



DAMAGES IN INTERNATIONAL ARBITRATIONS GUIDE

FIFTH EDITION

Editor
John A Trenor

Damages in International Arbitration Guide

Fifth Edition

Editor

John A Trenor

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Contents

Preface..... xi

Introduction..... 1

John A Trenor

PART I: LEGAL PRINCIPLES APPLICABLE TO THE AWARD OF DAMAGES

1 Compensatory Damages Principles in Civil and
Common Law Jurisdictions: Requirements, Underlying
Principles and Limits..... 7

Clare Connellan, Elizabeth Oger-Gross and Angélica André

2 Non-Compensatory Damages in Civil and Common Law
Jurisdictions: Requirements and Underlying Principles 30

Reza Mohtashami KC, Romilly Holland and Farouk El-Hosseny

3 Damages Principles under the Convention on Contracts
for the International Sale of Goods 55

Petra Butler

4 Contractual Limitations on Damages 101

Gabrielle Nater-Bass and Stefanie Pfisterer

5 Overview of Principles Reducing Damages 117

Craig Miles and David Weiss

6 Full Compensation, Full Reparation and the But-For Premise..... 134

Herfried Wöss and Adriana San Román

PART II: PROCEDURAL ISSUES AND THE USE OF DAMAGES EXPERTS

7 Procedural Issues 147
Louise Woods, Ciara Ros and Elena Guillet

8 The Function and Role of Damages Experts 162
Anthony Theau-Laurent, Edmond Richards and Louis Osman

9 Strategic Issues in Employing and Deploying Damages Experts..174
John A Trenor

**PART III: APPROACHES AND METHODS FOR THE ASSESSMENT
AND QUANTIFICATION OF DAMAGES**

10 Overview of Damages and Accounting Basics.....203
Gervase MacGregor and Susan Blower

11 Assessing Damages for Breach of Contract.....216
Karthik Balisagar and Tim Battrick

12 The Applicable Valuation Approach 226
Roula Harfouche and Joseph Kirby

13 Income Approach and the Discounted Cash Flow Methodology...239
Alexander Demuth

14 Best Practices and Issues that Arise in DCF Models 270
Gervase MacGregor and Michael Smith

15 Determining the Weighted Average Cost of Capital.....289
Charles Jonscher

16 Assessing 'Modern' DCF Valuation 302
Stuart Amor, Jose Alzate and Thomas Maassen

17 Market or Comparables Approach.....317
Richard Hern, Zuzana Janeckova and Yue Yin

18 Accounting-Based Valuation Approach	333
M Alexis Maniatis, Fabricio Nuñez, Ilinca Popescu and Jack Stirzaker	
19 Country Risk	353
Tiago Duarte-Silva	
20 Taxation and Currency Issues in Damages Awards	366
James Nicholson and Toni Dyson	
21 Pre-Award Interest	384
James Dow	
22 Costs	401
Joseph R Profaizer, Igor V Timofeyev and Adam J Weiss	
23 The Use of Econometric and Statistical Analysis in Damages Assessments	425
Jennifer Vanderhart, Steven Schwartz, Richard Brady and Aminta Raffalovich	

PART IV: DAMAGES ISSUES IN SPECIFIC INDUSTRIES OR THAT CUT ACROSS INDUSTRIES

24 Quantum in Oil and Gas and Mining Disputes	441
Darrell Chodorow, Florin Dorobantu and Fernando Bañez	
25 Damages in Gas and Electricity Arbitrations	463
Wynne Jones, Christoph Riechmann, Matthew Roberts and Stefan Lochner	
26 Damages in Construction Arbitrations	477
Conrad Bromley and Terry Hawkins	
27 Damages in Life Sciences Arbitrations	490
Gregory K Bell, Andrew Tepperman and Justin K Ho	
28 M&A and Shareholder Arbitrations	504
Kai F Schumacher, Michael Wabnitz and Greig Taylor	

29 Damages in Intellectual Property Arbitrations.....519
Trevor Cook

**30 Damages Relating to Environmental, Social
and Governance Issues.....533**
Colin Johnson, Jana Lefranc and Joseph Kirby

About the Authors 547

Contributors' Contact Details.....581

Index.....587

Preface

This fifth edition of Global Arbitration Review's *Damages in International Arbitration Guide* builds on the successful reception of the earlier editions. As explained in the Introduction, this book is designed to help all participants in the international arbitration community understand damages issues more clearly and to communicate those issues more effectively to tribunals to further the common objective of assisting arbitrators in rendering more accurate and well-reasoned awards on damages.

The book is a work in progress, with new and updated material being added to each successive edition. In particular, this fifth edition incorporates updated chapters from various authors and contributions from new authors. This edition seeks to improve the presentation of the substance through the use of visuals such as charts, graphs, tables and diagrams; worked-out examples and case studies to explain how the principles discussed apply in practice; and flow charts and check-lists setting out the steps in the analyses or the quantitative models. The authors have also been encouraged to make available online additional resources, such as spreadsheets, detailed calculations, additional worked examples or case studies, and other materials.

We hope this revised edition advances the objective of the earlier editions to make the subject of damages in international arbitration more understandable and less intimidating for arbitrators and other participants in the field, and to help participants present these issues more effectively to tribunals. We continue to welcome comments from readers on how the next edition might be further improved.

John A Trenor

Wilmer Cutler Pickering Hale and Dorr LLP

November 2022

Introduction

John A Trenor¹

There are three types of arbitrators: those who understand numbers and those who don't.

This old joke, adapted to the international arbitration community and repeated at conferences, typically receives nervous laughter from parties, counsel and experts who may have experienced innumeracy at first hand on the part of a tribunal. Yet this innumeracy is by no means limited to those who serve as arbitrators; the joke could equally be applied to those who appear as counsel and to other participants in the international arbitration community.

This book is aimed at everyone who gets the joke, whether they profess to understand numbers or not. The objective of the *Damages in International Arbitration Guide* is to help all participants in the international arbitration community – from the arbitrators to the parties to counsel and experts – understand damages issues more clearly and communicate those issues more effectively to tribunals to further the common objective of assisting arbitrators in rendering more accurate and well-reasoned awards on damages.

In the vast majority of international arbitrations, one or more parties seek damages. As such, damages are a critical component of most cases. A tribunal that misunderstands the relevant damages issues does not render justice to the parties. An award that effectively resolves the scope of liability but misunderstands, misapplies or miscalculates damages does not put the aggrieved party back in the position it would have been in if the wrongful act had not occurred. An award that seemingly takes a Solomonic approach by ‘splitting the baby’ or does

¹ John A Trenor is a partner at Wilmer Cutler Pickering Hale and Dorr LLP.

not adequately explain the decision on damages does not typically satisfy either party and does not contribute to a favourable reputation for the arbitrators who issued the award.

Parties, and their counsel and experts, express frustration with awards that offer little reasoning on damages or, worse yet, faulty reasoning or errors in principle or calculation. Arbitrators express frustration with counsel and experts who struggle to communicate often complex damages issues clearly and effectively. Counsel and experts express frustration with each other on how best to present damages cases to tribunals that may lack quantitative backgrounds.

The idea for this book arose from discussions among members of the Global Arbitration Review editorial board, who have heard these frustrations being voiced and identified a void in the market for a guide to damages in international arbitration. This book draws on the insights of leading lawyers, experts and academics in the field to produce a work that will be a valuable desk-top reference tool for arbitrators, parties, and their advisers and counsel, when approaching damages issues in international arbitration.

This book is not intended to provide a comprehensive answer to every question. Frequently, the answer depends on the context – on the contract or treaty language, the applicable law, the arbitration agreement or rules, the facts of the case, etc. Indeed, on some issues addressed in this book, the authors (and the editor) no doubt disagree. Participation in this book is not meant to convey endorsement of the views expressed by others. However, the objective of this book, and indeed the objective of resolving disputes between parties regarding damages, is to understand better why they disagree. Is the disagreement based on differing views on what the contract, treaty or applicable law requires? Is it based on differing assumptions of the parties and their experts? Is it based on differing views of the appropriate methodology to assess and quantify damages? Or is it based on different quantitative models?

The aim of this book is to make the subject of damages in international arbitration more understandable and less intimidating for arbitrators and other participants in the field, and to help participants present these issues more effectively to tribunals. The chapters address key issues regarding various aspects of damages, identify areas of general agreement and disagreement, provide checklists and tips, and describe effective approaches to presenting and resolving damages issues. With a firm understanding of the underlying issues and the reason why the parties disagree, the arbitrators can make informed judgements on how to resolve those differences.

The book is divided into four parts.

Part I addresses various legal principles applicable to the award of damages. The chapters in this part include overviews of the civil and common law approaches to both compensatory and non-compensatory damages, and cover damages principles under the Convention on Contracts for the International Sale of Goods, contractual limitations on damages, principles for reducing damages, such as mitigation, and damages principles in investment arbitration. The authors of these chapters are counsel from leading international arbitration firms and legal academics.

Part II addresses various procedural issues regarding damages and the use of damages experts, including bifurcation, evidentiary issues such as document disclosure, and techniques and approaches to maximise the effectiveness of expert assistance on damages. The authors of these chapters are also counsel from leading international arbitration firms.

Part III addresses various approaches and methods for the assessment and quantification of damages. It includes an overview of damages and accounting basics, quantifying damages for breach of contract, the income approach (discounted cash flow methodology) and determining the weighted average cost of capital, the market approach (comparables), the asset-based approach, taxation and currency issues, interest, costs, and the use of econometric and statistical analysis. The authors of these chapters are experts from leading expert practices, and economic and financial academics.

Part IV addresses damages issues specific to certain industries or those that cut across multiple industries. These chapters include overviews of damages issues in energy and natural resources arbitrations, construction arbitrations, life sciences arbitrations, mergers and acquisitions and shareholder arbitrations and intellectual property arbitrations. The authors are again experts from leading expert practices and counsel from leading international arbitration firms.

In addition to the hard copy version of this book, the content is also available on the Global Arbitration Review website, with additional online materials identified by the authors. Online access is available to subscribers at www.globalarbitrationreview.com/insight/guides.

Many individuals have contributed to making this book a success and deserve thanks. First and foremost, the authors of the chapters have shared in the vision of helping participants in the international arbitration community understand damages issues better. Their valuable contributions help to achieve this goal.

The professional team at Global Arbitration Review and its publisher, Law Business Research, have worked tirelessly at all stages of the process, from conception of the idea, through the editorial process, to publication.

This book would also not have been possible without the ideas and support of numerous current and former colleagues at Wilmer Cutler Pickering Hale and Dorr LLP.

Global Arbitration Review's *Damages in International Arbitration Guide* will continue to be updated in future editions. Contributing authors will be encouraged to update existing chapters and new authors will be invited to contribute additional chapters. If readers wish to see further topics included or existing topics addressed in more detail, please bring them to my attention or to the attention of Global Arbitration Review. We also welcome comments from readers on how the next edition might be improved.

I share the hope of Global Arbitration Review that this book and future editions will form a valuable contribution to the field of international arbitration and that, in the future, the joke that there are three types of arbitrators (or counsel, or others) – those who understand numbers and those who don't – no longer resonates.

Part I

Legal Principles Applicable to the Award of Damages

CHAPTER 1

Compensatory Damages Principles in Civil and Common Law Jurisdictions: Requirements, Underlying Principles and Limits

Clare Connellan, Elizabeth Oger-Gross and Angélica André¹

Introduction

Compensatory damages, as the name indicates, are intended to compensate a claimant for losses suffered as a result of another party's (wrongful) conduct. Those losses can be pecuniary (e.g., costs, loss of profit, related expenses) or non-pecuniary (e.g., for pain and suffering, loss of reputation).² The basic rule, in one common law formulation, is that a claimant is entitled to 'that sum of money which will put the party who has been injured, or who has suffered, in the same position as he would have been in if he had not sustained the wrong for which he is now getting his compensation or reparation'.³ This rule is formulated in similar terms in civil law jurisdictions; for example, French law recognises the principle

1 Clare Connellan and Elizabeth Oger-Gross are partners and Angélica André is a counsel at White & Case LLP. The authors thank Heather Clark for her contribution to the first edition of this chapter. The information in this chapter is correct as at November 2020.

2 H McGregor, *McGregor on Damages* (20th ed. Sweet & Maxwell, London 2017), Section 2-001. As discussed below, there are restrictions on a party's ability to recover non-pecuniary losses in common law jurisdictions. See, e.g., *The Law of Damages*, Part I – General Principles, Chapter 4 – Damages for non-pecuniary loss: E. Disappointment, distress, humiliation and loss of enjoyment: Contract (Butterworths Common Law Series, LexisNexis).

3 McGregor (20th ed.), op. cit. note 2, Section 2-002, citing *Livingstone v. Rawyards Coal Co* [1880] 5 App Cas. 25 at 39.

of full compensation, the objective of which is to put the injured party in the position in which it would have been had the act that gave rise to the damage not occurred.⁴

This chapter provides a comparative overview of the legal principles and elements of compensatory damages in civil law and common law jurisdictions, with a focus on contractual damages. There are several reasons why such a comparative analysis is important for international arbitration practitioners. It is common for disputes underlying international arbitrations to be governed by a range of applicable national laws, so it is important to be familiar with the broad principles of their substantive content – or, at least, of two of the main legal traditions,⁵ though the differences among national laws within those traditions should not be underestimated. Although there is certainly a lot of common ground in relation to the legal principles and elements of compensatory damages claims in common and civil law jurisdictions, there are also differences, as described in more detail in the sections below. As arbitrators or advocates, it can be useful to be attuned to these differences when drafting awards or formulating written or oral pleadings, particularly where the arbitral tribunal is of mixed legal backgrounds.

Although certainly less prevalent than national laws in international arbitration, transnational principles can also play a part in damages analyses in international arbitration, either where parties have agreed to apply them or where tribunals have cited them as a means of reinforcing or supplementing the applicable law.⁶ These principles may be influential even where not directly applicable and include, for example, those codified in instruments such as the 2016 UNIDROIT Principles of International Commercial Contracts (the

4 Full compensation is the authors' translation of the French term 'réparation intégrale'. See A Bénabent, *Droit des obligations* (18th ed. L.G.D.J. Précis Domat, 2019), para. 683. See also H Wöss and others, *Damages in International Arbitration under Complex Long-Term Contracts* (OUP, Oxford 2014), para. 2.03.

5 A discussion of compensatory damages principles under other legal traditions is beyond the scope of this chapter.

6 See E F Agrò, 'The Impact of UNIDROIT Principles in International Dispute Resolution in Figures', 16(3) *Unif. L. Rev.* (2011) 719, 721, available at www.unidroit.org/english/publications/review/articles/2011-3-finazzi-e.pdf (last accessed 10 November 2022). The UNIDROIT (The International Institute for the Unification of Private Law) provisions on damages were among those most frequently invoked by arbitral tribunals and domestic courts. See also P Gélinas, 'General Characteristics of Recoverable Damages in International Arbitration' in Y Derains and R Kreindler (eds), *Evaluation of Damages in International Arbitration, Dossiers of the ICC Institute of World Business Law*, Vol. 4 (Kluwer Law International; International Chamber of Commerce (ICC), 2006) 11, 21–29.

UNIDROIT Principles), which ‘reflect concepts to be found in many, if not all, legal systems’.⁷ Understanding the origin of these transnational principles is important preparation for their application.

As a final note, arbitration clauses often contain broadly worded consents to arbitration that may be interpreted to include non-contractual (i.e., tortious or delictual) claims.⁸ However, the focus of this chapter is on compensatory damages arising out of contractual claims. In addition, we do not consider non-compensatory damages, damages principles under the Convention on Contracts for the International Sale of Goods (CISG), contractual limitations on damages, damages in investment arbitration, interest and costs. These topics are addressed in other chapters of this Guide.⁹

At the end of this chapter, a flowchart sets out the steps to follow to determine whether a party may be entitled to compensatory damages, and a table sets out the main issues developed in this chapter.

Law applicable to damages

The law applicable to damages can have a significant effect on the assessment of damages, as it determines the conditions under which damages may be obtained and the categories of damages available and provides guidance regarding the amount of damages to be awarded.

The parties’ agreement is paramount in international arbitration. In the absence of a statement to the contrary, the right to damages, the categories and the amount of damages recoverable and the nature of the proof required are first and foremost governed by the parties’ agreement.¹⁰ Parties often choose to specify the conditions for the recovery of damages, as well as the categories and the

7 UNIDROIT Principles of International Commercial Contracts (UNIDROIT, 2016), Introduction, xxix (PDF 27).

8 See, e.g., ICC Case 9517, Interim Award, November 1998: ‘The Arbitrators find that the scope of the wording of the arbitration clause “any dispute arising in connection with this Agreement” is clear and does not lend itself to construction. It is very wide and covers any claim which arises, directly or indirectly, with any relationship to the Management Agreement, and whether the claim is contractual or delictual of nature. There is also no basis for constructing the clause or the ICC Rules as applicable only to commercial disputes. The claims raised are, therefore, within the scope of the arbitration clause.’

9 Damages in investment arbitration are addressed in previous versions of this Guide.

10 C T Salomon, P D Sharp, Chapter 10: ‘Damages in International Arbitration’, in J Fellas and J H Carter (eds), *International Commercial Arbitration in New York* (2nd ed., OUP New York, 2016) para. 10.1; N Blackaby, C Partasides and others, *Redfern and Hunter on International Arbitration* (6th ed. OUP, 2015), para. 9.40.

amount of damages recoverable (e.g., with liquidated damages, penalty clauses or limitation clauses),¹¹ broadening or limiting the rights available under national laws. However, parties do not always agree on such arrangements and, in any event, their agreement is unlikely to be exclusive of all provisions of the applicable rules of law. Further, some national law rules and principles, such as public policy rules and principles, are of mandatory application.

In the absence of, or to supplement, the parties' agreement relating to damages, arbitral tribunals have to determine the applicable rules of law. The tribunal first has to determine whether damages-related issues are substantive or procedural issues. Most damages-related questions are usually analysed as issues of substance. However, certain aspects, such as the standard of proof, are sometimes analysed as procedural matters, so that different laws or rules of law can apply to different aspects of damages.

The arbitral tribunal will again be guided by the parties' agreement and, without such agreement, by the relevant rules for determining the applicable rules of law. Some arbitration rules and laws favour a 'direct' approach to determining the applicable rules of law (i.e., without considering conflict of laws rules), referring to the rules of law that the arbitral tribunal considers appropriate¹² or those that have the closest connection to the dispute.¹³ Others rely on a conflict of laws approach.¹⁴

The applicable rules of law can be a national law or a convention, principles or sets of rules – such as the CISG,¹⁵ the UNIDROIT Principles or the 2002 Principles of European Contract Law that have been developed to reflect internationally accepted rules or principles or to achieve a compromise between various legal systems. These international instruments often have to

11 See the chapter in this Guide on contractual limitations on damages.

12 See, e.g., French Code of Civil Procedure, Article 1511; Austrian Code of Civil Procedure, s. 603; Belgian Code of Civil Procedure, Article 1710; 2010 UNCITRAL Arbitration Rules, Article 35.1; 2020 LCIA Arbitration Rules, Article 22.3; 2017 SCC Arbitration Rules, Article 27; 2007 DIAC Arbitration Rules, Article 33.1; 2016 SIAC Arbitration Rules, Article 31.1.

13 See, e.g., German Code of Civil Procedure, Article 1051; Swiss Private International Law, Article 187; 2012 Swiss Rules of Arbitration, Article 33; 2011 CRCICA Arbitration Rules, Article 35.1.

14 See, e.g., English Arbitration Act 1996, Section 46(3) ('the law determined by the conflict of laws rules which it considers applicable'); UNCITRAL Model Law, Article 28(2); Danish Arbitration Act, Article 28(2); Regulation (EC) No. 593/2008 of 17 June 2008 on the law applicable to contractual obligations (Rome I), Article 12(1)(c) in combination with Article 4; 1961 European Convention on International Commercial Arbitration, Article VII(1).

15 See the chapter in this Guide on damages principles under the Convention on Contracts for the International Sale of Goods.

be complemented by national rules of law to the extent that they do not cover specific issues and therefore do not necessarily exclude the application of national laws in those respects.

In addition to national laws, arbitral tribunals at times take a transnational approach, referring to general principles applicable to damages in international arbitration, such as a generally recognised duty to mitigate.¹⁶ Such principles, however, are not uniformly identified or applied.

Assessing proof relating to damages

The assessment of damages is driven by a factual determination and often involves complex data and economic issues, such that parties and arbitral tribunals rely on experts. Parties first have to establish their right to damages, before justifying the type and amount of damages requested. It is thus essential to determine which party bears the burden of proof and what standard should apply.

Burden of proof

In international arbitration, as under national laws, the burden of proof usually lies with the party making an assertion,¹⁷ in both common and civil law jurisdictions.¹⁸

However, this rule should not be understood to mean that the burden of proof necessarily lies with the claimant. Rather, the burden lies with the party making a claim, a counterclaim or any assertion. The burden of proof thus moves from one party to another depending on which party is making assertions on specific aspects of a claim.¹⁹ Certain Latin American legal systems have developed

16 See, e.g., ICC Case No. 2478, Award, *Clunet* (1975) 925, 927 ('we should not lose sight of the fact that, by virtue of the general principles of law, which are actually reflected in Articles 42(2) and 44(1) of the [Swiss] Federal Code of Obligations, it is for the aggrieved party to take all necessary measures in order not to increase the damage.'). See, further, the chapter in this guide on principles of reducing damages.

17 Blackaby, Partasides and others, *op. cit.* note 10, para. 6.84; G Born, *International Commercial Arbitration* (2nd ed., Wolters Kluwer, 2014), 2313–14.

18 See, e.g., UNCITRAL Arbitration Rules, Article 27(1); French Civil Code, Article 1353 (formerly Article 1315); Swiss Civil Code, Article 8; Belgian Civil Code, Article 1315. This general rule is expressed by the Roman law expression *actori incumbit probatio*; Wöss and others, *op. cit.* note 4, para. 2.14; Born, *op. cit.* note 17, 2313–14.

19 Wöss and others, *op. cit.* note 4, para. 2.14; N O'Malley, *Rules of Evidence in International Arbitration: an Annotated Guide* (2nd ed. Informa Law from Routledge, 2019), para. 7.32.

a dynamic burden of proof whereby the judge can redistribute the burden of proof among the parties depending on which party is in a better position to provide evidence on a particular claim.²⁰

Standard of proof

Although the burden of proof determines which party should prove the relevant facts and law underlying an assertion, the standard of proof sets the level of proof required and thus goes to the heart of the case.

There is no unanimously recognised standard of proof in international arbitration – national laws vary. Yet, the standard of proof is often considered to be a ‘balance of probabilities’, ‘preponderance of the evidence’ or ‘more likely than not’ standard. The standard does not rise to the ‘beyond all reasonable doubt’ standard that applies, for instance, in criminal matters in the United States or England.²¹

When they discuss it, arbitral tribunals usually refer, cumulatively or exclusively, to the applicable substantive national law and the applicable law of the seat of the arbitration to determine the applicable standard of proof.²²

Although the standard of proof varies from one legal system to another, the standard is often similar or leads to a similar analysis. In common law jurisdictions, the party making the claim for damages must meet the standard of proof for civil cases, the ‘balance of probabilities’ test.²³

Under Swiss law, the regular standard of proof refers to the judge’s or arbitrator’s inner conviction, whereby the judge or the arbitrator should be convinced of a fact and have no serious doubts about its existence, although absolute certainty is not necessary.²⁴ Some civil jurisdictions, however, have no defined standard of proof and instead grant judges extensive leeway to determine damages-related

20 Argentinian Civil and Commercial Code, Article 1735; Colombian General Code of Procedure, Article 167.

21 Blackaby, Partasides and others, op. cit. note 10, para. 6.85; Born, op. cit. note 17, 2314; G M von Mehren and C Salomon, ‘Submitting Evidence in an International Arbitration: The Common Lawyer’s Guide’, 20(3) *J. Int’l Arb.*, 285 (2003), 291.

22 Born, op. cit. note 17, 2315; O’Malley, op. cit. note 19, para. 7.26.

23 Defined in English law by Lord Denning as ‘more probable than not’ in *Miller v. Minister of Pensions* [1947] 2 All ER 372; and described in the United States as the preponderance of the evidence (the standard is satisfied if there is a greater than 50 per cent chance that the proposition is true).

24 Swiss Federal Tribunal, BGE/ATF 130 III 321 dated 29 January 2004; R Groner, *Beweisrecht*, 2011, 180; P Guyan, in K Spühler, L Tenchio and D Infanger, *Basler Kommentar, Schweizerische Zivilprozessordnung* (3rd ed., 2017), Article 257, para. 7; H P Walter, in H Hausheer and H P Walter (eds), *Berner Kommentar, ZGB, Band I/1, Einleitung* (2012), Article 1-9, para. 134.

facts. Under French law, for instance, the judge enjoys wide discretionary powers to assess the evidence presented.²⁵ Judges particularly make use of these discretionary powers in the allocation of damages.²⁶ Likewise, under German law, the German Code of Civil Procedure grants full discretion to judges. It refers to the judge's free conviction to decide allegations of facts in general,²⁷ and with respect to the existence and scope of damages in particular.²⁸ The standard of proof that the aggrieved party must meet to demonstrate its damages requires establishing the existence of loss and causation regarding the extent of the loss. In this context, a finding of a preponderant probability of the existence of damages and their extent is sufficient.²⁹

Entitlement to damages

This section outlines the conditions to be fulfilled to obtain damages and analyses, in particular, the foreseeability requirement and duty to mitigate.

Establishing entitlement to damages

Before assessing damages, the claimant first has to establish that it is entitled to damages. Under English law, for example, the requirements are as follows. First, one must prove the existence of a 'wrong'³⁰ – that is, in the case of contractual damages, a breach of contract. Second, one must establish that the damage is not too remote and that the losses were reasonably foreseeable at the time the parties entered into the contract.³¹ Third, any damages awarded are subject to deductions

25 L Siguoir, 'Art. 1353, Fasc. unique: Preuve des obligations, Charge de la preuve et règles générales', *JurisCl. Civil Code*, 2020, para. 9 and, e.g., French Court of Cassation (1st Civil Chamber, 14 January 2010), No. 08-13160; French Court of Cassation (Commercial Chamber, 6 September 2011), No. 10-17963; French Court of Cassation (2nd Civil Chamber, 4 October 2018), No. 17-24858.

26 C Boismain, 'Etude sur l'évaluation des dommages-intérêts par les juges du fond', *Petites affiches*, 2007, No. 39, p. 7; L Gratton, 'Le dommage déduit de la faute', *RTD Civ.* 2013 [275]; P Casson, 'Dommages et intérêts', *Rép. Droit Civil Dalloz* 2017, para. 19. This has been criticised (A Danis-Fantôme, 'La mesure des dommages-intérêts: question de fait ou question de droit? Pour un renforcement du contrôle de la motivation des juges du fond', *Rép. Droit Civil* 2019 No. 115y2, 160).

27 German Code of Civil Procedure, Section 286.

28 *ibid.*, at Section 287. See also Korean Civil Procedure Code, Article 202-2.

29 Wöss and others, *op. cit.* note 4, para. 4.330.

30 McGregor (20th ed.), *op. cit.* note 2, Section 1-001.

31 *Wagon Mound* (No. 1) [1961] AC 388; J Chitty and H Beale, *Chitty on Contracts* (33rd ed., 2019), paras. 26-119, 26-120, 26-121 and 26-126. The notion of foreseeability is further analysed below.

for any failure to mitigate (or contributory negligence in the case of breaches of duty of care).³² Fourth, any damages awarded are also subject to any breaks in the chain of causation.³³ Irrespective of factual causation, English law can treat some losses as not having been legally caused by the breach, on the basis that it is not fair to hold the defendant responsible for them owing to a ‘break in the chain’ or *novus actus interveniens*.³⁴ If the breach of contract was the ‘effective’ or ‘dominant’ cause of the loss, damages may be recoverable even if the breach was not the sole cause of the loss.³⁵ Where there are competing causes, a balance of probabilities test applies.³⁶

Civil law jurisdictions include similar conditions. Where a party has not performed its contractual obligations, French law favours specific performance over damages, unless specific performance is not possible or if there is a manifest disproportion between the costs of the specific performance for the debtor and the creditor’s interest in the specific performance (French Civil Code, Article 1221 *et seq.*).³⁷ If the aggrieved party has requested specific performance from its debtor and if the debtor does not comply, the debtor can be liable for damages, pursuant to Article 1231 of the French Civil Code. A claimant then has to show that the three conditions for the recovery of damages for breach of contract, drawn from Articles 1231 to 1231-2 of the French Civil Code, are satisfied.³⁹ First, the

32 The notion of mitigation is further analysed below.

33 See, e.g., *Corr v. IBC Vehicles Ltd* [2008] 1 AC 884, per Lord Bingham: ‘The rationale of the principle that a *novus actus interveniens* breaks the chain of causation is fairness.’

34 *id.*

35 *Galoo v. Bright Grahame Murray* [1994] 1 W.L.R. 1360, 1374-1375; Chitty and Beale, *op. cit.* note 31, paras. 26-066 and 26-076.

36 *Nulty and others v. Milton Keynes Borough Council* [2013] EWCA Civ 15 (‘the court must be satisfied on rational and objective grounds that the case for believing that the suggested means of causation occurred is stronger than the case for not so believing’).

37 Replacing Articles 1142 to 1144 and 1184 of the French Civil Code. The French Civil Code underwent a substantial revision and restructuring with respect to contract law, with Ordinance No. 2016-131 dated 10 February 2016, which entered into force on 1 October 2016. The reform made changes to the damages regime and reshuffled the relevant articles of the Civil Code but did not significantly change the applicable principles.

38 D Mainguy (ed), *Le nouveau droit français des contrats, du régime général et de la preuve des obligations (après l’ordonnance du 10 février 2016)* (UMR-CNRS 5815, 2016), para. 229; O Deshayes, T Genicon and Y-M Laithier, *Réforme du droit des contrats, du régime général et de la preuve des obligations – Commentaire article par article* (2nd ed, Gualino, 2018), 221–22. Requests for specific performance require only the showing of a breach of contract (C Larroumet and S Bros, *Traité de droit civil, Tome 3: Les obligations, Le contrat* (9th ed. Economica, 2018), para. 578).

39 Formerly Articles 1146 and 1147 of the French Civil Code.

claimant must establish that there has been a breach of contract. Second, the claimant must have suffered a loss. Third, there must be a causal link between the breach and the claimant's loss.⁴⁰ Article 1231-1 provides for one exception to the recovery of compensatory damages, in a case of *force majeure*,⁴¹ which is defined in this context as an event that is outside the debtor's control and could not have been reasonably foreseen at the time of conclusion of the contract, the effects of which cannot be avoided by appropriate measures, and that now prevents the debtor from performing its obligation (new Article 1218).⁴²

As under French law, specific performance is the rule under German law (German Civil Code, Section 241(1)). However, a party cannot request specific performance if performance is impossible for the debtor or anyone else (German Civil Code, Section 275).⁴³ Regarding the entitlement to damages, German law has adopted similar conditions to French law. The claimant must establish three objective conditions: a breach of an obligation; the existence of a loss; and a causal link between the two. German law also includes a subjective element, in the form of a fault on the part of the debtor.⁴⁴

Similar conditions to those found in these civil law jurisdictions are found in international instruments or transnational principles. Article 74 of the CISG requires the proof of a breach of contract by one party and a loss suffered by the other party as a consequence of the breach. Article 7.4.2 of the UNIDROIT Principles entitles an aggrieved party to full compensation for harm sustained as a result of non-performance.

Where some civil law jurisdictions do depart from common law jurisdictions is on the requirement of notice. There is no notice requirement under English common law, so notice is not required unless imposed by the contract. In contrast, under French law, for example, the claimant must give notice to the respondent that it is in delay or in breach of the agreement and request performance of its obligation within a reasonable time, unless the non-performance is permanent;

40 P Malaurie, L Aynès and P Stoffel-Munck, *Droit des obligations* (10th ed. L.G.D.J., 2018), 533, 535, paras. 961–66.

41 Rather than an external cause, *cause étrangère*, as was previously required under the former Article 1147.

42 Mainguy (ed.), op. cit. note 38, para. 242; Deshayes, Genicon and Laithier, op. cit. note 38, 216–19.

43 This is also the case under Japanese law. See Y Taniguchi, 'The obligation to mitigate damages', in Derains and Kreindler (eds), op. cit., note 6, 79, 83.

44 Wöss and others, op. cit. note 4, para. 4.263. The requirement for a fault arguably also exists under French law (Wöss and others, op. cit. note 4, paras. 4.198 to 4.201).

if the respondent does not perform upon receiving the notice, the claimant will be entitled to damages.⁴⁵ This requirement is consistent with the emphasis that French law puts on specific performance.

Foreseeability requirement

Foreseeability refers to the notion used in common law jurisdictions that a loss must be able to be anticipated. Civil law jurisdictions do not necessarily refer expressly to foreseeability in the texts relating to damages, although courts and commentators often rely on this requirement. The notion of foreseeability acts as a limitation on the amount of damages that have to be paid in both common and civil law systems.

Under English law, as set out above, damages for breach of contract are recoverable only to the extent that the loss that has occurred was reasonably foreseeable by the parties at the time they entered into the agreement. This test was first expressed in England in 1854 in *Hadley v. Baxendale* as follows:

*Where two parties have made a contract, which one of them has broken, the damages which the other party ought to receive in respect of such breach of contract should be such as may fairly and reasonably be considered either arising naturally, i.e. according to the usual course of things, from such breach of contract itself, or such as may reasonably be supposed to have been in the contemplation of both parties at the time they made the contract, as the probable result of the breach of it.*⁴⁶

Thus, loss is recoverable only if the type of loss⁴⁷ that occurs is ‘in the contemplation of the parties’ (i.e., foreseeable)⁴⁸ and ‘not unlikely’⁴⁹ at the date of contracting (rather than the date of breach).⁵⁰ What is in the contemplation of the parties is assessed objectively on the basis of the ‘ordinary course of things’ and subjectively

45 French Civil Code, Article 1231 (formerly Article 1146). See Mainguy (ed.), op. cit. note 38, para. 242; Deshayes, Genicon and Laithier, op. cit. note 38, 237–38.

46 *Hadley v. Baxendale* (1854) 9 Exch. 341. This rule applies in India as well. The Kerala High Court has observed that ‘the party guilty of breach of contract is liable only for reasonably foreseeable losses – those that a normally prudent person, standing in his place possessing his information when contracting, would have had reason to foresee as probable consequences of future breach’. (*State of Kerala v. K Bhaskaran* AIR 1985 Ker 49 (para. 12)).

47 *H Parsons (Livestock) Ltd v. Uttley Ingham & Co Ltd* [1977] EWCA Civ 13.

48 *Hadley v. Baxendale* (1854) 9 Exch. 341.

49 *Koufos v. C Czarnikow Ltd (The Heron II)* [1969] 1 AC 350.

50 *Hadley v. Baxendale* (1854) 9 Exch. 341.

on the basis of special circumstances or knowledge attributed to the parties.⁵¹ If this test is satisfied, the respondent is considered to have assumed the responsibility for the loss.⁵²

In civil law systems, damages are generally recoverable only if they were foreseen or ought to have been foreseen at the time the contract was made. Under French law, the defaulting party is liable only for damages that were foreseen or foreseeable at the time of conclusion of the contract, pursuant to Article 1231-3 of the French Civil Code.⁵³ The idea is that the parties should be in a position to understand the extent of their potential liability for breach of contract when entering the contract.⁵⁴ Foreseeability is applied *in abstracto* – meaning what is ‘normally’ foreseeable – but this notion is flexible.⁵⁵ This condition does not have to be examined if the parties have not put forward this argument.⁵⁶

However, the defaulting party cannot reduce its liability for damages on an argument that the loss was not foreseeable if it has been grossly negligent (*faute lourde*) or has committed an intentional breach (*faute dolosive*).⁵⁷ In a case of gross negligence or intentional breach, the defaulting party is liable only for damages that are the immediate and direct consequence of its breach, pursuant to Article 1231-4 of the French Civil Code.⁵⁸ The notions of foreseeability in Article 1231-3 and direct consequence of a breach in Article 1231-4 – which refers to causation as opposed to foreseeability – are two different concepts under French law,⁵⁹ although they are not well distinguished in practice.⁶⁰

51 *Victoria Laundry (Windsor) Ltd v. Newman Industries Ltd* [1949] 2 KB 528.

52 *Transfield Shipping Inc v. Mercator Shipping Inc (The Achilles)* [2008] UKHL 48; *Supershield Ltd v. Siemens Building Technologies FE Ltd* [2010] EWCA Civ 7; *Rubenstein v. HSBC Bank plc* [2012] EWCA Civ 1184.

53 Formerly Article 1150 of the French Civil Code.

54 B Fages, *Droit des obligations* (9th ed. L.G.D.J., 2019), para. 329.

55 Malaurie, Aynès and Stoffel-Munck, op. cit. note 40, para. 965.

56 French Court of Cassation (1st Civil Chamber), 15 July 1999, No. 97-10268; French Court of Cassation (1st Civil Chamber), 2 April 2014, No. 13-16038.

57 Before the 2016 reform, Article 1150 of the French Civil Code referred only to intentional breach (*dol*). However, the French courts were already analysing gross negligence as an intentional breach; therefore, the reference to gross negligence in the 2016 reform only codifies applicable case law.

58 Formerly Article 1151 of the French Civil Code.

59 Larroumet and Bros, op. cit. note 38, paras. 640–46; Malaurie, Aynès and Stoffel-Munck, op. cit. note 40, paras. 962–66; Deshayes, Genicon and Laithier, op. cit. note 38, 238–40.

60 Gélinas, op. cit., note 6, 11, 15.

Some other jurisdictions do not refer to foreseeability per se. For instance, German law provides for compensation of losses that are within the scope of protection of the contractual obligation breached, to the exclusion of damages that were not contemplated by the parties in their contract.⁶¹ Certain provisions expressly require a loss to have been foreseeable, such as Section 252 of the German Civil Code, which refers to lost profits that ‘could probably have been expected’ in the ‘normal course of events’ or in ‘special circumstances’, resulting from particular measures or precautions taken.

Mitigation

In common law jurisdictions, it is accepted that the aggrieved party is under a duty to take steps to minimise its loss, and not to increase it. Damages may be reduced if that party has not taken steps to mitigate its loss. Mitigation and other means of reducing damages are discussed in detail in Chapter 5. Nevertheless, a brief discussion of certain comparative law aspects is presented here.

Under English law, for example, the claimant must first take all reasonable steps to minimise its loss as a result of the respondent’s breach of its obligation. The claimant cannot recover losses that it could have avoided through reasonable action or inaction. Second, as a consequence of the first rule, the claimant can recover the costs that it has incurred in taking reasonable steps to minimise its loss. This is true even if the steps taken have in fact increased the loss. Reasonable attempts to mitigate will not reduce damages payable, if they are unsuccessful.⁶² Third, where the claimant has minimised its loss, the damages owed by the respondent are reduced by the amount of the reduction achieved by the claimant.⁶³ The burden of proof in this context is on the defendant.⁶⁴ This duty is present in other common law jurisdictions as well. Further, any profit accrued as a consequence

61 Wöss and others, op. cit. note 4, para. 4.261.

62 *Lagden v. O'Connor* [2004] 1 AC 1067, Lord Scott, para. 78.

63 McGregor (20th ed.), op. cit. note 2, Sections 9-002 to 9-006.

64 *Lombard North Central plc v. Automobile World (UK) Ltd* [2010] EWCA Civ 20. A claimant should nevertheless consider whether to take steps to show how it has mitigated its loss, as failure to do so can be risky. *Bulkhaul Ltd v. Rhodia Organique Fine Ltd* [2008] EWCA Civ 1452.

of the claimant's mitigating steps must be credited to the defendant if causation is established. The onus is on the defendant to prove both the existence and the amount of profit.⁶⁵

Contributory negligence is the contribution to the loss by the aggrieved party through its action or inaction and is a separate doctrine in common law jurisdictions. In a contractual context, contributory negligence can apply if there is a contractual duty of care and the contractual duty of care is concurrent with a tortious duty of care.⁶⁶ Contributory negligence reduces the damages payable in accordance with the court's assessment of the parties' respective responsibilities for the loss.

Civil law jurisdictions have not necessarily developed or embraced a doctrine of mitigation. As mentioned above, contrary to common law jurisdictions, civil law jurisdictions favour specific performance over the compensation of damages, at least in theory. Nonetheless, civil law jurisdictions have evolved over time to include mechanisms similar to mitigation. Under German law, for instance, there is no duty to mitigate per se, but a similar result is achieved through the regime on contributory negligence. Section 254 of the German Civil Code makes the entitlement and scope of damages dependent on the circumstances, in particular on the extent to which one or the other party caused the damages in full or in part. A fault will even be found where the aggrieved party has failed to avert or reduce the damage pursuant to Section 254(2). The Japanese Civil Code similarly provides that courts can take account of the claimant's own negligence in determining the entitlement and scope of damages.⁶⁷ Other civil law countries, such as Italy, Austria, Portugal and Finland, have similar provisions.⁶⁸

There are exceptions, however, where an approach similar to common law jurisdictions has been adopted. For example, the Quebec Civil Code includes an express obligation to mitigate under Article 1479, which provides that a 'person

⁶⁵ *Thai Airways International Public Co Ltd v. KI Holdings Co Ltd (formerly Koito Industries Ltd)* [2015] EWHC 1250 (Comm). See also *Globalia Business Travel SAU (formerly TravelPlan S.A.U) of Spain v. Fulton Shipping Inc of Panama* [2017] UKSC 43, in which the Supreme Court of the United Kingdom confirmed that the issue turns on causation: where the claimant has obtained a benefit following a breach of contract and this benefit was caused either by the breach or by the claimant's act of mitigation, the recoverable loss will be reduced by the benefit.

⁶⁶ *Forsikringsaktieselskapet Vesta v. Butcher and others* [1989] AC 852; *Barclays Bank plc v. Fairclough Ltd* [1995] QB 214.

⁶⁷ Japanese Civil Code, Article 418. See also Taniguchi, op. cit., note 43, 79, 83.

⁶⁸ Italian Civil Code, Article 1227; Austrian Civil Code, Section 1304; Portuguese Civil Code, Article 570; Finnish Sales of Goods Act Section 70(1).

who is bound to make reparation for an injury is not liable for any aggravation of the injury that the victim could have avoided'. Similarly, Article 404 of the Russian Federation Civil Code allows a judge to reduce the scope of damages if the aggrieved party, intentionally or not, increased the amount of damages or failed to take reasonable measures to reduce it.⁶⁹

French law is generally presented as a legal system that does not embrace the duty to mitigate, and it is true that the French Civil Code does not include, for now, an obligation or duty to mitigate.⁷⁰ The French Court of Cassation has confirmed that there is no obligation to minimise the damages the aggrieved party has suffered in the context of non-contractual liability.⁷¹ This principle is generally understood to apply to contractual liability too.⁷² Indeed, the duty of mitigation has been viewed by some as being in contradiction with the French principle of full compensation. If the aggrieved party is entitled to recovery of its damages, it should not have to minimise its loss.⁷³

However, the duty to mitigate finds its way in through the back door in French law, and several commentators have welcomed this idea.⁷⁴ Various avenues have been considered to integrate the idea of mitigation in French law even in the absence of a stated requirement in the Civil Code. Some judges have taken into account the aggrieved party's behaviour, in particular a person's inertia, in assessing damages, relying on the judge's discretion in doing so.⁷⁵ Commentators

69 A Komarov, 'Mitigation of Damages', in Derains and Kreindler (eds), *op. cit.*, note 6, 37, 39.

70 Fages, *op. cit.* note 54, para. 330.

71 French Court of Cassation (2nd Civil Chamber), 19 June 2003, No. 01-13289, JCP G 2003.II.10170, note C Castets-Renard; with respect to contract law, French Court of Cassation (1st Civil Chamber), 3 May 2006, No. 05-10411, D. 2006, p. 1403, obs. I Gallmeister; French Court of Cassation (2nd Civil Chamber), 26 March 2015, No. 14-16011.

72 French Court of Cassation (3rd Civil Chamber), 10 July 2013, No. 12-13851; Fages, *op. cit.* note 54, para. 330; Malaurie, Aynès and Stoffel-Munck, *op. cit.* note 40, paras. 963, 977.

73 C Larroumet, 'Obligation de modérer le dommage et arbitrage du point de vue du droit français', *Gaz. Pal.* 2008, No. 290, p. 5, sp. para. 2.

74 Malaurie, Aynès and Stoffel-Munck, *op. cit.* note 40, para. 963; Fages, *op. cit.* note 54, para. 330; Larroumet, *op. cit.* note 73, p. 5. The latest reform of the French Civil Code considers the reduction of damages if the aggrieved party does not take safe and reasonable measures to avoid the increase of damages (see, e.g., F Giaoui, 'Une évaluation innovante des dommages et intérêts pour traduire les faits en règles de droit et réduire l'imprévisibilité judiciaire', *RDC* 2019, No. 115y3, 164, paras. 15, 17; L Thibierge, 'La mesure des dommages-intérêts : question de fait ou question de droit ? Libres réflexions au travers du prisme de la minimisation du préjudice', *RDC* 2019, No. 115y1, 193).

75 French Court of Cassation (1st Civil Chamber), 2 October 2013, No. 12-19887; Malaurie, Aynès and Stoffel-Munck, *op. cit.* note 40, para. 963.

have also referred to the obligation of good faith in this context.⁷⁶ The better legal justification, however, appears to be the requirement for a causal link to establish the damages. If the amount of damages would have been lower had the aggrieved party taken some action or, on the contrary, refrained from taking action, then the aggrieved party should not be entitled to the amount of damages that it requests. This reasoning can be applied easily in connection with the judge's full discretion to assess damages.⁷⁷ Further, parties can provide in their contracts that a duty of mitigation applies, without contravening French law or public policy.⁷⁸

In any event, arbitral tribunals applying French law in international arbitration (as opposed to French domestic arbitration) could rely on the duty of mitigation being a transnational principle or a principle of the *lex mercatoria* to apply this duty in any event.⁷⁹ The duty of mitigation is indeed widely recognised as a transnational rule, part of the general principles of law, in particular, in the context of international arbitration, so much so that several international and transnational instruments refer to it (see CISG, Article 77 and UNIDROIT Principles, Article 7.4.8).⁸⁰ French courts would not annul or refuse to enforce an award on the ground of a violation of international public policy for referring to a duty to mitigate whether the arbitral tribunal applied French law or another law.⁸¹

Assessment of the amount of damages

General approach to damages in common and civil law traditions

In common law jurisdictions, damages are seen as the primary remedy for non-performance of contract, with specific performance seen as an exception. For example, the Restatement (Second) of the Law of Contracts, a US treatise that

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- 76 Malaurie, Aynès and Stoffel-Munck, op. cit. note 40, para. 977. This justification has been criticised, however (see J Ortscheidt, *La réparation du dommage dans l'arbitrage commercial international* (2001), para. 233 et seq.; Larroumet, op. cit. note 73, p. 5, para. 10; Thibierge, op. cit. note 74, 193).
- 77 Larroumet, op. cit. note 73, p. 5, para. 11; Malaurie, Aynès and Stoffel-Munck, op. cit. note 40, para. 977.
- 78 Larroumet, op. cit. note 73, p. 5, sp. para. 8.
- 79 *ibid.*, at p. 5, sp. paras. 6–9.
- 80 Komarov, op. cit., note 69, p. 37, sp. pp. 40–41; Larroumet, op. cit. note 73, p. 5, paras. 5–9; Born, op. cit. note 17, 3825; E Gaillard and J Savage (eds), *Fouchard Gaillard Goldman on International Commercial Arbitration* (Kluwer Law International, 1999), para. 1491.
- 81 Larroumet, op. cit. note 73, p. 5, paras. 6 to 8.

seeks to restate common law principles that is frequently cited in US courts, states that '[s]pecific performance . . . will not be ordered if damages would be adequate to protect the expectation interest of the injured party'.⁸²

This is one area in which civil and common law jurisdictions differ in a more significant manner, as the primary remedy in most civil law jurisdictions has traditionally been to have the contract performed as agreed, with damages in lieu of performance as only a secondary remedy.⁸³ This remains the case in Germany, which has a strong position on the principle of *pacta sunt servanda*.⁸⁴ The revised French Civil Code favours specific performance, as explained above (Article 1221).⁸⁵

Categories of recoverable loss

In common law jurisdictions, there are three basic categories of recoverable damages.⁸⁶ The main category is expectation damages, according to which damages are awarded on the basis of putting the claimant in the position it would have been in, but for the breach. A claimant's ability to recover lost profits will depend on the subject of the breach of contract. For example, it is more likely that a claimant will be able to recover lost profits in a contract for the sale of goods than in a contract for the carriage of goods, as lost profits in the latter situation are generally held to be too remote.⁸⁷ The second is performance damages – namely, the cost of curing the defective performance. The third is reliance or 'wasted expenditures' damages – for instance, expenditures or other losses that have been incurred by the claimant in reliance on the contract.⁸⁸ The purpose of reliance damages is to put the claimant in as good a position as before the promise.

Within the category of expectation damages in common law jurisdictions, there are two subcategories – normal or direct damages (also known as general damages) and consequential damages (also known as special damages). Normal

82 Restatement (2d) of the Law of Contracts, Section 359.

83 See, e.g., in relation to French law, Malaurie, Aynès and Stoffel-Munck, *op. cit.* note 40, paras. 975–76.

84 Wöss and others, *op. cit.* note 4, paras. 4.256 to 4.258.

85 Deshayes, Genicon and Laithier, *op. cit.* note 38, 221–22. See also discussion in Mainguy (ed), *op. cit.* note 38, paras. 230–32.

86 There are also various other categories of loss that may be recoverable, such as moral damages, punitive or exemplary damages, negotiation damages or non-monetary damages (i.e., specific performance) – these topics are addressed in depth in other chapters of this Guide.

87 McGregor (20th ed.), *op. cit.* note 2, Sections 4-018-19.

88 *Halsbury's Laws of England*, Vol. 29 (2019), Section 503.

damages are those that are the natural and probable consequence of the breach.⁸⁹ Consequential damages are those that do not flow directly from the breach; they are recoverable only in limited circumstances, they are particular to the injured party and they may be more difficult to calculate in financial terms.⁹⁰

In most civil law jurisdictions, there are two categories of loss – *damnum emergens* (actual losses or damage already suffered) and *lucrum cessans* (loss of profits or wasted costs) – which have their origins in Roman law. In France, for example, these two categories of loss are codified at Article 1231-2 of the Civil Code, which states that '[d]amages due to a creditor are, as a rule, for the loss that he has suffered and the profit of which he has been deprived'.⁹¹ These categories of damages roughly correspond to the common law categories of expectation and reliance damages.⁹² French law also allows the allocation of damages for a non-pecuniary loss, such as for bodily harm, lasting inconvenience after an injury and emotional distress.⁹³

Assessment of the amount of damages⁹⁴

Under common law, the normal measure of damages is the difference in value between the performance that should have occurred, had the contract been performed, and the actual performance.⁹⁵ This standard follows from the principle that compensation should put the injured party in the position it would have been in but for the wrong.⁹⁶

89 For the position under English law, see *ibid.*, at Section 317, citing *Ratcliff v. Evans* [1892] 2 QB 524 at 528, *per* Bowen LJ; for the position under New York law, see Salomon and Sharp, *op. cit.* note 10, paras. 10.11 to 10.14.

90 For the position under English law, see *Halsbury's Laws of England*, Section 317 and McGregor (20th ed.), *op. cit.* note 2, Section 3-008; for the position under New York law, see Salomon and Sharp, *op. cit.* note 10, paras. 10.15–10.20.

91 Mainguy (ed.), *op. cit.* note 38, para. 243; Fages, *op. cit.* note 54, para. 330.

92 Practical Law Company UK, 'Damages in international arbitration', online resource ID 0-519-4371. See also J Paulsson, 'The Expectation Model' in Derains and Kreindler (eds), *op. cit.*, note 6, 57, 64.

93 Larroumet and Bros, *op. cit.* note 38, para. 639.

94 In this chapter, we do not discuss contractual limitations, the metric of compensation or the treatment of expert evidence as these topics are addressed in other chapters in this Guide.

95 Wöss and others, *op. cit.* note 4, para. 4.38. See, e.g., *Durham Tees Valley Airport Ltd v. Bmibaby Ltd* [2010] EWCA Civ 485.

96 McGregor (20th ed.), *op. cit.* note 2, Section 2-002, citing *Livingstone v. Rawyards Coal Co* [1880] 5 App Cas. 25 at 39.

Under civil law, the assessment of the amount of damages is also based on the principle of full compensation, the objective of which is to put the injured party in the position it would have been in if the act that gave rise to the damage had not occurred.⁹⁷ Full compensation may be achieved through calculation of the difference in value (i.e., the normal measure of expectation damages under English law) or through the calculation of the cost of cure (i.e., as for performance damages under English law).⁹⁸ However, French courts have a significant amount of discretion on how damages are calculated and often do not provide details in their justification of the amount of damages awarded.⁹⁹ For example, French courts are not required to set out detailed reasoning in relation to their assessment of the amount of damages.¹⁰⁰ In practice, French courts tend to use this discretion to take account of the degree of fault of the breaching party; for instance, where there is a high degree of fault, they will use a 'heavy hand' in relation to the assessment of damages.¹⁰¹

Certainty of damages

Under English law, for example, a claimant must be able to prove the fact of loss and the amount of the loss on the basis of the balance of probabilities. Where it is difficult to prove the amount of loss with certainty, the wrongdoer should not be relieved of the responsibility to pay.¹⁰² Damages can also be recovered for loss of a chance, which is an inherently uncertain head of loss, and raises difficult issues of causation and quantification.¹⁰³

Although a certainty requirement is not codified in the French Civil Code, French law requires that parties establish with certainty the fact of loss, rather than presenting the mere possibility of a loss.¹⁰⁴ As to the amount of damages

97 See, e.g., for French law, Bénabent, *op. cit.* note 4, paras. 683–93.

98 Wöss and others, *op. cit.* note 4, para. 4.207.

99 Boismain, *op. cit.* note 26, p. 7; Wöss and others, *op. cit.* note 4, para. 4.206.

100 Wöss and others, *op. cit.* note 4, para. 4.208.

101 Bénabent, *op. cit.* note 4, para. 683.

102 McGregor (20th ed.), *op. cit.* note 2, Sections 10-001 to 10-002.

103 *ibid.*, at Sections 10-005 to 10-006.

104 A future loss can be certain, however, if there is no doubt that the loss will occur. What this notion of certainty excludes is a potential loss, which may or may not occur. See on these points, e.g., Larroumet and Bros, *op. cit.* note 38, paras. 640–42; Malaurie, Aynès and Stoffel-Munck, *op. cit.* note 40, para. 962.

awarded, French judges have a significant amount of discretion when making an assessment of damages, in particular with respect to breaches other than of an obligation to pay.¹⁰⁵

In relation to international arbitration, it has been observed that, even when faced with uncertainty, ‘arbitral tribunals will find juridical ways and means to arrive at a figure which, given all the circumstances of the case, will lead to an equitable finding’.¹⁰⁶

Conclusion

Although there are differences in the approach to compensatory damages in common and civil law jurisdictions, or among jurisdictions falling into one of those categories, they often lead to similar results, albeit through different paths, so much so that arbitrators, but also national judges and commentators, have identified and applied international principles applicable to damages, such as the duty to mitigate, particularly in international arbitration.

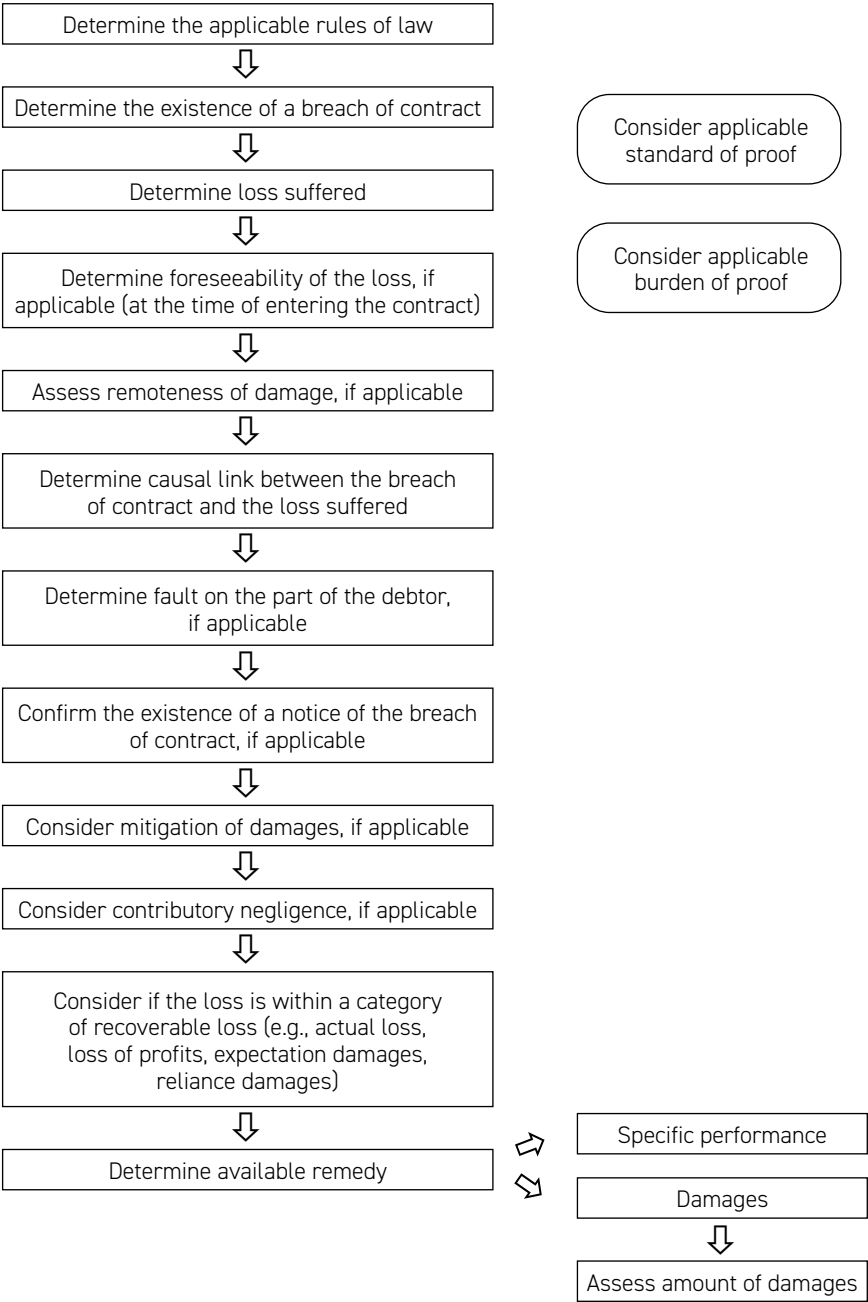
However, the analysis of damages is first and foremost driven by the facts of a case. Although the often subtle differences from one legal system to another might not lead to different results in most cases, they might have a significant effect in specific circumstances. It is, therefore, as important to ensure a proper analysis of the facts and of the assessment of the damages, often with the help of experts, as it is to determine the applicable rules of law to which the arbitrators will refer.

All jurisdictions give substantial leeway to judges and arbitrators in the determination of damages. It is also important, therefore, to take into account the legal background of the arbitrators, which might, whether consciously or not, affect their decisions.

105 Boismain, *op. cit.* note 26, p. 7; Larroumet and Bros, *op. cit.* note 38, paras. 670–71.

106 Gélinas, *op. cit.*, note 6, p. 11, *sp. p.* 12.

This flowchart sets out the steps to determine whether a party may be entitled to compensatory damages. Each step should be considered according to the applicable rules of law.



This table sets out the issues that may be relevant in determining whether and to what extent damages may be granted. It should be read in conjunction with the developments in this chapter. The examples of legal systems, international instruments and arbitration institution rules provided in the table are taken from this chapter and simplified for ease of presentation; this table is in no way comprehensive. The specific regime applicable should, in any event, always be cross-checked against the rules of law applicable to making a determination.

	Civil law jurisdictions	Common law jurisdictions	Arbitration institution rules and international instruments
Determining the applicable rules of law	• Applicable rules of law as agreed by the parties in the contract • Direct approach, referring to the rules of law that the arbitral tribunal considers appropriate (e.g., France, Austria, Belgium, 2010 UNCITRAL Arbitration Rules, 2020 LCIA Arbitration Rules, 2017 SCC Arbitration Rules, 2007 DIAC Arbitration Rules, 2016 SIAC Arbitration Rules) • Direct approach, referring to the rules of law that have the closest connection to the dispute (e.g., Germany, Switzerland, 2012 Swiss Rules of Arbitration, 2011 CRCICA Arbitration Rules) • Conflict of laws approach (e.g., England, UNCITRAL Model Law, Denmark, Regulation (EC) No. 593/2008 of 17 June 2008 on the law applicable to contractual obligations (Rome I) and 1961 European Convention on International Commercial Arbitration)		
Burden of proof	Lies with the party making an assertion		
Standard of proof	• Judge's wide discretionary powers (e.g., France) • Judge's or arbitrator's inner conviction (e.g., Switzerland) • Judge's 'free' conviction (e.g., Germany)	'Balance of probabilities' test (e.g., England: 'more probable than not'; United States: preponderance of evidence)	
Entitlement to damages	(1) existence of a breach of contract; (2) loss suffered; (3) causal link between the breach of contract and the loss suffered; (4) fault on the part of the debtor (e.g., France, Germany)	(1) existence of a breach of contract; (2) not too remote damage and reasonable foreseeability of the losses at the time of entering the contract; (3) deduction for failure to mitigate; (4) causation between the breach of contract and the losses (e.g., England)	
Causation	Causal link between breach of contract and loss suffered (e.g., France, Germany)	Causation between breach of contract and loss suffered (e.g., England)	Causal link between breach of contract and loss suffered (e.g., CISG, UNIDROIT Principles)

	Civil law jurisdictions	Common law jurisdictions	Arbitration institution rules and international instruments
Foreseeability of the loss	• Foreseeable loss at time of entering the contract, assessed objectively (e.g., France) • Compensation of losses that are within the scope of protection of the contractual obligation breached, to the exclusion of damages that were not contemplated by the parties in their contract (e.g., Germany)	Foreseeability requirement, at the date of contracting, assessed objectively and subjectively (e.g., England, India)	
Notice	Notice of breach of contract and request of performance of the relevant obligation (e.g., France)	No notice requirement (e.g., England)	
Duty to mitigate	• No duty to mitigate per se (e.g., France – but similar results are possibly achieved through various other ways; Germany – although a similar result is achieved through the regime on contributory negligence) • Duty to mitigate (e.g., Quebec, Russia)	Duty to mitigate (e.g., England, United States)	Duty to mitigate (e.g., CISG, UNIDROIT Principles)
Contributory negligence	Contributory negligence or similar mechanism (e.g., Germany, Japan, Austria, Portugal, Finland, Russia)	Contributory negligence (e.g., England)	

	Civil law jurisdictions	Common law jurisdictions	Arbitration institution rules and international instruments
Categories of recoverable loss	(1) <i>damnum emergens</i> (actual losses or damage already suffered); (2) <i>lucrum cessans</i> (loss of profits or wasted costs) (e.g., France)	(1) expectation damages (possibly including lost profits), including normal, direct or general damages and consequential or special damages; (2) performance damages; (3) reliance or 'wasted expenditures' (e.g., England, United States)	
Certainty of damages	No codified certainty requirement but requirement to establish with certainty the fact of the loss (e.g., France)	Proof of the loss and its amount on the basis of the balance of probabilities (e.g., England)	
Available remedy	Specific performance is preferred to damages, where possible; damages as an alternative where specific performance is not possible (e.g., France, Germany)	Damages as primary remedy, with specific performance being the exception (e.g., England, United States)	
Assessment of amount of damages	• Principle of full compensation, namely, putting the aggrieved party in the position it would have been in had the act that gave rise to the damage not occurred • Wide discretion of the judges or arbitrators in assessing the damages (e.g., France)	Basic rule is that the aggrieved party should be put in the same position as it would have been if it had not sustained the wrong for which it is requesting compensation or reparation (e.g., England)	

CHAPTER 2

Non-Compensatory Damages in Civil and Common Law Jurisdictions: Requirements and Underlying Principles

Reza Mohtashami KC, Romilly Holland and Farouk El-Hosseny¹

Introduction

Arbitral tribunals are routinely presented with requests for compensation for sums corresponding to the economic loss that the claiming party has suffered as a result of its counterpart's wrongful acts. This compensation is typically referred to as monetary damages, compensatory damages or, simply, damages. The purpose of such an award of damages is to put the claiming party in the position it would have been in but for the wrongful acts.

Non-compensatory damages are an exception to the rule, in that they are not intended to compensate for the claiming party's loss. Instead, they may be intended to correspond to the benefits gained by the wrongful party, for example, or even to punish the wrongful party.

In this chapter, we first review the availability of different types of non-compensatory damages under common law and civil law systems.² We then look at the limitations on the authority of arbitral tribunals to award non-compensatory damages, before considering the position under international

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2 For the purposes of this chapter, we primarily examine French and English law as illustrative of civil law and common law systems, respectively.

law and exploring the extent to which moral damages – traditionally considered to be compensatory – are assuming a non-compensatory function. Finally, we provide some concluding reflections.

Concept of non-compensatory damages under common and civil law systems

Damages inexorably serve the function of compensating an actual loss. However, as already mentioned, there are exceptions to this rule. Non-compensatory damages in the common law and civil law systems have interlacing characteristics that can be identified.

Damages as main form of compensation

Monetary damages in both the common law and civil law traditions aim to compensate the claimant but not to place the claimant in a better position than if the contract had not been breached.³

In the House of Lords decision of *Attorney General v. Blake*, Lord Nicholls affirmed that ‘damages are compensatory. That is axiomatic’.⁴ The overarching principle articulated by Lord Blackburn in *Livingston v. Rawyards Coal Co* is that their measure ‘is to be, as far as possible, that amount of money which will put the injured party in the same position he would have been in had he not sustained the wrong’.⁵ Similarly, under US law, as stated in the Second Restatement of Contracts (the primary treatise on contract law),⁶ the measure of damages is

3 Civil and common law intertwine in a myriad of international instruments, including most notably the Vienna Convention on Contracts for the International Sale of Goods, which simply defines damages as consisting of ‘a sum equal to the loss, including loss of profit, suffered by the other party as a consequence of the breach’. See United Nations Convention on Contracts for the International Sale of Goods, 1489 UNTS 3, Article 74. See also B Fauvarque-Causson, et al., *European Contract Law* (Sellier – European Law Publishers, 2006), 279, 311.

4 *Attorney General v. Blake, Jonathan Cape Ltd* (Third Party) [2000] E.M.L.R. 949, 962.

5 That amount (or quantum) will of course be governed by factors of remoteness, causation and mitigation. See *Livingstone v. Rawyards Coal Co* (1880) 5 App Cas 25, 39; see also *Robinson v. Harman* [1843-60] All ER Rep 383.

6 Most contractual relationships in the United States are governed by state common law. The Second Restatement of Contracts is a non-binding but highly influential authority on state common law.

generally the injured party's expectation interest,⁷ which is defined as 'his interest in having the benefit of his bargain by being put in as good a position as he would have been in had the contract been performed'.⁸

Reflecting the same ethos, the French Civil Code provides that '[d]amages owed to a creditor are, in general, for the loss he sustained and for the profit of which he was deprived'.⁹ The principle of full reparation (which is often referred to as *le principe compensatoire*) lies at the heart of French law on damages.¹⁰ In following this principle, French courts are bound to indemnify the breach and nothing but the breach.¹¹ The Court of Cassation is wary of eliminating the risk of unjust enrichment and seeks to ensure that compensation does not result in either loss or profit.¹² Beyond France, compensation for an actual loss is the main function of civil liability under most civil codes.¹³ The Introductory Act to the German Civil Code, for example, excludes damages that 'obviously serve purposes other than an adequate compensation of the injured party'.¹⁴

7 Restatement (Second) of the Law of Contracts, Section 347 (1981). Expectation interest is measured by '(a) the loss in the value to him of the other party's performance caused by its failure or deficiency, plus (b) any other loss, including incidental or consequential loss, caused by the breach, less (c) any cost or other loss that he has avoided by not having to perform'.

8 *ibid.*, Section 344(a) (1981).

9 See French Civil Code, Article 1231-2 (Article 1149 prior to the 1 October 2016 amendment of the Code), English translation available at www.legifrance.gouv.fr/.

10 Y M Laithier, 'Les règles juridiques relatives à l'évaluation du préjudice contractuel (droit anglais, droit français, droit suisse)', *Revue de l'Arbitrage, Comité Français de l'Arbitrage*, 361 (2015), 362.

11 The Court of Cassation will, for instance, quash an order of a lump sum of damages on the basis of equity and not the actual harm suffered. See French Court of Cassation, First Civil Chamber, 2 April 1996 – No. 94-13.871. See also *ibid.*, 362.

12 French Court of Cassation, Second Civil Chamber, 23 January 2003 – No. 01-00200. The *clause pénale* and court-ordered *astreintes* penalty payments are exceptions to the *principe compensatoire*. *Astreintes* are court-ordered periodic penalties for delays in the execution of a court judgment. See French Senate, Laws Commission, Report No. 558 on Civil Liability, presented by A Anziani and L Bételle, 15 July 2009, 80 ('French Senat Report on Civil Liability'), 80; F Barrière, 'Non-compensatory Damages: France under the Influence?', *Osservatorio del diritto civile e commerciale*, 323 (2012), 328.

13 Barrière (op. cit. note 12), 324.

14 Einführungsgesetzes zum Bürgerlichen Gesetzbuche ('Introductory Act to the Civil Code') provides at Article 40(3): 'Claims governed by the law of another country cannot be raised insofar as they (1) go substantially beyond what is necessary for an adequate compensation of the injured party, (2) obviously serve purposes other than an adequate compensation of the injured party.'

Notwithstanding the foregoing, both common law and civil law systems permit certain exceptions to the general principle that monetary damages are designed to compensate an aggrieved party, as we explore below.

Non-compensatory damages – an exception to the rule

Although the House of Lords, in *Blake*, emphasised the compensatory nature of damages, it also recognised that there are situations in which the strict application of this rule would lead to an injustice.¹⁵ The House of Lords in that instance granted the state restitutionary damages by requiring the defendant to account for the benefits he had received from his wrongful act.¹⁶ US contract law recognises a similar concept, known as restitution interest.¹⁷ An award of restitutionary damages goes beyond the notion of compensation, as is discussed further below.

The French Civil Code is silent on the question of non-compensatory damages.¹⁸ Unusually, the Civil Code of Quebec provides that, in cases of breach of contract, a Quebec court may award punitive damages if it finds that a statute¹⁹ allowing it to award damages has been violated.²⁰ A proposal to incorporate a provision for punitive damages in the French Civil Code that, when awarded,

15 *Attorney General v. Blake* (op. cit. note 4), at 957.

16 *ibid.*, at 951.

17 'Restitution interest' is defined as a promisee's 'interest in having restored to him any benefit that he has conferred on the other party [in a contract]'. Restatement (Second) of the Law of Contracts, Section 344(c) (1981).

18 F Barrière (op. cit. note 12), at 326.

19 These include the Charter of Human Rights and Freedoms or the Consumer Protection Act. See Article 49 of the Charter, which provides that: 'Any unlawful interference with any right or freedom recognized by this Charter entitles the victim to obtain the cessation of such interference and compensation for the moral or material prejudice resulting therefrom. In case of unlawful and intentional interference, the tribunal may, in addition, condemn the person guilty of it to punitive damages.' See Quebec Charter of Human Rights and Freedoms, L.R.Q., ch. C-12.

20 Quebec Civil Code provides at Article 1621: 'Where the awarding of punitive damages is provided for by law, the amount of such damages may not exceed what is sufficient to fulfil their preventive purpose. Punitive damages are assessed in the light of all the appropriate circumstances, in particular the gravity of the debtor's fault, his patrimonial situation, the extent of the reparation for which he is already liable to the creditor and, where such is the case, the fact that the payment of the reparatory damages is wholly or partly assumed by a third person.' See also B Fauvarque-Causson, et al. (op. cit. note 3), at 309.

would be paid to the state to sanction lucrative faults, thus remaining faithful to the principle of full reparation and eliminating the risk of unjust enrichment, was roundly rejected.²¹

Certain European legislation also permits the award of non-compensatory damages. For example, Directive 2004/48/EC on the enforcement of intellectual property rights, which has been implemented in the United Kingdom²² as well as in France,²³ provides that the amount of damages for infringement should take into account 'unfair profits made by the infringer and, where appropriate, any moral prejudice caused to the rightholder'.²⁴ However, the Directive's aim is compensatory rather than punitive.²⁵ Indeed, as underscored by the Rome II Regulation,²⁶ punitive damages are widely considered to be contrary to public policy in most European Union jurisdictions.²⁷

21 Proposed Article 1371 of the Civil Code provides: 'A person who commits a manifestly deliberate fault, and notably a fault with a view to gain, can, in addition to compensatory damages, be condemned to pay punitive damages, part of which may be allocated to the Public Treasury, at the court's discretion. A court's decision to order the payment of damages of this kind must be supported by specific reasons and their amount distinguished from any other damages awarded to the victim. Punitive damages may not be the object of insurance.' See F Barrière (op. cit. note 12), at 331.

22 Intellectual Property (Enforcement, etc.) Regulations 2006, Section 3.

23 French Intellectual Property Code, Articles L331-1-3, L-521-7, L-615-7 and L-716-14.

24 Further, it enables the assessment of damages on the basis of 'the royalties or fees which would have been due if the infringer had requested authorisation to use the intellectual property right in question' in cases where it would be difficult to precisely determine the amount of the loss suffered. See Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights, L 195/18 and Article 13.

25 This criterion takes into account the expenses incurred by the right holder, such as the costs of identification and research. See *ibid.*, at L 195/19.

26 The Rome II Regulation cautions against the application of a legal norm covered by it in a manner that would cause 'non-compensatory exemplary or punitive damages of an excessive nature to be awarded' which 'may . . . be regarded as being contrary to the public policy (*ordre public*) of the forum'. See Regulation (EC) No. 864/2007 of the European Parliament and of the Council of 11 July 2007 on the law applicable to non-contractual obligations (Rome II), 32.

27 However, as confirmed by the European Court of Justice, the award of punitive damages founded on EU antitrust law is not, as a matter of general principle, ruled out. See *Manfredi and others*, European Court of Justice, Judgment of the Court of 13 July 2006, C-295/04 and C-298/04, 99.

Types of non-compensatory damages available under civil and common law systems

In this section, we address those categories of damages, available in civil and common law alike, that do not strictly follow the compensatory principle. These include nominal damages, liquidated damages, restitutionary damages and punitive (or exemplary)²⁸ damages.²⁹ We also examine moral damages, at times a Manichean form of damages that can be viewed through the prism of both compensation and non-compensation, particularly in investment treaty arbitration, as is discussed further below.³⁰

Nominal damages

Under English law, nominal damages are symbolic and thus non-compensatory. They are awarded when a wrong has been committed by a defendant but no loss or damage has been inflicted on the aggrieved party.³¹ US law similarly tends to recognise nominal damages where there has been a contractual breach but there is no loss, or if the amount of loss is not proved.³² Nominal damages are often described as a ‘mere peg on which to hang costs’ as the award of costs routinely follows the event.³³

28 For the purposes of this chapter, we consider the terms ‘punitive’ and ‘exemplary’ to be interchangeable. For ease of reference, we use the term punitive throughout.

29 Harvey McGregor KC considers vindicatory damages as a form of non-compensatory damages, which ‘are intended not to compensate for loss, of which there may be little or none, but to show to the public by a substantial award of damages that the reputation of a defamed, or falsely imprisoned, claimant is secure’. See H. McGregor, *McGregor on Damages*, 19th edition (Sweet & Maxwell, 2016), 1-008–1-010.

30 M Reisman, et al., *International Commercial Arbitration: Cases, Materials, and Notes on the Resolution of International Business Disputes*, 2nd edition (Foundation Press, 2015), 250.

31 This could be the result of a failure by the claimant to prove either (1) any loss resulting from the breach of contract or (2) the actual amount of his loss. See McGregor (op. cit. note 29), at 12-001; *Chitty on Contracts*, Vol. I, 32nd edition (Sweet & Maxwell, 2015), 26-009.

32 Restatement (Second) of Contracts, Section 346(2) (1981).

33 *Beaumont v. Greathead* (1846) 2 C.B. 494, 499; see also *ibid.*, 26-009.

Under French law, courts have long accepted actions for *un franc symbolique*, whereby damages are awarded to the aggrieved party in addition to costs in claims relating to group or public interests.³⁴ As establishing damage is a precondition to standing, aggrieved parties may invoke nominal damages to have their claim heard.³⁵

Liquidated damages or clause pénale

Under both civil and common law systems, parties to a contract are free to determine the damages payable in the event of a specific contractual breach before the breach has arisen. Predetermined damages are known as liquidated damages. A liquidated damages clause is referred to as a *clause pénale* in French, which is somewhat confusing given there is no punitive element to such a provision.

Under English law, a liquidated damages clause should represent a 'genuine pre-estimate of loss'.³⁶ The amounts stipulated should be commercially justified and not intended as a deterrent; otherwise, the clause risks being qualified as an unenforceable penalty.³⁷ In a 2015 decision, the English Supreme Court emphasised that liquidated damages have long been available under English law, and noted that they are equally common in the French, Italian, German, Swiss and Belgian legal traditions.³⁸

There is a real chance, however, that a liquidated damages clause will provide for a sum in damages that does not correspond to the losses of the aggrieved party. Thus, although they have a compensatory function, liquidated damages cannot be

34 Perhaps one of the most infamous examples is the award of one euro to Michael Jackson fans who alleged emotional damage in an action brought against his former doctor. See BBC, 'Michael Jackson fans win one euro for emotional damage' (11 February 2014), available at www.bbc.co.uk/news/world-europe-26141075 (last accessed 12 October 2022).

35 B Garrigues, 'La contre-prestation du franc symbolique', *La revue de référence en droit civil* (1991), 459.

36 *Lordvale Finance Plc. v. Bank of Zambia* [1996] 3 W.L.R. 688, 763.

37 *ibid.*, at 764.

38 *Cavendish Square Holding BV v. Makdessi* [2015] 3 W.L.R. 1373, 1394.

said to be purely compensatory. It is for this reason that, under French law, a judge has discretion to reduce or increase the amount stipulated under a liquidated damages clause if it is deemed manifestly excessive or derisory.³⁹

Restitutionary damages

Restitutionary damages arise 'where the commission of a wrong results in a benefit to the wrongdoer which exceeds and outstrips the loss to the person wronged, who suffers a lesser loss or, frequently, no loss at all'.⁴⁰ In *Blake*, the Crown was not awarded compensatory damages because it had suffered no loss as a result of Blake's breach of contract.⁴¹ However, in exceptional circumstances, defendants may be ordered to reconstitute benefits that have arisen from a breach of contract.⁴² Accordingly, an innocent party may recover an amount of profit from the wrongdoer even in the absence of a measurable loss.⁴³ Under US law, restitution also exists as a remedy for certain contractual breaches. Restitution interest is defined as '[the promisee's] interest in having restored to him any benefit that he has conferred on the other party'.⁴⁴

39 French judges have, for instance, reduced to one euro the amount set forth under a *clause pénale* deemed excessive. See Court of Cassation, Commercial Chamber, 11 February 1997, No. 95-10851; see also French Civil Code, Article 1231-5. The possibility of a reduction of a liquidated damages clause is also set forth under the UNIDROIT (International Institute for the Unification of Private Law) Principles. See Article 7.4.13(2) on 'Agreed payment for non-performance', UNIDROIT Principles (2010), available at www.unidroit.org/english/principles/contracts/principles2010/integralversionprinciples2010-e.pdf (last accessed 12 October 2022).

40 McGregor (op. cit. note 29), at 14-002.

41 *Attorney General v. Blake* (op. cit. note 4), at 979.

42 The relevant circumstances to consider include the subject matter of the contract, the purpose of the contractual provision that has been breached, the context in which the breach occurred, the consequences of the breach and the circumstances in which relief is being sought, and whether the plaintiff had a legitimate interest in preventing the defendant's profit-making activity and, hence, in depriving him or her of his or her profit. See *ibid.*, at 967.

43 Against this backdrop, Lord Steyn in *Blake* disagreed with the majority by issuing 'a further note of warning that if some more extensive principle of awarding non-compensatory damages for breach of contract is to be introduced into our commercial law the consequences will be very far reaching and disruptive'. See *ibid.*, at 957, 983.

44 Restatement (Second) of Contracts, Section 344(c) (1981). Also, the measure of restitution interest is defined in Section 371 (1981) as: 'If a sum of money is awarded to protect a party's restitution interest, it may as justice requires be measured by either (a) the reasonable value to the other party of what he received in terms of what it would have cost him to obtain it from a person in the claimant's position, or (b) the extent to which the other party's property has been increased in value or his other interests advanced.'

The developments unravelled by *Blake* were well noted in civil law jurisdictions in general, and in France in particular, precisely because there are no remedies in France addressing 'lucrative faults' that lead to illicit gains.⁴⁵ French legal doctrine rejects restitutionary damages because they could lead to unjust enrichment.⁴⁶ The French Intellectual Property Code, transposing Directive 2004/48/EC into French law, is an exception to this rule.⁴⁷

Punitive damages

English law regards compensatory and punitive damages as being as 'incompatible as oil and vinegar'.⁴⁸ Punitive damages, as the term suggests, are concerned with punishing the wrongdoer rather than compensating the aggrieved party. By definition then, their assessment is not commensurate with the latter's loss.⁴⁹ Under US law, punitive damages are widely available and may be awarded in commercial and contractual cases.⁵⁰ However, most US jurisdictions do not allow punitive damages for breach of contract, unless the breach itself constitutes an independent tort, such as fraud.⁵¹

45 G Viney, 'Quelques propositions de réforme du droit de la responsabilité civile', *Recueil Dalloz* (2009), 2949.

46 *id.*

47 See footnote 23.

48 *Broome v. Cassell & Co* [1972] A.C. 1027, 1077; see also McGregor (op. cit. note 29), at 1-009.

49 McGregor (op. cit. note 29), at 1-008; *Chitty on Contracts* (op. cit. note 31), at 26-044.

50 Under New York law, for instance, punitive damages may be available in cases of breach of contract when a plaintiff can show a bad faith breach that reaches a sufficient level of egregiousness. See J Leventhal and T Dickerson, 'Punitive Damages: Public Wrong or Egregious Conduct? A Survey of New York Law', 76:2; *Albany Law Review*, 961 (2013), 997; see also G Born, *International Commercial Arbitration*, 2nd edition (Kluwer Law International, 2014), Vol. III, 3077.

51 See, e.g., Restatement (Second) of Contracts, Section 355 (1981), under which punitive damages are only recoverable if the 'conduct constituting the breach is also a tort for which punitive damages are recoverable'. For example, under New York law, for a breach of contract to merit the award of punitive damages, the defendant's conduct must meet four criteria: the conduct must be 'actionable as an independent tort'; it must be of an 'egregious nature'; 'the egregious conduct must be directed to plaintiff'; and 'it must be part of a pattern directed at the public generally'. *New York Univ. v. Cont'l Ins. Co.*, 87 N.Y.2d 308, 315, 662 N.E.2d 763, 767 (1995).

Under English law, a court may order the payment of punitive damages in circumscribed and exceptional situations.⁵² However, as a matter of general principle, they are not an available remedy for breach of contract.⁵³ They confuse ‘the civil and criminal functions of the law’ and, therefore, are regarded with scepticism.⁵⁴ English courts may rely on *Blake* to award restitutionary damages but have expressed no interest in awarding punitive damages in a contractual context.⁵⁵

In most civil law jurisdictions, punitive damages are not available for contractual breach unless the breach is tainted by fraudulent or malicious conduct.⁵⁶ The Swiss Federal Tribunal has qualified punitive damages as ‘foreign to Swiss law’.⁵⁷ As already noted, Rome II recognises that punitive damages are contrary to the public policy of several EU Member States.⁵⁸ However, the French Court of Cassation has refrained from deeming punitive damages to be a violation of international public policy.⁵⁹ Of course, such a violation would effectively bar the recognition and enforcement of foreign judgments and awards ordering the payment of punitive damages. This issue is discussed in greater detail in the section on ‘Non-compensatory damages in international commercial arbitration’, below.

Moral damages

The notion of ‘moral damages’ derives from the French concept of *le préjudice moral*,⁶⁰ which refers to a wrong done to an individual’s emotions, honour or reputation.⁶¹ Moral damages are thus, in the civil law tradition, compensatory – they are claimed pursuant to the principle of full reparation in the French

52 See *Rookes v. Barnard and Others* [1964] A.C. 1129, 1227.

53 Law Commission, ‘Report on Aggravated, Exemplary and Restitutionary Damages’, No. 247 (1997). At [185] in this Report, the Law Commission recommended that ‘punitive damages must not be awarded for breach of contract or under an undertaking in damages’.

54 McGregor (op. cit. note 29), at 13-001; *Chitty on Contracts* (op. cit. note 31), at 26-044.

55 Indeed, in *Kuddus v. Chief Constable of Leicestershire Constabulary* [2002] 2 A.C. 122, at 157, Lord Scott of Foscote affirmed that ‘[r]estitutionary damages are available now in many tort actions as well as those for breach of contract. The profit made by a wrongdoer can be extracted from him without the need to rely on the anomaly of exemplary damages’.

56 Laithier (op. cit. note 10), at 367.

57 Swiss Federal Tribunal, TF 4A_157/2007, 16 October 2007, 3.4.

58 See note 26.

59 See note 109.

60 S Jagusch and T Sebastian, ‘Moral Damages in Investment Arbitration: Punitive Damages in Compensatory Clothing?’, 29:1 *Arbitration International*, 45 (2013), 46.

61 Companies could also claim moral damages. See French Court of Cassation, Commercial Chamber, 15 May 2012 – No. 11-10278.

Civil Code.⁶² The right to recover moral damages as compensation is explicitly set out under several civil codes in the Middle East, including most notably in Egypt, Libya, Lebanon and Yemen.⁶³ The assessment in France of moral damages, including the quantum of such damages, is subject to the court's discretion.⁶⁴ As the conduct of the defaulting party, in principle, will not be relevant to the court's assessment,⁶⁵ an award of moral damages cannot be characterised as punitive. Separately, the availability of moral damages to legal persons has been called into question by certain civil law commentators.⁶⁶ However, acts or omissions that affect a company's reputation, creditworthiness or goodwill causing non-pecuniary harm may be compensated. This has been recognised by the French Court of Cassation⁶⁷ and by the higher courts of several other civil law jurisdictions, including Chile⁶⁸ and Egypt.⁶⁹

English law imported this terminology from EU intellectual property law.⁷⁰ Moral damages equate to non-pecuniary loss, which English courts can compensate, including in contractual and commercial matters. These particularly cover physical inconvenience or discomfort, pain and suffering and loss of amenities, mental distress and social discredit.⁷¹ Although damages for non-pecuniary

62 French Civil Code, Articles 1231-2 and 1231-3.

63 See Egyptian Civil Code, Article 222(1); Libyan Civil Code, Article 225(1); Lebanese Civil Code, Article 134(2); and Yemeni Civil Code, Article 352.

64 French Court of Cassation, Second Civil Chamber, 8 May 1964; on the court's discretion or '*pouvoir souverain*', see French Court of Cassation, Civil Chamber, 23 May 1911; see also French Senate Report on Civil Liability, note 9, 81.

65 *ibid.*, at 79.

66 For an overview of this debate, see B Dondero, 'La reconnaissance du préjudice moral des personnes morales', *Recueil Dalloz* (2012), 2286. According to the author, most commentators in France agree that legal persons may claim moral damages. See *ibid.*, at 2286.

67 The French Court of Cassation overturned a judgment by the Pau Court of Appeal for having found that the plaintiff could not claim moral damages, in respect of the 'commercial disruption' and harm caused to its brand name by the defendant, on the sole basis that it was a legal person, see French Court of Cassation, Commercial Chamber, 15 May 2012, No. 11-10278.

68 Supreme Court of Chile, 26 September 2013, No. 375/2013.

69 Egyptian Court of Cassation, Case No. 76 of Judicial Year 73 (Civil), 13 March 2007; Egyptian Economic Court Decisions in Case No. 2176 of 2012, 27 December 2014, and Case No. 813 of 2013, 28 December 2014.

70 This 'civil-law terminology' was apparently introduced following the transposition of EU intellectual property law into English tort law. See McGregor (*op. cit.* note 29), at 46-071, 37-019 (footnote 108).

71 See *Simmons v. Castle* [2013] 1 W.L.R. 1239, 1252; see also McGregor (*op. cit.* note 29), at 5-016.

loss were previously awarded to legal persons in tort cases,⁷² it appears that the position under English law is shifting in the opposite direction based on the principle ‘that aggravated damages were not to be awarded to a corporate claimant with no feelings to injure’.⁷³ Notwithstanding that moral damages are considered as compensatory in both the civil and common law systems (as well as in international law),⁷⁴ they stand distinct to monetary damages. Moreover, certain recent investment treaty awards demonstrate that moral damages are beginning to be understood as having a punitive (and, therefore, non-compensatory) function. We explore this development in the section ‘Non-compensatory damages awarded in investment treaty arbitration’, below.

Non-compensatory damages in international commercial arbitration

As discussed above, common and civil law systems consider various forms of non-compensatory damages, such as nominal and liquidated damages, as readily available. Excluding intellectual property protection, restitutionary damages are only accepted under English common law and US law, but not French civil law. Moral damages are meant to be compensatory and are awarded on that basis under both systems and under international law. Finally, an outright rejection of punitive damages in the contractual realm also seems to be a common rule, which makes them the most problematic form of non-compensatory damages when they arise in the context of an international arbitration.

An arbitral tribunal’s authority to award non-compensatory damages is constrained in two ways: the first substantive and the second procedural. With respect to the first, the applicable law, the *lex arbitri*, the arbitration agreement and the arbitration rules (where applicable) will together determine a tribunal’s authority to award such damages. The procedural scrutiny of arbitral awards by courts in set-aside and recognition proceedings constitutes the second limitation, particularly with respect to the award of punitive damages.

⁷² See, for example, *Columbia Picture Industries Inc and Others v. Robinson and Others* [1987]-Ch.38, 88.

⁷³ McGregor (op. cit. note 29), at 5-016 citing *Collins Stewart Ltd v. Financial Times Ltd* (No. 2) [2006] E.M.L.R. 5, 100.

⁷⁴ See *Lusitania (United States v. Germany)*, Administrative Decision No. II, 1 November 1923, in UN Reports of International Arbitral Awards, Mixed Claims Commission (United States and Germany), 1 November 1923–30 October 1939, Vol. VII, 36 for what is widely considered the first substantive analysis of moral damages in international law, discussing how mental suffering can merit remedy.

Authority of arbitral tribunals to award non-compensatory damages

Applicable law

The applicable law governs ‘the consequences of a total or partial breach of obligations, including the assessment of damages’.⁷⁵ As such, the applicable law will determine, for instance, whether the arbitral tribunal has the authority to reduce an amount set forth under a liquidated damages clause – as provided under French, Swiss and Libyan law, for example.⁷⁶ The same applies to moral damages. Relying on the Libyan Civil Code, which explicitly states that ‘compensation covers moral injury’,⁷⁷ the ad hoc tribunal in *Al-Kharafi & Sons Co v. the Government of Libya and others* awarded the claimant US\$30 million for reputational damage.⁷⁸ In the same vein, a tribunal sitting at the Cairo Regional Centre for International Commercial Arbitration, applying Egyptian law, granted moral damages to a state tourism authority for the breach of contract by an event planning firm ‘which gave a very bad image of the country’ as a result of its defective contractual performance.⁷⁹

Conversely, an International Chamber of Commerce (ICC) tribunal seated in Zurich, hearing a technology licensing dispute to which Indian law applied, found that it was not empowered to award punitive damages as under Indian law ‘an arbitral tribunal, will normally give “damages for breach of contract only by way of compensation for loss suffered, and not by way of punishment”’.⁸⁰ Although the choice of New York law as the applicable law (instead of Indian law) might have empowered the arbitrators to award punitive damages, the enforcement of the ensuing award would depend on the applicable public policy of the enforcing state.

75 Regulation (EC) No. 593/2008 of the European Parliament and of the Council of 17 June 2008 on the law applicable to contractual obligations (Rome I), Article 12(1)(c).

76 See ICC Cases No. 4629/1989, 165 and No. 4462/1985/1987, 27, in J-J Arnaldez, Y Derains and D Hascher (eds.), *Collection of ICC Arbitral Awards* (1991-1995) (Kluwer Law International, 1997).

77 See note 63.

78 *Mohamed Abdulmohsen Al-Kharafi and Sons v. Libya*, Economy Ministry of Libya, Finance Ministry of Libya and General Board of Investment Promotion and Privatization and the Libyan Investment Authority, Award of 22 March 2013, 333, available at www.italaw.com/sites/default/files/case-documents/italaw1554.pdf (last accessed 12 October 2022).

79 The Cairo Regional Center for International Commercial Arbitration tribunal held that the claimant had suffered a loss of reputation and awarded US\$2 million in moral damages; see Case between an African tourism regional authority and an African tourism company, CRCICA Case No. 117/1998 (1999); see also Egyptian Civil Code, Article 222(1).

80 *Manufacturer v. Manufacturer*, Final Award, ICC Case No. 8445, 1994 in A J van den Berg (ed), *Yearbook Commercial Arbitration*, Volume 26, 177.

Lex arbitri

Opinions differ as to whether the availability of a specific head of relief, and the authority of an arbitral tribunal to grant it, is a substantive or a procedural matter.⁸¹ Thus, looking at whether the applicable law grants arbitral tribunals the authority to award non-compensatory damages is not sufficient.⁸² The *lex arbitri* requires equal and careful consideration.

In an often-cited case, an ICC tribunal seated in Geneva refused to award punitive damages sought by the respondent for the claimant's termination of a wine distribution agency agreement governed by New York law,⁸³ on the grounds that to do so would be contrary to Swiss law as the *lex arbitri*.⁸⁴ In support of its decision, the tribunal relied on a provision of the Swiss Federal Private International Law Act, which provides that, in the context of product liability claims based on foreign law, 'no damages can be awarded in Switzerland beyond those that would be awarded under Swiss law for such damage'.⁸⁵

Arbitration agreement

An arbitration agreement may explicitly authorise an arbitral tribunal to award non-compensatory damages. For instance, such an agreement could preclude⁸⁶ or provide for the award of punitive damages, as is not uncommon in the United States,⁸⁷ and as validated by the US Supreme Court in *Mastrobuono v. Shearson*

81 M Petsche, 'Punitive Damages in International Commercial Arbitration: Much Ado about Nothing?', 29 *Arbitration International* (2013), 93.

82 N Blackaby, C Partasides, A Redfern and M Hunter, *Redfern and Hunter on International Arbitration*, 6th edition (Oxford University Press, 2015), 9.50.

83 ICC Case No. 5946/1990, 62, in Arnaldez, Derains and Hascher (op. cit. note 76). See also Born (op. cit. note 50), at 3080.

84 The tribunal found: 'Damages that go beyond compensatory damages to constitute a punishment of the wrongdoer (punitive or exemplary damages) are considered contrary to Swiss public policy, which must be respected by an arbitral tribunal sitting in Switzerland even if the arbitral tribunal must decide a dispute according to a law that may allow punitive or exemplary damages as such.' See ICC Case No. 5946/1990, 62, in Arnaldez, Derains and Hascher (op. cit. note 76). Also cited in Born (op. cit. note 50), at 3080.

85 See Federal Private International Law Act of 18 December 1987, Article 135(2).

86 In the arbitration clause of a Farm-In and LNG cooperation agreement entered into between Shell and Centurion, the parties agreed: 'The arbitrators shall not award consequential, punitive or other similar damages in connection with the decision of any dispute hereunder.' See *Shell Egypt West Manzala GmbH & Shell Egypt West Qantara GmbH v. Dana Gas Egypt Ltd* [2009] EWHC 2097, 2098.

87 J Lew, L Mistelis and S Kröll, *Comparative International Commercial Arbitration* (Kluwer Law International, 2003), 650.

*Lehman Hutton Inc.*⁸⁸ The arbitration agreement could also set a cap on the amount of damages. A good example of this is the *Tapie* arbitration, in which the parties' agreement to arbitrate capped Bernard Tapie's and his spouse's claim to moral damages at €50 million.⁸⁹ The arbitral tribunal awarded the claimants €45 million to account for the 'humiliation' and 'destructive manoeuvres' suffered.⁹⁰ As shown above, moral damages are available under French law; however, the sum awarded to Tapie is widely considered to be unprecedented in the French legal system. The authority given to the tribunal under the arbitration agreement thus shows the pivotal role of such clauses.

Arbitration rules

Arbitration rules are generally silent on arbitrators' authority with respect to damages.⁹¹ One notable exception is the joint International Arbitration Rules of the International Centre for Dispute Resolution and the American Arbitration Association (AAA), which expressly exclude the award of 'punitive, exemplary, or similar damages' unless the parties agree otherwise.⁹² It is interesting to note that the AAA Arbitration Rules (i.e., the equivalent domestic arbitration rules) do not contain such a provision.⁹³ Perhaps this can be viewed as a recognition that such damages are not available in many (if not most) jurisdictions. This is

88 *Mastrobuono v. Shearson Lehman Hutton Inc* 514 U.S. 52 (1995). See also Born (op. cit. note 50), at 3078–79.

89 *Bernard Tapie et al v. (1) CDR Créances and (2) Consortium de réalisation*, Award of 7 July 2008, 82–83.

90 The award was overturned by the Paris Court of Appeal in February 2015 after finding that the arbitration had been fraudulently conducted. The Court of Cassation subsequently confirmed the Court of Appeal's judgment. See French Court of Cassation, First Civil Chamber, 30 June 2016, No. 932. For a summary, see the various GAR articles on this saga, including, 'IMF chief to stand trial over Tapie Affair' (22 July 2016), available at <http://globalarbitrationreview.com/article/1067246/imf-chief-to-stand-trial-over-tapie-affair> (last accessed 12 October 2022).

91 Petsche (op. cit. note 81), at 96.

92 Article 31(5) provides that: 'Unless the parties agree otherwise, the parties expressly waive and forego any right to punitive, exemplary, or similar damages unless any applicable law(s) requires that compensatory damages be increased in a specified manner. This provision shall not apply to an award of arbitration costs to a party to compensate for misconduct in the arbitration.' See International Arbitration Rules of the International Centre for Dispute Resolution, amended and effective as of 1 June 2014.

93 See American Arbitration Association Commercial Arbitration Rules and Mediation Procedures, amended and effective as of 1 October 2013.

also evidenced by the exclusion of the award of arbitration costs on the basis of a party's misconduct from the scope of this provision, which could be viewed as a form of non-compensatory damages.⁹⁴

Excess of jurisdiction and public policy considerations – scrutiny of awards on non-compensatory damages

One of the primary duties of arbitrators is to ensure that their awards are enforceable.⁹⁵ To this effect, tribunals have to be mindful of the provisions of the *lex arbitri* as mentioned above, as well as of the Convention on the Recognition and Enforcement of Foreign Arbitral Awards.⁹⁶ For instance, an award of non-compensatory damages could be set aside or denied recognition on the grounds of excess of jurisdiction if a tribunal grants moral damages when no party sought such damages, or if a tribunal refuses to order punitive damages in breach of the terms of the arbitration agreement.⁹⁷

94 Other arbitration rules explicitly authorise tribunals to take into account a party's conduct when deciding on the allocation of costs. See, for instance, ICC Arbitration Rules 2012, Article 37(5).

95 This is a requirement found in many arbitration rules. For instance, the ICC Rules provide that the ICC Court and the arbitral tribunal 'shall make every effort to make sure that the award is enforceable at law'; see ICC Arbitration Rules 2012, Article 41. The LCIA Rules, on the other hand, refer to an obligation incumbent on the LCIA Court, the arbitral tribunal as well as the parties to make 'every reasonable effort' to ensure the enforceability of the award at the seat; see LCIA Arbitration Rules 2014, Article 32.2. That said, '[a]rbitrators cannot be expected to be aware of all formal requirements to ensure the enforceability of the award in any given country'. See P Turner and R Mohtashami, *A Guide to the LCIA Arbitration Rules* (Oxford University Press, 2009), 9.51.

96 In particular, see Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York Convention), Articles V(1)(c) and V(2)(b), 330 UNTS 38; 21 UST 2517; 7 ILM 1046 (1968). Article V(1)(c) provides that recognition and enforcement may be refused if '[t]he award deals with a difference not contemplated by or not falling within the terms of the submission to arbitration, or it contains decisions on matters beyond the scope of the submission to arbitration, provided that, if the decisions on matters submitted to arbitration can be separated from those not so submitted, that part of the award which contains decisions on matters submitted to arbitration may be recognized and enforced.' Article V(2)(b) sets an additional ground for refusal on the basis that '[t]he recognition or enforcement of the award would be contrary to the public policy of that country'.

97 Born (op. cit. note 50), at 3070.

In addition, the award could be challenged on the basis of the public policy exception,⁹⁸ a point of primary relevance in relation to punitive damages. Interest in this issue stems from developments in the United States, notably the Supreme Court decisions in the *Mitsubishi* and *Shearson/American Express* cases, that confirmed the authority of arbitral tribunals to award treble (i.e., punitive) damages.⁹⁹ Nevertheless, punitive damages are not common in international commercial arbitration.¹⁰⁰

Given their relative rarity, there is little jurisprudence concerning the set-aside or enforcement of arbitral awards ordering punitive damages.¹⁰¹ The recognition and enforcement of US judgments that allow for punitive damages in continental jurisdictions sheds some valuable light, however. There are, for instance, examples of decisions from France,¹⁰² Spain¹⁰³ and Italy¹⁰⁴ refusing to recognise US judgments, or parts thereof, containing an award for punitive damages, particularly on the basis of the public policy exception.

However, in a trademark infringement case, the Spanish Supreme Court granted *exequatur* to a Texas judgment awarding punitive damages and found that, in the circumstances, punitive damages could not be considered as undermining public policy.¹⁰⁵ In the same vein, Kaufmann-Kohler and Rigozzi consider that an award of punitive damages does not constitute per se a violation of Swiss public policy.¹⁰⁶ The Swiss Federal Tribunal has found that the principle whereby an award of damages and interest must not result in the enrichment of the injured

98 In addition to the New York Convention, the public policy exception typically forms part of the *lex arbitri*. For instance, Article 1514 of the French Code of Civil Procedure provides: 'An arbitral award shall be recognised or enforced in France if the party relying on it can prove its existence and if such recognition or enforcement is not manifestly contrary to international public policy.' See also Article 1520(5) of the Code, as well as Federal Private International Law Act, Article 190(2)(e) and Arbitration Act (1996), Sections 68(2)(g) and 103(3).

99 *Mitsubishi Motors Corp v. Soler Chrysler-Plymouth Inc*, 473 U.S. 614 (1985); *Shearson/American Express Inc v. MacMahon*, 482 US 420 (1987). See also Petsche (op. cit. note 81), at 90.

100 Born (op. cit. note 50), at 3076.

101 Petsche (op. cit. note 81), at 101.

102 See footnote 111.

103 Spanish Supreme Court, ATS 163/2001, 18 September 2001.

104 Italian Court of Cassation, Civil Section III, 19 January 2007, No. 1183.

105 Spanish Supreme Court, ATS 1803/2001, 13 November 2001, 9. On the availability of non-compensatory damages in the context of intellectual property protection, see note 20.

106 'Contrary to other opinions, it is submitted here that an award of punitive damages does not necessarily contravene public policy'. See G Kauffmann-Kohler and A Rigozzi, *International Arbitration: Law and Practice in Switzerland* (Oxford University Press, 2015), 8.276.

party 'pertains to Swiss or domestic public policy, but commentators do not consider it as a concept belonging to international public policy'.¹⁰⁷ Rather than rejecting punitive damages outright, it is argued that the relevant test should be whether the amount of punitive damages is compatible with public policy.¹⁰⁸

This position was echoed by the French Court of Cassation.¹⁰⁹ Addressing a denial by the Poitiers Court of Appeal to grant *exequatur* of a Supreme Court of California judgment, the Court of Cassation affirmed that 'a foreign judgment ordering the payment of punitive damages is not, as a matter of principle, contrary to the *ordre public international de fond*'.¹¹⁰ However, the Court stated that a foreign judgment will not be recognised in France if the amount of damages ordered is 'manifestly disproportionate in relation to the damage caused as well as the breach of contractual obligations'.¹¹¹

Against this backdrop, it appears that the concept of punitive damages does not systematically trigger alarm bells at the courts in jurisdictions where punitive damages are not normally awarded. This is reflected in an attempt to set aside an ICC award before the High Court of England and Wales. In this case, the claiming party argued that the arbitral tribunal awarded damages under an indemnity clause of a share purchase agreement in a manner that would characterise them as 'punitive damages' and, therefore, contrary to Spanish public policy.¹¹² This failed to convince the High Court, which found that the arbitral tribunal may have erred in the application of the rules of Spanish law (as the

107 *Entreprise nationale des engrais et des produits phytosanitaires ASMIDAL v. Compagnie française d'étude et de construction TECHNIP*, Swiss Federal Tribunal, 17 July 1998, in ASA Bulletin (Association Suisse de l'Arbitrage; Kluwer Law International 2002, Volume 20 Issue 4), 660–76. See also J Werner, 'Punitive and Exemplary Damages in International Arbitration', in Y Derains and R Kreindler (eds.), *Evaluation of Damages in International Arbitration*, 102.

108 B Berger and F Kellerhals, *International and Domestic Arbitration in Switzerland*, 3rd edition (Hart Publishing, 2014), 1770, 2100 (footnote 157).

109 French Court of Cassation, Civil Chamber, 1 December 2010, No. 09-13303.

110 *id.*

111 *id.*

112 The dissenting Spanish arbitrator considered that the majority imposed 'punitive and multiple damages in a manner which was not permitted under Spanish law and thus ignored the remedies available within the limits of the law of the contract' and that '[t]he Award was in consequence . . . illegal, as a matter of public order, under Spanish law'. See *B v. A* [2010] 2 C.L.C. 1, 5–6, 18.

applicable law) on the assessment of damages. However, according to the Court, such an error in the application of Spanish law did not meet the threshold to constitute a valid ground of challenge to an arbitral award.¹¹³

In summary, although the award of punitive damages is not accepted in an overwhelming majority of jurisdictions, such awards seem to be dealt with by the courts in those jurisdictions in subtle and nuanced ways.

Non-compensatory damages awarded in investment treaty arbitration

In this section, we look at the particular status of moral damages in international law. As we have seen, moral damages are considered as compensatory in both the civil and common law traditions, as well as in international law. However, a number of investment treaty awards show that tribunals are increasingly considering moral damages to serve a punitive function.

Brief overview

The International Law Commission's Articles on Responsibility of States for Internationally Wrongful Acts (the ILC Articles) seek to codify international law concerning, inter alia, the legal consequences for the responsible state of internationally wrongful acts.¹¹⁴

Article 31 provides that the responsible state is to make 'full reparation' for the injury caused by its wrongful act, that is to 'wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed'.¹¹⁵

¹¹³ *ibid.*, at 18.

¹¹⁴ 2001 Articles on Responsibility of States for Internationally Wrongful Acts, 53 UN GAOR Supp. (No. 10) at 43, UN Doc. A/56/83 (2001).

¹¹⁵ International Law Commission, Draft Articles on Responsibility of States for Internationally Wrongful Acts, November 2001, Supplement No. 10 (A/56/10), chp.IV.E.1 ('ILC Articles Commentary'), 91; *Chorzów Factory (Claim for Indemnity) (Merits), Germany v. Poland*, 1928 P.C.I.J. Ser. A., No. 17, Judgment (13 September 1928), 47.

Reparable injury includes any material or moral damage.¹¹⁶ The latter includes ‘individual pain and suffering, loss of loved ones or personal affront associated with an intrusion on one’s home or private life’. As confirmed in the *Rainbow Warrior* case, moral damages can be awarded for violations of international law even in the absence of a pecuniary loss.¹¹⁷

The *Lusitania* case underlines the long-established availability of moral damages under international law, specifying that an aggrieved party could be compensated for ‘an injury inflicted resulting in mental suffering, injury to his feelings, humiliation, shame, degradation, loss of social position or injury to his credit or reputation’.¹¹⁸ In *Diallo* (a diplomatic protection case involving violations of international law, including the arrest, detention and expulsion of Mr Diallo, a Guinean citizen, from the Democratic Republic of Congo),¹¹⁹ the International Court of Justice further established that there is no need to present specific evidence of moral injury¹²⁰ and that ‘the quantification of the compensation’ can be based on equitable considerations.¹²¹

Pursuant to Article 36(1) of the ILC Articles, a responsible state is obliged to compensate for the damage it causes, to the extent that the damage is not made good by restitution. However, compensation does not have a punitive or exemplary character.¹²²

Finally, the commentary to the ILC Articles states that intention to harm (‘fault’) is not a constitutive part of a state’s internationally wrongful act.¹²³ Accordingly, fault is not a prerequisite to an award for damages.

In line with the foregoing, investment treaty tribunals have confirmed the availability of compensation by way of moral damages under international investment protection treaties. However, a number of tribunals have more recently imposed the additional requirement of fault as a prerequisite to awarding moral

116 *id.* It should be noted that moral damage may also be referred to as ‘non-pecuniary’, ‘non-economic’, ‘non-material’ or ‘intangible’ damages.

117 Case concerning the difference between New Zealand and France concerning the interpretation or application of two agreements, concluded on 9 July 1986 between the two States and which related to the problems arising from the Rainbow Warrior Affair, Decision of 30 April 1990, in UN Reports of International Arbitral Awards, Vol. XX, 215.

118 *Opinion in the Lusitania Cases* (1923) 7 RIAA 32.

119 Ahmadou Sadio Diallo (*Republic of Guinea v. Democratic Republic of the Congo*), Compensation, Judgment, ICJ Rep 2012.

120 *ibid.*, at para. 21.

121 *ibid.*, at para. 24.

122 ILC Articles Commentary, 91.

123 *ibid.*, at 36.

damages. If the loss of the aggrieved foreign investor is no longer the crux of an evaluation of moral damages, then awarding moral damages risks evolving from the compensatory mechanism described by the ILC Articles to a punitive tool to be wielded by tribunals, in contravention of the ILC Articles.

Moral damages: shift to a non-compensatory approach

In *Desert Line*, the claimant claimed 40 million Omani rials¹²⁴ for moral damages, including loss of reputation.¹²⁵ The tribunal found that a party may request moral damages in ‘exceptional circumstances’.¹²⁶ It determined that the state’s treatment of the claimant’s executives in the case in hand was ‘malicious’ and ‘therefore constitutive of a fault-based liability’, and that, as a result, the state should be liable for the substantial prejudice the claimant incurred.¹²⁷ The tribunal awarded moral damages of US\$1 million, a sum it considered ‘more than symbolic yet modest in proportion to the vastness of the [underlying] project’.¹²⁸ The tribunal’s focus on the state’s fault begs the question as to whether the tribunal was seeking not only to compensate the claimant but also to reprimand the state.

The tribunal in *Al-Warraq* was more explicit in its conclusion that fault is a condition precedent to moral damages, which are generally awarded ‘only if illegal action was motivated or maliciously induced’.¹²⁹

In *Lemire*, the tribunal concluded that fault is a constituent part of the ‘exceptional circumstances’ required to award moral damages (according to the tribunal in *Desert Line*) and elaborated a three-tiered test to determine exceptionality:

– the State’s actions imply physical threat, illegal detention or other analogous situations in which the ill-treatment contravenes the norms according to which civilized nations are expected to act;

124 Approximately US\$100 million at the time.

125 *Desert Line Projects LLC v. The Republic of Yemen* (ICSID Case No. ARB/05/17).

126 *ibid.*, at 289.

127 *ibid.*, at 290.

128 *id.*

129 See *Hesham Talaat M Al-Warraq v. the Republic of Indonesia*, UNCITRAL, Final Award (15 December 2014), 653, a claim brought pursuant to the Agreement on Promotion, Protection and Guarantee of Investments among Member States of the Organisation of the Islamic Conference, dated June 1981. The tribunal relied on the ICSID decisions *Inmaris Perestroika Sailing Maritime Services GmbH and Others v. Ukraine* (ICSID Case No. ARB/08/8, and *The Rompetrol Group NV v. Romania* (ICSID Case No. ARB/06/3) in support of this assertion.

- *the State's actions cause a deterioration of health, stress, anxiety, other mental suffering such as humiliation, shame and degradation, or loss of reputation, credit and social position; and*
- *both cause and effect are grave or substantial.*¹³⁰

In the event, the tribunal decided that the test was not met. Interestingly, it underlined its decision by pointing out that Mr Lemire's conduct towards the Ukrainian authorities 'may have appeared rude and disrespectful', which served to 'reinforce the conclusion that a separate redress for moral damages is not appropriate'.¹³¹ The tribunal's analysis compounds the notion that the award of damages has moved away from a compensatory measure and is instead being deployed as a means of dispensing equity, with moral damages available subject to the attitudes, behaviour, intention and motivation of the responsible state and the investor alike.

In *Arif*, the tribunal referred to the ILC Articles to support its assertion that moral damages may be awarded in international law, but noted that they are an 'exceptional remedy'.¹³² It stated that compensating a 'sentiment of frustration and affront' would 'systematically create financial advantages for the victim which go beyond the traditional concept of compensation'.¹³³ It further remarked that both the conduct of the state and the prejudice of the investor must be 'grave and substantial' to merit the award of moral damages (thereby elevating the non-cumulative 'grave or substantial' standard in *Lemire*).

As in *Lemire*, the *Arif* tribunal's finding that exceptional circumstances did not exist turned on considerations that did not relate to the loss actually suffered by the investor. Thus, the tribunal found that the investor should have had a certain level of 'mental fortitude' to deal with the authorities in a 'transition economy' where the institutions are 'weak' and governance is 'improving'.¹³⁴ These facts, according to the tribunal, have a bearing on whether the exceptional circumstances test is met. In the event, the tribunal concluded that, although the conduct of the state caused the investor 'stress and anxiety', the state's actions 'did

¹³⁰ *Joseph Charles Lemire v. Ukraine* (ICSID Case No. ARB/06/18), 333.

¹³¹ *ibid.*, at 345.

¹³² *Mr Franck Charles Arif v. Republic of Moldova* (ICSID Case No. ARB/11/23), 584.

¹³³ *ibid.*, at 592.

¹³⁴ *ibid.*, at 605.

not reach a level of gravity and intensity which would allow it to conclude that there were exceptional circumstances which would entail the need for a pecuniary compensation for moral damages'.¹³⁵

Although the facts may not have warranted an award of moral damages, the tribunal's analysis once again turned away from the concept of compensation as a means of fully repairing the harm suffered by the investor towards a concept that permits the tribunal to assess the extent to which an investor deserves an award of moral damages in light of its own conduct as well as that of the state.

Following *Desert Line* and *Lemire*, the tribunal in *Bernard von Pezold and others* awarded moral damages, overtly stating that such a remedy served the dual function of repairing 'intangible harm' to the investor and 'condemning the actions of the offending State'.¹³⁶ Thus, the tribunal considered that moral damages could be deployed as a punitive measure. The tribunal also referred to *Desert Line* when determining quantum, awarding precisely the same sum of US\$1 million, irrespective of the difference between the factual matrices in the two cases. This further calls into question the extent to which moral damages, in this instance, were awarded to compensate the injury suffered by the investor rather than to reprimand the state.

In *Trinh Vinh Binh*, the tribunal concluded that the facts of the case warranted a more significant sum than had been awarded in *Desert Line*, and decided that US\$10 million represented an appropriate sum by way of compensation for the investor's illegal detention for almost three years.¹³⁷

The upshot of these cases is that an absence of malicious and egregious fault on the part of the state would seem to bar an investor from successfully obtaining moral damages, notwithstanding that fault is not a condition precedent to 'full reparation' under international law as codified in the ILC Articles.¹³⁸

¹³⁵ *ibid.*, at 615.

¹³⁶ *Bernhard von Pezold and others v. Republic of Zimbabwe* (ICSID Case No. ARB/10/15), 916.

¹³⁷ *Trinh Vinh Binh and Binh Chau Joint Stock Company v. The Socialist Republic of Vietnam*, PCA Case No. 2015-23, Award, 10 April 2019. See, e.g., 'Dutch investor prevails over Vietnam, as tribunal awards \$27 million in compensation, \$10M in moral damages and sizable legal fees', *IAReporter*, 12 April 2019, available at <https://www.iareporter.com/articles/dutch-investor-prevails-over-vietnam-as-tribunal-awards-27-million-in-compensation-10m-in-moral-damages-and-sizable-legal-fees>. At the time of writing, the tribunal's award remains confidential (last accessed 12 October 2022).

¹³⁸ The ICSID tribunal in the *Caratube II* decision did not pronounce on the fault of the state as the claimants failed to satisfy their burden of proof with respect to the state's alleged involvement in the harassment to which the claimants were subjected. (See *Caratube International Oil Company LLP and Mr Devincci Salah Hourani v. Republic of Kazakhstan* (ICSID Case No. ARB/13/13), 1202 to 1203).

Tribunals should be encouraged to reconsider an award of moral damages as a means of compensating parties for losses suffered, possibly looking to the jurisprudence of human rights tribunals for guidance on how intangible harms have been quantified.¹³⁹ The authors consider that although equitable considerations concerning the manner in which a state breached its obligations should not determine the availability of moral damages, equity could play a role in determining the quantum of any moral damages awarded.¹⁴⁰ This quantum assessment should be subject to the usual principles of remoteness and causation and also broken down where possible so that the damages are understood to correspond to the actual loss suffered.

An investment arbitration tribunal may in practice be an investor's sole (effective) recourse to justice for reparation of losses suffered arising out of its investment. It is important, therefore, that notions of equity, merit and fairness are not allowed to dominate decisions on whether or not to award moral damages at the expense of a proper assessment of the full extent of damages suffered by the investor and how that can be repaired.

Finally, although respondent states have increasingly brought counterclaims for moral damages, to date such claims have been unsuccessful. For example, in *Europe Cement v. Turkey*, Turkey claimed compensation for reputational injury and injury to its international standing through the bringing of a baseless claim.¹⁴¹ Although the tribunal dismissed the claim because of an absence of exceptional circumstances, such as physical duress, it deemed that Turkey's potential reputational damage would be remedied by the wording and reasoning in the award and the award of costs. In *Amto v. Ukraine*, Ukraine presented a claim of 'non-material injury' to its reputation based on the allegations made before the tribunal.¹⁴² The tribunal dismissed Ukraine's request on the basis that no counterclaim of that nature could be brought under the Energy Charter Treaty. In *Iberdrola v. Guatemala (II)*, an UNCITRAL tribunal held that the investor's claims were

139 See A Champagne, 'Moral Damages Left in Limbo', *McGill Journal of Dispute Resolution*, Vol. 1:2 (2015).

140 See, in this regard, B Sabahi, 'Moral Damages in International Investment Law: Some Preliminary Thoughts in the Aftermath of *Desert Line v. Yemen*', *Transnational Dispute Management*, Volume 9, Issue 1 (January 2012), 260, and S Ripinsky and K Williams, *Damages in International Investment Law* (British Institute of International and Comparative Law, 2008), 312.

141 *Europe Cement Investment & Trade SA v. Republic of Turkey*, ICSID Case No. ARB(AF)/07/2, Award (13 August 2009), 177.

142 *Limited Liability Company Amto v. Ukraine*, SCC Case No 080/2005, Award (26 March 2008), 116.

barred by the *res judicata* effects of a prior award by the International Centre for the Settlement of Investment Disputes. Guatemala counterclaimed for breach of the relevant treaty's fork-in-the-road provision and asked that the tribunal should 'sanction the Claimant for its systematic and abusive resubmission of the same claim'.¹⁴³ In this regard, Guatemala sought no less than US\$2 million in moral damages. The tribunal found that it lacked jurisdiction over the counterclaim, but the formulation of Guatemala's request for moral damages nonetheless reflects a growing inclination to invoke moral damages to penalise a party for its conduct, rather than to compensate a party's alleged losses.

Conclusion

We have examined the different types of non-compensatory damages available in civil law and common law jurisdictions and identified the limitations to which arbitral tribunals are subject when considering a claim for non-compensatory damages, most notably in the context of a request for punitive damages where tribunals should be aware of a possible conflict between the applicable law and the *lex arbitri*. We have seen that moral damages, viewed as compensatory in both civil law and common law jurisdictions, including most relevantly to address the reputational harm that may be caused to either natural or legal persons in the context of the performance of contractual obligations, are evolving under international law from a compensatory tool to a non-compensatory one at the hands of investment treaty tribunals. This evolution could prove to be problematic if it leads to the award of punitive damages via the back door.

Given the overlap between participants (among users, counsel and arbitrators) in investment treaty arbitration and commercial arbitration, it is possible that the non-compensatory notion of moral damages in the former may begin to influence the award of moral damages in the latter. Such a development would have profound consequences if tribunals decide to award moral damages not on the basis of the applicable law but on the basis of equity.

¹⁴³ *Iberdrola Energía, S.A. v. The Republic of Guatemala*, PCA Case No. 2017-41, Final Award, 24 August 2020, para. 52.

CHAPTER 3

Damages Principles under the Convention on Contracts for the International Sale of Goods

Petra Butler¹

Introduction

The Convention on Contracts for the International Sale of Goods (CISG) provides a neutral set of rules for international sale of goods transactions.² It encapsulates the modern understanding of the key legal contract principles in regard to international sales and is heralded as a successful amalgamation of common and civil

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2 Article 7 of the Convention on Contracts for the International Sale of Goods (CISG) directs to an autonomous interpretation of the CISG void of any fallback on domestic principles. CISG academic literature is almost unanimous in the conclusion that recourse to any national law, which must be defined according to private international law rules, is an ultima ratio solution for gap filling under the CISG and should be avoided as far as possible [I Schwenzer, P Hachem in Schwenzer, *Commentary on the UN Convention on the International Sale of Goods* (4th ed, OUP, Oxford, 2016) (hereinafter Schwenzer Commentary), Article 7, para. 42; J Honnold, H Flechtner, *Uniform Law for International Sales under the 1980 United Nations Convention* (4th ed, Wolters Kluwer, Alphen aan den Rijn, 2009), para. 102; U Magnus in *J von Staudingers Kommentar zum Bürgerlichen Recht*, Vol. XIV (15th ed, De Gruyter, Berlin, 2018) (hereinafter *Staudingers Kommentar*, Vol. XIV), Article 7, para. 58; P Schlechtriem, P Butler, *UN Law on International Sales* (Springer, Heidelberg, 2009) (hereinafter Schlechtriem/Butler), paras. 45, 47]. Deducing general principles from the CISG is always the first priority (Article 7(2)). Because there is no highest court deciding on issues arising from the application of the CISG, note should be taken of academic literature, the opinions by the CISG Advisory Council, an independent body of experts (www.cisgac.com) and the jurisprudence from courts and arbitral tribunals.

law contract principles.³ According to World Trade Organization trade statistics, the 10 largest export and import nations are CISG contracting states.⁴ Those 10 countries account for more than 50 per cent of world trade.⁵ It follows that international sale of goods contracts account for a large majority of international contracts relating to trade. It is essential, therefore, to be aware of the application of the CISG as the most widely accepted uniform international sales law, and its damages regime.⁶

The major advantage of the CISG is that it provides a uniform and neutral set of substantive rules specifically drafted for international sale of goods contracts. Importantly, unlike some national contract laws that favour either the buyer or the seller, the CISG balances the rights and obligations of both equally. The CISG provides for the substance of an international sale of goods dispute in regard to procedure: a neutral regulatory framework, independent of any domestic law. Parties who want their international sale of goods disputes decided in a truly international manner should choose the CISG as the applicable law, and international arbitral tribunals should apply the CISG to an international sale of goods dispute whenever they have a mandate.⁷

3 Compare P Schlechtriem, '25 Years of the CISG: An international lingua franca for Drafting Uniform Laws, Legal Principles, Domestic Legislation and Transnational Contracts' in H Flechtner, R Brand, M Walter (eds), *Drafting Contracts under the CISG* (OUP, Oxford, 2008), 167, 168.

4 Note that Hong Kong has ratified the CISG, which will come into force on 1 December 2022 (Zeyu Huang & Wenhui Chi, 'The CISG applies to Hong Kong and Mainland China Now: Shall Macau Follow Suit?', *Conflict of Laws.net*, 7 May 2022).

5 See World Trade Statistical Review 2021, Chapter 5 (https://www.wto.org/english/res_e/statis_e/wts2021_e/wts21_toc_e.htm, last accessed 10 Aug 2022). The United Kingdom is one of the 10 leading importers whereas Belgium is one of the leading exporters.

6 The CISG has been ratified by 95 countries (https://uncitral.un.org/en/texts/salegoods/conventions/sale_of_goods/cisg/status, last accessed 10 Aug 2022). There are a number of free databases dedicated to providing near comprehensive resources in regard to case law and academic writing on the CISG: CISG-online – <https://cisg-online.org/home> (last accessed 17 October 2022); CISG database – see https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/cisg_digest_2016.pdf (last accessed 17 October 2022); Case Law on UNCITRAL Texts (CLOUT) – www.uncitral.org/clout/index.jsp (last accessed 27 Sep 2022).

7 See below in regard to application of the CISG, in particular footnote 9.

Application of CISG (especially Article 1)

In regard to the application of the CISG to business-to-business international sale of goods contracts by an arbitral tribunal, three situations have to be distinguished (Article 1).⁸ First, and uncontroversially, an arbitral tribunal will generally respect the choice of the CISG by commercial parties as the governing law of their sale of goods contract.⁹ Second, it is also uncontroversial that Article 1(1)(b) can be applied by an international arbitral tribunal.¹⁰ Article 1(1)(b) dictates the application of the CISG when the rules of the private international law of the forum lead to the application of the law of a CISG Member State. Article 1(1)(b) is not a choice of law rule: it gives the CISG domestic law status and prevents any possible renvoi.¹¹ Third, it is controversial, however, whether an arbitral tribunal can apply the CISG by virtue of Article 1(1)(a), which stipulates the application of the CISG if parties have not agreed on an applicable law to their contract but do have their businesses in two CISG Member States. The prevailing view is that Article 1(1)(a) does not apply in the context of arbitration.¹² This view is based on

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- 8 See also for a more detailed discussion, I Schwenzer, P Hachem in Schwenzer Commentary, Intro to Articles 1 to 6, para. 12 *et seq.*; U Magnus in *J von Staudinger Kommentar zum Bürgerlichen Gesetzbuch mit Einführungsgesetz und Nebengesetzen, Wiener UN-Kaufrecht (CISG)* (Sellier-de Gruyter, Berlin, 2018) (hereinafter *J von Staudinger Kommentar*), Article 1, para. 12 *et seq.*
 - 9 An arbitral tribunal will apply the CISG as the choice of the parties directly if the parties have chosen the law of a Member State without any specification because the CISG is part of its domestic law. However, the requirements of Article 1(1) have to be met. In addition, a tribunal will respect the direct choice of the CISG as applicable law if it is either acting as amiable compositeurs or if the *lex arbitri* permits or even requires the application of rules of law instead of (or in addition to) a particular domestic law. See I Schwenzer, P Hachem in Schwenzer Commentary, Introduction to Articles 1 to 6, para. 12. Note that issues of the application of mandatory rules or public policy in regard to the application of the CISG should arise only in exceptional circumstances (potentially in regard to interest if the seat of the arbitration is in an Islamic state) because the CISG was drafted with the aim of amalgamating the world's legal regimes.
 - 10 G Petrochilos, 'Arbitration Conflict of Laws Rules and the 1980 International Sales Convention' (1999), 52 *Revue Hellenique de Droit International*, 191; S Kröll, 'Arbitration and the CISG' in I Schwenzer, Y Atamer, P Butler (eds), *Current Issues in CISG and Arbitration* (Eleven International Publishing, The Hague, 2013) (hereinafter Kröll, 'Arbitration and the CISG'), 59.
 - 11 See in regard to the application of Article 1(1)(b), A Janssen, M Spilker, 'CISG in the World of International Commercial Arbitration', 77 (2013) *RabelsZ*, 131, 139, who also discuss whether CISG, Article 95 binds the arbitral tribunal.
 - 12 See Petrochilos (op. cit. note 10), 191; Kröll, 'Arbitration and the CISG' (op. cit. note 10), 59.

the understanding that the CISG is an international treaty and as such only binds the states and its organs. In other words, Article 1(1)(a) is a direction to the courts alone and not (international) arbitral tribunals.¹³

Entitlement to damages

The buyer's entitlement to damages under Article 45(1)(b) and the seller's entitlement to damages under Article 61(1)(b) stem from the respective duties of the parties imposed by the contract, particularly the duties stated in Articles 30¹⁴ and 53.¹⁵ Any kind of breach of a contractual duty, even the most minor, can trigger the entitlement to damages. Also, a breach of the obligation to make restitution when unwinding the contract upon avoidance (Article 81(2)) leads to liability under Article 74.¹⁶

To ascertain the particular obligations that the parties have agreed, arbitral tribunals are required to consider not only any written contract but also pre-contractual and post-contractual behaviour of the parties (CISG, Article 8(3)) as well as trade usages between the parties and usages in the relevant industry (CISG, Article 9).¹⁷ The seller's duty to deliver goods in conformity with the contract (CISG, Article 35) has generated considerable jurisprudence by courts and arbitral tribunals.¹⁸ 'Lack of conformity' includes not only differences in quality but also differences in quantity, delivery of an altogether different good and defects in packaging.

13 Kröll, 'Arbitration and the CISG' (op. cit. note 10), 59, 65; A Janssen, M Spilker, 'CISG in the World of International Commercial Arbitration', 77 (2013) *RebelsZ*, 131, 137; see in regard to the view that arbitral tribunals should have regard to Article 1(1)(a), P Butler 'Choice of Law' in L DiMatteo, A Janssen, U Magnus, R Schulze (eds), *International Sales Law* (Beck, Hart, Nomos, Munich, 2016) (*International Sales Law*), Chapter 30, paras. 63 to 70.

14 CISG, Article 30: 'The seller must deliver the goods, hand over any documents relating to them and transfer the property in the goods, as required by the contract and this Convention.'

15 CISG, Article 53: 'The buyer must pay the price for the goods and take delivery of them as required by the contract and this Convention.'

16 *Roder Zelt- und Handelskonstruktionen GmbH v. Rosedown Park Pty Ltd and Reginald R Eustace* (Fed Ct, Adelaide, SA (28 April 1995) CISG-online 218.

17 That means the parol evidence rule is not applicable under the CISG unless the parties have specifically agreed to the exclusivity of the written contract. It also should be noted that consideration is not required for a valid contract under the CISG.

18 Overview by S Kröll in S Kröll, L Mistelis, P Perales-Viscasillas (eds), *UN Convention on Contracts for the International Sale of Goods* (2nd ed, Beck, Hart, Munich, 2018), Article 35; I Schwenzer in Schwenzer Commentary, Article 35.

It should be noted that, unlike in some legal systems, the remedy of damages is available irrespective of the breaching party's fault.¹⁹

Damages

Under the CISG, the obligee can choose specific performance,²⁰ price reduction, avoidance or damages as the primary remedy for a breach of the sales contract. Article 74 *et seq.* do not provide a basis for an aggrieved party to claim damages. The requirements of Articles 45 and 61 have to be met for an obligee to be entitled to damages. The extent of the damages to which an obligee is entitled is set out by Article 74 *et seq.* In the majority of cases, the remedy sought will be damages,²¹ often in addition to other remedies. The award of damages is dealt with in four provisions of the CISG (Articles 74 to 77). These provisions provide the framework for the recovery of economic loss. The CISG does not contain specific guidelines for the calculation of damages. Interest is dealt with separately in Article 78. Article 79 sets out the requirements when a party is excused of its performance as a result of *force majeure* or hardship.

General principle – Article 74

The purpose of a damages award under the CISG is clearly stated in Article 74²² to be compensatory. The obligee is entitled to a sum equal to the loss caused by the breach of contract. The obligee is entitled to be put in the economic position

19 See Oberster Gerichtshof (OGH) (Austria), 15 January 2013 (Glass mosaic tiles) CISG-Online 2398 ('fault is not a requirement (for liability for damages under the CISG)'); Oberlandesgericht (OLG) Linz (Austria) 8 February 2012 (Safety belts) CISG-online 2444 ('the CISG does not recognize any discharge of liability by proving lack of fault'); Polimeles Protodikio Athinon (Greece), 1 January 2009 (Bullet-proof vest) CISG-Online 2228; Arbitral Award, Foreign Trade Court of Arbitration attached to the Serbian Chamber of Commerce T-14/07, 23 May 2008 (Seamless steel pipes) CISG-online 2272 ('the buyer is obliged to pay the price even where it is not his fault that he is unable to do so. This is because such non-payment represents a breach of contract').

20 A claim for specific performance is subject to Article 28.

21 See the jurisprudence in I Schwenzer in Schwenzer Commentary, Article 74 *et seq.*; J Gotanda and M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 74 *et seq.*

22 CISG, Article 74: 'Damages for breach of contract by one party consist of a sum equal to the loss, including loss of profit, suffered by the other party as a consequence of the breach. Such damages may not exceed the loss which the party in breach foresaw or ought to have foreseen at the time of the conclusion of the contract, in the light of the facts and matters of which he then knew or ought to have known, as a possible consequence of the breach of contract.'

as if the contract had been fully and correctly performed.²³ The obligor is liable for all losses arising from non-performance, irrespective of fault,²⁴ unless the obligor is exempted in accordance with Articles 79 and 80.²⁵ Article 74 encompasses two principles: full compensation and limitation of liability by the foreseeability rule, and thereby strives to marry the civil law and common law traditions.

Compensation

That full compensation is the underlying damages principles is undisputed. However, the precise meaning of full compensation has yet to be determined.²⁶ Jurisprudence and academic commentary have established that compensation under the CISG comprises the obligee's expectation interest (i.e., gaining the benefits from the performance),²⁷ their indemnity interest (i.e., not to suffer damage to other interests as a result of non-performance)²⁸ but also their reliance interest (i.e., the expenditure made in reliance on the existence of the contract).²⁹ It is generally accepted that the CISG does not differentiate between pecuniary and non-pecuniary loss and that it does not per se prohibit overcompensation (i.e., that the damages claim exceeds the performance interest).³⁰

Loss

Loss is not defined, except for Article 74 stating that 'loss' includes loss of profits. It follows that future losses are included in the concept of loss. In accordance with the underlying core principle of the CISG, to leave the contractual relationship between the parties intact as long as possible, punitive damages are not included in the concept of loss.³¹

23 'Der Gläubiger ist wirtschaftlich so zu stellen, wie wenn der Vertrag vollumfänglich korrekt erfüllt worden wäre', *Handelsgericht Zürich* (17 September 2014) CISG-online 2656.

24 OGH (15 January 2013) CISG-online 2398; I Schwenzer in Schwenzer Commentary, Article 74, para. 3.

25 See section titled 'Exemptions under Articles 79 and 80', below.

26 I Schwenzer in Schwenzer Commentary, Article 74, para. 5.

27 M Bridge, 'Remedies and Damages' in *International Sales Law* (op. cit. note 13), Chapter 19, para. 23; I Schwenzer in Schwenzer Commentary, Article 74, para. 3.

28 OGH (14 January 2002) CISG-online 643; W Witz in W Witz, H-C Salger, M Lorenz, *Internationales Einheitliches Kaufrecht* (Beck, Munich, 2016), Article 74, para. 12.

29 OGH (14 January 2002) CISG-online 643, CISG-AC Op 6, J Gotanda, Comment 1.1.

30 I Schwenzer in Schwenzer Commentary, Article 74, para. 8.

31 See also section titled 'Punitive damages', below.

Article 74 gives tribunals broad authority to award damages ‘in a manner best suited to the circumstances’.³²

It should be noted that the CISG does not adhere as such to the doctrine of efficient breach of contract. If the obligee has the right to avoid the contract, damages will be awarded under Article 74, despite any assertion that certain future losses would not have accrued but for the avoidance of the contract.³³

Hypothetical on heads of damages

A German seller sold a French buyer glue to affix ceiling boards. The parties agreed that the glue had certain characteristics in regard to its adhesive qualities and its weight-bearing capacity. Both qualities had been specified by the seller.

The buyer affixed the ceiling boards, using the glue, to the ceiling of the manufacturing plant the buyer built for its customer. However, the glue did not have the adhesive characteristics needed. As a consequence, the ceiling boards crashed down and caused damage to the buyer’s production belt, which resulted in:

- substantial damage to the production belt (replacement needed);
- loss of seven working days’ worth of manufactured goods;
- loss of opportunity to enter into a major contract;
- damage to a piece of necessary manufacturing equipment that belonged to the customer; and
- injury to 10 workers, who required medical attention and were on sick leave for a week.

The principle of full compensation means that the buyer can claim all heads of damages listed (i.e., damages caused to the buyer and the buyer’s customer caused by the non-conforming good and loss of profit and loss of opportunity). However, full compensation under the CISG does not cover personal injury and death (Article 5).

32 Secretariat Commentary on the 1978 Draft, Article 70 (now Article 74), para. 4.

33 This is implicit in Articles 75 and 76. M Bridge ‘Remedies and Damages’ in *International Sales Law* (op. cit. note 13), Chapter 19, para. 22.

Categories of loss

Direct loss

Direct loss is measured by ‘the difference between the value to the injured party of the performance that should have been received and the value to that party of what, if anything, actually was received’.³⁴ If the contract is avoided, direct damages are calculated pursuant to Articles 75 and 76 (i.e., based on the costs of a cover purchase or based on the market value of the goods). If the obligee undertakes measures to place itself in the same position that it would have been in had the contract been properly performed, the obligee is entitled to recover the costs of those measures, provided that they were reasonable.³⁵

Examples:

- If the delivery of the goods is unjustifiably delayed and the buyer carries out reasonable measures to overcome the temporary loss and to avoid consequential damages, the buyer may be entitled to recover the expenses incurred.³⁶ In particular, rental costs for a replacement good can be claimed irrespective of whether or not a replacement was actually obtained.³⁷
- If the buyer is in possession of the defective goods but has not avoided the contract, the buyer can recover damages pursuant to Article 74 for substitute transactions. The value of the non-conforming goods has to be deducted.³⁸

34 Handelsgericht Zürich (17 September 2014) CISG-online 2656; Landgericht Trier (12 October 1995) CISG-online 160; J Gotanda and M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 74, para. 17; see also Secretariat Commentary on 1978 Draft, Article 70 (now Article 74), para. 7. Note that in regard to the seller’s calculation of damages, Article 74 *et seq.* are applicable within the European Union instead of the domestic provisions of the Late Payment Directive (see I Schwenzer, P Hachem in Schwenzer Commentary, Article 90, para. 4 *et seq.*).

35 See OGH (14 January 2002) CISG-online 643; *Nova Tool and Mold Inc v. London Industries Inc*, Ontario Court of Appeal (16 December 1998) CISG-online 572, [2000] O.J. No. 307. No. C31315; *Delchi Carrier SpA v. Rotorex Corp*, US Circuit Court of Appeals (2nd Cir) (6 December 1996) CISG-online 140; see also Secretariat Commentary on 1978 Draft, Article 70 (now Article 74), para. 6.

36 OLG Köln (24 April 2013) CISG-online 2480 para. 46; OLG Köln (8 January 1997) CISG-online 217; see Secretariat Commentary on 1978 Draft, Article 70 (now Article 74), para. 7.

37 Compare OLG Köln (8 January 1997) CISG-online 217.

38 Handelsgericht Zürich (17 September 2014) CISG-online 2656; OLG Graz (29 July 2004) CISG-online 1627; Audiencia Provincial de Palencia (26 September 2005) CISG-online 1673; Chamber of National and International Arbitration of Milan (28 September 2001) CISG-online 1582.

- If the non-conformity of the delivered goods can be remedied, the loss can be calculated according to the necessary and reasonable expenses for the cure.³⁹
- The seller is generally entitled to reimbursement of a bridging loan if the buyer unjustifiably does not pay the purchase price in time.⁴⁰
- The seller is entitled to damages if, as a result of the buyer's late payment, the seller suffers loss because of change of exchange rates or currency devaluation.⁴¹
- The loss of value of the purchase price caused by inflation cannot generally be recovered.⁴²

Incidental loss

Expenses that were incurred by the obligee to avoid any additional disadvantages are recoverable under Article 74 and are referred to as incidental loss.⁴³ Generally, additional costs incurred by a party as a result of another party's unjustified refusal to perform are recoverable.⁴⁴ Article 77 (mitigation of damages) must be taken into account for all incidental losses.⁴⁵

Examples:

- The buyer's expenses for storing and preserving goods that have been delivered late or that are defective and are returned to the seller.⁴⁶
- The buyer's expenses for the expedited shipment of alternative goods.⁴⁷

39 Bundesgerichtshof (25 June 1997) CISG-online 277; *Delchi Carrier SpA v. Rotorex Corp.*, US Circuit Court of Appeals (2nd Cir) (6 December 1996) CISG-online 140; OLG Hamm (9 June 1995) CISG-online 146. It has to be noted that the seller keeps the right to remedy the defects pursuant to Article 48.

40 App Ct of Eastern Finland (27 March 1997) CISG-online 782.

41 Kantonsgericht Wallis (28 January 2009) CISG-online 2025; OLG München (18 October 1978) but see OLG Düsseldorf (14 January 1994) CISG-online 119: recognition only insofar as the seller can prove that a timely payment would have yielded a higher monetary value than was possible as a result of the delay; see overview J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 74, para. 52 *et seq.*

42 OLG Düsseldorf (14 January 1994) CISG-online 119.

43 I Schwenzer in Schwenzer Commentary, Article 74, para. 28.

44 Bundesgerichtshof (10 December 1986) NJW 1987, 831.

45 See also section titled 'Mitigation of damages – Article 77', below.

46 OLG Köln (14 August 2006) CISG-online 1405; CIETAC (9 November 2005) CISG-online 1444; Landgericht Landshut (5 April 1995) CISG-online 193; Arbitral Award, Vienna Arbitral Tribunal (15 June 1994) CISG-online 691; Arbitral Award, Arbitration Institution of the Stockholm Chamber of Commerce 107/1997, CISG-online 1301.

47 *Delchi Carrier SpA v. Rotorex Corp.*, US Circuit Court of Appeals (2nd Cir) (6 December 1996) CISG-online 140.

- The buyer's reasonable expenses incurred in ascertaining whether the goods are in conformity with the contract, but only if the non-conformity is actually established and notice is given to the seller.⁴⁸
- The seller's expenses for storing and preserving goods that the buyer has unjustifiably rejected or has not taken delivery of to avoid greater loss.⁴⁹
- The seller's expenses as a result of the buyer's late payment.⁵⁰
- The seller's expenses as a result of the shipping space provided by the buyer being unsuitable for the loading of the goods because it is dirty.⁵¹
- The seller's expenses as a result of damage to the goods from having been stored because the buyer had not paid in time.⁵²

Consequential loss

Consequential loss comprises losses other than those caused by non-performance as such. Typically, consequential loss arises because of the obligee's liability to third parties as a result of the breach.

It is controversial whether damages resulting from the buyer's liability to third parties for death or personal injury caused by the seller's defective products can be recovered under the CISG. Some courts and academic literature deny the applicability of the CISG to the recourse of the buyer in accordance with Article 5.⁵³ Others, and the CISG Advisory Council, allow the buyer's claim for a consequential damage that is a result of the seller's defective product injuring a third party or that party's property.⁵⁴ The author submits that the latter view is preferable because it allows the buyer to be compensated under one damages regime (i.e., that of the CISG). It avoids unnecessarily distinguishing between separate

48 OLG Köln (14 August 2006) CISG-online 1405; Arbitral Award, Arbitration Institution of the Stockholm Chamber of Commerce 107/1997, CISG-online 1301; Bundesgerichtshof (25 June 1997) CISG-online 277.

49 See Arbitral Award, ICC 7585/1992, CISG-online 105.

50 District Court Tukums (5 May 2010) CISG-online 2584; ICC Ct Arb 7197/1992 CLOUT No. 104; Int Ct Russian CCI (9 September 1994) 375/1993 <http://cisgw3.law.pace.edu/cases/940909r1.html>.

51 OLG Karlsruhe (8 February 2006) CISG-online 1328.

52 I Schwenzer in Schwenzer Commentary, Article 74, para. 28.

53 Paris Court of Appeal (18 June 2002), www.cisg.fr/decision.html?lang=fr&date=02-06-18 (last accessed 12 Aug 2022); W Witz in W Witz, H-C Salger, M Lorenz, *Internationales Einheitliches Kaufrecht* (Beck, Munich, 2016), Article 5, para. 5; U Magnus in *Staudingers Kommentar*, Vol. XIV, Article 5, para. 8.

54 Supported by OLG Düsseldorf (2 July 1993) CISG-online 74; Handelsgericht Zürich (26 April 1995) CISG-online 248, para. 5.b.; CISG-AC Opinion No. 12 Rapporteur Sono, Comment 2.3.1; I Schwenzer, P Hachem in Schwenzer Commentary, Article 5, para. 10.

heads of the buyer's liability, namely contract, tort or property. Having to claim under different heads of damages would mean that a mixture of international law (the CISG with regard to contractual claims) and applicable domestic law (with regard to tort or property claims) would be applicable for a breach of the contract. The application of those different damages regimes has the potential to either overcompensate or under-compensate the buyer. In regard to compensating for the consequences of a breach of an international sales contract, the CISG comprises a modern damages regime that amalgamates common and civil law principles and, therefore, is preferable.

Academic literature and jurisprudence are not unanimous as to whether domestic tort law may be applied concurrently with the CISG. Some support leaving this decision to the applicable domestic law,⁵⁵ whereas others argue for the exclusion of domestic tort law in these cases.⁵⁶ A third view distinguishes between damage caused by the defective performance of the good, in which case the CISG is exclusively applicable, and damage caused because the goods did not adhere to general safety expectations and standards, in which case the buyer has a course of action under the CISG and the applicable domestic tort law concurrently available to them.

Examples:

- Time (e.g., visiting customers) and cost incurred in trying to rectify defective goods are only recoverable if extra staff had to be employed or additional workload was caused.⁵⁷
- Legal costs (extrajudicial or procedural) incurred by the obligee in disputes with third parties are recoverable.⁵⁸

55 See *Miami Valley Paper LCC v. Lebbing Engineering and Consulting GmbH*, SD Ohio (10 October 2006) CISG-online 1362; Supreme Court of Israel (17 March 2009) CISG-online 1980, para. 73; U Magnus in *Staudingers Kommentar*, Vol. XIV, Article 5, para. 14; J Lookofsky 'Understanding the CISG' (2003), *Duke J Comp & Int'l L*, 263, 285.

56 OLG Tübingen (26 May 1998) CISG-online 513; J Honnold and H Flechtner (op. cit. note 2), Article 5, para. 73.

57 See *Castel Electronics Pty Ltd v. Toshiba Singapore Ptd Ltd*, Fed Ct Aust (28 September 2010) CISG-online 2158.

58 I Schwenzer in Schwenzer Commentary, Article 74, para. 35, but in regard to the recovery of the obligee's legal costs under Article 74 from the obligor stemming from their relationship, see section titled 'Legal costs', below.

- Reputational loss and loss of goodwill as a result of breach of contract can be recovered.⁵⁹ The calculation of the loss of reputation should take into account; for example, the size of the company, the market, the value of the trademark and the necessary costs to re-establish the reputation.⁶⁰
- Damage to the buyer's own property as a result of the defective goods can be recovered.⁶¹
- If the buyer has agreed to a contractual penalty in a subsequent contract, this penalty, generally, can also be recovered from the seller.⁶²
- The seller might incur consequential loss if the buyer refused to take delivery of the goods (Article 53).⁶³

Loss of profits

Article 74 explicitly provides that damages for breach of contract include lost profits.⁶⁴ Lost profits are awarded to place the aggrieved party in the same pecuniary position it would have been in but for the breach.⁶⁵ It has to be emphasised that, in line with the view advanced for standard of proof,⁶⁶ lost profits do not have to be calculated with mathematical precision.⁶⁷ Lost profits need to be established

59 CISG-AC Opinion No. 6, Calculation of Damages under CISG Article 74, Rapporteur J Gotanda, Comment 7.1; Schlechtriem/Butler, para. 299a; U Magnus in *Staudingers Kommentar*, Vol. XIV, Article 74, para. 27; I Schwenzer in Schwenzer Commentary, Article 74, para. 36.

60 I Schwenzer in Schwenzer Commentary, Article 74, para. 36.

61 See examples in Schlechtriem/Butler, para. 40.

62 Article 74's foreseeability requirement, however, might limit the recoverability – see section titled 'Foreseeability', below.

63 See Landesgericht Aachen (14 May 1993) CISG-online 86.

64 Secretariat Commentary: the reference to loss profits was included because 'in some legal systems the concept of "loss" standing alone does not include loss of profit' (Secretariat Commentary on 1978 Draft, Article 70 (now Article 74), para. 3.

65 See *Shenzen Synergy Digital Co., Ltd. v. Mingtel, Inc.*, US District Court for the Eastern District of Texas, 4:19-cv-00216 (29 March 2022) CISG-online 5845; Audiencia Provincial de Murcia (15 July 2010) CISG-online 2130.

66 See section titled 'Calculation of loss', below.

67 See CISG-AC Opinion No. 6, Calculation of Damages under CISG Article 74, Rapporteur J Gotanda, Comment 3.19.

with reasonable certainty.⁶⁸ The buyer cannot claim lost profits if the buyer failed to give notice pursuant to Article 44. Whether or not the buyer has a reasonable excuse for not having given notice is irrelevant.⁶⁹

The obligee is not only entitled to recovery for lost profits incurred prior to the judgment or award, but also for future lost profits. Future lost profits are limited by the requirements that they have to be proved with reasonable certainty, that there has to be a causal connection between the breach and the future profits, and that they be foreseeable.⁷⁰

Examples:

- Lost profits include losses resulting from the inability to keep a business running caused by the breach of contract.⁷¹
- Lost profits also include fixed costs (i.e., general expenses) on a pro rata basis⁷² that have to be reduced by the expenses that would have been incurred when realising those fixed costs.⁷³
- The loss of chance of winning is recoverable.⁷⁴

68 J Gotanda and M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 74, para. 27.

69 Compare ICC Court of Arbitration Arbitral Award No. 9187/1999 CISG-online 705; W Witz in W Witz, H-C Salger, M Lorenz (eds), *Internationales Einheitliches Kaufrecht* (Beck, Munich, 2016) Article 74, para. 15; I Schwenzer in Schwenzer Commentary, Article 74, para. 38.

70 J Gotanda in S Kröll, L Mistelis, P Perales-Viscasillas (eds), *UN Convention on Contracts for the International Sale of Goods* (Beck, Hart, Munich, 2011) (hereinafter *UN Convention on Contracts for the International Sale of Goods* (2011)), Article 74, para. 28; D Saidov, *The Law of Damages in International Sales: The CISG and other International Instruments* (Hart Publishing, Oxford, 2008), 76.

71 I Schwenzer in Schwenzer Commentary, Article 74, para. 38.

72 OLG Hamburg (26 November 1999) CISG-online 515; *Delchi Carrier SpA v. Rotorex Corp.*, US Circuit Court of Appeals (2nd Cir) (6 December 1996) CISG-online 140.

73 Compare Handelsgericht Zürich (22 November 2010) CISG-online 2160.

74 CISG-AC Opinion No. 6, Calculation of Damages under CISG, Article 74, Rapporteur J Gotanda, Comment 3.15; I Schwenzer, P Hachem, 'The Scope of the CISG Provisions on Damages' in D Saidov, R Cunnington (eds), *Contract Damages: Domestic and International Perspectives* (Hart, Oxford, 2008) 91, 98; D Saidov, *The Law of Damages in International Sales: The CISG and other International Instruments* (Hart, Oxford, 2008), 70 *et seq.*, but *Delchi Carrier SpA v. Rotorex Corp.*, US Circuit Court of Appeals (2nd Cir) (6 December 1996) CISG-online 140; Kantonsgericht Zug (14 December 2009) CISG-online 2026, para. 13.5; but compare International Institute for the Unification of Private Law, UNIDROIT Principles of International Commercial Contracts 2010, Official Comment 2 (PICC), 7.4.3(2), which also stipulates the reimbursement of the loss of chance.

- Frustrated expenses are recoverable. They constitute the minimum loss incurred.⁷⁵
- The seller is entitled to lost profits that are as a result of having missed out on an investment opportunity.⁷⁶

Calculation of loss

When calculating loss, two positions have to be taken into account: concrete versus abstract calculation and whether to account for any gain made.

As regards concrete and abstract calculation, the principle of full compensation necessitates the admissibility of the loss being calculated abstractly⁷⁷ to achieve equal outcomes for all obligees. As Professor Ingeborg Schwenzer explains:

It cannot be justified that a truck seller is to compensate a commercial carrier for the costs of vehicles the carrier rents in case of non-delivery, while the same breach of contract remains without consequences when the buyer is an NGO which intends to use the trucks to deliver food to conflict areas and cannot rent substitute vehicles. The loss due to the loss of use can be easily calculated abstractly since rental markets exist for nearly for all types of goods.⁷⁸

However, it should be noted that if the buyer purchases substitute goods, Article 75 mandates a concrete calculation of loss.⁷⁹

As regards accounting for gain, the obligee has to offset the loss from the breach by any gains resulting from the non-performance.⁸⁰ It is important to note that only the gain that has an adequate connection to the breach is to be subtracted.⁸¹

75 CIETAC (4 April 1997) CISG-online 1660; Serbian Chamber of Commerce (1 October 2007) CISG-online 1793; Schlechtriem/Butler, para. 308.

76 Landgericht Stuttgart (31 August 1989) CISG-online 11; AG Oldenburg (24 April 1990) CISG-online 20.

77 Compare *Semi-Materials Co Ltd v. MEMC Material Electronics*, Ed Mo (10 January 2011) CISG-online 2168.

78 I Schwenzer in Schwenzer Commentary, Article 74, para. 43.

79 See section titled 'Damages in case of substitute transaction – Article 75', below.

80 Compare Secretariat Commentary on 1978 Draft, Article 70 (now Article 74), para. 5; J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 74, para. 34.

81 J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 74, para. 27; see also I Schwenzer in Schwenzer Commentary, Article 74, para. 44.

***Delchi Carrier Spa v. Rotorex Corp*, 71 F.3d 1024**

The US seller manufactures compressors. The Italian buyer purchased compressors from the seller for use in its air conditioners after receiving a sample compressor from the seller and accompanying written performance specifications. The compressors were scheduled to be delivered in three shipments. The buyer found that the first shipment did not conform while the second was en route. The non-conformity resulted in lower cooling capacity and consumed more power than the sample model and specifications. After several attempts to cure, the buyer asked the seller to supply new compressors conforming to the original sample and specifications. The seller refused. The buyer claimed damages from the seller for:

- lost profits resulting from a diminished level of sales of the air-conditioning units;
- expenses that the buyer incurred in attempting to remedy the non-conformity of the compressors;
- costs of expediting a shipment of compressors from a third party;
- costs for handling and storing rejected compressors;
- shipping, customs and incidentals relating to the two shipments of the seller's compressors;
- cost of obsolete insulation and tubing buyer purchased for use with the seller's compressors;
- cost of obsolete tooling purchased only for production of units with the seller's compressors;
- labour costs for four days when the buyer's production line was idle because it had no compressors to instal; and
- prejudgment interest.

The buyer could recover all heads of damages listed, except:

- lost profits resulting from a diminished level of sales of the air-conditioning units because the buyer did not prove the loss; and
- labour costs because the buyer's labour costs incurred during the four-day shutdown were fixed costs and therefore not part of the damages calculation or variable costs and payable.

Time

Article 74 does not provide a specific time for the calculation of damages. A tribunal has broad discretion, therefore, to determine the appropriate time to calculate the damages. The principle of full compensation, however, means that damages should be assessed at the latest possible point in time.⁸² This allows compensation for all possible consequences that may arise.

Place

The CISG does not provide for where damages have to be paid. Prof Schwenger argues that damages should be paid at the place where the breached obligation was to be performed,⁸³ whereas others contend that damages should be paid at the obligee's place of business.⁸⁴ The latter view is in line with the general principle of Articles 57 and 74 of full compensation.

Currency

General jurisprudence and academic opinion is that to fully compensate an obligee, damages should be calculated under the currency of the loss.⁸⁵ However, the actual payment of the damages may be in a different currency. In the case that a different currency in regard to the damages is chosen, the tribunal will have to determine the appropriate exchange rate.

Causation

The obligee must establish that the loss was caused by the breach of the contract. It is necessary, but generally also sufficient, for the breach to have been the *conditio sine qua non* (i.e., the precondition for the occurrence of the detriment).⁸⁶ It is immaterial whether the breach caused the damage directly or indirectly.

82 J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 74, para. 29; see also I Schwenger in Schwenger Commentary, Article 74, para. 46.

83 I Schwenger in Schwenger Commentary, Article 74, para. 63.

84 OLG Düsseldorf (2 July 1993) CISG-online 74; P Huber in P Huber, A Mullis, *The CISG: A Textbook for Students and Practitioners* (sellier, Munich, 2007), 281; J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 74, para. 30.

85 Handelsgericht Aargau (10 July 2010) CISG-online 2176; OLG Hamburg (28 February 1997) CISG-online 261; D Saidov, *The Law of Damages in International Sales: The CISG and other International Instruments* (Hart, Oxford, 2008) 265; J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 74, para. 31; I Schwenger in Schwenger Commentary, Article 74, para. 65.

86 Kantonsgericht Zug (14 December 2009) CISG-online 2026, para. 11.2.

Foreseeability

The loss has to be foreseeable at the time of contract conclusion.⁸⁷ It is not the exact size of the loss, but only the possibility of the loss that must be foreseeable. The foreseeable loss must be assessed in light of the facts that the party in breach knew (subjective assessment) or ought to have known (objective assessment). What is relevant is what in that sector of trade normally could have been foreseen, taking into account the information the contracting party had at its disposal.⁸⁸

Limitation on damages

Limited to monetary relief

It is well accepted that relief under Article 74 must be in the form of a monetary payment.⁸⁹

Limited to material loss

The CISG does not expressly exclude liability for non-pecuniary loss. However, given the nature of the CISG regulating international sales of goods between businesses, the CISG's ambit does not extend to damages for pain and suffering, mental distress and loss of amenities.⁹⁰ Loss of reputation and loss of chance are classified under the CISG as pecuniary loss.⁹¹ Prof Schwenger argues that non-pecuniary damages may be recoverable under Article 74 if the intangible purpose of the performance became part of the contract and, therefore, made

87 Bundesgerichtshof (25 November 1998) CISG-online 353 (seller delivered surface-protective film to buyer for use by the buyer's business partner. The buyer did not test the film, which had to be self-adhesive and removable. When the film was removed from polished high-grade steel products by the buyer's business partner, it left residues of glue on the surface. The buyer paid the expenses of removing the glue residue and claimed for reimbursement of these expenses against the seller); OLG Köln (21 May 1996) CISG-online 254. Court of Cassation (17 February 2015) www.legifrance.gouv.fr/affichJuriJudi.do?oldAction=rechJuriJudi&idTexte=JURITEXT000030270329&fastReqId=1445360440&fastPos=1 (last accessed 10 Aug 2022) – foreseeability not ascertainable, if damages cannot with certainty be established.

88 See ICC Court of Arbitration, Arbitration Case No. 9187 of June 1999 (Coke case), www.cisg.law.pace.edu/cisg/wais/db/cases2/999187i1.html.

89 See Oberster Gerichtshof (12 January 2002) CISG-online 643.

90 J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 74, paras. 38, 39 with further references; I Schwenger in Schwenger Commentary, Article 74, para. 41 with further references.

91 See I Schwenger in Schwenger Commentary, Article 74, para. 4; see examples in UNCITRAL Digest on the CISG, Article 74, para. 21 *et seq.*, available at https://www.uncitral.org/pdf/english/clout/CISG_Digest_2016.pdf (last accessed 12 Aug 2022).

the incurred loss a typical consequence of the non-performance.⁹² Including non-pecuniary damages under Article 74, if the parties have so agreed, conforms with the CISG's underlying principle of party autonomy.

Punitive damages

Article 74 does not permit the recovery of punitive damages but expressly limits damages to 'a sum equal to the loss'.⁹³ The prevailing view is that the application of the CISG excludes the award of punitive damages under the applicable domestic law. However, the parties are free to stipulate the provision of punitive damages in their contract.

Special cases

Disgorgement of profits

Given the considerable divergence of jurisprudence and academic literature in civil and common law jurisdictions regarding the question of whether disgorgement of profits is a remedy, a head of damages or not recoverable at all,⁹⁴ tribunals should arguably consider granting damages based on disgorgement of profits only in narrow circumstances. In practice, international sale of goods cases in which the obligee has suffered no loss at all, while the obligor was able to make a profit, will be rare. Prof Schwenger has identified three situations in which the obligee should be entitled to disgorgement of profit under Article 74 (i.e., as a head of damage):

- the seller sells the goods a second time and realises a higher profit than agreed to under the contract with the first buyer (i.e., efficient breach);
- the seller, who is contractually obliged to manufacture the goods in accordance with ethical or human rights standards, lowers its production costs by resorting to production mechanisms that are in breach of the agreement, and thereby increasing its profits; or

92 M Bridge, 'Remedies and Damages' in *International Sales Law* (op. cit. note 13), Chapter 19, para. 41; I Schwenger in Schwenger Commentary, Article 74, para. 41; explicitly disagreeing with P Huber in P Huber, A Mullis, *The CISG: A Textbook for Students and Practitioners* (sellier, Munich, 2007), 279.

93 OLG Düsseldorf (2 July 1993) CISG-online 74.

94 For a general overview of the treatment of disgorgement of profits, see E Hondius, A Janssen (eds), *Disgorgement of Profits – Gain Based Remedies throughout the World* (Springer, Heidelberg, 2015).

- the buyer supplies a defined market, such as the European Union, NAFTA (replaced by the USMCA) or Mercosur, against an express stipulation in the contract with the purchased goods, and thus makes a profit.⁹⁵

The commonality in all three cases is that common damages under Article 74 are difficult, if not impossible, to prove. Therefore, tribunals may be open to calculate damages as disgorgement of profits when damages under Article 74 are otherwise impossible to prove but the obligor would gain a clear windfall otherwise.

Legal costs

A uniform application of the CISG requires that the question of recoverability of legal costs cannot depend on its classification as substantive or procedural by the relevant *lex fori*. That would lead to a non-uniform interpretation and application of the CISG. Uncontroversially, attorney fees and costs can be awarded when the contract provides for their payment. The majority of academic literature is in agreement that extrajudicial costs may be recovered as incidental damages under Article 74 (especially if extrajudicial activity mitigates damages).⁹⁶ Extrajudicial costs include legal costs incurred in connection with preventing the breach or pursuing rights under the contract, such as a demand for performance.⁹⁷ However, the majority of academic literature and courts' jurisprudence does not support litigation costs being recoverable under Article 74.⁹⁸ Arbitral tribunals do not present a unified picture. Often it is hard to ascertain whether the tribunal has awarded costs under the applicable rules or under Article 74.⁹⁹

⁹⁵ I Schwenzer in Schwenzer Commentary, Article 74, para. 45.

⁹⁶ Landesgericht München (30 August 2001) CISG-online 668; *Hermanos Successors SA v. Hearthside Baking Company*, Federal Appellate Court (7th Cir) (19 November 2002) CISG-online 684; J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 74, para. 73; I Schwenzer in Schwenzer Commentary, Article 74, para. 31.

⁹⁷ J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 74, para. 73.

⁹⁸ *San Lucio et al v. Import & Storage Services et al*, D NJ (15 April 2009) CISG-online 1836; *Norfolk Southern Railway Company v. Power Source Supply Inc*, WD Pa (25 July 2008) CISG-online 1776; M Bridge, 'Remedies and Damages' in *International Sales Law* (op. cit. note 13), Chapter 19 paras. 53, 54; I Schwenzer in Schwenzer Commentary, Article 74, para. 30; CISG-AC Opinion No. 6, Calculation of Damages under CISG, Article 74, Rapporteur J Gotanda, Comment 5.1.

⁹⁹ See overview in UNCITRAL Digest on the CISG, Article 74, para. 27, available at https://www.uncitral.org/pdf/english/clout/CISG_Digest_2016.pdf (last accessed 18 Aug 2022).

The majority opinion holds that the recovery of litigation costs is a matter of the applicable domestic law or the applicable arbitration rules, respectively. The main rationale advanced is that allowing for litigation costs to fall under the ambit of loss under Article 74 would violate the principle of equality between the parties embodied in the CISG.¹⁰⁰ The argument is that, if recovery of litigation costs were possible under Article 74, it would lead to an unjustifiable preferential treatment of the successful plaintiff over the successful defendant, because the defendant would not be able to claim litigation costs.¹⁰¹ However, the author submits that this view misinterprets the CISG's equality principle, which relates to equal treatment of the buyer and the seller, not equal treatment of the plaintiff and the defendant in a litigation or to the claimant and the respondent in an arbitration. The buyer and the seller will not be treated differently in regard to the recovery of litigation costs under Article 74. The buyer, as well as the seller, is able to claim litigation costs as part of its damages if the buyer is the plaintiff. To allow litigation costs to be claimed as incidental damages under Article 74 will achieve global uniformity for parties to a contract to which the CISG applies. The recoverability of litigation costs will be limited by the foreseeability and causation requirements inherent in Article 74.¹⁰²

It seems less controversial that legal costs may be recovered indirectly as damages if they accrue in regard to a sale to a third party.¹⁰³

Penalty clauses and liquidated damages

There is a lacuna in the CISG regarding the recoverability of damages agreed by the parties in a penalty clause or a liquidated damages clause if the amount agreed falls below the foreseeable amount of loss or is in excess of any loss caused by the

100 I Schwenzer in Schwenzer Commentary, Article 74, para. 30; CISG-AC Opinion No. 6, Calculation of Damages under CISG, Article 74, Rapporteur J Gotanda, Comment 5.1.

101 I Schwenzer in Schwenzer Commentary, Article 74, para. 31 with further references.

102 See section titled 'Legal costs', above. *Stemcor USA, Inc. v. Miracero, S.A. de C.V.*, 66 F. Supp. 3d 394, 395 (S.D.N.Y. 2014); in regard to foreseeability and causation, see section titled 'The foreseeability requirement' in Chapter 1.

103 See M Bridge 'Remedies and Damages' in *International Sales Law* (op. cit. note 13), Chapter 19, para. 55: Goods are sold by A to B under a CISG contract. The same goods are sold by B to C, whether under the CISG or domestic law. A breaches the contract with B by delivering defective goods. B, who on-sells those defective goods, is in breach of its contract with C. B ends up having to pay damages to C as well as its own legal costs and a contribution to C's legal costs. When B sues A for breach of contract under the CISG, B's loss will include not just its damages liability to C but also both sets of legal costs in the B-C proceedings.

breach of contract.¹⁰⁴ Whether or not an agreed damages clause is valid in accordance with Article 4 is a matter of the applicable domestic law to the contract: 'it has to be noted that tribunals have to fill the gap in the CISG finding an internal solution in accordance with Article 7 instead of resorting to domestic law'.¹⁰⁵ Agreed damages clauses, which are valid under the applicable domestic law, are compatible with the CISG because an agreed damages clause may encourage performance of the contract and deter a breach, thereby fostering a basic value underlying the CISG as a whole. In the event of a breach of contract, the agreed damages clause may encourage the parties to settle their differences and avoid legal costs. In addition, a clause will provide clearer guidance for recovery than often the foreseeability requirement can provide. An agreed damages clause, therefore, can aid dispute resolution.¹⁰⁶

Third-party claims

Only the contracting party can seek damages under Article 74. Third parties must pursue their claims under the applicable domestic law.¹⁰⁷

104 See, in contrast, PICC, Article 7.1.6: 'A clause which limits or excludes one party's liability for non-performance or which permits one party to render performance substantially different from what the other party reasonably expected may not be invoked if it would be grossly unfair to do so, having regard to the purpose of the contract.'

105 Article 4 states: 'This Convention governs only the formation of the contract of sale and the rights and obligations of the seller and the buyer arising from such a contract. In particular, except as otherwise expressly provided in this Convention, it is not concerned with: (a) the validity of the contract or of any of its provisions or of any usage'; see in regard to the application, OLG München (8 February 1995), cisgw3.law.pace.edu/cases/950208g2.html; Hof Arnhem (22 August 1995), <http://cisgw3.law.pace.edu/cases/950822n1.html>; ICC Court of Arbitration, Arbitral Award No. 7197/1992, cisgw3.law.pace.edu/cases/927197i1.html; CISG AC Opinion No. 10, Agreed Sums Payable upon Breach of an Obligation in CISG Contracts, Rapporteur P Hachem.

106 M Bridge, 'Remedies and Damages' in *International Sales Law* (op. cit. note 13), Chapter 19, para. 72.

107 See P Huber in P Huber, A Mullis, *The CISG: A Textbook for Students and Practitioners* (sellier, Munich, 2007), 280.

Loss of volume

To allow for full compensation in the case of a lost volume seller,¹⁰⁸ damages under Article 74 should encompass the recovery of lost profits that the seller would have made but for the buyer's breach, irrespective of any subsequent transactions by the aggrieved party.¹⁰⁹ The calculation of the lost profit may present, in some cases, a considerable forensic challenge.¹¹⁰

Child labour and human rights standards

It has been argued that human rights standards can be an inherent characteristic of goods. In particular, there seems to be a general opinion that it is an inherent characteristic of any good that it be manufactured without the use of child labour.¹¹¹ If a good is manufactured with child labour or contrary to a contractually agreed ethical or human rights standard, the buyer can demand the difference between the price for the goods manufactured under conditions that are ethical or compatible with human rights standards and the price for goods manufactured in violation of those conditions. If the market value is difficult to assess, the manufacturing costs that were saved as a result of the breach of contract can be used as minimum damages.¹¹²

108 A lost volume seller is a seller who can produce as much of certain goods as they can sell. That means that a lost volume seller loses out on an opportunity to sell extra goods if the buyer breaches the contract.

109 Oberster Gerichtshof (28 April 2000) CISG-online 581; for an extensive analysis, see M Bridge, 'Remedies and Damages' in *International Sales Law* (op. cit. note 13), Chapter 19, paras. 48 to 50.

110 See example by M Bridge, 'Remedies and Damages' in *International Sales Law* (op. cit. note 13), Chapter 19, para. 50.

111 For an in depth discussion of human rights standards as inherent characteristics of goods, see (Article 35): P Butler, 'The CISG – a secret weapon in the fight for a Fairer World?' in I Schwenzer (ed), *CISG – 35 years and beyond* (Eleven International Publishing, Den Haag, 2016), Chapter 18; I Schwenzer, 'Ethical Standards in CISG Contracts' (2017), 22 *Uniform Law Review*, 122; I Schwenzer, B Leisinger, 'Ethical Values and International Sales Contracts' in R Cranston, J Ramberg, J Ziegel (eds), *Commercial Law Challenges in the 21st Century*, Jan Hellner in memoriam (Stockholm Centre for Commercial Law, Juridiska institutionen, 2007), 249.

112 See I Schwenzer in Schwenzer Commentary, Article 74, para. 24; I Schwenzer, P Hachem, 'The Scope of the CISG Provisions on Damages' in D Saidov, R Cunnington (eds), *Contract Damages: Domestic and International Perspectives* (Hart, Oxford, 2008), 91, 99, 100; N Schmidt-Ahrendts, 'Disgorgement of Profits under the CISG' in I Schwenzer, S Spagnolo (eds), *State of Play: The 3rd Annual MAA Peter Schlechtriem Conference* (Eleven International Publishing, Den Haag, 2012), 89, 101.

Burden of proof and standard of proof

The CISG does not explicitly address either the burden of proof or the level of proof required. Jurisprudence and academic commentary generally agree that ‘a party who asserts a claim has to prove all circumstance or facts advantageous to him’ (i.e., the party claiming damages bears the burden of proving the damage suffered).¹¹³

Jurisprudence and academic literature do not present a unified picture of the level of proof required. First, tribunals have to fill the gap in the CISG, finding an internal solution in accordance with Article 7, instead of resorting to domestic law.¹¹⁴ Some courts and tribunals have required a specific ascertainment of damages,¹¹⁵ some have required that the damages be reasonably proved¹¹⁶ and others have required sufficient proof of damages.¹¹⁷ Belgian courts, in particular, have determined the amount of damages often *ex aequo et bono*.¹¹⁸ The CISG Advisory Council reasons that the requisite standard should be one of ‘reasonable certainty’ without the need for ‘mathematical precision’.¹¹⁹ The reasonable

113 Handelsgericht Zürich (17 September 2014) CISG-online 2656; OLG Zweibrücken (31 March 1998), CISG-online 481; Tribunale di Vigevano (12 February 2000) CISG-online 493; CLOUT Case No. 476 (Tribunal of International Commercial Arbitration at the Russian Federation Chamber of Commerce and Industry (6 June 2000) Arbitral Award 406/1998); CLOUT Case No. 935, Handelsgericht Zürich (25 June 2007); J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 74, para. 9; I Schwenzer in Schwenzer Commentary, Article 74, para. 66.

114 M Bridge, ‘Remedies and Damages’ in *International Sales Law* (op. cit. note 13), Chapter 19, para. 39; CISG-AC Opinion No. 6, Calculation of Damages under the CISG, Article 74, Rapporteur J Gotanda, Comment 2.1.

115 OLG Celle (2 September 1998), CISG-online 506; OLG Köln (21 May 1996) CISG-online 254; Landgericht München (20 February 2002) CISG-online 712.

116 Käräjäläis-Oikeus of Kuopio (5 November 1996) CISG-online 869; CIETAC CISG/1990/01, <http://cisgw3.law.pace.edu/cases/910418c1.html>.

117 CIETAC CISG/1995/01 CISG-online 971; Tribunal de Commerce Namur (15 January 2002) CISG-online 759.

118 *Steinbock-Bjonustan EHF v. NV Duma* (4 June 2004) District Court Kortrijk, <http://cisgw3.law.pace.edu/cases/040604b1.html>; District Court Hasselt (18 October 1995), <https://cisgw3.law.pace.edu/cases/951018b1.html> (last accessed 12 Aug 2022); *Vital Berry Marketing v. Dira-Frost* (2 May 1995), District Court Hasselt, <http://cisgw3.law.pace.edu/cases/950502b1.html>.

119 CISG-AC Opinion No. 6, Calculation of Damages under the CISG Article 74, Rapporteur J Gotanda, Comment 2.9; see Court of Cassation (17 February 2015), www.legifrance.gouv.fr/affichJuriJudi.do?oldAction=rechJuriJudi&idTexte=JURITEXT000030270329&fastReqId=1445360440&fastPos=1 (last accessed 12 Aug 2022) and *Delchi Carrier SpA v. Rotorex Corp*, US Circuit Court of Appeals (2nd Cir) (6 December 1996) CISG-online 140, which refer to ‘sufficient certainty’ albeit without discussion.

certainty standard is supported by and consistent with the CISG as a whole, which generally applies the reasonableness standard.¹²⁰ It is also consistent with the UNIDROIT Principles of International Commercial Contract (PICC).¹²¹

Limitation period

The CISG does not cover limitation periods. If the Convention on the Limitation Period in the International Sale of Goods 1974 is applicable to the contract, damages fall under the four-year limitation period under Article 8 thereof.¹²² In all other cases, the choice of the parties' dispute resolution mechanism will become highly relevant. Civil law jurisdictions generally characterise statute of limitation issues as matters of substantive law and, therefore, as a matter of *lex contractus*.¹²³ In many common law jurisdictions, statute of limitation issues are considered a matter of procedural law and, therefore, a matter of *lex fori*.¹²⁴ Tribunals should consider whether to apply PICC, Article 10.1 *et seq.*, which stipulate a relative limitation period of three years and an absolute limitation period of 10 years.¹²⁵

Damages in case of substitute transaction – Article 75

Article 75¹²⁶ allows, in the case of avoidance of the contract, a concrete calculation of damages in the form of the difference between the contract price and the price of a cover purchase (buyer) or the resale of the goods (seller). Further damage that is not already part of the calculation under Article 75 can often be claimed under

120 J Bonell in C M Bianca, J Bonell, *Commentary on the International Sales Law* (Giuffrè: Milan, 1987), Article 7, para. 2.3.2.2.

121 PICC, Article 7.4.3. The Principles of International Commercial Contract are soft law (devised by UNIDROIT (International Institute for the Unification of Private Law)) and designed to be an elaboration of an international restatement of general principles of contract law. They can be found at <https://www.unidroit.org/english/principles/contracts/principles2016/principles2016-e.pdf> (last accessed 12 Aug 2022).

122 Convention on the Limitation Period in the International Sale of Goods 1974 can be found at www.uncitral.org/uncitral/en/uncitral_texts/sale_goods/1974Convention_limitation_period.html (last accessed 12 Aug 2022).

123 Landgericht München I (6 April 2000) CISG-online 665; OLG Braunschweig (28 October 1999) CISG-online 510; Landgericht Heidelberg (2 October 1996) CISG-online 264.

124 Lord Collins of Mapesbury et al., *Dicey, Morris & Collins on the Conflict of Laws*, Vol. I (15th ed, Sweet & Maxwell, London 2012), paras. 7-055, 7-056.

125 PICC, Article 10.2(1) and Article 10.2(2), respectively.

126 CISG, Article 75 states: 'If the contract is avoided and if, in a reasonable manner and within a reasonable time after avoidance, the buyer has bought goods in replacement or the seller has resold the goods, the party claiming damages may recover the difference between the contract price and the price in the substitute transaction as well as any further damages recoverable under article 74.'

Article 74 (see Article 76). Article 75 does not replace Article 74; it supplements and works in conjunction with it. The application of Article 75 is not mandatory. Parties that have avoided the contract can choose whether to seek damages pursuant to Article 75 or whether they rely only on the abstract calculation of damages under Article 74.¹²⁷

Avoidance

To claim damages in accordance with Article 75, the obligee has to avoid the contract (i.e., it must have dissolved its contractual obligation)¹²⁸ before making a substitute purchase.¹²⁹ Jurisprudence and academic commentary also concur that Article 75 is applicable if the obligor unequivocally and finally refuses to perform.¹³⁰

Substitute transaction

A sale or purchase by an aggrieved party qualifies as a substitute transaction under Article 75 if two requirements are satisfied. First, the aggrieved party has to have undertaken the purchase or sale as a substitute for the avoided transaction. Second, the cover purchase or sale has to be commercially reasonable. It is generally accepted that the price of the cover purchase or sale will minimise the loss of the breaching party to the extent that is reasonably possible.¹³¹ If the difference between the avoided contract and the substitute transaction results in reduced costs, an adjustment to the amount of damages may be warranted to account for expenses saved by the obligee.¹³²

127 J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 74 para. 3.

128 See Articles 49, 64, 72, 73 in regard to the requirements of avoidance for buyer and seller, respectively.

129 OLG Bamberg (13 January 1999) CISG-online 516; CISG-AC Opinion No. 8, Calculation of Damages under the CISG Articles 75 and 76, Rapporteur J Gotanda, Comment 2.3.3.

130 Handelsgericht des Kantons Zürich (17 September 2014) CISG-online 2656; OLG Brandenburg (5 February 2013) CISG-online 2400; Supreme Court Poland (27 January 2006) CISG-online 1399; OLG Hamburg (28 February 1997) CISG-online 261 (where the Court held that in the case of the seller seriously and finally refusing to perform the principle of good faith mandated that the buyer did not have to avoid the contract before making the cover purchase); I Schwenzer in Schwenzer Commentary, Article 75, para. 5.

131 See Secretariat Commentary on 1978 Draft, Article 71, para. 4.

132 J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 75, para. 11.

The wording of Article 75 makes it clear that it is not applicable if the obligee does not transact with a third party to fulfil the avoided contract.¹³³ Article 75 is also not applicable when the buyer uses goods in substitution for the non-conforming goods that have been purchased before the avoidance of the contract.¹³⁴

Reasonable time and manner

To avoid the obligee speculating on the development of the market, at the expense of the obligor, Article 75 requires that the cover purchase is made in a reasonable manner and within a reasonable amount of time. Those requirements do not exclude, however, that the obligee waits to avoid the contract to take account of market developments.¹³⁵

Jurisprudence has determined that the standard for acting in a reasonable manner is whether a party has acted as a 'careful and prudent businessman' who observes the relevant trade practices.¹³⁶ Being a 'careful and prudent businessman' can entail reselling the goods substantially below the contract price.¹³⁷

The substitute transaction also has to be done within a reasonable time. The period for a reasonable substitute transaction commences when the obligee declares the contract avoided.¹³⁸ What is reasonable depends on the circumstances and the good in question. For goods that are subject to market price fluctuations, a reasonable period will be relatively short,¹³⁹ whereas for goods that are seasonal or unique, it will be longer.¹⁴⁰

133 P Huber in P Huber, A Mullis, *The CISG: A Textbook for Students and Practitioners* (sellier, Munich, 2007), Section 13(VII)(2)(a)(bb).

134 *Delchi Carrier SpA v. Rotorex Corp*, US Circuit Court of Appeals (2nd Cir) (6 December 1996) CISG-online 140; J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 75, para. 14.

135 Schlechtriem/Butler, para. 311.

136 ICC Court of Arbitration, Arbitral Award No. 8128/1995, CISG-online 526; OLG Düsseldorf (14 January 1994) CISG-online 119; compare Secretariat Commentary on 1978 Draft, Article 71, para. 4.

137 OLG Düsseldorf (14 January 1994) CISG-online 119.

138 Secretariat Commentary on 1978 Draft, Article 71, para. 5.

139 Compare OLG Hamburg (28 February 1997) CISG-online 261 – period of two weeks considered reasonable for cover purchase for iron-molybdenum.

140 Compare OLG Düsseldorf (14 January 1994) CISG-online 119 – period of three months considered reasonable for seasonal goods.

If the obligee has not made an identified substitute transaction in a reasonable manner or time frame, the obligee is free to claim damages in accordance with Articles 74 and 76, which allow for an abstract calculation of damages.¹⁴¹ Conversely, if an obligee who pursues a damages claim under Article 76 makes a substitute transaction after initiating litigation, but before a reasonable time has elapsed since avoidance, then damages may be calculated pursuant to Article 75.¹⁴²

Calculating damages

Damages in accordance with Article 75 are measured by the difference between the price of the substitute transaction and the contract price. The contract price is the price either agreed expressly or impliedly between the parties in the contract, or the price as determined by Article 55 if the parties did not agree expressly or implicitly on a price.¹⁴³ The price of the substitute transaction is the price paid for the substitute goods plus extra expenses incurred from having to make the substitute transaction, such as costs associated with transport or changed market conditions, minus saved expenses.¹⁴⁴

Further damages recoverable under Article 74

An aggrieved party may recover further damages under Article 74. This allows the recovery of incidental and consequential damages in addition to the damages recovered under the Article 75 calculation.

141 The wording of Article 76 does not seem to support the view that an unreasonable substitute transaction can be claimed under Article 76 because the Article assumes that no substitute transaction has been made. However, in practice, a substitute transaction will be reasonable as to the market price (the market price is generally reasonable under Article 77 – see section titled ‘Mitigation of damages – Article 77’, below) of the goods, which is what can be claimed as damages under Article 76. Therefore, in practice, it will make little difference whether to base one’s claim on Article 75 or Article 76 in the case of an unreasonable substitute transaction (see N Schmidt-Ahrendts, *Das Verhältnis von Erfüllung, Schadensersatz und Vertragsaufhebung im CISG* (Mohr Siebeck, Tübingen, 2007), 84, 85; I Schwenzer in Schwenzer Commentary, Article 75, para. 10).

142 Oberster Gerichtshof (28 April 2000) CISG-online 581.

143 Article 55 provides that when a contract has been validly concluded but does not expressly or implicitly fix the price, the price will be the generally charged price for those goods at the time the contract was concluded, unless the parties provide otherwise.

144 See Secretariat Commentary on 1978 Draft, Article 71, para. 3; J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 75, para. 22.

Examples:

- Costs associated with the substitute transaction under Article 75.¹⁴⁵
- Loss caused by the delay in locating a substitute transaction.¹⁴⁶
- Loss caused by a change in the interest rates or in the currency exchange rate between the date that the transaction was supposed to have occurred under the contract and the substitute transaction.¹⁴⁷
- Costs of an unsuccessful tender of goods or their necessary storage by the seller.¹⁴⁸
- Costs associated with the failed transaction.¹⁴⁹

Foreseeability

‘Foreseeability’ is not a requirement of Article 75, according to its wording. This is not surprising because loss resulting from a substitute transaction is generally foreseeable.¹⁵⁰

Burden of proof

The onus is on the obligee to prove that the avoidance of the contract was justified and that the obligor was correctly notified of the avoidance. The obligee must also show that the substitute transaction was reasonable and within a reasonable time after the avoidance of the contract. If the obligor asserts that the substitute transaction could have been made sooner, the obligor also implicitly invokes a breach of the duty to mitigate damages (Article 77), for which the obligor carries the burden of proof.¹⁵¹

145 *Downs Investment v. Perwaja Steel*, Supreme Court of Queensland (17 November 2000) CISG-online 587.

146 *Delchi Carrier SpA v. Rotorex Corp*, US Circuit Court of Appeals (2nd Cir) (6 December 1996) CISG-online 140.

147 Landgericht Krefeld (28 April 1993) CISG-online 101.

148 Handelsgericht Aargau (26 September 1997) CISG-online 329.

149 ICC Court of Arbitration, Arbitral Award 8128/1995, CISG-online 526; *Delchi Carrier SpA v. Rotorex Corp*, US Circuit Court of Appeals (2nd Cir) (6 December 1996) CISG-online 140.

150 See I Schwenzer in Schwenzer Commentary, Article 75, para. 8.

151 Compare Hof van Beroep, Gent (20 October 2004) CISG-online 983.

Concrete calculation of damages without substitute transaction – Article 76

Like Article 75, Article 76¹⁵² is *lex specialis* to Article 74. Article 76 allows for the calculation of damages to be based on the current price of goods when the obligee has avoided the contract without entering into a resale or cover purchase. The difference between Article 76 and Article 75 is that, under Article 76, the damages are calculated abstractly without the need to show a concrete measure of actual loss. Therefore, the advantage is that the obligee can recover damages simply based on a straightforward calculation.

Article 76 allows, when its requirements are met, to abstractly calculate the performance loss as the difference between the contract price and the market price. The advantage for the obligee to claim under Article 76 is that concrete proof of the non-performance loss is unnecessary.

Avoidance of the contract

The application of Article 76 requires that the obligee has avoided the contract. In addition, the prevailing view applies Article 76 to cases in which the obligor unambiguously and definitively refuses to perform.¹⁵³

Current price

Nature of current price

Article 76 requires a current price for the goods – ‘the price prevailing at the place where delivery of the goods should have been made’ – but if no current price is available then ‘the price at such other place serves as a reasonable substitute’.

152 CISG, Article 76 states: ‘(1) If the contract is avoided and there is a current price for the goods, the party claiming damages may, if he has not made a purchase or resale under article 75, recover the difference between the price fixed by the contract and the current price at the time of avoidance as well as any further damages recoverable under article 74. If, however, the party claiming damages has avoided the contract after taking over the goods, the current price at the time of such taking over shall be applied instead of the current price at the time of avoidance. (2) For the purposes of the preceding paragraph, the current price is the price prevailing at the place where delivery of the goods should have been made or, if there is no current price at that place, the price at such other place as serves as a reasonable substitute, making due allowance for differences in the cost of transporting the goods.’

153 OLG München (15 September 2004) CISG-online 1003; I Schwenzer in Schwenzer Commentary, Article 76, para. 3 with further references; but formal avoidance needed to have certainty in regard to the time for establishing the market price. OLG Graz (29 July 2004) CISG-online 1627; J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 76, para. 7.

The current price must be for goods of the same kind as the avoided contract, under comparable terms. Article 35(2) stipulates factors that can give guidance to determine which goods conform to the contract and whether they can be used to set a comparable price.¹⁵⁴ An adjustment should be made for any differences in terms or circumstances between the contract terms and those associated with the market price.¹⁵⁵

A current price can exist without being officially quoted.¹⁵⁶ As one court has observed:

*it is sufficient for the existence of a market price in the sense of Article 76(1) CISG if, owing to regular business transactions for goods of the same type at a particular trade location, a current price has been established.*¹⁵⁷

If there is no current price, then an abstract calculation cannot be performed and the obligee may resort to Article 74.¹⁵⁸ For subjectively valued goods or goods made on special order, it might be impossible to ascertain a current price.¹⁵⁹ The obligee thus has to resort to Article 74.

154 CISG, Article 35(2) states: '(2) Except where the parties have agreed otherwise, the goods do not conform with the contract unless they: (a) are fit for the purposes for which goods of the same description would ordinarily be used; (b) are fit for any particular purpose expressly or impliedly made known to the seller at the time of the conclusion of the contract, except where the circumstances show that the buyer did not rely, or that it was unreasonable for him to rely, on the seller's skill and judgement; (c) possess the qualities of goods which the seller has held out to the buyer as a sample or model; (d) are contained or packaged in the manner usual for such goods or, where there is no such manner, in a manner adequate to preserve and protect the goods. (3) The seller is not liable under subparagraphs (a) to (d) of the preceding paragraph for any lack of conformity of the goods if at the time of the conclusion of the contract the buyer knew or could not have been unaware of such lack of conformity.'

155 CIETAC, Arbitral Award CISG/2000/01 (1 February 2000), <http://cisgw3.law.pace.edu/cases/000201c1.html>.

156 *Novia Handelsgesellschaft mbH v. AS Maseko, Tallinna Ringkonnakohus* (19 February 2004) CISG-online 826.

157 OLG München (15 September 2004) CISG-online 1627 (translation); see also official commentary to PICC, Article 7.4.6, <https://www.unidroit.org/english/principles/contracts/principles2016/principles2016-e.pdf> (last accessed 12 Aug 2022).

158 See OLG Celle (2 September 1998) CISG-online 506.

159 See ICC, Court of Arbitration, Arbitral Award 8740/1996, CISG-online 1294; F Enderlein, D Maskow, *International Sales Law* (Oceana, Dobbs Ferry NY, 1992), Article 76, para. 2.

Time of determination

The time at which to set the current price for the calculation is the time at which the obligee made the statement of avoidance.¹⁶⁰ Basing the relevant time on the statement of avoidance leaves no room for tribunal discretion with regard to the timing, and avoids the obligee speculating at the obligor's expense. If the obligee unreasonably delays making a statement of avoidance, the obligor may seek relief under Article 77.¹⁶¹ Article 76 provides an exception for the setting of the current price if the obligee avoids the contract after taking the goods. In that case, the current price is determined at the time when the party took over the goods rather than at the time of avoidance.¹⁶²

Location of goods

In determining the current price for the calculation of damages, first resort must be to the place where the seller should have delivered the goods.¹⁶³ If a determination at the place of delivery is not possible, the tribunal can resort to a location that would be a reasonable substitute.¹⁶⁴ In accordance with the CISG's underlying principles, 'reasonable' has to be evaluated from the perspective of a typical merchant under similar circumstances, including taking into account the cost of shipping to the substitute location.¹⁶⁵

Price fixed by the contract

To calculate damages under Article 76, the 'price fixed by the contract' has to be determined. It should be noted that Article 75 merely requires a 'contract price'. This means that to satisfy the requirement of Article 75, the price does not need

160 Oberster Gerichtshof (28 April 2000) CISG-online 581. Note that Article 31 determines the place of delivery.

161 See section titled 'Mitigation of damages – Article 77', below.

162 J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 76, para. 20.

163 See OLG Hamm (22 September 1992) CISG-online 75.

164 Secretariat Commentary on the 1978 Draft, Article 72 (now Article 76), para. 11.

165 See OLG Hamburg (4 July 1997) CISG-online 1299; CISG AC-Opinion No. 8, Calculation of Damages under the CISG, Articles 75 and 76, Rapporteur J Gotanda, Comment 4.5.

to be fixed by the contract; instead it can be determined by means of Article 55.¹⁶⁶ Therefore, if the price is not fixed by the contract and the obligee has not engaged in a substitute transaction, the obligee can only pursue damages in accordance with Article 74. An application of Article 55 would result in implying a contract price based on the market price at the time of the contract and then calculating abstractly based on the market prices at the time of avoidance. Such a damages calculation is undesirable because it would increase the uncertainty in the amount of damages.¹⁶⁷

No substitute transaction

Abstract calculation of damages is only possible if the obligee has not engaged in a substitute transaction. It has to be noted that fixing damages concretely based on a substitute transaction takes precedence over an abstract calculation.¹⁶⁸ The primacy of concrete calculation supposes that a substitute transaction will generally be the most cost-effective resolution after the avoidance of a contract.¹⁶⁹

Whether the obligee has made a substitute transaction or not is assessed in accordance with the requirements under Article 75. Thus, if the obligee made a 'substitute' transaction that fails to meet the requirements stipulated under Article 75, the obligee is free to claim abstractly calculated damages under Article 76.¹⁷⁰ Abstract calculation might also be appropriate when the obligee has made a separate transaction similar to the avoided one and where the obligee cannot show that a particular transaction replaced the avoided one.¹⁷¹

166 CISG, Article 55 provides: 'Where a contract has been validly concluded but does not expressly or implicitly fix or make provision for determining the price, the parties are considered, in the absence of any indication to the contrary, to have impliedly made reference to the price generally charged at the time of the conclusion of the contract for such goods sold under comparable circumstances in the trade concerned.' The drafting history of Article 76 clarifies that Article 76 was drafted to exclude any price calculation on the basis of Article 55 (Summary of Records of Meetings of the First Committee, 37th Meeting, Consideration of Report of the Drafting Committee to the Committee (7 April 1980) 1980 Vienna Diplomatic Conference, paras. 59 to 69).

167 J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 76, para. 17.

168 OLG Hamm (22 September 1992) CISG-online 75; OLG Graz (29 July 2004) CISG-online 1627.

169 J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 76, para. 13.

170 Secretariat Commentary on 1978 Draft, Article 72 (now Article 76), para. 2.

171 See OLG Hamm (22 September 1992) CISG-online 75. Alternatively, in that situation, the obligee may seek damages under Article 74. A claim under Article 74 may be particularly appropriate in the case of a lost volume seller.

Foreseeability

The wording of Article 76 clarifies that foreseeability is not a requirement of Article 76.¹⁷² It would be contrary to the principle of full compensation if the obligor were able to argue unforeseeable changes in the price, after the conclusion of the contract, that the obligor did not take into account.¹⁷³

Recovery of further loss

In addition to damages based on the difference between the current price at the time of avoidance and the price fixed by the contract, the obligee may recover further damages under Article 74. Article 76 allows a party to claim compensation for incidental and consequential damages that occurred as a result of voiding the contract under Article 74. The requirements of Article 74 have to be met, especially the requirement that further damages must have been foreseeable.¹⁷⁴ Care has to be taken that when the obligee claims additional damages under Article 74, the obligee is not placed in a better position than it would have been in if the contract had not been avoided.

Anticipatory breach

If it is clear that one party will commit a fundamental breach, Articles 72 and 73 allow for the avoidance of the contract before the date that performance was due. These provisions may affect the determination of damages under Article 76 in a fluctuating market. In these circumstances, it is uncertain whether the market price at the time of performance would be the same as or even similar to the market prices at the time of avoidance. As Professor John Gotanda observes:

*To address the risk that the market will change to the detriment of the obligee, Article 75 provides the option to proceed with a substitute transaction and calculate damages concretely rather than proceeding abstractly under Article 76. By choosing to proceed under Article 76, the aggrieved party accepts the risk of inadequate compensation.*¹⁷⁵

172 See, for a different view, D Saidov, *The Law of Damages in International Sales: The CISG and other International Instruments* (Hart Publishing, Oxford, 2008), 118. .

173 See I Schwenzer in Schwenzer Commentary, Article 76, para. 6; P Huber in P Huber, A Mullis, *The CISG: A Textbook for Students and Practitioners* (sellier, Munich, 2007), 283, 288.

174 See section titled 'Foreseeability', above.

175 J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 76, para. 28.

Burden of proof

The obligee has to prove the calculation of damages under Article 76 (i.e., the price fixed by the contract as well as the current price).¹⁷⁶ However, the obligor has to prove that the obligee has, or should have, carried out a more favourable substitute transaction (Article 77).¹⁷⁷

Mitigation of damages – Article 77

Article 77(1) obliges the party that wants to claim damages because of the breach of contract by another party to take reasonable measures to mitigate the damage caused by the breach of contract. Under Article 77(2), a breach of this obligation will result in a decrease in the amount of damages that can be claimed. The obligation to mitigate damages exists only in regard to damages claims and not in regard to other remedies, such as claims in regard to the performance of the contract.¹⁷⁸

Obligation to mitigate

What the obligation to mitigate damages entails depends on the circumstances in the particular case: the threshold is a reasonable person in the shoes of the obligee.¹⁷⁹ Trade usages and practices, as well as special habits that exist between the parties, have to be taken into account.¹⁸⁰ In general, a cover transaction is reasonable if it is ‘made in such a manner as is likely to cause a resale to have been made at the highest price reasonably possible in the circumstances or a cover purchase the lowest price reasonably possible’.¹⁸¹ Cover transactions that are identical to the terms of the original contract are more likely to be considered

176 OLG Celle (2 September 1998) CISG-online 506; CIETAC, Arbitral Award (5 February 1996), <http://cisgw3.law.pace.edu/cases/960205c1.html>.

177 OLG Hamm (22 September 1992) CISG-online 57.

178 UNCITRAL Digest on the CISG, Article 77, para. 2, https://www.uncitral.org/pdf/english/clout/CISG_Digest_2016.pdf (last accessed 12 Aug 2022).

179 Compare Article 8(2): ‘If the preceding paragraph is not applicable, statements made by and other conduct of a party are to be interpreted according to the understanding that a reasonable person of the same kind as the other party would have had in the same circumstances.’

180 Schlechtriem/Butler, para. 315; see Article 9: ‘(1) The parties are bound by any usage to which they have agreed and by any practices which they have established between themselves. (2) The parties are considered, unless otherwise agreed, to have impliedly made applicable to their contract or its formation a usage of which the parties knew or ought to have known and which in international trade is widely known to, and regularly observed by, parties to contracts of the type involved in the particular trade concerned.’

181 Secretariat Commentary on the 1978 Draft, Article 71 (now Article 75).

reasonable.¹⁸² However, cover transactions that differ in terms such as quantity, credit or time of delivery may still be considered reasonable, with all circumstances taken into account.¹⁸³

Examples of factors that have been taken into account¹⁸⁴ are:

- timeliness of a cover purchase¹⁸⁵ or sale;¹⁸⁶
- seasonal nature of goods;¹⁸⁷
- potential consequences of a defect;¹⁸⁸
- desirability to stop performance;¹⁸⁹ and
- ability to preserve and store goods.¹⁹⁰

Lost volume sales

Article 77 does not impose on a lost volume seller an obligation to find a substitute buyer for the contracted goods following a breach. This is because, in the case of a lost volume seller, the second sale would have been made even if there had been no breach of contract. The second sale is thus not a substitute transaction.¹⁹¹

182 D Saidov, *The Law of Damages in International Sales: The CISG and other International Instruments* (Hart Publishing, Oxford, 2008), 134; J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 77, para. 20.

183 Secretariat Commentary on the 1978 Draft, Article 71 (now Article 75); CISG-AC Opinion No. 8, Calculation of Damages under the CISG, Articles 75 and 76, Rapporteur J Gotanda, Comment 2.3.

184 For additional examples, see UNCITRAL, Digest on the CISG, Article 77, para. 9 *et seq.*, available at https://www.uncitral.org/pdf/english/clout/CISG_Digest_2016.pdf (last accessed 12 Aug 2022).

185 Tribunal of International Commercial Arbitration at the Ukraine Chamber of Commerce and Trade (1 January 2005) CISG-online 1372; OLG Celle (2 September 1998) CISG-online 506; OLG Hamburg (28 February 1997) CISG-online 261: cover purchase three times the contract price, reasonable given it was the market price in the available time; Schlechtriem/Butler, para. 315.

186 *Treibacher Industrie AG v. Allegheny Technologies Inc.*, US Court of Appeals (11th Circuit) (12 September 2006) CISG-online 1278; *Lothringer Gunther Grosshandels-gesellschaft für Bauelemente und Holzwerkstoffe v. NV Fepco International*, Hof van Beroep, Antwerpen (24 April 2006) CISG-online 1258: six months not a reasonable period for resale.

187 OLG Düsseldorf (14 January 1994) CISG-online 119.

188 J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 77, para. 23.

189 Tribunal of International Commercial Arbitration at the Russian Federation Chamber of Commerce and Industry, Arbitral Award (27 July 1999) CISG-online 779.

190 ICC Court of Arbitration, Arbitral Award 7585/1992, CISG-online 105.

191 Oberster Gerichtshof (28 April 2000) CISG-online 581.

Burden of proof

The obligor has the burden of proof in regard to the facts that establish the obligee's duty to mitigate.¹⁹² In practice, the obligor may find it difficult to meet its burden because evidence concerning mitigation efforts is often within the knowledge and control of the obligee.¹⁹³ Some tribunals have placed an obligation to prove the requirements of Article 77 on both parties when a failure to mitigate defence has been raised under Article 77.¹⁹⁴

Interest – Article 78

Interest is due under Article 78 regardless of proof of loss.¹⁹⁵ Interest can be claimed pursuant to Article 78 independently from the damages under Articles 74 to 76.¹⁹⁶ It applies to the purchase price and to 'any other sum in arrears'. Most courts and tribunals have held that 'any other sum in arrears' includes damages.¹⁹⁷ The preponderant opinion also presumes that the liability to pay interest arises under Article 78, even if the precise amount owed has to be determined by a tribunal.¹⁹⁸ Article 78 is silent on the most important questions in regard to interest: the accrual period and the rate of interest. Both questions have to be answered relying on general CISG principles to achieve uniform and congruent application of the CISG.

192 Handelsgericht Zürich (17 September 2014) CISG-online 2656.

193 See Handelsgericht des Kantons St Gallen (3 December 2002) CISG-online 727: 'The Court appreciates that it might be extremely burdensome and difficult to prove [buyer's] allegations to the satisfaction of the Court, because [seller] only is in the position to give notice about its particular measures to mitigate.'

194 Tribunal of International Commercial Arbitration at the Russian Federation Chamber of Commerce and Industry, Arbitral Award (23 December 2004) CISG-online 1188.

195 ICC Court of Arbitration, Arbitral Award 8962/1997, CISG-online 1300.

196 OLG Frankfurt (18 January 1994) CISG-online 123; Landgericht Hamburg (26 September 1990) CISG-online 21; K Bacher in Schwenzer Commentary, Article 78, para. 5.

197 See Kantonsgericht Zug (21 October 1999) CISG-online 491; Handelsgericht des Kantons Zürich (5 February 1997) CISG-online 327; J Gotanda, Y Atamer in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 78, para. 7; CISG-AC Opinion No. 14, Interest under Article 78, Rapporteur Y Atamer, Comment 3.b.

198 J Gotanda, Y Atamer in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 78, para. 10; CISG-AC Opinion No. 14, Interest under Article 78, Rapporteur Y Atamer, Comment 4, both with further references.

Accrual period

Interest starts to accrue the moment a payment is in arrears, without any further requirement, such as a request or demand for payment or default having to be met or any compliance with formalities being necessary.¹⁹⁹ Interest ceases to accrue when the obligation to pay is extinguished.

Oberlandesgericht Wien, 1 R 207/16t (27 February 2017), CISG-online 2814

A seller operates a biodiesel production plant, where one of the by-products is pharmaceutical glycerine. In 2012, the parties concluded a contract for 100 tonnes of pharmaceutical glycerine and agreed a price of €690 per tonne. The buyer was supposed to take delivery of the goods in the first quarter of 2013 but did not do so.

The seller sought damages, which included the loss incurred when the glycerine was resold after the contract was avoided. The seller asserted that its warehouses had been full and, therefore, avoidance of the contract and a resale had been necessary. However, the price realised in the substitute sale was lower than the price agreed with the original buyer, resulting in the loss. The buyer claimed that the seller had breached its mitigation obligation under Article 77 of the CISG and that, in accordance with Article 77, the seller had an obligation to negotiate with the buyer, including in respect of the reduction of the purchase price as long as the price was above what could be realised by a substitute sale. The buyer argued that if the seller did not take advantage of this opportunity, the seller was only entitled to the difference between the contractually agreed purchase price and the price offered by the buyer. The court agreed with the buyer and opined that the seller's duty to mitigate meant that the seller had to accept a lower purchase price than the contractually agreed price if the new price offered by the buyer was above the price that could be realised by a substitute sale. However, that duty only existed if the buyer did make a new offer (Paragraphs 4.2 and 4.3.). The seller was not obliged to renegotiate the contract under Article 77 (Paragraph 4.3).

199 Handelsgericht des Kantons Aargau (5 November 2002) CISG-online 715; Landgericht Stendahl (12 October 2000) CISG-online 592; Tribunale di Padova (31 March 2004) CISG-online 823; Schlechtriem/Butler, paras. 318, 319. See J Gotanda in *UN Convention on Contracts for the International Sale of Goods* (2011), Article 78, paras. 17–20 for a discussion of the consequences of applying domestic law to the issue.

Interest rate

The most controversial issue presented by Article 78 is the rate at which interest on a sum in arrears is to accrue, because although providing an obligation to pay interest whenever a payment is in arrears, Article 78, does not specify an interest rate or the means to determine the interest rate. Therefore, interest rates are one of the most discussed issues by courts and tribunals in regard to the CISG,²⁰⁰ and various methods of determining the interest rate have been used. The attempts can be roughly categorised into two broad clusters: those preferring a uniform approach²⁰¹ and those giving domestic law primacy.²⁰² The former interprets the lacuna in Article 78 as inviting tribunals to define the applicable interest rate by way of resorting to general principles deduced from the CISG (Article 7(2)). The latter interprets Article 78 as excluding the question of the interest rate from the sphere of application of the CISG and therefore, as an express invitation to tribunals to resort to the applicable domestic law. However, those who favour the

200 See *Chicago Prime Packers v. Northam Food Trading*, C 320 F Supp 2d 702, 715 (ND Ill 2004) (7th Circ 2005); P Butler 'CISG and Arbitration - A Fruitful Marriage' (2014), *XVII International Trade and Business Law*, 322; J Gotanda, Y Atamer in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 78, para. 21.

201 See *Zapata Hermanos Sucesores v. Hearthside Baking Co Inc*, US District Court, Northern District of Illinois (28 August 2001) CISG-online 35; Internationales Schiedsgericht der Bundeskammer der gewerblichen Wirtschaft in Österreich, Arbitral Award (15 June 1994) CISG-online 120; J Gotanda 'Damages in Private International Law' (2007) 326 *Recueil des Cours* 73, 241 *et seq.*

202 ICC Court of Arbitration, Arbitral Award 7153/1992 CISG-online 35; OLG Koblenz (31 January 1997) CISG-online 256; Tribunale di Pavoda (31 March 2004) CISG-online 823.

uniform approach are not unified in regard to the general principle that should be applied to determine the rate of interest.²⁰³ The following approaches can be found in the jurisprudence of courts and tribunals:

- the current interest rate at the creditor's place of business;²⁰⁴
- the current interest rate at the debtor's place of business;²⁰⁵
- the current rate of interest relating to the particular currency of the claim;²⁰⁶
- an internationally or regionally applied interest rate, such as Euribor (Euro Interbank Offered Rate);²⁰⁷ and
- the application of Article 7.4.9 of the PICC.²⁰⁸

The CISG Advisory Council suggests that the interest rate applicable to any mature sum should be determined according to the law of the state where the creditor has its place of business.²⁰⁹ The major purpose of an interest claim is compensating the time value of money for the creditor. Therefore, an interest claim in Article 78 is akin to a damages claim. Thus, the full compensation principle underlying CISG damages should also be applied to interest claims and the focus should be on compensating the creditor's loss.

203 See CISG-AC Opinion No. 14, Interest under Article 78, Rapporteur Y Atamer, Appendix with an overview of cases; UNCITRAL Digest on the CISG, Article 78, para. 9, https://www.uncitral.org/pdf/english/clout/CISG_Digest_2016.pdf (last accessed 12 Aug 2022).

204 Internationales Schiedsgericht der Bundeskammer der gewerblichen Wirtschaft in Österreich, Arbitral Award (15 June 1994) CISG-online 691; ICC Court of Arbitration, Arbitral Award No. 7331 (1 January 1994) CISG-online 106; Landgericht Frankfurt am Main (16 September 1991) CISG-online 26; Rechtbank van Koophandel, Hasselt (20 September 2005) CISG-online 1496; Serbian Chamber of Commerce Arbitration (19 October 2009) CISG-online 2265.

205 OLG Graz (13 June 2013) CISG-online 2458; Landgericht Berlin (21 March 2003) CISG-online 785; Tribunal Cantonal Vaud (11 April 2002) CISG-online 899; Yugoslav Chamber of Commerce Arbitration, Arbitral Award (28 January 2009) CISG-online 1856; Rechtbank van Koophandel Oudenaarde (10 July 2001) CISG-online 1785; Landesgericht Heidelberg (2 November 2006) CISG-online 1416.

206 Rechtbank van Koophandel Ieper (18 February 2002) CISG-online 764; Rechtbank van Koophandel Oudenaarde (10 July 2001) CISG-online 1785.

207 Serbian Chamber of Commerce, Arbitral Award (4 June 2009) CISG-online 2266; Serbian Chamber of Commerce, Arbitral Award (23 January 2008) CISG-online 1946; Rechtbank van Koophandel, Hasselt (10 May 2006) CISG-online 1259.

208 China International Economic and Trade Arbitration Commission, Arbitral Award (2 September 2005) CISG-online 1712; ICC Court of Arbitration, Arbitral Award No. 8769 (1 December 1996) CISG-online 775; ICC Court of Arbitration, Arbitral Award 8128/1995, CISG-online 526.

209 CISG-AC Opinion No. 14, Interest under Article 78, Rapporteur Y Atamer, Comment 3.36.

Simple versus compound interest

The CISG does not address whether interest should accrue on a simple or compound basis. Although most courts and tribunals have awarded simple interest,²¹⁰ parties are free to agree on the payment of compound interest. If the parties have not addressed the issue of compound interest in their contract, the CISG Advisory Council takes the view that the question of whether compound interest should be awarded be resolved in accordance with the domestic law of the creditor.²¹¹ Professor Gotanda points out that awarding compound interest is in line with modern economic and financial principles and practices, and the CISG's underlying principle of full compensation.²¹²

More generally, a party may also be able to seek compound interest as damages under Article 74. Article 78 provides for a claim to interest on a sum in arrears without the proof of loss; such an interest claim, therefore, is independent of any claim for damages (and, as noted above, only simple interest is awarded on such a claim by most courts and tribunals). If, however, the obligee can prove under the standard required for loss by Article 74 that a consequential loss resulting from the obligor's breach of contract was the loss of compound interest, compound interest should be recoverable in accordance with Article 74.

Articles 78 and 79

The obligation to pay interest under Article 78 remains, notwithstanding an exemption from paying damages under Article 79 (discussed below). However, interest does not accrue when and insofar as the failure to pay the monetary obligation was caused by the act or omission of the obligee or when the obligor has exercised its right to suspend performance.

Exemptions under Articles 79 and 80

Article 79 unforeseeable impediment and hardship

Unforeseeable impediment

The contractual ethos underlying the CISG is that the contractual relationship between the parties is preserved for as long as possible. Hence the CISG places a strong emphasis on the principle of *pacta sunt servanda*: once the parties have

210 ICC Court of Arbitration, Arbitral Award No. 8502 (1 November 1996) CISG-online 1295; ICC Court of Arbitration, Arbitral Award No. 8908 (1 December 1998) CISG-online 1337; Hof van Beroep, Antwerpen (24 Apr 2006) CISG-online 1258.

211 CISG-AC Opinion No. 14, Interest under Article 78, Y Atamer (Beijing 2013), Comment 3.45.

212 J Gotanda, Y Atamer in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 78, para. 28.

concluded the contract, subsequent developments, in principle, will not allow either party to avoid or modify its contractual obligations unilaterally. The exception to this principle is stipulated in Article 79. An obligor will be exempt from paying damages, but not from other remedies for non-performance, if the obligor is not able to perform its obligation under the contract because of an unforeseeable impediment beyond the obligor's control (Article 79(1)). Regarding the seller's obligation to deliver goods, Article 79(1) is applicable not only to the non-delivery of goods but also to defective goods.²¹³

To date, parties have rarely succeeded in invoking Article 79, because the threshold imposed by Article 79(1) to exempt the obligor is high.²¹⁴ However, the covid-19 outbreak put the spotlight on this Article.

Article 79(1) sets out several requirements for a party to be exempt from liability for damages:

- an impediment to the performance of a contract has arisen;
- the party's non-performance was caused by the impediment;
- the impediment was beyond the control of the party claiming the exemption;
- the party could not reasonably be expected to have taken the impediment into account at the time of the conclusion of the contract; and
- the party could not reasonably be expected to have avoided or overcome the impediment or its consequences.

213 Y Atamer in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 79, para. 12.

214 Successful cases include, for example, District Court Berlin-Charlottenburg, CISG-Online 386 (4 May 1994); Commercial Court Besançon, CISG-Online No 557 (19 Jan 1998); ICC Court of Arbitration, Case No. 8790/2000, CISG-Online 1172 = CLOUT Case No. 1085 (1 Jan 2000); District Court Willisau, CISG-Online No. 961 = CLOUT Case No. 893 (12 March 2004); *Raw Materials, Inc. v. Manfred Forberich GmbH & Co., KG*, No. 03 C 1154, 2004 WL 1535839, at *1 (N.D. Ill. July 7, 2004); Belgian Court of Cassation, CISG-Online Nr. 1963 (19 June 2009); U Magnus in *J von Staudinger Kommentar*, Article 79, para. 7.; see also I Schwenzer in *Schwenzer Commentary*, Article 79, para. 1.

There are a number of circumstances that are widely accepted to constitute the core requirement of an impediment within the meaning of Article 79(1): natural disasters such as earthquake, fire, flood, drought, hurricane, epidemic or pandemic.²¹⁵ Financial constraints, on the other hand, are generally regarded as surmountable.²¹⁶

The unforeseeability of the impediment at the time of concluding a contract will often not be controversial between the parties. At the time the contract is concluded, the parties must not have foreseen the impediment.²¹⁷

The party relying on Article 79(1) has to prove a causal link between the party's non-performance and the impediment.²¹⁸ Article 79(2) complements Article 79(1) by clarifying that the obligor cannot avoid liability by relying on third parties to fulfil the obligor's duties.²¹⁹ Furthermore, Article 79(3) exempts the obligor from liability only for the period for which the impediment exists.

215 Y Atamer in *UN Convention on Contracts for the International Sale of Goods* (2018),

Article 79, para. 46; A Janssen states that pandemics are classical examples of an impediment under Article 79 (A Janssen, 'Der internationale Warenkauf in Zeiten der Pandemie' *EuZW* 2020, 393, III.1.a); however, the arbitrators in a CIETAC arbitration held that the seller could not invoke Article 79 due to the SARS outbreak because at the time of contracting SARS was already known (CIETAC Arbitration proceeding (5 March 2005) (log-in required to access <https://cisgw3.law.pace.edu/cases/050305c1.html>)).

216 See, e.g., Tribunal of International Commercial Arbitration at the Russian Federation Chamber of Commerce and Industry (17 October 1995) CISG-online 207 (holding that the lack of free convertible bank credit of the Russian buyer/payment debtor did not relieve the buyer from paying the purchase price to the seller); Civil Court Monza (14 January 1993) CISG-online 540 (holding that the rise of the market price of steel by 30 per cent since the conclusion of the contract was not unreasonable hardship); but regarding the view that financial constraints might constitute an impediment, see U Magnus in *J von Staudinger Kommentar*, Article 79, para. 24, citing, *inter alia*, Peter Huber in *MünchKomm*, Article 79, para. 21, Peter Mankowski in *MünchKomm/HGB*, Article 79, para. 81; OLG Hamburg ForInt 1997, 168. However, Magnus does not elaborate what those circumstances might be. See below for discussion on hardship.

217 E Wagner, R Holtz, T Dötsch, 'Auswirkungen von COVID-19 auf Lieferverträge', *Betriebs-Berater* 2020, 845; A Janssen, 'Der internationale Warenkauf in Zeiten der Pandemie' *EuZW* 2020, 393, III.1.b.; compare the decision in *Raw Materials, Inc. v. Manfred Forberich GmbH & Co., KG*, No. 03 C 1154, 2004 WL 1535839, at *1 (N.D. Ill. 7 July 2004), (holding that the freezing over of the harbour – a once in 60 years occurrence – was not foreseeable).

218 Compare *Macromex SRL v. Globex Int'l, Inc.*, No. 08 CIV. 114 (SAS), 2008 WL 1752530, at *1 (S.D.N.Y. Apr. 16, 2008), *aff'd*, 330 F. App'x 241 (2d Cir. 2009), with Tribunal of International Commercial Arbitration at the Russian Federation Chamber of Commerce and Industry (42/2005), CISG-online 1520 (21 Nov 2005).

219 For a fuller discussion, including the requirements of Article 79, see Y Atamer in *UN Convention on Contracts for the International Sale of Goods* (2011), Article 79; I Schwenzer in *Schwenzer Commentary*, Article 79; Schlechtriem/Butler, para. 288 *et seq.*

Article 79(4) requires that the obligor should inform the other party of the impediment and the effects on its ability to perform within a reasonable time after it has or should have become aware of the impediment. Otherwise the liability remains in force.

The wording of Article 79(1) clearly stipulates that the party who fails to perform is under the duty to prove that the requirements for the exemption are met.²²⁰

Article 79 only regulates the consequences of the failure to perform by one party in regard to the party's liability for damages resulting from the failure to perform (Article 79(5)) and the exemption from liability for damages of the contracting party, not the question of whether and how the contract is continued. Article 79 is silent on the fact that it is not possible to finally dissolve the contract by termination or withdrawal.

Hardship

The CISG does not contain a special provision dealing with questions of hardship. However, the CISG Advisory Council in its Opinion No. 20, published in February 2020, has stated that the CISG does cover hardship situations.²²¹

It is also the view of the CISG Advisory Council that to bring hardship into the fold of Article 79 is to broaden the meaning of impediment. Hardship only meets the threshold of an impediment if the performance of the contract has become excessively onerous or if the equilibrium of the contract has been

220 See Commercial court of the Canton of Aargau, CISG-online 2176 (10 March 2010); Tribunal of Vigevano, CISG-online 493 (12 July 2000); Tribunal of International Commercial Arbitration at the Russian Federation Chamber of Commerce and Industry Arbitration (155/1994), CISG-online 205 (16 March 1995); T Dornis in P Mankowski, *Commercial Law* (Beck, Munich, 2019), Article 79, para. 25.

221 CISG-AC Opinion No. 20, Hardship under the CISG, Rapporteur: Professor Dr Edgardo Muñoz, Universidad Panamericana, Guadalajara, Mexico. Adopted by the CISG Advisory Council following its 27th meeting, in Puerto Vallarta, Mexico on 2 to 5 February 2020; see also Hof van Cassatie, 19 June 2009, CISG-online 1963 (granting a right to renegotiate the contract to a seller in light of a 70 per cent price increase in steel after the conclusion of the contract); I Schwenzer, E Muñoz, 'Duty to renegotiate and contract adaptation in case of hardship', 24 (2019) *Uniform Law Review*, 149, 152, 153.

**Four-leaf clover case, OLB Düsseldorf, I-6 U 2/19 (4 July 2019)
CISG-online 4614**

The buyer ordered one million four-leaf clover bulbs from the seller for €5,200. A fire broke out in the warehouse of the horticulture business growing the four-leaf clover bulbs from which the seller had purchased the bulbs for the buyer. Approximately 90 per cent of the grower's four-leaf clover bulbs were destroyed.

The German court dismissed the buyer's claim for damages in accordance with Article 45(1)(b) and Article 74 *et seq.* CISG. Although the seller may not have fulfilled its obligation to deliver the bulbs, the court stated that the seller was exempt from paying damages in accordance with Article 79(1), CISG. The fact that almost 'the entirety of the bulbs' were destroyed by a fire in the grower's warehouse, and that no replacement product was available on the market, constituted an obstacle that was beyond the seller's control. Even if generally a seller is liable for the actions of its own suppliers, this only applies as long as the goods or replacement goods are still available on the market. A seller cannot overcome an obstacle in procuring replacement goods if the goods owed can no longer be obtained on the market, or only at considerable cost. In the opinion of the court, this was the case as the fire not only destroyed the goods that were to be delivered to the buyer, but around 90 per cent of the entire species of four-leaf clover bulbs available on the market. Therefore, there were no replacement goods available on the market that the seller could have procured. Furthermore, the court held that the claimant had not shown that the seller could have prevented the fire in any way. The appellate court dismissed the buyer's appeal. The appellate court stressed that, in general, the seller bears the risk of procurement. An exception is made from this general principle when the goods cannot be procured on the market at all, or only at an unreasonable cost, and this could not have been foreseen when the contract was concluded; in such cases, the seller is not liable for its failure to perform under Article 79(1) CISG.

fundamentally altered.²²² The CISG Advisory Council Opinion sets out the following rules regarding the obligations of the parties and how a court or arbitral tribunal should deal with a case of hardship:

8. The party affected by hardship must give notice to the other party of the circumstances and its effect on its ability to perform. If the notice is not received by the other party within a reasonable time after the party affected knew or ought to have known of the hardship situation, it is liable for damages resulting from such non-receipt.

9. In case of hardship, nothing prevents either party from exercising any right other than to claim damages and require performance of the obligation affected by hardship.

10. The exemption due to hardship has effect for the period during which hardship exists.

11. Under the CISG, the parties have no duty to renegotiate the contract in case of hardship.

12. Under the CISG, a court or arbitral tribunal may not adapt the contract in case of hardship.

13. Under the CISG, a court or arbitral tribunal may not bring the contract to an end in case of hardship.

Article 80

Like Article 79, Article 80 sets out an exception to the remedies' regime set out in the CISG. Article 80 provides that an obligee may not rely on a breach by the other party to the extent that the breach was caused by the obligee's act or omission. Unlike Article 79, Article 80 excludes not only claims for damages but all remedies.²²³

²²² CISG-AC Opinion No. 20, Hardship under the CISG, Rapporteur: Prof. Dr Edgardo Muñoz, Universidad Panamericana, Guadalajara, Mexico. Adopted by the CISG Advisory Council following its 27th meeting, in Puerto Vallarta, Mexico on 2 to 5 February 2020, Principles 4 to 6; for a discussion what these thresholds mean, see I Schwenzer, E Muñoz, 'Duty to renegotiate and contract adaptation in case of hardship', 24 (2019) *Uniform Law Review*, 149, 155.

²²³ For a more in-depth discussion, see Y Atamer in *UN Convention on Contracts for the International Sale of Goods* (2011), Article 80; T Dornis in P Mankowski, *Commercial Law* (Beck, Munich, 2019), Article 80; case example *State Joint Stock Holding Company Artem v. Gray Fox Aviation and Logistics Inc*, SCC V 2019/066 (30 April 2020).

Other remedies

As stated earlier, it is the choice of the party which remedy or remedies to pursue. In addition to damages, the CISG provides for specific performance (Articles 46(1), 62, 28), avoidance of the contract (Articles 49(1), 64(1)) and price reduction (Article 50).²²⁴ A claim for damages pursuant to Article 74 can be made concurrently with all three other remedies.²²⁵ The amount of the recoverable damages depends on whether and to what extent the other remedy has redressed the loss suffered.

Conclusion

Damages under the CISG can be claimed in addition to other available remedies for breach of contract, such as specific performance or avoidance of the contract. The CISG's damages regime under Article 74 *et seq.* provides for the obligor to put the obligee into the position the obligee would have been in if the contract had been performed according to its terms. The CISG offers the obligee a choice, if the breach was so fundamental that the obligee could avoid the contract, to calculate the obligee's damages either abstractly under Article 74 or concretely under Article 75 if the requirements of Article 75 are met. The obligee may prefer recovery under Article 75 (or recovery under Article 76 if no substitute transaction was done) if the obligee cannot prove with a requisite degree of certainty that it suffered damage as a result of the breach. In addition, the concrete calculation under Article 75 avoids the possibility of having to open a company's 'books, i.e., . . . disclose its internal calculations, its customers and other business connections, etc.'²²⁶ to prove its loss.

Article 6 stipulates that the parties are free to derogate from the provisions of the CISG. The damages regime of the CISG generally provides for a comprehensive and best practice regime. Lacuna do exist regarding the actual rate of interest, lawyers' fees and the legal significance of hardship. Parties might want to consider providing for those issues in their contract.

²²⁴ For an instructive case on Article 50 (price reduction), see *China Railway No. 10 Engineering Group Co. Ltd. v. Trorient LLC*, AAA/ICDR case 01-19-0003-0137 (CISG-online 5639).

²²⁵ I Schwenzer in Schwenzer Commentary, Article 74, para. 10. The claim for specific performance is subject to Article 28.

²²⁶ J Gotanda, M Djordjevic in *UN Convention on Contracts for the International Sale of Goods* (2018), Article 75, para. 3, citing P Schlechtriem, 'Calculation of Damages in the Event of Anticipatory breach under the CISG' in *Liber Amicorum Jan Hellner* (2007), Sections I and III, available at www.cisg.law.pace.edu/cisg/biblio/slechtriem20.html# (last accessed 10 Aug 2022).

CHAPTER 4

Contractual Limitations on Damages

Gabrielle Nater-Bass and Stefanie Pfisterer¹

Contractual limitations on damages are of critical importance, allowing parties to assess more effectively and better control business risks arising from a commercial transaction. It is not surprising, therefore, that today many commercial contracts include some form of damage limitation. Yet, despite their prevalence, contractual limitations on damages give rise to difficult questions that go to the heart of the legal system, such as how to balance the parties' freedom to contract against provisions of mandatory law, and the weight to be given to the respective interests of creditors and debtors.

Contractual limitations on damages are agreements whereby the parties limit the availability of damages that would otherwise be available under statutory law. They differ from more general 'exemption clauses'² or 'liability limitations'³ – clauses that absolve a party, whether in whole or in part, from liability under a contract or for a related tort, or that qualify that liability – in that contractual limitations on damages relate specifically, and exclusively, to damages. Clauses that go beyond a limitation of damages, for example, because they exclude the coming into being of a contractual duty in the first place, are not the primary focus of this chapter.

After first considering some general aspects relating to contractual limitations on damages (see 'General aspects of contractual limitations on damages'), we address the different forms that these limitations generally take (see 'Forms of contractual limitations on damages'). Although the scope of the chapter does

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2 Chitty on Contracts, Volume 1, 15-001 (34th ed. 2021).

3 Lörtscher, *Vertragliche Haftungsbeschränkung im schweizerischen Kaufrecht*, 6 (1977).

not allow for an in-depth analysis of how contractual limitations on damages are dealt with under different legal systems, red flags that practitioners should keep in mind when confronted with these provisions are highlighted.

General aspects of contractual limitations on damages

Agreements on contractual limitations on damages and their incorporation

A contractual limitation on damages needs to be agreed by the contracting parties. It thus requires a contractual relationship between the creditor and the debtor.⁴

As long as there is consensus on the content, provisions containing contractual limitations on damages can normally be included in a contract without further ado.⁵

In general, contract terms can also be implied, and be incorporated through the conduct of the parties. However, reading a limitation of damages into a contract based on party conduct will rarely be done in practice, and requires a previous course of dealings between the parties on the same terms.⁶ In particular, mere personal relationships or the existence of goodwill will generally not suffice to assume a limitation of liability.⁷

Limitations on damages are frequently contained in general terms and conditions (GTCs), which are contract terms that are pre-formulated by one party.⁸ They are only effectively included in an agreement when the contract itself refers to them.⁹ In civil law systems, the contracting party needs to have the possibility to take note of the GTCs that were pre-formulated by the other party,¹⁰ whereas in other systems it may suffice for the written agreement referring to the GTCs to be signed for them to be binding.¹¹ In civil law systems, any GTC provisions

4 *ibid.*, at 9.

5 *id.* Common law may require an exemption clause to be expressed clearly and without ambiguity – see *Chitty on Contracts*, Volume 1, 15-008 (34th ed. 2021).

6 *J Spurling Ltd v. Bradshaw* [1956] 1 WLR 461.

7 For German law, see Lorenz, Section 276, No. 51 in Bamberger/Roth/Hau/Poseck, *Bürgerliches Gesetzbuch – Kommentar*, Buch 1 (4th ed. 2019).

8 Council Directive 93/13/EEC of 5 April 1993 on unfair terms in consumer contracts, Article 3(1). In some jurisdictions, the definition of general terms and conditions (GTCs) contains an additional element requiring that GTCs have been pre-formulated for a large number of contracts; see, e.g., German Civil Code, Section 305(1) as well as Swiss law.

9 For German law, see Becker, Section 305, No. 45 in Bamberger/Roth/Hau/Poseck, *Bürgerliches Gesetzbuch – Kommentar*, Buch 1 (4th ed. 2019).

10 For Swiss law, see Kuoni, *Haftungsbegrenzung im schweizerischen deutschen und englischen Recht*, para. 87 (2015).

11 Mellish L J in *Parker v. South Eastern Railway Co* (1877) 2 C.P.D. 416.

that are considered so unusual that they could not reasonably have been expected will typically not be considered to be a valid part of the agreement and, thus, are invalid.¹² On the other hand, common law systems frequently require a showing of fraud or misrepresentation for a party to be able to escape the consequences of its signature.¹³ Similarly, if a party claims to have misunderstood the GTCs, it will have to satisfy the court that the document is radically different from that which the party intended to sign and that the mistake was not the result of carelessness.¹⁴ Some civil law countries, in particular Germany, govern in detail the limitations of liability allowed in standard terms (see ‘Limits of contractual limitations on damages’, below).

Interpretation and construction of contractual limitations on damages

Contractual limitations on damages are interpreted in the same manner as other contractual provisions, with the aim being to determine the parties’ actual intent.¹⁵ Courts use several methods to determine the parties’ intent.

The starting point is usually the wording used by the parties, but the purpose of the agreement and the organisation of the various provisions of an agreement are also considered and may prevail over a strict interpretation of the wording.¹⁶ For example, a damage limitation clause may be so broad and general in scope that to apply it literally would create an absurdity or defeat the main purpose of the contract into which the parties have entered.¹⁷ The courts will then need to ascertain the objective meaning to give effect to the objectively intended agreement of the parties.

12 German Civil Code, Section 305c(1); see also the decision of the Swiss Federal Supreme Court, BGE 108 II 416, at cons. 1.

13 Mellish L J in *Parker v. South Eastern Railway Co* (1877) 2 C.P.D. 416.

14 Lawson, *Exclusion Clauses and Unfair Contract Terms*, 1-046 (12th ed. 2017).

15 For Swiss law, see Swiss Code of Obligations, Article 18(1); for English law, see *Kudos Catering Ltd v. Manchester Central Convention* [2013] EWCA Civ 38, *Transocean Drilling UK Ltd v. Providence Resources Plc* [2016] EWCA Civ 372, *Persimmon Homes Ltd v. Ove Arup and Partners Ltd* [2015] EWHC 3573 (TCC). See also *Chitty on Contracts*, Volume 1, 15-007 (34th ed. 2021). Under English law, more attention is being drawn towards an objective approach than a subjective one – see *Chitty on Contracts*, Volume 1, 13-047 (34th ed. 2021).

16 For Swiss law, see Kuoni, *Haftungsbegrenzung im schweizerischen deutschen und englischen Recht*, para. 389 et seq. (2015).

17 *Suisse Atlantique Société d'Armement Maritime SA v. NV Rotterdamsche Kolen Centrale* [1967] 1 A.C. 361, 398, subsequently upheld by *Photo Production Ltd v. Securicor Transport Ltd* [1980] UKHL 2. See also *Chitty on Contracts*, Volume 1, 15-010 (34th ed. 2021).

In the Anglo-Saxon tradition, the *contra proferentem* rule (i.e., the interpretation of an ambiguous contractual provision against the party that proffered the provision) is sometimes used.¹⁸ However, this rule ought not to be taken as the starting point and should only be used to resolve ambiguity.¹⁹ Furthermore, the rule that damage limitation clauses and, more broadly, exemption clauses need to be interpreted strictly is frequently applied.²⁰ In *Internet Broadcasting Corp Ltd (t/a NETTV) v. MAR/LLC (t/a MARHedge)*,²¹ the High Court of England and Wales held that there is a presumption, which appears to be a strong presumption, against exemption clauses being construed so as to cover deliberate, repudiatory breaches. Similarly, in *Bovis Construction (Scotland) Ltd v. Whatlings Construction Ltd*,²² the House of Lords held that a clause that limited liability should state ‘clearly and unambiguously the scope of the limitation and would be construed “with a degree of strictness”, albeit not to the same extent as an exclusion or indemnity clause’.

Special consideration is required when an agreement provides for both a warranty or guarantee of a certain quality of the goods or services and a limitation of liability. In such a case, interpretation of the agreement may lead to the conclusion that one of the clauses prevails, for example, when the warranty is contained in the main text of the agreement and the limitation of liability in the annexed standard terms.²³ However, if a party gives a warranty without at the same time also assuming liability for a breach of the warranty, the warranty may be considered to be consistent with the limitation of liability.²⁴

18 Lawson, *Exclusion Clauses and Unfair Contract Terms*, 2-005 (12th ed. 2017).

19 *Nobahar-Cookson v. Hut Group Ltd* [2016] EWCA Civ 128; *Taberna Europe CDO II Plc v. Selskabet* [2016] EWCA Civ 1262; *Persimmon Homes Ltd v. Ove Arup and Partners Ltd* [2017] EWCA Civ 373. See also *Chitty on Contracts*, Volume 1, 15-012 (34th ed. 2021).

20 Lawson, *Exclusion Clauses and Unfair Contract Terms*, 2-14 (12th ed. 2017).

21 [2009] EWHC 844 (Ch). See also Lawson, *Exclusion Clauses and Unfair Contract Terms*, 2-014 (12th ed. 2017).

22 [1995] NPC 153. See also Lawson, *Exclusion Clauses and Unfair Contract Terms*, 2-019 (12th ed. 2017).

23 See the decision of the Swiss Federal Supreme Court, BGE 93 II 317, at cons. 4. See also Schwenger, *Beschränkung und Modifikation der vertraglichen Haftung*, 109-110, in Koller, *Haftung aus Vertrag* (1998).

24 See the decision of the Swiss Federal Supreme Court, BGE 41 II 437.

Burden of proof

It is for the party seeking to rely on a damage limitation clause to show that, in its true construction, the clause covers the obligation or damage that it purports to restrict or exclude.²⁵

Limits of contractual limitations on damages

Party autonomy and contractual freedom are not unlimited. Limitations of liability and of damages are well-suited examples to illustrate the boundaries placed on contractual freedom by mandatory law. Statutory limitations to contractual agreements limiting the availability of damages are common in virtually all countries.

In Germany, parties cannot agree in advance to exclude liability and, thus, also damages for unlawful intent.²⁶ If contained in standard terms, an agreement to exclude liability for negligence will be considered invalid in the event of a violation of essential duties.²⁷ Swiss law is more rigid, as it provides that any agreement purporting to exclude or limit liability or damages for unlawful intent or gross negligence in advance is void.²⁸ The court also has discretion to invalidate an advance exclusion of liability for minor negligence in certain cases.²⁹ Even narrower restrictions exist for consumer contracts and if the limitation on damages is contained in GTCs.³⁰

In New York, the courts have a policy against limiting liability in contracts in cases of grossly negligent conduct and of purely intentional wrongdoing.³¹

In England, the Unfair Contract Terms Act 1977 (UCTA) restricts the operation and legality of some contract terms. The Act contains a number of restrictions to limitations of liability, which mainly concern the liability for death

²⁵ *Chitty on Contracts*, Volume 1, 15-021 (34th ed. 2021).

²⁶ German Civil Code, Section 276(3).

²⁷ *ibid.*, at Section 307(2)(2).

²⁸ Swiss Code of Obligations, Article 100(1). Even more rigid provisions can be found in provisions governing specific types of contractual relationships, e.g., in the Swiss Product Liability Act (PrHG).

²⁹ Namely, if the party excluding liability was in the other party's service at the time the waiver was made or the liability arises in connection with commercial activities conducted under an official licence. See Swiss Code of Obligations, Article 100(2).

³⁰ Council Directive 93/13/EEC of 5 April 1993 on unfair terms in consumer contracts. See also Swiss Unfair Competition Act (UWG), Article 8.

³¹ *Novak & Co v. New York City Housing Authority*, 480 N.Y.S.2d 403 (N.Y. App. Term. 1984). See also California Civil Code, Section 1668 ('All contracts which have for their object, directly or indirectly, to exempt any one from responsibility for his own fraud, or willful injury to the person or property of another, or violation of law, whether wilful or negligent, are against the policy of the law').

or personal injury resulting from negligence. In addition, the UCTA applies a reasonableness test, requiring that any term 'shall have been a fair and reasonable one to be included having regard to the circumstances which were, or ought reasonably to have been, known to or in the contemplation of the parties when the contract was made'.³²

Contractual limitations on damages that exceed the statutory limits for exclusions of liability (which also apply to exclusions of damages) are not effective, or may be void or voidable. Depending on the applicable law and the type of contractual limitation involved, the limitation on damages may be rendered absolutely ineffective or it may be partially effective, in particular, only insofar as the term does not exceed the limits of mandatory law or satisfies the requirement of reasonableness in the common law system. There is a debate about whether clauses exceeding the statutory limits shall be reduced to the extent permitted, in particular, with a view to avoid creating incentives for parties to include excessive limitation clauses.³³ A party intending to include a limitation clause, therefore, should carefully check the statutory limits applicable to the limitation of damages and the fate of clauses exceeding the limits.

Consequences of contractual limitation on damages

Contractual limitations on damages that are validly agreed and that do not go beyond the limits described above are valid and serve to limit the availability of damages.³⁴ In particular, the damaging party is released from the duty to pay damages that would otherwise exist. It must be carefully assessed, however, whether a contractual limitation on damages excludes only contractual damages or also tort damages.³⁵ On the other hand, a primary duty to perform will not be affected by contractual limitations on damages.³⁶

32 Unfair Contract Terms Act 1977 (UCTA), Section 11.

33 See, e.g., Schwenger, *Beschränkung und Modifikation der vertraglichen Haftung*, 121–22, in Koller, *Haftung aus Vertrag* (1998).

34 For clauses limiting the liability in general under Swiss law, see Buol, *Beschränkung der Vertragshaftung durch Vereinbarung*, para. 230 (1996).

35 In Switzerland, a contractual limitation of damages is generally considered to also exclude tort damages. See, e.g., Schwenger, *Beschränkung und Modifikation der vertraglichen Haftung*, 124, in Koller, *Haftung aus Vertrag* (1998); decision of the Swiss Federal Supreme Court, BGE 120 II 58, at cons. 3.

36 For clauses limiting the liability in general under Swiss law, see Buol, *Beschränkung der Vertragshaftung durch Vereinbarung*, para. 232 (1996).

Forms of contractual limitations on damages

Liquidated damages and penalty clauses

Common law jurisdictions distinguish clearly between liquidated damages and penalties.

Liquidated damages are an amount contractually stipulated as a reasonable estimation of the actual damages to be recovered by one party if another party breaches an agreement.³⁷ Traditionally, courts have upheld liquidated damages clauses.³⁸

On the other hand, penalty clauses are contractual provisions that assess against a defaulting party an excessive monetary charge unrelated to actual harm.³⁹ Penalty clauses are generally considered unenforceable.⁴⁰ In the words of Professor P S Atiyah:

*It not infrequently happens that contracts provide for what is to happen in the event of a breach by the parties, or by one of them. Such provisions may be perfectly simple attempts to avoid future disputes, and to quantify the probable amount of any loss. That is unobjectionable. But sometimes clauses of this kind are not designed to quantify the amount of the probable loss, but are designed to terrorize, or frighten, the party into performance. For example, a contract may provide that the promisor is to pay £5 on a certain event, but if he fails to do so, he must then pay £500. Now a clause of that kind is called a penalty clause by lawyers, and for several hundred years it has been the law that such promises cannot be enforced. The standard justification for the law here is that it is unfair and unconscionable to enforce clauses which are designed to act in terrorem.*⁴¹

Although the parties' choice of 'penalty' or 'liquidated damages' in their contract will serve as prima facie evidence of the term actually stipulated, the expression used by the parties will not be conclusive. Rather, the court will have to determine whether the payment stipulated constitutes a penalty or liquidated damages.⁴²

³⁷ *Black's Law Dictionary*, 490 (11th ed. 2019).

³⁸ *Clydebank Engineering and Shipbuilding Co v. Don Jose Ramos Yzquierdo y Castaneda* [1905] AC 6. See also *Chitty on Contracts*, Volume 1, 26-190 (34th ed. 2021).

³⁹ *Black's Law Dictionary*, 1368 (11th ed. 2019). See also the decision of the High Court of Australia, *Legione v. Hateley* [1983] HCA 11, at 32 ('A penalty, as its name suggests, is in the nature of a punishment for non-observance of a contractual stipulation; it consists of the imposition of an additional or different liability upon breach of the contractual stipulation').

⁴⁰ See, e.g., for New York law, *Vernitron Corp v. CF 48 Associates*, 478 N.Y.S.2d 933, 934 (N.Y. App. Div. 1984). See also *Chitty on Contracts*, Volume 1, 26-190 (34th ed. 2021).

⁴¹ Atiyah, *Promises, Morals, and Law*, 57-58 (1981).

⁴² *Dunlop Pneumatic Tyre Co Ltd v. New Garage & Motors Co Ltd* [1914] A.C. 86.

To assist this task of construction, various tests have been suggested. The traditional approach focused on the question of whether a given clause was a genuine pre-estimate of the loss that the aggrieved party was likely to suffer.⁴³ More recently, it was held that a clause may also be justified on the basis that a party has a legitimate interest in securing performance rather than damages, provided that the amount of damages stipulated in such a clause is not extravagant and unconscionable in comparison with that the party's interest.⁴⁴

There is no such general exclusion of penalty clauses in civil law countries – quite the contrary. In Switzerland, Germany and Austria, a penalty can be promised for non-performance or defective performance of a contract and, unless otherwise agreed, the creditor may then compel performance or claim the penalty.⁴⁵ In fact, the Swiss Federal Supreme Court has confirmed that a contractual penalty may be agreed for the purpose of punishing one of the parties.⁴⁶ The penalty is payable even if the creditor has not suffered any loss or damage.⁴⁷ The parties are free to determine the amount of the contractual penalty.⁴⁸ However, under Swiss, German and Austrian law, the court may use its discretion to reduce penalties that it considers excessive.⁴⁹

Liquidated damages and penalty clauses are thus treated differently in various legal systems.

43 See the test laid down by Lord Dundelin in *Dunlop Pneumatic Tyre Co Ltd v. New Garage & Motors Co Ltd* [1914] A.C. 79; see also *Chitty on Contracts*, Volume 1, 26-198 and 26-199 (34th ed. 2021).

44 *Cavendish Square Holding BV v. Talal El Makdessi* [2015] UKSC 67; see also *Chitty on Contracts*, Volume 1, 26-190 and 26-213 (34th ed. 2021).

45 Swiss Code of Obligations, Article 160(1). When the penalty is for failure to comply with the stipulated time or place of performance, the creditor may claim the penalty in addition to performance provided he has not expressly waived that right or accepted performance without reservation (Swiss Code of Obligations, Article 160(2)).

46 Decision of the Federal Supreme Court, BGE 109 II 462, at cons. 4a. See also Austrian Civil Code [ABGB], Section 1336; German Civil Code, Section 340 *et seq.*

47 Swiss Code of Obligations, Article 161(1).

48 *ibid.*, at Article 163(1).

49 *id.*; ABGB, Section 1336(2); German Civil Code, Section 343.

Stipulation of a maximum amount of damages (limitation clauses)

Clauses limiting the amount of damages, also called limitation clauses, are generally admissible in common law. Pursuant to *Ailsa Craig Fishing Co Ltd v. Malvern Fishing Co Ltd*:

*Clauses of limitation are not regarded by the courts with the same hostility as clauses of exclusion: this is because they must be related to other contractual terms, in particular to the risks to which the defending party may be exposed, the remuneration which he receives, and possibly also the opportunity of the other party to insure.*⁵⁰

There is even case law holding that the principle of strict construction is not applicable when considering the effect of clauses merely limiting damages.⁵¹ The modern view, however, seems to be that the general approach to interpretation, which is to ascertain the objective intention of the parties, also applies to limitation clauses.⁵² Under English law, a clause providing for a maximum amount of damages will be valid if the limitation is considered to be reasonable.⁵³ With regard to contract terms that restrict damages to a specified sum of money, the UCTA provides that regard shall be had in particular to (1) the resources that the person seeking to restrict damages could expect to be available to that person for the purpose of meeting the liability should it arise, and (2) how far it was open to that person to obtain insurance cover. The contract value and the turnover of the party seeking to restrict damages are also taken into consideration.⁵⁴

In civil law systems, caps on damages are generally valid, albeit only to the extent that the cap does not violate the statutory limits to limitations of damages that have been discussed above.⁵⁵ Moreover, in some civil law jurisdictions, these types of restrictions will be examined to ensure that they do not unduly restrict damages in such a manner as to exclude coverage of the actual damages incurred.⁵⁶

Clauses stipulating a maximum amount of damages are thus generally admissible, although they may nevertheless be subject to substantial restrictions, particularly in certain civil law systems.

⁵⁰ *Ailsa Craig Fishing Co Ltd v. Malvern Fishing Co Ltd* [1983] S.L.T. 377, at 380.

⁵¹ *ibid.*, at 382.

⁵² *Whitecap Leisure Ltd v. John H Rundle Ltd* [2008] EWCA Civ 429.

⁵³ McKendrick, *Contract Law: Text, Cases and Material*, 445 (9th ed. 2020).

⁵⁴ *id.*

⁵⁵ Decision of the Federal Supreme Court, 4A_460/2013, at cons. 3.1 *et seq.*

⁵⁶ e.g., German law, decision of the German Bundesgerichtshof, BGH VIII ZR 155/99, in *NJW*, 2001, 292, at 295 *et seq.*

Exclusion of a particular damage type

Contractual limitations of damages may also limit the availability of certain types of damages.

Damages arising from death or personal injury can hardly ever be excluded. For example, under English law, the UCTA provides that a person ‘cannot by reference to any contract term or to a notice given to persons generally or to particular persons exclude or restrict his liability for death or personal injury resulting from negligence’.⁵⁷ Similarly, under Swiss law, clauses excluding liability for personal injury are ineffective.⁵⁸ If liability for personal injury cannot be excluded, it is difficult to conceive how damages for personal injury could be excluded. It may thus be preferable to make a reservation for damages arising out of personal injury when drafting clauses limiting the availability of damages.

On the other hand, loss or damage that does not result directly or naturally from a breach of contract can generally be excluded, unless the limitation exceeds the mandatory limits.⁵⁹ These damages are referred to as consequential damages or indirect damages.⁶⁰

Under English law, case law provides guidance with regard to what is considered a consequential loss or damage and to what extent a clause excluding consequential loss or damage is effective. For example, in *British Sugar Plc v. NEI Power Projects Ltd*,⁶¹ the relevant clauses provided that the seller:

will be liable for any loss, damage, cost or expense incurred by the purchaser arising from the supply of any such faulty goods or material or any goods or materials not being suitable for the purpose for which they are required, save that the seller's liability for consequential loss is limited to the value of the contract.

The value of the contract was £106,000, while the damages claimed for the breach were £5 million. The Court of Appeal stated that the word ‘consequential’ does not cover any loss that directly and naturally results in the ordinary course of

⁵⁷ UCTA, Section 2(1).

⁵⁸ There is no statutory prohibition, but scholars consider that such clauses are immoral, and thus invalid, pursuant to Swiss Code of Obligations, Article 20. cf. Kessler, Article 41 N 2, in *Basler Kommentar: Obligationenrecht I* (7th ed. 2020).

⁵⁹ e.g., under New York law, consequential damages may be limited or excluded in commercial contracts, unless the limitation or exclusion is unconscionable, *Corinno Civetta Construction Corp v. City of New York*, 502 N.Y.S.2d 681 (N.Y. 1986).

⁶⁰ *Black's Law Dictionary*, 489 (11th ed. 2019).

⁶¹ [1997] 87 BLR 42; [1997] CLC 622.

events from the breach of contract and that the clause thus simply limited the liability for loss and damage not directly arising from the breach to an amount equal to the value of the contract. Similarly, in *Deepak Fertilisers & Petrochemical Group v. Davy McKee (London) Ltd*,⁶² the clause explicitly excluded ‘indirect or consequential damages’ and ‘loss of profits’. The court considered the lost profits as damages that flow directly from the breach. However, since the clause expressly excluded lost profits, these could not be recovered. English courts also frequently give consideration to *Hadley v. Baxendale*⁶³ to determine which damages directly follow from a breach.⁶⁴ However, more recent English decisions have criticised the traditionally narrow interpretation of a consequential loss exclusion and seem to favour a broader interpretation.⁶⁵ For example, in *Star Polaris LLC v. HHIC-PHIL INC*,⁶⁶ the Commercial Court considered a clause excluding ‘consequential or special losses, damages or expenses’ in a contract for the construction of a cargo ship. The Court concluded that the limitation clause was intended to exclude liability for losses over and above those specifically accepted (which were limited to repair of defects and physical damage). Although it remains to be seen whether recent case law leads to a real change, the latest decisions make it clear that courts will have a close look at each contract and the circumstances of each case when construing limitation clauses.

In civil law countries, the terminology is less clear. In Switzerland, the distinction between direct and indirect damages is made on the basis of the length of the causal chain involved (i.e., it needs to be assessed whether the damage was caused directly by the breach (or defect) or only by the occurrence of further causes of damage).⁶⁷ Moreover, lost profits are generally considered to be indirect damages, but they can constitute direct damages; for example, if the seller in a sales contract is aware that the buyer will resell the goods with profit.⁶⁸ However,

62 [1999] 1 Lloyd's Rep 387.

63 [1854] 9 Ex. 341.

64 e.g., *Jewson Ltd v. Kelly* [2002] EWCA Civ 1030.

65 See, e.g., *Scottish Power UK Plc v. BP Exploration Operating Co Ltd* [2015] EWHC 2658 (Comm) (‘this unnatural interpretation of the term consequential loss is to be deprecated’); *Transocean Drilling UK Ltd v. Providence Resources Plc* [2016] EWHC 2611 (Comm) (‘It is questionable whether some of those cases would be decided in the same way today, when courts are more willing to recognise that words take their meaning from their particular context and that the same word or phrase may mean different things in different documents’).

66 [2016] EWHC 2941 (Comm).

67 See the so-called ‘parrot case’ of the Swiss Federal Supreme Court, BGE 133 III 257.

68 Huguenin, *Obligationenrecht – Allgemeiner und Besonderer Teil*, para. 2677 (3rd ed. 2019).

under German law, indirect damages are damages affecting an asset other than the object of the contract that was breached.⁶⁹ The boundaries placed on limitations on damages by statutory law also apply to any types of damages that are excluded. For example, under Swiss law, the governing principle is that damages for gross negligence cannot be excluded. Accordingly, even if the contract excludes consequential damages, any consequential damages arising from gross negligence will still be owed, as long as the damages are within the causal chain and can still be considered as having been caused by the breach.⁷⁰ Similarly, exclusions of indirect damages under German law will be invalid to the extent that they are contained in GTCs and seek to exclude any damages arising out of a violation of essential duties.⁷¹

In summary, in civil law systems, exclusions of a particular type of damage need to be viewed against the mandatory liability for damages arising from gross negligence or wilful misconduct. Clauses excluding consequential damages are thus generally only valid to the extent that the damages arise from simple negligence or without fault. On the other hand, common law systems tend to accept exclusions of different types of damages, as long as the exclusions are reasonable; in fact, it may be precisely the exclusion of consequential damages but not direct damages that may render an exemption clause reasonable.

Modifications regarding other aspects resulting in a limitation of damages

Further clauses may also have the effect of limiting damages. For example, the parties may agree to shorten the time limit for the notification of a breach of contract or shorten the statutory limitation periods to the extent permissible under the applicable law.⁷² The parties may also modify the statutory burden of proof or the standard of proof. For example, under Swiss law, obligors who fail to discharge an obligation must make amends for the resulting loss or damage

69 Oetker, Section 249, N 99 in *MünchKomm BGB* (9th ed. 2022).

70 Kuoni, *Haftungsbegrenzung im schweizerischen deutschen und englischen Recht*, para. 305 (2015).

71 Decision of the German Bundesgerichtshof, BGH X ZR 211/98, in *NJW-RR* 2001, 324, at 343.

72 e.g., for English law, *Chitty on Contracts*, Volume 1, 15-003 (34th ed. 2021). Under Swiss law, the general statutory time limitation of 10 years cannot be shortened – see Swiss Code of Obligations, Article 129.

unless they can prove that they were not at fault.⁷³ The parties can amend this principle by agreeing that the injured party needs to prove that an obligor was at fault, which may – as the case may be – have the effect of a limitation on damages.

These examples show that the position of the creditor may be affected by clauses modifying the modalities of liability. These clauses, if admissible under the applicable law, may have the same effect as contractual limitations of damages in the strict sense.

Limitation of damages owed by third parties

A different issue is whether contractual limitations can operate to protect a person who is not a party to the contract.

Common law tradition generally considers that the principle of privity of contract prevents a contractual agreement from granting benefits to third parties or imposing burdens on them.⁷⁴ Based on this principle, courts have traditionally considered that third parties cannot claim the benefit of a clause limiting liability, and thus also of a damage limitation clause between two contracting parties, since they are not a party to that contract.⁷⁵ These decisions have been considered to be too rigid, in particular between parties to an arm's-length business transaction. In *Scruttons Ltd v. Midland Silicones Ltd*,⁷⁶ the argument was made that the contracting party, in addition to contracting on that party's own behalf, is also contracting as an agent for the third party to whom the provisions should apply. The situation has become clearer with the enactment of the Contracts (Rights of Third Parties) Act 1999. Section 1(6) of this Act provides that where 'a term of a contract excludes or limits liability in relation to any matter references in this Act to the third party enforcing the term shall be construed as references to his availing himself of the exclusion or limitation'.

⁷³ Swiss Code of Obligations, Article 97(1).

⁷⁴ Lawson, *Exclusion Clauses and Unfair Contract Terms*, 2-063 (12th ed. 2017).

⁷⁵ See, e.g., *Adler v. Dickson* [1955] 3 All E.R. 397.

⁷⁶ [1962] 1 All E.R. 1 at 10.

In civil law systems, the parties to an agreement are generally allowed to limit their liability for any loss or damage caused by an associate to whom the performance of an obligation or the exercise of a right arising from a contractual obligation is delegated.⁷⁷ However, the majority view is that these types of clauses do not exclude the liability of the associate (based on tort, etc.).⁷⁸

In summary, it seems that clauses limiting damages owed by third parties tend to be more effective under common law.

Conclusion

The above explanations demonstrate that the general concepts regarding how contractual limitations of damages can be agreed, how they are interpreted, who bears the burden of proving the limitations, and the consequences of those limitations are similar even in diverse legal traditions.

However, the enforceability of contractual limitations on damages varies quite heavily between the common law and civil law traditions. Although the common law system tends to apply a reasonableness test, civil law countries generally focus on the degree of fault and consider agreements purporting to exclude damages for unlawful intent and gross negligence in advance to be ineffective. This difference is crucial for the availability of several forms of contractual limitations on damages.

Differences in the approach towards contractual limitations on damages emerge in almost all forms of limitations on damages that have been assessed in this chapter.

Liquidated damages and penalty clauses are generally permissible in civil law systems, with the caveat that excessive penalties may be reduced by courts. On the other hand, penalty clauses, to the extent that they provide for a monetary charge unrelated to the actual harm, are generally considered ineffective in the common law tradition.

⁷⁷ Swiss Code of Obligations, Article 101(2). If the obligee is in the obligor's service or if the liability arises in connection with commercial activities conducted under an official licence, any exclusion of liability by agreement may apply at most to minor negligence (Swiss Code of Obligations, Article 101(3)). See also German Civil Code, Section 278.

⁷⁸ Weber, *Berner Kommentar*, Article 101, N 167 (2000); Widmer Lüchinger/Wiegand, Article 101, N 16, in *Basler Kommentar: Obligationenrecht I* (7th ed. 2020). See also Schwenger, *Beschränkung und Modifikation der vertraglichen Haftung*, 125–26, in Koller, *Haftung aus Vertrag* (1998).

Stipulations of a maximum amount of damages are effective in the common law tradition if the limitation is reasonable. In civil law systems, caps on damages are only admissible if they do not restrict the damages to an extent that is not admissible under statutory law; in other words, in cases of wilful intent or gross negligence, a cap may not be effective.

Clauses that exclude a particular type of damages generally face the same differences in approach. One exception to this rule is damages arising from death or personal injury, which can hardly ever be excluded. On the other hand, the common law tradition generally considers the exclusion of consequential damages to be valid, as long as the exclusions are reasonable. But in civil law, exclusions of a particular type of damage do not seem to be very effective, since these limitations may not overcome the mandatory liability for damages arising from gross negligence and wilful misconduct.

Contractual limitations on damages can also appear through clauses that modify the liability with regard to other aspects, such as statutory limitation periods, which may have the same effect as contractual limitations on damages.

With regard to limitation of damages owed by third parties, it seems that the common law tradition allows third parties to avail themselves of the contractual limitation of damages, whereas this may not be the case in civil law systems.

When being faced with a damage limitation issue, the authors recommend following the checklist below, to assess the validity and consequences of the damage limitation clause concerned. However, in any event, the individual contractual limitation sought or in dispute must be assessed under the applicable law.

Damage limitation checklist

This checklist serves only as a guideline and is not a substitute for a careful review of the applicable law.

Is there an agreement on the limitation of damages?

- *Is there consensus with regard to the agreement on the limitation of damages?*
- *Is the agreement or relevant clause on the limitation of damages contained in GTCs?*

If yes, check applicable law for specific requirements with regard to damage limitation clauses in GTCs.

- *How does the agreement need to be interpreted?*

Usually, the wording is the starting point. Common law systems may also apply the *contra proferentem* rule and interpret the damage limitation clause against the party that proffered the clause. Special consideration is required if an agreement provides for both a warranty and limitation of damages.

- *Has the party bearing the burden of proof established the existence, content and applicability of the damage limitation clause?*

Generally, the party seeking to rely on the damage limitation clause bears the burden of proof.

Is the agreement on the limitation of damages valid?

- *Is the agreement a liquidated damages or penalty clause?*

Liquidated damages and penalty clauses are generally permissible in civil law systems, with the caveat that excessive penalties may be reduced by courts. On the other hand, penalty clauses, to the extent that they provide for a monetary charge unrelated to the actual harm, are considered ineffective in the common law tradition.

- *Is the agreement a limitation clause stipulating a maximum amount of damages?*

Stipulations of a maximum amount of damages are effective in the common law tradition if the limitation is reasonable. In civil law systems, caps on damages are only admissible if they do not restrict the damages to an extent that is not admissible under statutory law; in other words, in a case of wilful intent or gross negligence, a cap may not be effective.

- *Does the agreement exclude a particular type of damage?*

Damages arising from death or personal injury can hardly ever be excluded. Apart from this general principle, the common law tradition generally considers the exclusion of consequential damages to be valid, as long as the exclusions are reasonable. In civil law, exclusions of a particular type of damage do not seem to be very effective, since these limitations may not overcome the mandatory liability for damages arising from gross negligence and wilful misconduct.

- *Does the agreement limit damages owed by a third party?*

With regard to limitation of damages owed to third parties, it seems that the common law tradition allows third parties to avail themselves of the contractual limitation of liability, while this may not be the case in civil law systems.

What is the consequence of a contractual limitation on damages?

Contractual limitations on damages serve to limit the availability of damages. However, it must be assessed whether only contractual damages are excluded or also tort damages. The primary duty to perform will not be affected.

CHAPTER 5

Overview of Principles Reducing Damages

Craig Miles and David Weiss¹

International arbitral tribunals operating under international law and municipal laws routinely apply well-recognised principles of law to limit compensation awarded to a claimant for a respondent's breach of law. The most common of these principles are causation, speculation, contributory fault, foreseeability, mitigation and the bar against double recovery. When reviewing authorities analysing or applying these principles, one often finds a conceptual overlap among these principles, which can be explained, at least in part, by the observation that these six principles are arguably all iterations of factual or proximate causation.

In addition, one of the most commonly used tools to measure the value (as well as the loss of value) of a business is discounted cash flow (DCF), that is to say, the present value of the expected cash flows that the business will generate in the future. Because DCF necessarily relies on assumptions about future performance, including the risk that the expected cash flows will materialise, tribunals using DCF to measure damages have broad discretion to apply conservative assumptions to such models to lower the damages awarded.²

This chapter address each of these principles and concepts in turn.

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- 1 Craig Miles and David Weiss are partners at King & Spalding LLP. The authors would like to express their gratitude to Shayna Goldblatt for her research assistance. The information in this chapter was correct as at September 2020.
 - 2 Needless to say, tribunals also have discretion to use more aggressive assumptions, which would tend to increase damages. This chapter, however, is focused on damages reduction principles.

Causation

It is uncontroversial that, barring highly unusual circumstances, a respondent's liability is limited to damage that its conduct caused and, in general, a claimant bears the burden of proving that the respondent caused the claimant's injuries. Causation has long been widely recognised as a general principle of law.³ As stated by the tribunal in *Biwater v. Tanzania*, 'it is well settled that one key requirement of any claim for compensation (whether for unlawful expropriation or any other breach of Treaty) is the element of causation'.⁴ Article 31 of the International Law Commission (ILC) Articles on State Responsibility and its official commentary reflect the principle as it exists under customary international law.⁵ The concept requires establishing a cause-and-effect relationship between the act and the harm done.⁶

Many legal systems, including international law, draw a distinction between factual causation and proximate causation. Factual and legal factors inform that distinction. Factual causation concerns proving that an act caused the damage in question. As stated by Borzu Sabahi: 'The factual aspect of proximity mainly turns on proving, with evidence, that the particular unlawful act actually caused the damage in dispute.'⁷

Legal causation concerns underlying policies that limit liability even if factual causation can be established. In US law, one of the classic cases that all first-year law students study, is *Palsgraf v. Long Island Railroad*,⁸ concerning two railway guards who attempted to help a man board a train. In doing so, they caused the man to drop a package. That package was wrapped in newspaper and looked innocuous. However, it contained fireworks, which caused an explosion that, in turn, knocked down scales at the other end of the railway platform, injuring the plaintiff. The court dismissed a claim on the ground that the injury was not foreseeable.⁹

3 Bin Cheng, *General Principles of Law as Applied by International Courts and Tribunals*, 241–53 (Cambridge University Press, 2006) (1953) (Cheng).

4 *Biwater Gauf (Tanzania) Ltd v. Tanzania*, ICSID Case No. ARB/05/22, Award, 24 July 2008 at para. 778 (*Biwater v. Tanzania*).

5 James Crawford, *The International Law Commission's Articles on State Responsibility, Introduction, Text, and Commentaries*, 201–06 (Cambridge University Press, 2005) (2002) (Crawford).

6 Borzu Sabahi, *Compensation and Restitution in Investor-State Arbitration Principles and Practice*, 170 (2011) (Sabahi).

7 *ibid.*, at 171.

8 *Palsgraf v. Long Island Railroad Co*, 248 N.Y. 339, 162 N.E. 99 (N.Y. 1928).

9 *ibid.*, at 340–41, 347.

The ILC Articles on State Responsibility reflect certain policies behind rules of proximate cause in international law. For instance, the commentary to Article 31 of the ILC Articles, which provides that a responsible state must make full reparations for the injury caused by the internationally wrongful act, explains that, in international law, a state is responsible for all the harm its wrongful conduct caused even if other factors contributed to the injury (unless resulting from contributory fault):

*Often two separate factors combine to cause damage. In the Diplomatic and Consular Staff case, the initial seizure of the hostages by militant students (not at that time acting as organs or agents of the State) was attributable to the combination of the students' own independent action and the failure of the Iranian authorities to take necessary steps to protect the embassy. In the Corfu Channel case, the damage to the British ships was caused both by the action of a third State in laying the mines and the action of Albania in failing to warn of their presence. Although, in such cases, the injury in question was effectively caused by a combination of factors, only one of which is to be ascribed to the responsible State, international practice and the decisions of international tribunals do not support the reduction or attenuation of reparation for concurrent causes, except in cases of contributory fault.*¹⁰

Causation analysis could lead to no compensation even when there has been a breach of a legal obligation. In *Biwater v. Tanzania*, the tribunal held that Tanzania violated the treaty but that the violation caused no harm because the investment was already worthless; it thus awarded zero compensation.¹¹

The interaction between factual and proximate causation can often be decisive to the outcome of a case. As many commentators have observed and analysed, *CME* and *Lauder* concerned the same facts.¹² The *CME* tribunal held that the Czech Republic contributed to the investor's injury and, as provided for under international law, the other contributing causes did not relieve the state of its obligation to provide full compensation.¹³ In contrast, the *Lauder* tribunal held that one of the other, non-state contributing causes (the acts of a private party) was

¹⁰ Crawford (op. cit. note 5), at 205–06.

¹¹ *Biwater v. Tanzania* (op. cit. note 4), at paras. 798–807, 814.

¹² See, e.g., Sabahi (op. cit. note 6), at 173–74; Mark Kantor, *Valuation For Arbitration: Compensation Standards Valuation Methods and Expert Evidence*, 108 (2008) (Kantor).

¹³ *CME Czech Republic BV v. Czech Republic*, UNCITRAL, Partial Award, 13 September 2001 at paras. 584–85 (*CME v. Czech Republic*).

the main cause for the injury and that the Czech Republic's conduct in breach of the treaty did not cause the investor's damage.¹⁴ As a result, the former tribunal awarded US\$270 million and the latter tribunal awarded nothing.¹⁵

Bar against speculative damages

Most legal systems, if not all, including international law, reject damages that are too speculative.¹⁶ The bar against damages that are too speculative is a form of factual causation. A tribunal declines to award damages because there is insufficient evidence to prove that the illegal act caused the damage the claimant claims. A claimant always needs to prove facts in support of its case. An inherent difficulty with damages is that one is often, if not always, trying to prove a counterfactual. This is not proving what happened but what would have happened if the respondent had not breached a legal obligation.

The principle against speculative damages does not require a claimant to prove its damage as a certainty.¹⁷ The standard most often used in municipal and international law is one of 'reasonable certainty' or a 'reasonable degree of certainty'. For instance, under US law, a claimant must prove its damage with 'reasonable certainty', and the UNIDROIT¹⁸ Principles of International Commercial Contracts use the term 'reasonable degree of certainty'.¹⁹

In many legal systems, several nuances limit the extent to which the allegedly speculative nature of the damages will prevent them from being awarded. For instance, doubts should be resolved against the breaching party.²⁰ The rationale is that a party that caused a significant loss should not be allowed to profit from that breach. That rationale is especially applicable when the respondent's illegal conduct was wilful or destroyed evidence that, if available, would have allowed the claimant to prove the damage with more certainty.

A second important nuance is the distinction between proof of the fact of damage and proof regarding the amount of damages. Though some authorities have held that the 'reasonable certainty' requirement applies to both the fact of

14 *Lauder v. Czech Republic*, UNCITRAL, Award, 3 September 2001 at paras. 222, 234–35 (*Lauder v. Czech Republic*).

15 *CME v. Czech Republic* (op. cit. note 13), para. 319.

16 Kantor (op. cit. note 12), at 70.

17 *ibid.*, at 71.

18 The International Institute for the Unification of Private Law, an independent intergovernmental organisation.

19 Restatement (Second) of Contracts, Section 352; UNIDROIT Principles 2010, Article 7.4.3.

20 See, e.g., Restatement (Second) of Contracts, Section 352.

damage and the amount of the loss, the better view, at least when permissible under the applicable law, is that the 'reasonable certainty' requirement should apply to the fact of damage, but that once the fact of damage is established with reasonable certainty, proof as to the amount of damages may be an estimate, uncertain and inexact, because requiring a high degree of certainty unfairly burdens the injured party and benefits the breaching party.²¹ For instance, Article 7.4.3(1) of the UNIDROIT Principles provides that compensation 'is due only for harm, including future harm, that is established with a reasonable degree of certainty', though Article 7.4.3(3) provides that if 'the amount of damages cannot be established with a sufficient degree of certainty, the assessment is at the discretion of the court'.²²

At the same time, international tribunals often reject the use of a DCF model on the ground that it is too speculative, especially if the project was not a going concern. For instance, the US–Iran claims tribunal and several International Centre for Settlement of Investment Disputes (ICSID) tribunals have rejected damages based on DCF models when the project at issue was not built or completed.²³ Companies that have yet to build a project face numerous risks: construction, *force majeure*, business climate, currency risks and creditworthiness of a long-term purchaser, to name a few. However, such companies are routinely traded on stock exchanges, which illustrates both that they have value and that this value can be calculated to a reasonable degree of certainty. And there have been instances where a claimant was able to obtain significant compensation based on DCF models for projects that were injured early in their life cycle and, thus, not completed. In *Gold Reserve v. Venezuela*, the tribunal considered damages for breach of the fair and equitable treatment standard with respect to a mine that never exploited the minerals.²⁴ Even though the mine never generated

21 J Y Gotanda, 'Assessing Damages in International Commercial Arbitration: A Comparison with Investment Treaty Disputes', TDM 6 (2007), at 5–6 (see www.transnational-dispute-management.com) (citing Paulsson, 'The Expectation Model' at 60, in Derains and Kriendler (eds), *Evaluation of Damages in International Arbitration* (ICC Institute of World Business Law 2006); see, also, Kantor (op. cit. note 12), at 73.

22 UNIDROIT Principles 2010, Article 7.4.3.

23 See, e.g., *William J Levitt v. Iran*, 14 Iran-US CTR (1987) 191, paras. 56–58; *Dadras Int'l and Per-Am Construction v. Iran*, 31 Iran-US CTR (1995) 127, paras. 275–76; *Impregilo S.p.A v. Argentina*, ICSID Case No. ARB/07/17, Award, 21 June 2011 at paras. 375–81 (*Impregilo v. Argentina*); *Railroad Development Corp. v. Guatemala*, ICSID Case No. ARB/07/23, 29 June 2012 at para. 269.

24 *Gold Reserve Inc v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB(AF)/09/1, Award, 22 September 2014 at para. 863.

any cash flow, the tribunal concluded that compensation based on a DCF model was appropriate because the damages concerned a commodity product for which data, such as reserves and price, were easily calculated, and detailed mining cash flow analysis had been performed previously.²⁵

Although declining to award damages based on a DCF model may be appropriate if there is clearly no reasonable evidence that a project would have been profitable, it is arguably inappropriate if proof of the fact of damage is very certain. In such instances, it may be more appropriate to account for elevated levels of uncertainty by adjusting variables within the DCF model. For instance, increasing the discount rate to account for the uncertainty of the future revenue stream will decrease the net present value of that revenue stream and, thus, the compensation awarded. In many fact patterns, this approach is more consistent with financial valuations in the commercial world, where DCF models are routinely used to value projects that are not yet established going concerns. We discuss DCF and the role of sensitivities in more detail below.

An alternative, which is common in investment jurisprudence, is to award a claimant the monies it invested instead of using a DCF model when the tribunal concludes that the model is too speculative because the project was not a going concern.²⁶ In many instances, this approach benefits the breaching party by under-compensating the claimant even though evidence of the fact of damage is well established. Further, in many fact patterns, this approach, which is compensating the claimant for its reliance interest, is inconsistent with the *Factory at Chorzów* principle – now considered the primary rule for compensation under international law – which provides that a claimant should be placed in as near a position as it would have been ‘but for’ the breach.²⁷ Yet it is often difficult to conceive of a but-for fact pattern in which the claimant would have received only the money it invested, and nothing more, if the respondent state had not violated the international legal obligation at issue.

Yet another approach to redress damages that might otherwise be considered overly speculative is to compensate a claimant for a lost opportunity. For instance, if a claimant is improperly barred from participating in the bidding process for a potentially lucrative oil and gas concession, it may be hard to prove that the claimant would have won the bidding process had it been allowed to participate.

25 *ibid.*, at paras. 831–32.

26 See, e.g., *Impregilo v. Argentina* (op. cit. note 22), at paras. 375–81.

27 *Factory at Chorzów*, Merits, 1928, P.C.I.J., Series A, No. 17, p. 47; see, also, Crawford (op. cit. note 5), at 201.

The claimant might be able to provide compelling evidence that it would have offered more than the winning bid, but can it prove that the party who actually won the concession would not have been willing to bid even more had it been necessary? In such a circumstance, awarding compensation based on the assumption that the claimant would have won the bid might be deemed too speculative. An alternative approach would be to assess the odds that the claimant would have won the bid and award the claimant compensation in accordance with those odds. Thus, for instance, if the tribunal deemed that there was a 65 per cent chance that the claimant would have won the bid, the tribunal might determine the amount of damages that would be due, assuming that the claimant had won the bid, and then award the claimant 65 per cent of that amount.

The UNIDROIT Principles expressly contemplate this form of compensation as one in which the tribunal awards damages in proportion.²⁸ In the *Sapphire Petroleum*s arbitration, the tribunal awarded the claimant a portion of its anticipated lost profits as compensation for a lost opportunity, but the tribunal did not expressly articulate the amount awarded as being based on an assessed probability of the lost opportunity's occurrence.²⁹ In *Bosca v. Lithuania*, the tribunal interpreted compensation for a 'lost opportunity' as the right to recover direct damages (i.e., monies spent on the investment) as opposed to compensation in proportion to the probability that the investment would have succeeded.³⁰ Nevertheless, there is nothing in principle under international law that would preclude a tribunal from awarding compensation for the loss of a chance in proportion to the probability of its occurrence – especially when a more conservative approach might unduly benefit the breaching party that created the situation of uncertainty.

Foreseeability

In general, a claimant can only recover damages that the respondent could have foreseen. Countries apply this principle differently but most, if not all, recognise this principle as one that limits recoverable damages.³¹ At the same time, nuances of this principle vary among legal systems. Some domestic laws do not apply this

28 UNIDROIT Principles 2010, Article 7.4.3(2) ('Compensation may be due for the loss of a chance in proportion to the probability of its occurrence.').

29 *Sapphire International Petroleum Ltd v. National Iranian Oil Co*, Arbitral Award, 35 I.L.R. 146 (1963).

30 *Luigiterzo Bosca v. Lithuania*, PCA Case No. 2011-05, Award, 17 May 2013 at paras. 296–301.

31 Herfried Wöss, Adriana San Román Rivera, Pablo T Spiller and Santiago Dellepiane, *Damages in International Arbitration Under Complex Long-Term Contracts* (2014), 212–14 (Wöss et al.).

principle if the breach resulted from wilful misconduct or gross negligence.³² Like the principle against speculative damages, some authorities hold that a rough estimate of the amount of harm must be foreseeable, whereas most only require that the type of harm was foreseeable.³³ French and English law assess foreseeability from the moment a contract is executed, whereas German law assesses it from the moment of breach.³⁴

Although this principle is widely recognised, it rarely arises in practice. International arbitrations typically concern large investment disputes or complex international commercial disputes between sophisticated parties, and the object of damages will concern lost profits and costs incurred owing to a state's breach of widely recognised standards under international law for the protection of foreign investments, or private parties for breach of a contractual obligation. In these sorts of disputes, it is rare that a respondent would have a credible argument that the claimed damages were not foreseeable.

Contributory fault

The contributory fault principle allows a tribunal to apportion liability between a claimant and respondent when the claimant's conduct materially contributed to its loss. This principle is recognised in international law and it is generally recognised that the conduct must be wilful or negligent.³⁵ Thus, this principle is a mixture of factual and proximate causation. A tribunal may take into account the extent to which a claimant's own conduct contributed to its loss if that conduct was unreasonable, imprudent or unlawful. International investment tribunals have tended to apply this principle restrictively. One example of its application is *MTD v. Chile*,³⁶ in which the tribunal determined that Chile breached the treaty, but also held that the claimant contributed to its own loss by purchasing the property at issue before obtaining the required permits for the project.³⁷

32 Kantor (op. cit. note 12), at 103.

33 id.

34 Wöss et al. (op. cit. note 30), at 212–13.

35 Crawford (op. cit. note 5), at 240–41.

36 *MTD Equity Sdn Bhd and MTD Chile SA v. Chile*, ICSID Case No. ARB/01/7, Award, 25 May 2004 at paras. 242–46 (*MTD v. Chile*); see, also, Irmgard Marboe, *Calculation of Compensation and Damages in International Investment Law* (2009), 121 (Marboe); Sabahi (op. cit. note 6), at 176.

37 *MTD v. Chile* (op. cit. note 35), at paras. 242–46.

One should also bear in mind that, unlike some other principles commonly used to limit damages, contribution can operate as a defence to liability as well as a condition limiting a claimant's damages. For instance, most legal systems recognise that one party to a contract cannot assert a claim for breach of contract against another if that party's own conduct prevented the other from performing.³⁸ Thus, depending on the facts, the degree to which one party's conduct caused another to fail to perform a contractual obligation may operate as a defence to liability or as a limit on the amount of compensation the claimant can recover.

Mitigation

The duty to mitigate damages has been widely applied in international arbitration.³⁹ It is recognised in common law systems and has been recognised by several investment tribunals.⁴⁰ The principle also exists in some civil law jurisdictions but not in all – most notably, it does not exist in French law and some countries whose

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- 38 See, e.g., United Nations Convention on Contracts for the International Sale of Goods, Article 80, 11 April 1980, U.N. Doc. A/CONF.97/18, Annex I, reprinted in 19 I.L.M. 668 ('A party may not rely on a failure of the other party to perform, to the extent that such failure was caused by the first party's act or omission.') (CISG); see, also, Cheng (op. cit. note 3), at 149–58 (discussing the principle *nullus commodum capere de sua injuria propria* (no one can be allowed to take advantage of his own wrong) under international law).
- 39 See, e.g., *The ILC Articles* (op. cit. note 5), at 205; *EDF International SA SAUR International SA and León Participaciones Argentinas SA v. Argentina*, ICSID Case No. ARB/03/23, Award, 11 June 2012 at para. 1302 ('The duty to mitigate damages is a well-established principle in investment arbitration. This idea is reflected in *Middle East Cement v. Egypt*, where that tribunal clearly recognised it as a general principle of law.' (citations omitted)) (*EDF v. Argentina*); *Marboe* (op. cit. note 35), at 122 (citing E Gaillard and J Savage (eds), *Goldman on International Commercial Arbitration* (The Hague: Kluwer, 1999), 832; M Mustill, 'The New Lex Mercatoria: The First Twenty-Five Years' (1998), 4, *Arbitration International*, 86, 113; ICC No. 2478, Clunet (1975) 925; ICC No. 2103, Clunet (1974), 902; ICC No. 3344, Clunet (1982) 978; ICC No. 2412, Clunet (1974), 892).
- 40 See, e.g., Restatement (Second) of Contracts, Section 350; *AIG Capital Partners Inc and CJSC Tema Real Estate Company v. Kazakhstan*, ICSID Case No. ARB/01/6, Award, 7 October 2003, at 10.6.4 ('Mitigation of damages, as a principle, is applicable in a wide range of situations. It has been adopted in common law and in civil law countries, as well as in international conventions and other international instruments – as for instance in Article 77 of the Vienna Convention and Article 7.4.8 of the UNIDROIT Principles for International Commercial Contracts. It is frequently applied by international arbitral tribunals when dealing with issues of international law.');
- Middle East Cement Shipping and Handling Co SA v. Egypt*, ICSID Case No. ARB/99/6, Award, 12 April 2002 at para. 167; *EDF v. Argentina* (op. cit. note 35), at para. 1302.

laws are based on French law.⁴¹ Thus, in an international commercial arbitration, one should always research the applicable law and not assume that a duty to mitigate applies.

The duty to mitigate is a form of proximate causation. It arises after a respondent has breached a duty and caused injury and obliges a claimant to take reasonable steps to limit the extent of that injury.⁴²

Although the precise contours of the duty may vary under different laws, in the context of complex commercial and international investment disputes, reasonableness should operate as a limitation on the duty to mitigate.⁴³ The proper test for mitigation is whether it was unreasonable for the claimant to forgo a particular opportunity; it is not whether the forgone opportunity was better than the steps the claimant actually took. Further, the 'reasonableness' quality of this duty means that the claimant's conduct should be judged based on the information that was available to the claimant at the relevant time, not with the benefit of hindsight.

Thus, for instance, if one party breaches a long-term sales contract that the purchaser was knowingly relying on for downstream sales, a duty to mitigate by purchasing replacement volumes will arise, in the absence of special circumstances. At the same time, in pursuing replacements, the mitigating party may have to agree to higher prices on replacement volumes than might be available on a daily spot market if there is uncertainty regarding the degree and length that the breaching party will remain in breach. The breaching party should not be allowed to argue, with the benefit of hindsight, that damages should be reduced because the mitigating party could have obtained less expensive replacements by relying on a daily spot market that moves unpredictably.

Indeed, many authorities recognise that failed mitigation efforts may not be to the detriment of the claimant. 'If the claimant has taken reasonable measures to mitigate the consequences of the breach, the result of the but-for vs. the

41 Wöss et al. (op. cit. note 30), at 215.

42 See, e.g., Crawford (op. cit. note 5), at 205 ('Although often expressed as a "duty to mitigate", this is not a legal obligation which itself gives rise to responsibility. It is rather that a failure to mitigate by the injured party may preclude recovery to that extent.' (citing *Gabcíkovo-Nagymaros Project* (Hungary/Slovakia), ICJ Reports 1997, 7, at p. 55, para. 80)); Wöss et al. (op. cit. note 30), at 215–16.

43 See, e.g., Crawford (op. cit. note 5, above), at 205 ('Even the wholly innocent victim of wrongful conduct is expected to act reasonably when confronted by the injury'); Restatement (Second) of Contracts, Section 350; Marboe (op. cit. note 35), at 122–23; Wöss et al. (op. cit. note 30), at 215–16.

actual comparison damages calculation must incorporate the benefits and costs of mitigation.⁴⁴ In addition, the respondent bears the burden of proving that the claimant did not mitigate its losses.⁴⁵

Double recovery

The principle of double recovery – or allowing a party to obtain compensation in excess of what is required to make that party whole – is widely recognised. A risk of double recovery usually arises in the context of parallel, or multiple, related proceedings. Though tribunals should strive to prevent double recovery, respondents should not be allowed to rely on the mere risk of double recovery as a defence to paying the first recovery. The most common solution is for the first tribunal deciding the claims before it to proceed and for any other subsequent tribunals to take account of that prior decision. As stated by the *Lauder* tribunal, ‘the amount of damages granted by the second deciding court or arbitral tribunal could take [the prior award of damages] into consideration when assessing the final damage’.⁴⁶ In *Exxon v. Venezuela*, one of the claimants had already received compensation for one of the measures at issue in a related commercial arbitration against the state-owned company, *Petróleos de Venezuela, SA (PdVSA)*.⁴⁷ As required under the relevant agreement, the claimant represented to the ICSID tribunal that it would reimburse PdVSA in the event of a favourable award. The tribunal noted this representation in the operative part of its award and held that there was therefore no risk of double recovery.⁴⁸

Although this solution will resolve concerns regarding a double recovery in most instances, tribunals should still be wary of potential unfairness. For instance, consider a hypothetical case. Two companies of different nationalities that are joint venture partners under a single petroleum concession bring separate claims for expropriation under different investment treaties against the same sovereign.

44 Wöss et al. (op. cit. note 30, above), at 215 (citing *Tractebel Energy Marketing Inc v. AEP Power Marketing Inc*, 487 F.3d 89, 109–10 (2nd Circuit 2007); Djahkongir Saidov, *The Law of Damages in International Sales: The CISG and Other International Legal Instruments* (Hart Publishing 2008), 102–03).

45 *ibid.*, at para. 404.

46 *Lauder v. Czech Republic* (op. cit. note 14), para. 172; see, also, *British Caribbean Bank Limited (Turks & Caicos) v. Belize*, PCA Case No. 2010-18, Award, 19 December 2014, at para. 190 (citing with approval *Lauder* for this proposition).

47 *Venezuela Holdings BV, Mobil Cerro Negro Holding Ltd, Mobil Venezolana de Petróleos Holdings Inc, Movil Cerro Negro Ltd, and Mobil Venezolana de Petróleos Inc v. Venezuela*, ICSID Case No. ARB/07/27, Award, 9 October 2014, at paras. 378–81.

48 *id.*

The sovereign asserts the same environmental counterclaim as an offset in both arbitrations. In this hypothetical case, there is both a risk of double recovery and a risk that the respondent obtains an improper second ‘bite at the apple’ (or cherry, depending on the continent in which you reside). If the first tribunal determines that the amount of environmental damage is US\$100 and the second determines that it is US\$75, the first tribunal would offset its award for expropriation by US\$100 and the second tribunal, taking into account the offset in the first proceeding, would offset its award by zero. But if the first tribunal determines that the amount of environmental damage is US\$75 and the second determines that it is US\$100, then the second tribunal might offset its award by US\$25 (after taking into account the offset in the first award). In both situations, the sovereign state obtains the benefit of the larger assessment of environmental damage.

Sensitivities in DCF as a damages-reduction strategy

We have briefly mentioned the DCF method above. In summary, the DCF method measures the value of a business by adding the free cash flows that the company expects to generate in the future, discounted at a rate that reflects the company’s cost of raising capital.⁴⁹ The term ‘free’ cash flows means the flow of cash that is generated by the company and that is available to be distributed to its shareholders and lenders. The free cash flows for any given year are equal to the cash left to the company after meeting all its operating expenses and taxes, but prior to making its debt and other financial payments.

Importantly, however, the stream of annual expected free cash flows must take into account the time value of money to reflect the basic economic principle that a dollar in the hand today is worth more than a dollar tomorrow. Thus, cash flows must be discounted at a rate that reflects the facts that (1) people generally prefer present cash to future cash, (2) when there is inflation, the value of future cash flows decreases faster and (3) the higher the risk of realising the future cash flows, the more inclined a stakeholder will be to receive a quicker (albeit discounted) return on his or her risk capital.

49 See R Doak Bishop and Craig S Miles, ‘Lost Profits and the Discounted Cash Flow Method of Valuation’, *World Arbitration & Mediation Review*, Vol. 1, No. 1, 33 (2007).

It is widely accepted that the most appropriate discount factor is the weighted average cost of capital (WACC).⁵⁰ The WACC represents the average cost of raising funds from shareholders and lenders operating in the same industry as the damaged company. The cost of raising funds from lenders is measured by the interest rate at which they are willing to offer loans to the company, called the cost of debt, while the cost of raising funds from shareholders is measured by the cost of equity, which represents the expected rate of return (in the form of dividends) on the shareholder's equity contributions to the company. Thus, the WACC estimates the implicit risk existing on future cash flows, considering the rate of return required by each of the two finance providers (i.e., lenders and shareholders), each weighted by the optimal proportion of debt and equity observed in the company's industry.

The effects of the discount rate cannot be overstated; for example, assume the same DCF model for a 20-year concession expected to generate US\$1 million in profits per year for the 20-year term. If discounted at 10 per cent, the US\$20 million in cash flows would be valued presently at US\$8,513,564, whereas at a 20 per cent discount rate, the same cash flows would have a present value of only US\$4,869,580.

One key factor in the discount rate is the country risk premium. In essence, this is a way of quantifying how investing equity in a particular country is riskier than investing equity in a 'safe' country. The higher the spread in interest rates, the higher the country risk premium and, therefore, the higher the discount rate and the lower the damages. As a result, respondents, especially in investment arbitration, often argue for high (or very high) country risk premiums as a means of reducing damages in an arbitration.

The most common way to measure country risk premium is by looking at the difference between the interest rate of a local bond denominated in US dollars versus a US bond of similar maturity (known as a credit risk model). There are also other methods, including the international capital asset pricing model, sovereign spread models, relative standard deviation approaches and implied equity market

50 See McKinsey & Company, Inc (Tim Koller, et al.), *Valuation: Measuring and Managing the Value of Companies* (4th ed. 2005) ('The weighted average cost of capital is the discount rate, or the time value of money, used to convert expected future cash flow into present value for all investors. . . . It must comprise a weighted average of the marginal costs of all sources of capital – debt, equity, and so on – since the free cash flow represents cash available to all providers of capital.').

risk premiums. There is no consensus regarding which approach is best in which circumstances, and each has shortcomings, including issues concerning assumptions inferred from historical data, correlation versus causation and data quality.

In investment arbitration, tribunals routinely seek to avoid compensating an investor for business risk that it should bear, but tribunals have diverged on how to assess political risk, especially the risk that a state may engage in behaviour that violates the applicable investment treaty.⁵¹ A related issue concerns whether the date for assessing political risk should be when the investor commenced its investment or when the state enacted the measure that breached the treaty.⁵²

Of equal importance to a DCF calculation is the damages period, which in many instances will be equal to the length of the future life of the company (unless the challenged measures have a shorter lifespan. In other words, for how many years can the company expect to generate these cash flows? At times, the company may be operating under a concession or other principal contract containing a defined term. In other instances, however, it is left to the discretion of experts (and, ultimately, the arbitrators) to establish the asset's remaining useful life. Moreover, a DCF analysis necessarily implies some in-depth knowledge of the company and its products, markets and competition.⁵³ It involves understanding the industry in which the company operates and the factors that drive that industry and that affect the company's performance during the damage period.⁵⁴ Finally, it involves understanding the economic forces that affect the business and the financial outlook for the company.⁵⁵

Although the underlying assumptions will be numerous and different in each case, in general terms, they can be summarised as those:

- relating to the business in which the firm operates (e.g., revenues, prices, market shares, new products, operating expenses, capital expenses, inventory policy, working capital, tax requirements);

51 See, e.g., *Tidewater v. Venezuela*, ICSID Case No. ARB/10/5, Award, 13 March 2015, at paras. 182–90; *Saint-Gobain v. Venezuela*, ICSID Case No. ARB/12/13, Decision on Liability and the Principles of Quantum, 30 December 2016, at paras. 719–20; *Gold Reserve v. Venezuela*, ICSID Case No. ARB(AF)/09/1, Award, 22 September 2014, at paras. 841–42.

52 See, e.g., *Flughafen v. Venezuela*, ICSID Case No. ARB/10/19, Award, 18 November 2014, at paras. 896–907.

53 Nancy J Fannon, 'Lost Profits Damages: A Natural Extension of Business Valuation Skills', *The CPA Expert* (Spring 2001).

54 *id.*

55 *id.*

- regarding external macroeconomic factors (e.g., growth of gross domestic product, inflation rates, exchange rates, monetary and fiscal policy that may affect the firm directly or indirectly, labour market conditions, wages and salaries);
- on how the relevant regulatory framework will evolve, including taxation matters and forms of direct regulation, if applicable; and
- of financial viability, if binding.

All these variables can lead to significant variations in different DCF valuations of what is ostensibly the same damaged company. This ultimately gives arbitrators significant discretion to accept or reject key assumptions in the DCF methodology advanced by one party or the other, which can have a profound effect on the damages awarded. This points to the importance of the underlying assumptions used and the ability of good advocates to influence the damages outcome by arguing for conservative assumptions.

For example, in the *Phillips*⁵⁶ case, the claimant was a participant in a 1965 joint structure agreement (JSA) with Iran, which provided for the exploration and exploitation of petroleum resources in an offshore area in the Persian Gulf. When Iran terminated the agreement in 1979, Phillips sought compensation and based its claim on a DCF valuation of its interest in the JSA, which it calculated to be US\$159,199,000.⁵⁷ The tribunal agreed that ‘the DCF method by the Claimant [is] a relevant contribution to the evidence of the value of the Claimant’s contract rights which have been taken by the Respondents’ but that ‘it is not an exclusive method of analysis and that all relevant considerations must be taken into account’.⁵⁸ The tribunal decided not ‘to make its own DCF analysis with revised components, but rather to determine and identify the extent to which it agrees or disagrees with the estimates of both Parties and their experts concerning all of these elements of valuation’.⁵⁹ Ultimately, the tribunal disagreed with several of the claimant’s assumptions and awarded substantially less damages than the amount sought.

First, the tribunal lowered Phillips’s assumption about the number of barrels of oil that could be produced from the field. Phillips’s DCF valuation assumed about 375 million barrels; the tribunal, however, reduced that amount to a range

56 *Phillips Petroleum Co. Iran v. Iran*, Iran–US claims tribunal, Award No. 425-9-2, 29 June 1989.

57 *ibid.*, at para. 154.

58 *ibid.*, at para. 113.

59 *ibid.*, at para. 114.

between 280 and 290 million barrels.⁶⁰ The tribunal also thought that Phillips's assumptions about the price of oil were too high and its assumptions regarding costs were too low.⁶¹

Third, and most significantly, the tribunal thought that Phillips's discount rate of 4.5 per cent was far too low. This rate assumed that the WACC for large oil companies in general was 4.5 per cent and that this project was no riskier than those associated with interests in oil reserves elsewhere.⁶² The tribunal disagreed and held that the following risks needed to be taken into account:

*first, the risk that not all recoverable oil might, as a practical matter and for various reasons, be produced during the remaining years of the JSA; second, the risk that world oil prices during the remaining term of the JSA might prove lower than during the range foreseen; and third, the risk of coerced revisions of the JSA in the future that would reduce its economic benefits.*⁶³

Although the tribunal did not select its own discount rate, it held that the real risk was 'substantially' higher, and it awarded only US\$55 million in damages, which was only about one-third of the damages that Phillips sought.⁶⁴

The principles discussed in this chapter operate individually and in an interactive manner to limit damages awarded to claimants. At the same time, these principles are sufficiently nuanced to ensure that full and proper compensation is awarded when these principles are applied properly.

Checklist

The following questions relate to the principles discussed and should be considered when assessing a claim for damages:

- Contribution:
 - What are the key principles under the applicable law?
 - If under public international law, is the state liable for an injury that has multiple causes (some potentially concurrent, some potentially intervening)?
- Bar against speculative damages:
 - Is the evidence of injury too speculative?
 - Did the wrongful cause there to be a lack of better evidence?

60 *ibid.*, at paras. 119–24.

61 *ibid.*, at paras. 125–34.

62 *ibid.*, at para. 136.

63 *ibid.*, at para. 138.

64 *ibid.*, at para. 158.

- Is there any applicable rule holding that evidentiary doubts should be resolved in favour of the injured party?
- Is there evidence to support valuing a lost opportunity?
- Foreseeability:
 - What are the key principles under the applicable law?
 - Does any foreseeability limitation apply if the breach resulted from wilful misconduct or gross negligence?
 - Should foreseeability be assessed from the date the contract is executed or the date of breach?
- Contributory fault:
 - What are the key principles under the applicable law?
 - Should any contribution to the injury operate as a defence to liability or a limit on compensation?
- Mitigation:
 - Is there a duty to mitigate under the applicable law?
 - What is the effect on quantum of any failure to mitigate?
- DCF model:
 - Was the project at issue built or completed?
 - If the project was not completed, are there market prices and other relevant market data that could be used to support the DCF model?
 - If the project was not completed, would it be more appropriate to increase the discount rate or disregard the entire model in favour of an alternative approach (e.g., sunk costs)?

CHAPTER 6

Full Compensation, Full Reparation and the But-For Premise

Herfried Wöss and Adriana San Román¹

Introduction

The notions of ‘full compensation’ and ‘full reparation for damages’ have been used synonymously throughout history. Nowadays, the notion of full compensation is expressly recognised in many important jurisdictions. The full reparation principle applies in international law and may lead to higher compensation through the *Chorzów* principle, which uses the principle of fair market value (FMV), as is explained later in this chapter (see section titled ‘Full reparation, Chorzów and fair market value’). The application of the but-for premise under different rules of law, including international law, will give different results owing to the different levels of interest, which means that the amount of damages would change under different applicable laws.

Origins of full compensation principle

The full compensation principle is recognised in most of the important jurisdictions for international arbitration. In 1848, the leading English case, *Robinson v. Harman*, established that the aim of damages is to give the injured party the necessary amount of money to put it ‘so far as money can do it, in the same position as he would have been in had the contract been performed’.² The US Second Restatement of Contracts establishes that ‘[t]he initial assumption is that the

1 Herfried Wöss and Adriana San Román are founding partners of Wöss & Partners. The information in this chapter was correct as at September 2020.

2 *Robinson v. Harman* (1848) 13 P.D. 191 (C.A.), 200.

injured party is entitled to full compensation for his actual loss'.³ To achieve this purpose, US courts award the expectation interest, which aims to put the injured party in the economic position he or she would be in but for the breach.⁴

French law recognises the principle of full compensation or *reparation intégrale*. Full compensation is the objective and has to be in accordance with the loss suffered. The essence of the full compensation principle is to return the victim as closely 'as monetarily possible to the position in which he would have been had the wrong not been done'.⁵ German damages law is based on the principle of full reparation leading to the situation that would have existed if the damaging event had not occurred.⁶ Article 7.4.2 (Full compensation) of the UNIDROIT (International Institute for the Unification of Private Law) Principles of International Commercial Contracts reads:

The aggrieved party is entitled to full compensation for harm sustained as the result of the non-performance. Such harm includes both any loss which it suffered and any gain of which it was deprived taking into account any gain to the aggrieved party resulting from its avoidance of cost or harm.

Finally, Article 74 of the United Nations Convention on Contracts for the International Sale of Goods reads: 'Damages for breach of contract by one party consist of a sum equal to the loss, including loss of profit, suffered by the other party as a consequence of the breach.'

According to these rules of law, the payment of an amount of money should place the injured party in the economic position it would have been in had the damaging act not occurred, which refers to the full compensation principle. Nowadays, the principle of full compensation is a general principle of law.⁷

With respect to international law, under the famous *Factory at Chorzów* principle, 'reparation must, as far as possible wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if

3 Restatement (Second) of Contracts, Chapter 16, Topic 2, Introductory Note.

4 *ibid.* at, Section 344 (a) (Purpose of Remedies).

5 Solène Rowan, *Remedies for Breach of Contract: A Comparative Analysis of the Protection of Performance* (Oxford University Press, 2012), 109; Konstanze Brieskorn, *Vertragshaftung und responsabilité contractuelle, Ein Vergleich zwischen deutschem und französischem Recht mit Blick auf das Vertragsrecht in Europa* (Mohr Siebeck, 2010), 252.

6 Civil Code of Germany, Section 249.

7 See, e.g., Ingeborg Schwenzer, Pascal Hachem and Christopher Kee, *Global Sales and Contract Law* (Oxford University Press, 2012), para. 44.19.

that act had not been committed'.⁸ According to Professor Irmgard Marboe: 'The principle of full reparation has been recognized in international judicial practice not only in the context of international investment but also in cases of other violations of international law.'⁹

Role of differential hypothesis or but-for premise

But-for premise as means to achieve full compensation

The but-for premise considers the question of what would have happened in the absence of the breach and was developed by Friedrich Mommsen in 1855 in his *Doctrine of Interest*.¹⁰ To find an answer, the but-for premise compares the hypothetical situation without the breach and the actual situation with the breach. However, limitations under the applicable law – such as causality, culpability, foreseeability, the duty of mitigation and contributory negligence – have to be considered.¹¹ Once the liability has been proven and the differential hypothesis together with the limitations have been applied, the result is the actual loss or expectation interest, which has to be compensated to achieve full compensation.

The application of the but-for premise may lead to different results depending on the interest protected under the applicable law. It makes a difference if the applicable law protects the performance principle, that is the equivalent to specific performance, or the economic benefit leading to a difference in value. For example, in *Ruxley Electronics & Construction v. Forsyth*,¹² a case in which a swimming pool had been constructed with less depth than specified in the contract, the House of Lords of the UK Parliament held that the cost of cure has to be in proportion to the benefit that would accrue to the claimant. The respondent argued that he was liable only for the difference in value between the pool as promised and as delivered, which was zero, as the pool could be used for the purposes intended. Under French law, the performance principle is protected and granted even if the cost of

8 1928 Permanent Court of International Justice (PCIJ), Series A, No. 17, 47.

9 Irmgard Marboe, *Calculation of Compensation and Damages in International Investment Law*, Second edition (Oxford University Press, 2017), para. 2.78.

10 Friedrich Mommsen, *Beiträge zum Obligationenrecht: Abth. Zur Lehre von dem Interesse* (EU Schwetschke und Sohn, 1855), 27 ('Interest means, however, damages; and if the expression damages is exclusively understood as full compensation, both terms coincide in their meaning').

11 Adriana San Román and Herfried Wöss, 'Damages in International Arbitration with respect to Income Generating Assets or Investments in Commercial and Investment Arbitration' (2015), *Journal of Damages in International Arbitration*, 37–62, and Mark Kantor (ed), *Yukos Special* (2015) 5, *Transnational Dispute Management*.

12 [1996] 1 AC 344.

cure would be unreasonable. Therefore, the claimant could demand the rebuilding of the swimming pool in accordance with specifications. This example shows how the damages resulting from the application of the but-for premise depend on the interest protected under the applicable law.

But-for premise as means to prove causality and loss

Under the but-for premise, the question to be asked is what would have happened in the absence of the breach. If the claimant would be in the same economic situation had the breach not happened, there would be no causation. If the claimant would be in a better economic situation had the breach not occurred, there would be causation. Whether this situation refers to a monetary difference or the injured party's exact, concrete position, which is the cost of cure measure of damages, depends on the measure of damages applicable or available under the relevant rules of law. The loss must be properly attributable to the breach. Liability is determined to the extent that losses would have been avoided in the absence of the breach. If the damage would have occurred even in the absence of the breach, then there is no loss caused by the breach.¹³

Causation is not only a requirement for the recovery of damages but also has implications on the amount or extent of damages to be recovered. If through the application of the but-for premise only partial causation is proved, this may lead to a substantial reduction of the damages. This situation is intimately related to contributory negligence of the injured party, where the respondent has to pose hypothetical situations to reduce the scope of causation. For example, in the case of the violation of a non-competition obligation, the defendant may argue that the joint venture company would not have won the project even in the absence of the breach or that the company was badly managed by the managing partner that caused the loss.¹⁴

Once the hypothetical situation has been posited and compared with the actual situation, if there is an economic difference, there is a loss. That is why the but-for premise serves as a means to determine whether there is actually loss.

13 Herfried Wöss and Adriana San Román in Herfried Wöss et al., *Damages in International Arbitration under Complex Long-term Contracts*, 5.61, footnotes omitted.

14 *ibid.*, at 5.63.

But-for premise and quantification

The objective of the but-for method is to build a situation taking into account the world as it is except for the economic and financial implications that could arise from a hypothetical circumstance in which the breach had not occurred. However, the application may not be that simple, in particular because of a lack of information and the inability to disentangle the effects of specific actions from other forces affecting the business.¹⁵ Time is also an essential part of long-term contracts and investments.

There are different valuation methods that can be applied in the context of the but-for premise and can be grouped as follows:

- income approach: discounted cash flow method, adjusted present value and capitalised cash flow;
- market approach: publicly traded multiples, transaction multiples and stock prices; and
- the asset or cost approach: liquidated value, book value and adjusted book value.

The choice of the approach depends on the nature of the asset being valued and the microeconomic and macroeconomic circumstances surrounding the valuation.¹⁶ What is calculated is, in essence, the effect of the breach or violation on the income stream or the difference in value of the business or investment caused by the breach or violation.

In the income approach, the negative effect on the income stream caused by the breach or violation equals a loss of value of the contract, business or investment. In the case of lost income stream, one may either reconstruct the income stream that the company or investment would have had in the absence of the breach or violation, or refer to the income stream of similar companies, and then compare it with the actual situation, which leads to the expectation interest. In jurisdictions where lost profits may be difficult to claim, the loss of value of the contract, business or investment may be the preferable approach. This means that damages may be claimed in different forms and the applicable law and the available evidence determine how a damages claim has to be framed.

15 Pablo T Spiller and Santiago Dellepiane in *ibid.*, at 6.29–6.30.

16 *ibid.*, at 6.145 ss.

Full reparation, Chorzów and fair market value

The full reparation principle as we know it today has its origins in the Permanent Court of International Justice case, *Factory at Chorzów*. As Professor Hersch Lauterpacht observed:

*states were originally reluctant to provide full compensation; however, at the beginning of the twentieth century, both the award of lost profits and the full compensation principle were already duly recognized, as shown by the well-known Factory at Chorzów case, which reflected contemporary state practice in 1928.*¹⁷

However, full reparation according to *Chorzów* has additional elements, such as the right of the claimant to ask for the FMV at the date of the violation or the date of the award, whichever results in the higher amount, plus the lost profits between the date of the violation and the date of the award, in the case of the latter. Nowadays, Article 31. Reparation, Commentary (1) and Article 36. Compensation, Commentary (5) of the United Nations draft articles on Responsibility of States for Internationally Wrongful Acts expressly refer to the obligation of the responsible state to provide full reparation of the wrongful act and both refer to the *Factory at Chorzów* case. This refers to compensation for the violation of international investment law standards, which are in essence international tort law standards.¹⁸

The key legal principle for damages compensation in the *Factory at Chorzów* case is that compensation ‘should wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed’.¹⁹ To achieve this purpose, the *Chorzów* formulation uses the higher FMV at the date of either the violation or illegal expropriation or the date of the award. In the case of the latter, lost profits between the date of the

17 Hersch Lauterpacht, *The Development of International Law by the International Court* (Cambridge University Press, 1958), 315–16.

18 Herfried Wöss, ‘Systemic Aspects and the Need for Codification of International Tort Law Standards in Investment Arbitration’ in *Comprehensive and Economic Trade Agreement between the European Union and Canada (CETA), Transnational Dispute Management, TDM 1* (2016); Hersch Lauterpacht, *Private Law Sources and Analogies of International Law* (Longmans, Green & Co Ltd, 1927), 6; R Y Jennings, ‘State Contracts in International Law’ (1961), 37 *British Yearbook of International Law*, 157–59.

19 *Factory at Chorzów*, 1928 PCIJ Series A, No. 17, 27; this formula reflects the but-for premise in international law.

illegal act and the date of the award have to be added, as shown by the questions posed by the arbitral tribunal to the experts that reflect the measure of damages determined by the arbitral tribunal.²⁰

The reference to the ‘value of the undertaking’ in *Factory at Chorzów*²¹ has been considered to refer to the notion of FMV,²² although the case does not expressly refer to this term. The court referred to the value at the date of the award and stated that this supposes:

*that the factory had remained essentially in the state in which it was on the date of the expropriation, and secondly, the factory is to be considered in the state in which it would (hypothetically but probably) have been in the hands of Oberschlesische and Bayerische if instead of being taken in 1922 by Poland, it had been able to continue its supposedly normal development from that time onwards.*²³

This corresponds to the notion of the ‘hypothetical normal course of events’ originally developed under German private law, whereby extraordinary circumstances or economic crises are being discarded. Therefore, it may be seen clearly that the FMV measure of damages appears in the *Chorzów* principle.

The German notion of the hypothetical normal course of events is reflected in the FMV rule developed in the United States, when referring to situations without duress or threat. The US Supreme Court has provided a classic definition of FMV: ‘The Fair Market Value is the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts.’²⁴ This formulation is also referred to in the World Bank ‘Guidelines on the Treatment of Foreign Direct Investment’ 1992. Commentary (22) of Article 36 of the United Nations draft articles on Responsibility of States for Internationally Wrongful Acts states: ‘Compensation reflecting the capital value of property taken or destroyed . . . is generally assessed on the basis of the “fair market value”

20 *ibid.*, at 17, 51; Pablo T Spiller and Santiago Dellepiane, in Herfried Wöss et al., *Damages in International Arbitration under Complex Long-term Contracts*, 6.71–6.79.

21 ‘The whole damages suffered by the one or the other Company as the result of dispossession, in so far as concerns the cessation of the working and the loss of profit which would have accrued, is determined by the value of the undertaking as such’, PCIJ Series A, No. 17, 49.

22 Manuel A Abdala and Pablo T Spiller, ‘Chorzów’s Standard Rejuvenated: Assessing Damages in Investment Treaty Arbitrations’ (2008), 25(1) *Journal of International Arbitration*, 108; PCIJ Series A, No. 17, 47.

23 *Factory at Chorzów*, 1928 PCIJ Series A, No. 17, 51.

24 *United States v. Cartwright*, 411 U.S. 546 (1973), (CL068).

of the property lost.’ A fair market valuation must assume that neither party to the transaction is under any compulsion to buy or sell, therefore it is standard to exclude distress when assessing fair market value.²⁵

The FMV and the hypothetical normal course of events ignore duress or threat or special economic circumstances, thereby removing potential issues of alternative causation. Applying the FMV may increase compensation as compared with market value, where the actual economic circumstances are being taken into consideration even if they represent duress or threat. However, in investment arbitration practice, economic crises are considered temporary and reflected in cash flows but not normally in the discount rate.²⁶

With respect to the date of the valuation of damages, the rationale behind using the higher of the FMV at the date of the illegal act and the date of the award is that the state should not obtain windfall profits from the illegal expropriation. As stated by Professor Pablo Spiller and Santiago Dellepiane:

*The Chorzów standard, however, has a powerful economic logic. It is equivalent to transferring to the expropriating state the ex-post risks (up to the time of the award) associated with the expropriated asset. In other words, if the asset has increased in value in the absence of the measures, the state ought not to benefit from its expropriating actions, and thus, the windfall ought to belong to the investor.*²⁷

Factory at Chorzów showed that wiping out all effects of the measures through monetary compensation can be achieved by two alternative means: granting the FMV as at the date of the expropriation brought forward to the date of the award and expressed in current currency; or granting the sum of the FMV as at the date of the award plus the profits that the investor would have probably obtained in the period between the date of expropriation and the date of the award.²⁸

25 Pablo T Spiller and Santiago Dellepiane in Herfried Wöss et al., *Damages in International Arbitration under Complex Long-term Contracts*, 6.39.

26 Herfried Wöss and Adriana San Román Rivera, ‘Damages in Investment Treaty Arbitration’ in José Rafael Mata Dona and Nikos Lavranos (eds), *International Arbitration and EU Law* (Elgar Arbitration Law and Practice Series, 2021), 35 *et seq.*

27 Pablo T Spiller and Santiago Dellepiane in Herfried Wöss et al., *Damages in International Arbitration under Complex Long-term Contracts*, 6.69.

28 *ibid.*, at 6.78.

If there is total destruction or deprivation of the investment because of an illegal act, the calculation of the FMV of the whole investment suffices. However, if the investment is not totally destroyed, the but-for premise is the tool to calculate the effect of the illegal act on the income stream or the value of the investment in order to achieve full reparation.

Is Chorzów and FMV measure of damages always applied?

The application of the FMV through the *Chorzów* principle leads to full reparation in investment arbitration, which may be higher than the market value corresponding to full compensation in commercial arbitration, as under the hypothetical normal course of events formula used under the FMV measure of damages, extraordinary events such as economic crises that would have contributed to the damages are being ignored. For example, during the 2008 financial crisis, an apartment in Manhattan might have a market value of US\$2 million because of the effect of the crisis, whereas its FMV was still at US\$8 million, as the FMV formula ignores the 'distress' and effects of the economic crisis.

However, in many investment arbitration awards, the only reference to *Chorzów* is to the 'wipe-out' rule, but in fact what is used is the market value.²⁹ Furthermore, in certain cases, arbitral tribunals have questioned the usefulness of calculating the FMV through an income approach using the scenario of a hypothetical willing buyer and a hypothetical willing seller. Determining the causal effect of the illegal act on the income stream of an investment through the but-for premise is likely to provide a more direct and realistic result.

In the landmark case *Burlington v. Ecuador*,³⁰ Ecuador illegally expropriated certain oil exploration and development blocks, which was preceded by tax increases on profits from the proceeds of the sale of oil to 50 per cent and to 99 per cent. The arbitral tribunal found that the standard of compensation was full reparation as set out in Article 31 of the International Law Commission Articles, which it applied by analogy. This led to the application of the *Chorzów* formula.³¹

29 Irmgard Marboe, *Calculation of Compensation and Damages in International Investment Law*, para. 3.163, footnote 340; Diona Ziyaeva, 'Arbitral Tribunals Tend to Pay Lip Service to the Chorzów Factory Full Reparation Principle, Disregarding the Context and Full Implication of the Dictum' (2015) 2(2) *Journal of Damages in International Arbitration*, 121, 124 et seq.

30 *Burlington Resources Inc. v. Republic of Ecuador*, ICSID Case ARB/08/5, Decision on Reconsideration and Award, 7 February 2017.

31 *ibid.*, at paras. 160, 177.

According to the arbitral tribunal, ‘the value of Burlington’s investment should be quantified by reference to the profit-making capacity of the PSCs [product sharing contracts]’.³²

According to the arbitral tribunal, ‘[i]n the majority’s view, the full reparation standard requires that the damages resulting from the unlawful act be valued on the date of the award, using information available at that point in time’, which ‘derives from the *Chorzów* case’, according to which ‘wip[ing] out all the consequences of the illegal act . . . involves the obligation to restore the undertaking and, if this be not possible, to be its value *at the time of the indemnification*, which value is designed to take the place of restitution which has become impossible’.³³ The majority of the arbitral tribunal stated that its task is to place Burlington in the situation it would have been in had Ecuador not expropriated the PSCs. For this, the tribunal assessed what the PSCs’ value would have been on the date of the award.

With respect to quantification, the arbitral tribunal found that:

*its task is to place Burlington in the position in which it would have been but for the expropriation. The question here is whether, when assessing the value of PSCs’ revenue stream, the Tribunal should assume that extraordinary revenues are taxed at 99 per cent (as mandated by Law 42) or that Ecuador absorbs the impact of this tax.*³⁴

When building the counterfactual situation in which the expropriation has not occurred, the majority assumed that Burlington holds the rights that made up the expropriated assets and that those rights are respected.³⁵

The arbitral tribunal found: ‘When quantifying the value of a going concern, the Tribunal must disregard the effects of value-depressing measures taken by the State related to the investment.’³⁶ Under the standard of full reparation, ‘the Tribunal must value what Burlington lost as a result of the expropriation’. When determining the FMV, ‘the Tribunal is not bound by the “willing buyer-willing seller” analogy’. What Burlington lost was a contract with a full set of rights, each of which must be given its value. Burlington did not lose an opportunity to sell its contract rights, ‘it lost an opportunity to exercise them. The relevant question is

32 *ibid.*, at para. 232.

33 *ibid.*, at para. 326.

34 *ibid.*, at para. 357.

35 *ibid.*, at para. 358.

36 *ibid.*, at para. 362.

thus not whether a hypothetical buyer would have paid full value for the PSCs, it is what value Burlington would have derived from exercising the rights under the PSCs, but for their expropriation'.³⁷

The rationale behind the *Chorzów* principle is to avoid opportunistic behaviour by the state. However, there are cases such as *Burlington v. Ecuador* in which the FMV element of the *Chorzów* principle referring to a willing buyer and a willing seller was not considered adequate. The arbitral tribunal in *Burlington v. Ecuador* considered the contract as an income-generating investment. It calculated the effect of the illegal expropriation on the income stream using the but-for premise and arrived at the market value, applying the date of the award under the *Chorzów* principle to arrive at full reparation.

Conclusions

The differential hypothesis, or but-for premise, is the tool to determine loss and causality when framing and analysing damages claims. Its application leads to full compensation in the form of the expectation interest in commercial arbitration, which varies according to the applicable rules of law. To achieve full reparation in investment arbitration, this tool is to be used under the *Chorzów* principle in combination with the hypothetical course of events that is used to assess the FMV.

The difference between FMV and market value may be significant. Market value is the result of the application of the but-for premise considering the prevailing economic circumstances affecting the business in both the actual and but-for situations, including situations of distress and economic crises, while the FMV is the result of applying the but-for premise without considering distress, threat or economic crises for their duration. Therefore, the FMV is likely to be higher than the market value, which is justified by the rationale behind the full reparation principle under the *Chorzów* principle, which is to avoid opportunistic behaviour by the state. When opportunistic behaviour of the state is not involved, market value may be considered fair and adequate compensation.

³⁷ *ibid.*, at para. 366.

Part II

Procedural Issues and the Use of Damages Experts

CHAPTER 7

Procedural Issues

Louise Woods, Ciara Ros and Elena Guillet¹

Introduction

Expediency of proceedings and flexibility for the parties are two of the pillars of arbitration, and it is essential that every element of an arbitration is designed both to ensure the proceedings are dispatched quickly (and, therefore, at a low cost) and to maintain the balance of flexibility and control of proceedings for the parties. In all elements of an arbitration, proper organisation and a well thought through, thoroughly planned procedure are key to the smooth running of proceedings. The procedure for the arguments relating to, and allocation of, damages is no exception. Damages are often intrinsically linked to the complexity of a case, therefore the quick identification of, and solution to, procedural issues relating to damages is key. A robust framework for addressing those procedural issues is essential to an expedient arbitration, leading to reduced costs for the parties and the best chance of an accurate damages award. This chapter sets out certain of the procedural issues that may arise, and the tools that may be deployed, in relation to damages in international arbitration.

Bifurcation

What does it entail and when might it be appropriate to bifurcate a case?

One of the issues that may arise early in an arbitration is whether it is appropriate to bifurcate the proceedings. Bifurcation entails splitting the arguments in a case into two phases, which are typically either (1) jurisdiction and liability, or (2) liability and damages. If there is concern about whether the tribunal has jurisdiction to hear all (or part) of a claim, the parties may choose to bifurcate

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proceedings and for the tribunal to make an initial decision as to whether it has jurisdiction. The parties may also choose to bifurcate proceedings between liability and damages. Typically, the tribunal would first decide on liability and then hear the parties on damages, but it is also possible for the tribunal to hear the parties on damages first. The latter option would usually be appropriate only, for example, if the decision as to whether a party had suffered loss or was otherwise entitled to damages was not intrinsically intertwined with the question of liability, and a decision that a party has no entitlement to damages would vitiate the need for a decision as to liability (on either all, or a significant portion, of the claims).

Bifurcation is provided for in some but not all the major arbitral rules used by commercial and state parties. However, it is unusual for the rules specifically to address bifurcation in respect of one element of the claim. Typically, when bifurcation is addressed, it is set out as a general concept to be used by the tribunal as appropriate. For example, the International Chamber of Commerce (ICC) Rules of Arbitration 2021 simply provide that the tribunal may bifurcate the proceedings, or issue a partial award, ‘when doing so may genuinely be expected to result in a more efficient resolution of the case’.² Similarly, the tribunal has wide discretion with respect to bifurcation under the Rules of the London Court of International Arbitration (LCIA), which provide that the tribunal may determine ‘the stage of the arbitration at which any issue or issues shall be determined, and in what order’.³

These rules allow the tribunal wide discretion to bifurcate proceedings, including to hear damages separately (either before or after a liability phase). Conversely, the Arbitration Rules of the United Nations Commission on International Trade Law (the UNCITRAL Arbitration Rules) do not address bifurcation save in respect of jurisdiction, which may be considered either as a preliminary question or in an award on the merits.⁴ Similarly, the Rules of the International Centre for Settlement of Investment Disputes (ICSID) do not provide for bifurcation save in respect of jurisdictional matters;⁵ nevertheless, a number of ICSID arbitrations have been subject to bifurcation of the merits from the quantum phase. There is a convention, therefore, of bifurcating damages and merits but it is not a procedural phase that is addressed in great detail in the major

2 International Chamber of Commerce (ICC), Arbitration Rules (2021), Appendix IV, a).

3 London Court of International Arbitration (LCIA), Arbitration Rules (2020), Article 14.6(iv).

4 United Nations Commission on International Trade Law (UNCITRAL Arbitration Rules) (2013), Article 23.

5 International Centre for Settlement of Investment Disputes (ICSID), Arbitration Rules (2006), Article 41(2).

arbitral rules. In Working Paper 4: Proposals for Amendment of the ICSID Rules, issued in February 2020, ICSID included proposals for a stand-alone bifurcation provision. The proposed revision provides a full procedure for a request for bifurcation, requiring that, *inter alia*:

- the request be issued as soon as possible with the question or questions to be bifurcated;
- the tribunal issue any decision within 30 days of the final written or oral submission on bifurcation;
- the tribunal shall, when making its decision, take into account all relevant circumstances, including whether (1) bifurcation would materially reduce time and costs, (2) bifurcation would dispose of all or a substantial portion of the dispute, and (3) the questions to be addressed are so intertwined with the remainder of the proceedings as to make bifurcation impractical; and
- if the tribunal orders bifurcation, it shall suspend the proceeding with respect to any questions to be addressed at a later stage unless otherwise agreed by the parties, or the tribunal considers this is not justified.

If the proposed revision is adopted, the tribunal would also have discretion to decide that any question should be addressed in a separate phase of a proceeding. This procedure for bifurcation would still leave the parties significant flexibility in respect of bifurcation proceedings, but is an express recognition of parties' ability to make a request for bifurcation for any appropriate reason.

A key obstacle in reviewing the commonality of procedural issues in arbitration is the lack of available information, including awards. ICSID made available its findings from a study into the efficiency of arbitration proceedings in September 2018. As part of this study, ICSID found that the average duration of an arbitration was three years and seven months from constitution of the tribunal to the final award. Of the 63 cases reviewed, 29 were bifurcated into jurisdiction and merits phases. If a case was dismissed as a result of a finding of no jurisdiction, the arbitration was concluded within two years on average but if the arbitration was bifurcated and the case was not dismissed, the average length of the arbitration was more than five years (and, on average, 550 days longer than an award issued in a proceeding that combined jurisdiction and the merits).⁶

⁶ 'Proposals for Amendment of the ICSID Rules – Working Paper', Volume 3 (ICSID Secretariat, 2 August 2018), pages 900–05, available at https://icsid.worldbank.org/sites/default/files/publications/WP1_Amendments_Vol_3_WP-updated-9.17.18.pdf (last accessed 14 October 2022).

Anecdotally, it appears that the length of a case can be reduced significantly (and, therefore, the costs reduced) if a party is successful in having all claims dismissed at the jurisdiction phase, but the arbitration is likely to be significantly longer if the claims go ahead notwithstanding the bifurcation. The review of arbitration cases carried out by ICSID also shows that bifurcated proceedings that lead to an award on the merits take almost two years longer than the average time for a blended hearing.⁷ Parties should be careful, therefore, to properly consider whether bifurcation of damages has a significant likelihood of leading to either the dismissal of all or the majority of claims, or may increase the likelihood of early settlement, prior to issuing a request for bifurcation. In the event that a party requests that damages are assessed prior to the merits, the parties and tribunal must take due care to ensure that damages can be properly separated from the merits arguments and that an award concerning damages does not require any prejudgment of the merits.

The key benefit to bifurcation of liability and damages phases in an arbitration is the potential to increase efficiency of proceedings and, therefore, reduce costs. As the research carried out by ICSID highlights, a bifurcation phase that leads to dismissal of all claims can significantly reduce the length of an arbitration.⁸ However, the split between damages and liability may be less cut and dried than between jurisdiction and liability and there is a risk that work will be duplicated and costs increased through bifurcation, for example if fact witnesses are required to attend two separate hearings to give evidence. In addition, if the proceedings are bifurcated and the level of damages (if any) is assessed prior to the merits hearing, there is the possibility that a low level of damages may dispense with the need for a full arbitration. Bifurcation may also promote early settlement if one party realises that it may not succeed on all claims and wishes to compromise on all or certain claims before incurring the expense of a full arbitration, particularly if the partial award contains adverse findings on the strength of its claims. This could result in significant cost savings for the parties if, following an award on liability, the case is settled and there is no requirement for a damages phase. For example, in the ICC arbitration *Brazil v. YPF*, bifurcation of liability and damages was granted and the arbitral tribunal ultimately held YPF (Argentina's

⁷ Although the ICSID review predominantly focused on bifurcation on the basis of jurisdiction and liability, the findings may be equally applicable to an arbitration that is bifurcated into damages and liability phases.

⁸ 'Proposals for Amendment of the ICSID Rules – Working Paper', Volume 3 (op. cit. note 6), pages 889–902.

state-controlled energy company) liable.⁹ The only outstanding question was the measure of YPF's exposure. This allowed the parties to negotiate a settlement without preparing protracted submissions on the determination of damages.

Bifurcation will not always be appropriate and will need to be determined case by case. One example of when it might be appropriate is when the quantification of, and arguments surrounding, damages are particularly complex and require substantive submissions. By dealing with the question of liability first, a party may not be required to incur costs on extensive submissions and expert quantum evidence if a claim (or claims) are dismissed on liability. It may be appropriate if damages are easily segregated from the liability issues in dispute. If damages are intrinsically linked to liability, then it may not be cost-efficient to bifurcate proceedings, as parties may be forced to restate certain arguments and elements of the case, and have separate hearings on issues that would be best heard together. Finally, it may be appropriate to bifurcate damages if it would increase the likelihood of early settlement of the claim (or claims). Once a decision on liability has been made, parties might return to the negotiating table and settle the case, without incurring the potentially significant costs of a damages phase in the arbitration.

Fundamentally, it will be for the parties and the tribunal to consider whether bifurcation is appropriate for any particular case but the risk of slowing down proceedings rather than creating expediency (thus, saving costs) should be carefully considered prior to making any application.

Witness evidence

Witnesses of fact

In arbitration, witnesses of fact and expert witnesses have different, but equally important, roles in assisting the tribunal with assessing the merits of a claim. In respect of damages, witnesses of fact are key in bringing context to any damages evidence. Typically, these fact witnesses would be employees in the financial departments of the relevant party, have a role in the financial negotiation of relevant contracts (including at director and board level) or work in the accounting department of the company or as its statutory accountants.

⁹ *YPF, S.A. v. AES Uruguiana Empreendimentos, S.A., Companhia de Gas do Estado do Rio Grande do Sul and Transportadora de Gas del MERCOSUR, S.A.*, ICC Case No. 16232/JRF/CA.

One of the key factual elements that a tribunal may need to take into account so as to understand and assess a party's damages claim is the financial structure of that party, and fact witnesses will often be put forward to assist the tribunal with the context of the corporate and financial structure of the party. An employee in the accounting department may be able to provide important context to the invoicing, payment and general financial procedures used by the relevant party or parties, which could be particularly relevant when there are disputes as to the timing of payments, whether a party was responsible for any delayed payments (or whether it was the fault of a third party, such as the bank) and to provide context about why certain decisions may have been made around payments (or withholding the same). The accounting team may also be able to provide helpful context about any irregularities with the accounts or payment processes, and any issues with payments on a project or in relation to the contract in dispute. The financial advisers on a particular project or contract, whether internal or external, may be able to provide the tribunal with guidance as to the calculations made by a party when pricing a project or choosing to enter into a contract, and how this affects the calculation of loss suffered by a party. The advisers may also be able to provide context about how a party had calculated any damages contemporaneously.

Witnesses of fact are unlikely to be appropriate to prepare an independent quantification of damages but the background they can provide to the decisions made by the party during a project, or the negotiation prior to execution of a contract, for example, may provide much-needed context about the contemporaneous documents retained by either party.

Quantum experts

In contrast to witnesses of fact, quantum experts act as independent expert witnesses and are typically engaged to calculate or assess the damages claimed by the claimant or counterclaimed by the respondent (or to assess the damages claimed by the opposing party). They will not have been contemporaneously involved with the underlying facts at issue in the arbitration. Either the tribunal or the parties may appoint quantum experts, though typically each party will appoint its own. If the parties do not appoint a quantum expert, or the tribunal considers, for example, that the quantum experts have not addressed all relevant issues, then the tribunal may choose to appoint its own expert. To save costs, the parties may also agree to appoint an expert jointly.

Role of quantum expert

As with any expert in arbitral proceedings, independence and non-partiality is key to the role of a quantum expert and the parties should be careful to inform their chosen expert of the need for independence (notwithstanding that one party may be paying the expert). The expert should also be careful not to take an adversarial position and to consider all relevant evidence, including whether the evidence would change their view and have a negative effect on their instructing party's case. In arbitration, there is generally an assumption of independence; therefore, any experts must be careful to disclose any possible links to the parties that could affect that impression of independence and ensure that they are always working on the basis of assisting the tribunal and not of assisting either of the parties towards a successful outcome.

It is key for the parties and, where appropriate, the tribunal to ensure that any quantum expert is engaged early in the proceedings. Indeed, the claimant in an arbitration may wish to engage an expert to assess the level of damages prior to submitting its claim. This would enable the claimant to identify viable claims and avoid submitting claims that have little to no prospect of success, saving costs for all parties. Either party could choose to utilise financial experts that had been involved in the project or contract, if relevant, as a starting point. Although these experts are unlikely to be seen as sufficiently independent for the purposes of testifying, they may be able to provide an initial assessment of damages based on their background knowledge of the project, saving on the costs that are likely to be incurred in instructing a new expert, who is unfamiliar with the background facts and will be required to review all the materials relating to the dispute. These experts may also be useful as fact witnesses, as set out above.

Early engagement also allows quantum experts to provide input on relevant fact evidence, which may not only ensure that the necessary factual evidence is put before the tribunal but also make the document production process more expeditious, as the experts will have considered which documents are likely to be relevant, both in relation to requesting documents and producing them. Engaging a quantum expert to conduct an early assessment of the claims value should also increase the likelihood that the damages claimed are accurate and capable of substantiation. This should reduce the need for protracted expert reports and expert testimony, which in turn should lead to quicker proceedings and lower costs for the parties.

Risks with party-appointed experts

One issue that is frequently encountered with party-appointed experts is that each expert will have different instructions, which can lead to them simply being ‘ships passing in the night’ and not actually calculating damages on the same basis. Proceedings will be less cost-effective if the experts are not on the same page in terms of the assumptions made and the questions they are asked to address. Another issue with party-appointed experts is that they will have different access to information prior to the document production phase and, thus, there is no equality of arms. One expert may be able to prepare a model based on, for example, project-specific data while the other is working off market rates and assumptions.

There are a number of procedural tools that may assist in ironing out these issues and improve the efficiency of proceedings. As set out above, it is key to engage experts early in the process and this can be encouraged by addressing the provision of expert reports in the procedural timetable. The choice between memorial style and pleadings style for an arbitration should be considered in each case and there are pros and cons for each, but the eventual choice will affect when and how the expert damages evidence is submitted by reference to the parties’ submissions and any witness evidence. The parties should also ensure any expert testimony is carefully considered in the pre-hearing protocol.

With time at a premium in a hearing, it is essential that the parties allocate sufficient time to hear expert evidence on damages and allow the tribunal to ask any questions that it may have. Damages are often dealt with at the end of a (potentially lengthy) hearing and overrunning fact witness evidence can come at the expense of time allocated for the experts’ testimony. Robust time management is critical to minimise any slippage. For the sake of expediency, particularly in a short hearing, the parties may wish to agree with the tribunal that any initial questions are submitted to experts either prior to or after their testimony, to be addressed in post-hearing briefs. The tribunal may even wish to submit calculation-specific questions directly to the experts, independent of parties and counsel.

Another increasingly common technique to increase expediency in expert examination in arbitration is the use of witness conferencing or ‘hot-tubbing’. This involves the experts being questioned at the same time and allows the tribunal to hear from both experts on specific points of interest, and may serve to narrow the issues in dispute between the two experts. In a virtual environment, care must be taken when planning a hot-tubbing session to ensure that the experts do not end up talking over each other, preventing the parties and the

tribunal from understanding their answers and creating difficulties for the transcribers. A carefully considered virtual-hearing protocol can reduce the likelihood of these issues arising.

Preparation of a joint expert report, typically following submission of the statement of rejoinder, or the occurrence of joint expert meetings, is likely to narrow the gap between the experts' respective positions and reduce the points of dispute in respect of damages. These meetings, and the preparation of the joint expert report, should ideally be held independently of counsel. They provide an opportunity for the experts to discuss any points of disagreement and assess whether it may be possible to agree on some, or all, of the elements of the damages claim. This in turn may reduce the need for long periods of cross-examination of the experts, saving both time at the hearing and costs of preparation. It should also make the tribunal's assessment of damages more straightforward, particularly if the experts can agree on a method or formula for calculation (such as a calculation of a delay rate that can simply be applied to the days of delay, if any, or an appropriate discount rate in the case of a discounted cash flow calculation).

Tribunal engagement with quantum experts

The tribunal may choose to appoint its own expert if it deems it necessary or useful for its determination of the claims, or if the parties agree with the tribunal that it appoints the only quantum expert to assess the damages claimed. This may not only save costs, as just one expert's fees are payable, but may also cause the expert to be viewed as more independent than party-appointed experts. Indeed, among other things, Article 21 of the LCIA Rules, Article 25(3) of the ICC Rules of Arbitration and Article 29 of the UNCITRAL Arbitration Rules contemplate the appointment of experts by the tribunal. In the event that the tribunal chooses to appoint a damages expert, it will be key to ensure that a proper protocol is in place to ensure the parties retain their autonomy and the ability to present their case as they see fit.

There are a number of risks in taking what may be a more cost-effective approach, by the tribunal appointing one expert. For example, it may result in a later appointment of the expert, as the tribunal may wish to review the first round of submissions prior to issuing detailed instructions. Although the tribunal could request assistance from the parties in providing instructions, it may be difficult for the parties to agree on the instructions and this could create inefficiencies in the proceedings. The parties and the tribunal would also need to agree on a protocol for the disclosure of relevant documents to the expert, taking into account all necessary confidentiality restrictions. There is a risk that the autonomy of the parties is affected by not having the guidance of their own experts in preparing

document production requests of a technical nature. The unilateral appointment of an expert by the tribunal may also present a risk to enforceability of any final award. Any procedural order would need to ensure that both parties had equal rights to cross and re-examine any expert. The risks of challenge to an award may be reduced by agreeing on the appointment of an expert with the parties, including coordinating with the parties on the identity of the expert and the scope of the instructions.

The tribunal may also elect to explore its own damages calculation, for example inserting a different interest rate into a methodology proposed by one of the parties. In respect of tribunal-led calculations of damages, such as taking an unconventional approach or an approach taken that was not put forward by either party, there is also a risk of challenge. In November 2020, the Commercial Court at the High Court of England and Wales set aside the quantum findings in a US\$50 million investment treaty award made in favour of a Canadian mining company, World Wide Minerals Limited (WWM), against the Republic of Kazakhstan (TRK), after ruling that the state was not given a fair opportunity to address damages.¹⁰ WWM presented a ‘rolled-up claim’ based on the assumption that all their allegations would succeed and that the effect of them together amounted to expropriation of their investment. The investors further made no effort to individually identify the losses associated with each of TRK’s alleged actions. TRK had provided three separate bases for quantum calculations but all were based on a finding that it had expropriated WWM’s assets. The tribunal did not find that there was any expropriation and, therefore, none of the quantum calculations, or underlying methodology and assumptions, applied to the judgment reached by the tribunal. In view of the lack of options, the UNCITRAL tribunal decided the case on the basis of a ‘loss of a chance or opportunity’, which had not been argued for by WWM and, in fact, was not in line with either counsel’s approach during the hearing. This approach ultimately grouped all the costs together but was not on a basis contended for by WWM or the subject of arguments before the arbitrators from either party. The court concluded that the tribunal’s decision to award damages based on a methodology that had not been argued for by either party was a serious irregularity, which resulted in a substantial injustice to TRK, under Section 68(2) of the UK Arbitration Act 1996. The court ruled that the relevant paragraphs of the award relating to quantification of loss should be set aside and that the quantum issue be remitted back to the tribunal

10 *The Republic of Kazakhstan v. World Wide Minerals Limited and Paul A Carroll QC* [2020] EWHC 3068 (Comm).

for determination. The tribunal may wish to put questions about alternative calculation methods to the parties prior to using them in the final award, to lower the risk of a challenge.

Document production

The document production phase of an arbitration is particularly important to the assessment of damages, as financial information is rarely disclosed to an opposing party prior to an arbitration. The lack of full and clear information can lead to either inflated, or underestimated, damages claims, which could be solved by early disclosure of relevant information and cooperation between the parties. The relevance of financial information will depend on the factual matrix and type of claim. A backward-looking claim for damages may require the review of invoices, payslips, remittances and any other evidence of payments made or costs incurred, alongside market data and relevant ancillary information such as budgets, the structures of the company and evidence of cash flow (including within any corporate group structure). Conversely, a forward-looking claim may involve financial models, internal budgets and forecasts, a review of any relevant long-term financing agreements, information delivered to shareholders and market data. The risk with a forward-looking claim is that it necessarily requires a greater use of assumptions, which leads to less certainty as to the level of damages that should be awarded. An example of a forward-looking claim that can be difficult to quantify is a claim for lost profits.

Parties may be reticent to disclose certain documents, particularly financial documents, on the basis of commercial sensitivity, which will typically be increased when the opposing party is a competitor. However, any reluctance to disclose documents may risk not only affecting the accuracy of the damages calculations but also slowing down the proceedings with protracted submissions on the relevance, materiality and availability of documents. The majority of arbitrations are conducted confidentially, with third parties unable to review submissions or attend hearings; however, the position on confidentiality in arbitration is not always clear cut and may be subject to change. As of 1 January 2019, any award issued under the ICC Rules shall be automatically published two years after the date of the award unless one of the parties objects.¹¹ This puts the onus

¹¹ Note to Parties and Arbitral Tribunals on the Conduct of the Arbitration under the ICC Rules of Arbitration (January 2021), Part IV(C) – Publication of Awards, Procedural Orders, Dissenting and/or Concurring Opinions, page 10, paras. 58 and 59, available at <https://iccwbo.org/content/uploads/sites/3/2020/12/icc-note-to-parties-and-arbitral-tribunals-on-the-conduct-of-arbitration-english-2021.pdf> (last accessed 18 October 2022).

on the parties to object to publication of the award, rather than an automatic presumption that the award will remain confidential. It remains to be seen how other arbitral institutions will react to this move towards greater transparency in arbitration.

In relation to confidentiality, the ICC Rules do not provide for the automatic confidentiality of proceedings but, rather, provide that, upon request from any party, the tribunal may ‘make orders concerning the confidentiality of the arbitration proceedings or of any other matters in connection with the arbitration and may take measures for protecting trade secrets and confidential information’.¹² This is in contrast to certain other arbitral rules, which provide for greater, automatic confidentiality restrictions. For example, the LCIA Rules provide for the confidentiality of the arbitration proceedings and of all materials in the arbitration created for the purpose of the arbitration and all other documents produced by another party in the proceedings not otherwise in the public domain, subject to certain exceptions.¹³ The Arbitration Rules of the Hong Kong International Arbitration Centre, the Singapore International Arbitration Centre and the Dubai International Arbitration Centre similarly provide for a general agreement of confidentiality with respect to the arbitration.¹⁴

A party may attempt to rely on the International Bar Association’s (IBA) Rules on the Taking of Evidence in International Arbitration to resist disclosure of commercially sensitive documents, in view of concerns it may have about confidentiality. This is particularly likely with information requested in relation to the calculation of damages, as financial information (particularly pricing structures) is generally commercially sensitive. Similar concerns would also arise in relation to proprietary technical information or in intellectual property disputes. Pursuant to Article 9 of the IBA Rules, the tribunal may, either of its own volition or at the request of a party, exclude any document, statement, oral testimony or inspection on the grounds of ‘commercial or technical confidentiality’ that it deems compelling. If the tribunal finds the arguments that the information should be excluded on this basis compelling, but also considers that the information is likely to be relevant, it could choose to review the information itself, or appoint an independent expert to review the information, and assess whether it should be disclosed. In addition, the tribunal could consider the disclosure of redacted

12 ICC Arbitration Rules (2021), Article 22.

13 LCIA Arbitration Rules (2020), Article 30.

14 Hong Kong International Arbitration Centre, Arbitration Rules (2018), Article 45; Singapore International Arbitration Centre, Arbitration Rules (2016), Article 39; Dubai International Arbitration Centre, Arbitration Rules (2007), Article 41.

information. However, in relation to quantum, it is likely that the most relevant information is also the most commercially sensitive and, therefore, any redaction is likely to neutralise the usefulness of the documents or information. An alternative, as set out below, is for the parties to agree to a confidentiality regimen (including the option to limit access to certain documents to just counsel, experts and the tribunal).

The inconsistent approach to confidentiality in arbitral rules does not need to be a reason for parties to refuse to disclose commercially sensitive documents, as the flexibility of arbitration allows the parties to agree to a confidentiality club or non-disclosure agreement to ensure protection from any unauthorised disclosure of information. The parties have full discretion as to the breadth of their confidentiality agreement and may decide that the confidential documents (and any arguments relating thereto) can be accessed only by all parties to the arbitration, or only counsel and experts, or even purely the experts and the tribunal. The risk with limiting access to just counsel and experts is that the parties will not be able to provide input on the context of the documents and the significance of the information they contain. This risk is further increased by restricting access to just the experts, who may not be able to properly assess the correlation between financial information and the parties' respective legal positions. An alternative (or additional) restriction, which may give the parties peace of mind without restricting their ability to properly present their case, is to restrict access to the documents to viewing rights only (except for counsel and experts).

Whatever the decision, a protocol will need to be prepared if the parties agree to a confidentiality club, to include all restrictions of the relevant information. The parties may wish to include a naming convention for confidential exhibits and pleadings, to ensure there is no accidental disclosure of confidential information. This delineation will also make preparation of the hearing bundle easier, particularly if a virtual platform is used. In view of the move towards more virtual hearings, and generally to the use of virtual bundles, the parties should include a protocol for storage of confidential information on any data management site and restriction of log-in access to only those with access rights under the confidentiality agreement. The confidentiality club protocol should also address issues that will arise at the hearing, such as the sequestration of witnesses and, if relevant, other experts from the hearing during confidential portions and how the confidential portions of the transcript can easily be identified by the transcribers. The use of a confidentiality club is likely to increase costs, particularly because either separate or redacted submissions may be required, but may be a suitable solution if it allows more accurate calculation of damages through the disclosure of relevant information.

Case management and cost considerations

As has been set out in this chapter, addressing quantum early is key to ensuring that hopeless claims are identified, that experts have access to necessary documents to assess damages accurately and that the parties can properly present their claims (and counterclaims and defences) to the tribunal, saving both time and costs. By engaging in a damages protocol at the same time as the procedural timetable is agreed, the tribunal and parties may be able to improve the efficiency of proceedings. The damages protocol might address issues such as:

- the type of damages claimed;
- whether the parties will be addressing mitigation of loss;
- any application of contractual limitation clauses (or limitation under law);
- the format of any expert submissions, including any methodology and underlying calculations to explain the ultimate quantum claimed (or disputed);
- a good faith estimate of any damages claimed; and
- the guidelines for presentation of expert evidence at the hearing.

However, the parties should be ready to review the protocol as the case evolves and the presentation of early views on damages should not prevent a party advancing different arguments on damages as more evidence is presented. Each case will present its own unique procedural requirements and challenges but, as has been set out in this chapter, certain tools may be deployed to save costs.

Settlement of an arbitration can save parties significant costs, particularly if settlement occurs early in the arbitration timetable. Distinct damages claims with proper evidence and fully detailed financial models will typically make it easier for parties to assess whether they can reach a compromise voluntarily on any compensation to be paid. Settlement offers are also relevant to damages claims when they can be made available to the tribunal in relation to costs awards, to demonstrate the reasonableness of the parties' behaviour. Generally, across the major arbitral institutions, the tribunal has wide discretion as to how to allocate the costs of the arbitration, and can consider not only the relative success of the parties but also their conduct during the proceedings. As part of this wide-ranging discretion, the tribunal may also take into account settlement offers made. In the English courts, parties may make a 'Calderbank offer' (i.e., an offer made without prejudice save as to costs). A party may choose to utilise this type of settlement offer in an arbitration, which, if it is not accepted, can be disclosed to the tribunal in the costs phase. If a successful claimant fails to beat a respondent's settlement offer, for example, the tribunal may choose to take this into account in the costs

award and penalise the claimant for failing to accept a reasonable settlement offer, resulting in unnecessary arbitration costs being incurred. There is no obligation on the tribunal to take any settlement offer into account, but parties should carefully consider the potential costs consequences when making, or receiving, an offer without prejudice, save as to costs.

In sum, it is key for the efficiency and cost-effectiveness of proceedings that damages are addressed clearly, fairly and accurately. Each case will turn on its facts and there is no one-size-fits-all approach to the procedural issues in relation to damages. The flexibility of the arbitration process allows the parties, in conjunction with the tribunal, to carefully craft the procedures around damages to fit the unique issues of the case, and to adapt them as the case evolves.

CHAPTER 8

The Function and Role of Damages Experts

Anthony Theau-Laurent, Edmond Richards and Louis Osman¹

Introduction

In dispute resolution processes, such as arbitration, litigation, or mediation, experts are often instructed to provide an opinion on specific matters within their area of expertise. When one party, or several, seeks financial compensation for the damage sustained as a result of another party's wrongful actions, damages experts are typically instructed to assess the losses.

In arbitration cases specifically, damages experts provide their evidence to the tribunal in the form of written reports and, depending on how the case proceeds, may be required to testify at a hearing. The International Bar Association Rules on the Taking of Evidence in International Arbitration (the IBA Rules) 2020 set out a number of guidelines relating to evidentiary issues in international arbitration. Although the IBA Rules are non-binding (unless explicitly agreed by the parties to a dispute or ordered by a tribunal), they are commonly followed by experts in the preparation of their submissions. The guidelines set out in the IBA Rules broadly revolve around three underlying principles that shape the role of a damages expert: competence, independence and transparency.

Damages expert process in arbitration

Tribunal-appointed versus party-appointed experts

In arbitration, damages experts may be appointed by either the parties to the case or by the tribunal itself.

¹ Anthony Theau-Laurent is a partner, Edmond Richards is a director and Louis Osman is a manager at Accuracy.

A tribunal may directly appoint an expert to help it assess the financial consequences of the decisions it makes on key facts or assumptions relating to the matter at hand or to enable it to choose between the views of party-appointed experts.

More commonly, however, claimants and respondents each appoint their own damages expert, with the instructing parties referring to the experts' reports in their written submissions.²

Regardless of whether an expert is appointed by the parties or by the tribunal, the overriding duty of the expert remains towards the tribunal, as opposed to the parties. Indeed, a recent judgment from the Court of Appeal of England and Wales did not uphold the finding that a fiduciary duty was owed by a testifying expert to the appointing party.³

Involvement of damages experts throughout disputes process

Although the bulk of a damages expert's work may occur during the expert report phase, experts are commonly involved to different extents throughout the entire dispute resolution process, preferably from the outset of a case, through to the hearings, and possibly after.

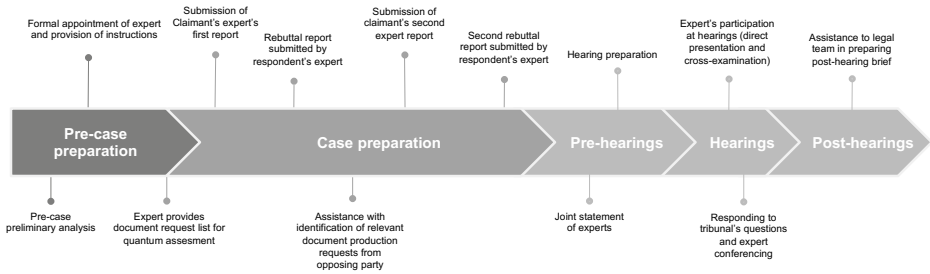
In processes where experts are appointed by the parties, the experts' reports are typically submitted sequentially, giving experts the opportunity to consider and comment on each other's submissions. In such a process, each expert will often have the opportunity to submit two (or more) reports; however, this may vary depending on the nature of the case, and how it proceeds, or unforeseen events. For example, in some cases where hearings were postponed because of the covid-19 pandemic, the damages experts were required to submit additional reports updating their opinions.

Alternatively, the experts may be required to submit their initial reports simultaneously, usually with a further opportunity for the experts to respond to each other's reports.

The timeline below illustrates some of the duties that the experts may be required to perform under a sequential submission process.

2 Alternatively, on occasion, an expert may be appointed jointly by both parties to an arbitration.

3 *Secretariat Consulting Pte Ltd v. A Company* [2021] EWCA Civ 6 (11 January 2021).



Duties and obligations of damages experts

Competence

The IBA Rules provide that experts' qualifications and relevant experience should be set out in their submissions.⁴

A damages expert should have the requisite expertise or qualifications to assess damages, which will often involve knowledge of finance, valuation, economics or accounting, among other things.

Prior experience in similar situations and sectors is often preferable, although not indispensable. Where an arbitration relates to a sector requiring specific technical knowledge, the instructing party's counsel may seek to appoint a damages expert with prior experience of that particular sector, whether through previous expert assignments or time spent working in the industry.

In cases that require specialist knowledge beyond the damages expert's expertise, counsel may instruct an industry or technical expert to assist the damages expert. We discuss the interaction between a damages expert and a technical expert in further detail later in the chapter.

Independence

The IBA Rules also state that experts should submit a statement of independence, alongside or including a statement regarding their relationship with the parties, their lawyers and the arbitral tribunal.⁵ This requirement is enshrined in various other arbitration rules worldwide.⁶

⁴ International Bar Association Rules on the Taking of Evidence in International Arbitration, 2020, Article 5(2)(a).

⁵ *ibid.*, Article 5(2), Paragraphs (a) and (c).

⁶ For example, Article 29 of the UNCITRAL Arbitration Rules (2021) stipulates: 'The expert shall, in principle before accepting appointment, submit to the arbitral tribunal and to the parties a description of his or her qualifications and a statement of his or her impartiality and independence.'

The overriding duty of experts in arbitration is to assist the tribunal on matters within their specific area of expertise. Regardless of which party they may be instructed by, experts must remain independent, objective and impartial at all times. Any actions that undermine experts' independence and impartiality would, by extension, undermine their credibility and the validity of their opinion.

When experts are appointed by one of the parties, there may be an element of inherent bias in the way the case is presented to the experts and in the nature of the evidence provided. Part of the experts' role, therefore, is to maintain impartiality when considering the information provided, to overcome any such bias and to provide an objective opinion to the tribunal.

The Civil Justice Council's Guidance for the Instruction of Experts in Civil Claims 2014 sets out a general rule for independence in UK litigation, requiring that 'the expert would express the same opinion if given the same instructions by another party', adding that 'experts should not take it upon themselves to promote the point of view of the party instructing them'.⁷

Experts should objectively consider all available evidence and should seek to perform appropriate verifications against available data, including data obtained via the experts' own research (which, when referred to in an expert report, should be disclosed). Experts should seek to assess evidence received from the instructing party as critically as they would data from the other party or an external source, and should seek additional clarification or explanations as necessary.

The sequential nature of the party-appointed expert process may cause asymmetries in information, particularly during the first stage of the arbitration process, when the claimant may not have access to relevant information from the respondent. In a multi-stage expert process, experts' duties include outlining any additional information they would require to produce a more robust assessment of damages, or to respond more comprehensively to the arguments raised by the expert appointed by the other party.

If appropriate, experts may address the issue of incomplete or inconsistent evidence by reflecting an additional level of risk in their damages assessment (e.g., by applying a contingency or by increasing the discount rate).

Experts may be required to amend or update their opinion based on new evidence. This may be the case in a sequential report process when an expert becomes aware of new, relevant information, when another expert has identified discrepancies or errors in the analysis initially performed, or when experts

⁷ <https://www.judiciary.uk/wp-content/uploads/2014/08/experts-guidance-cjc-aug-2014-amended-dec-8.pdf> (last accessed 23 September 2022).

themselves become aware of an error at a later stage following self-review. Experts should not be wary of making amendments to their opinions, as this is a natural outcome of an efficient expert process.

Transparency

Experts should set out the basis for their assumptions, calculations and opinions as clearly as possible, so the analysis performed can be understood, questioned and possibly modified by recipients of their reports, including other experts. For example, experts should assist the reader in following their report by appending relevant models and calculations (in native format, where possible) and by comprehensively referencing the evidence and exhibits they have relied on in reaching their conclusions.

In addition, experts should clearly state in their reports which instructions they have received and relied on to reach their conclusions. Experts should only opine on issues within their expertise and, therefore, counsel may instruct experts to assume certain other factual or legal matters that are relevant for the purpose of their damages assessments. Any such instructions should be indicated in the experts' reports, and tribunals have the option to subsequently request experts to consider matters under different instructions.

Experts should also set out in their reports which damages framework they are applying for the purposes of their assessments. Typically, an award of damages should seek to put the claimant back in the position it would have been in but for the alleged actions of the respondent. This requirement is enshrined, for example, in international law through the Permanent Court of International Justice's decision on the *Factory At Chorzów* case,⁸ which stipulated that damages should 'wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed'.

As an alternative, experts may opt to apply other generally accepted frameworks or, if relevant, frameworks specific to a particular industry. For example, the International Valuation Standards set out a number of generally accepted standards and principles that provide an overarching framework for valuation-based assignments.

8 *Factory At Chorzów, Germany v. Poland*, Judgment, Claim for Indemnity, Merits, Judgment No. 13, (1928) PCIJ Series A No. 17.

Experts should set out the limitations of their analysis; often, limitations may arise, *inter alia*, when experts are provided with incomplete or inconsistent evidence, when they are provided with particularly narrow instructions, or when their work is subject to time or resource constraints.

Evidence may be obtained by experts from a number of sources, including exhibits submitted by the parties to the case or, where appropriate, information obtained through the experts' own independent research. Often, experts may be presented with different sources of evidence on the same topic, which may be contradictory. In such a case, they will be required to apply professional judgment to weigh different sources of information against each other, with a view to ultimately selecting the sources of evidence they believe will be the most useful in providing an independent, informed opinion to the tribunal.

Of course, the exercise of selecting the most reliable source of evidence may be subjective and may not always be clear-cut. Experts may seek to compare contradictory sources of evidence against other benchmarks to provide further assurance regarding the reliability (or not) of those sources.

If the nature of the evidence obtained, or any other circumstance, limits the usefulness of experts' opinions or requires them to make certain simplifying assumptions, these should be identified in the experts' reports.

Role of damages experts at each stage of arbitration process

Taking on an expert damages assignment

Counsel will often identify areas requiring input from a damages expert at an early stage of the legal process. Before being appointed formally, damages experts may be initially requested to provide a preliminary opinion on certain matters within their expertise, such as assisting counsel in identifying possible heads of claim or by preparing a preliminary 'back of the envelope' assessment of damages.

Counsel may subsequently decide to formally instruct a damages expert. If the process of selecting an expert is competitive, counsel may circulate a Request for Proposal to the potential experts detailing the background to the dispute and setting out the experts' proposed instructions. Before preparing their proposal and accepting potential mandates, experts should ensure that they are free from conflicts of interest.

Following the selection of experts, counsel should communicate experts' instructions in writing. If experts have any doubts as to the correct interpretation of these instructions, they should seek clarification at the earliest opportunity.

Experts should refrain from taking on an assignment if the proposed instructions would result in their independence being compromised. Experts should also avoid accepting instructions that would result in them providing a biased or misleading opinion to a tribunal, or that would result in a damages assessment that is inconsistent with fundamental financial or economic principles.

Expert damages reports

Structure of a damages report

Although different damages expert reports are likely to contain common elements, the structure may vary contingent on the instructions and evidence provided to the experts. It is often helpful for experts to draw the attention of tribunals to their key findings and conclusions in a summary section early in their reports, before setting out their detailed analysis.

Experts should bear in mind that there may be multiple users of their report, including the expert appointed by another party, parties' counsel and the tribunal, all of whom have different responsibilities and varying levels of technical knowledge. Therefore, although reports should be written using formal written language, experts should consider using non-technical language to the extent possible and clearly set out the methodology used to reach their conclusions so that the reader can easily follow (or even re-perform) the analysis carried out, even if they are not an expert in the subject matter. Where appropriate, technical terms, abbreviations and acronyms should be defined (and explained) in the body of reports and referenced in a glossary.

Damages experts should seek to present their analysis in a 'layered' manner; experts' reports should set out their opinions and conclusions clearly while also enabling the reader to dig further into the detail of the evidence used or the assumptions made. Experts should try to avoid making their reports too long or complex, as this may hinder a tribunal's ability to understand the analysis performed or to identify the key messages. Experts may consider setting out more detailed aspects of their analysis in an appendix to their report, to enhance the reader's understanding of the conclusions reached.

Making assumptions in an expert damages report

Damages experts are often required to produce assessments or valuations relating to a counterfactual situation in which a business or project was able to be operated unimpeded by the alleged breaches. Experts may be required, therefore, to make a number of assumptions as to the performance of the relevant business or project, for example, in relation to revenue growth, direct costs, operating costs

and working capital or capital expenditure requirements. Experts may also need to make macroeconomic assumptions, or assumptions relating to the wider industry, or to legislative or regulatory matters.

Whether or not experts can use hindsight in making such assumptions (for example, in relation to economic growth or inflation in prices of raw materials) will depend on whether they are performing an *ex ante* (before the facts) or *ex post* (after the facts) damages assessment. When performing an *ex ante* assessment, experts put themselves in the parties' shoes at the selected valuation date, typically around the date of breach, using only information available up to that date. Conversely, under an *ex post* assessment, experts use all information available up to the date of the assessment.⁹

Any assumptions used by experts should be clearly set out in their reports. Experts should seek to explain why they have made particular assumptions, by reference to documentary evidence, discussions with the instructing party or their own experience. Experts should try to avoid making superfluous or speculative assumptions, so as not to undermine the robustness of their analysis. If experts make simplifying assumptions for the sake of expediency (or in the absence of other information), this should be noted in their reports.

To test the reasonableness of their assessment, experts should seek to benchmark the assumptions they have made against other sources of data. This can be done individually (e.g., by comparing specific operational assumptions to industry average data) or more holistically (e.g., by comparing the valuation obtained using a specific set of assumptions with a valuation obtained applying an alternative set of assumptions). Experts may seek to compare the outcome of their damages assessment against the damages figure that would be obtained using a different valuation approach (for example, comparing the outcome using a discounted cash flow methodology to a transaction multiples approach).

Considering evidence from other experts

If required given the nature of the case, the instructing parties may instruct other experts alongside the damages expert to opine on specific issues. This may be the case in arbitrations pertaining to industries in which specific expertise is required, such as the mining industry.

⁹ Experts may also use a hybrid approach, with a valuation date at the date of breach but making use of hindsight to reduce uncertainty in relation to selected inputs, such as commodity prices or inflation. Although such an approach is not a true valuation per se, it can help the expert isolate the impact of the alleged breaches.

Where appropriate, the damages expert may assist counsel in identifying matters within the other expert's expertise, which may help with the preparation of a robust damages assessment (e.g., by opining on certain technical or operational assumptions that are beyond the damages expert's knowledge).

Damages experts should critically evaluate the evidence put forward by other experts and consider the extent to which they are able to rely on another expert's assumptions, in the same way that they would evaluate any other source of information. If necessary, the damages expert may provide sensitivities to test the assumptions of other experts, or assess the impact of assessing damages under alternative assumptions.

Providing opinions in an expert damages report

Experts should set out their conclusions and opinions in a clear and succinct manner that can be understood by readers who may not be experts in the subject matter, in particular the members of the tribunal. Experts' conclusions should follow on logically from the analysis and calculations they have documented in their report and should be supported by the evidence referred to and the assumptions made.

As a general rule, conclusions should be documented in such a way that another reader would be able to follow an expert's analysis and arrive at the same conclusion. Where part of an expert's opinion is based on experience of similar cases rather than specific documentary evidence, this should be made clear in the report.

Preparing a financial model to support an expert damages report

Often, experts will provide a damages model to support their analysis. A financial model, which is typically produced in a spreadsheet software program such as Microsoft Excel, will be underpinned by the assumptions made by an expert and, depending on the nature of the case, may be of differing levels of complexity.

Although there is no 'one size fits all' approach for developing a damages model, a number of considerations should be taken into account. Experts should take all measures possible to ensure the model is accurate and error-free; the more complex a model, the greater the risk of an erroneous formula that may undermine the entire damages calculation. To the extent possible, the model should be concise and logically structured, with inputs referenced back to the source data. Where required, experts may incorporate 'switches', to enable the user of the model (e.g., the expert appointed by the other party, counsel or the tribunal) to assess the quantitative effect of using different assumptions or running an alternative damages scenario.

If helpful, experts may wish to include instructions or signposting in the model itself to instruct a user as to its operation. In preparing a damages model, experts should continue to bear in mind their duty to assist the tribunal, as making a model excessively complex and difficult to follow will, inevitably, limit its usefulness.

Furthermore, damages experts may use a sensitivity analysis to show how modifying a particular assumption may affect the overall damages assessment. Examples of sensitivities that an expert could use include adjusting the annual growth rate, updating assumptions of variable costs per unit or changing the cost of capital.

Experts should aim to focus their sensitivity analysis on the inputs that drive their conclusions or to which the damages calculation is particularly sensitive. Providing a dynamic model that clearly illustrates the effect of key assumptions will assist the parties to the case in focusing on the topics that are most material to the case and, in turn, will avoid the damages experts (or the tribunal) dedicating a disproportionate amount of time to matters that are of limited importance from a quantum perspective.

In performing a sensitivity analysis, experts should consider that assumptions are often interrelated and that changing a single assumption in isolation may not always be logical from an economic perspective. In such a case, experts may wish to perform a sensitivity analysis by modifying several assumptions at once to reflect a particular situation or factual outcome, accompanied by an appropriate explanation of the scenario the updated assumptions represent.

When assumptions are particularly subjective or uncertain (or require further information to determine), experts may present their final damages figure as a range of possible outcomes. This may also be helpful, for example, when certain assumptions are dependent on the tribunal's decision on certain factual matters that may affect the damages assessment (for example, if the tribunal were required to determine whether or not a particular revenue-generating activity fell within the scope of a contract). If a range of damages figures is provided, experts should attempt to explain the different outcomes by reference to differences in the underlying assumptions used.

Additional considerations for a rebuttal expert report

In a sequential report submission process, the respondent's expert will typically have an opportunity to respond to the claimant's expert's report twice, whereas the claimant's expert will have one opportunity to respond to the respondent's expert's comments on the former's initial report.

In rebuttal reports, experts will often be instructed to perform their own damages assessment under the same instructions as the expert appointed by the other party. An expert could also be instructed to assess damages under

different sets of instructions in the same case, to provide the tribunal with a range of possible outcomes. Alternatively, experts may be asked to comment on the analysis and opinions of the other expert, including highlighting any limitations of that analysis and points of agreement, without seeking to perform additional analysis to derive their own assessment of damages.

In any case, to provide an objective and impartial opinion on the subject matter, experts must be familiar with the arguments of both parties to a dispute. When responding to another expert's report, experts should give due consideration to the other expert's arguments and analysis, as well as the additional evidence submitted by an opposing party. Experts should seek to address any rebuttal or criticism from the other expert of the assumptions they made or conclusions they reached and, where appropriate, seek to propose alternatives.

To the extent possible, reports from opposing parties' experts should seek to follow a similar structure, so that areas of agreement and disagreement are evident to the reader.

Joint-expert meetings and reports

Prior to commencement of the hearings, the experts appointed by both parties may be required to meet, to identify common ground and any remaining areas of contention.

The experts may be asked to formalise the outcome of this meeting through a joint statement of experts, setting out matters on which they agree and disagree. This statement usually benefits the tribunal by enabling the arbitrators to focus on the outstanding contentious issues during the hearings.

Hearings

To ensure they are sufficiently prepared for the hearings, experts should make sure they are familiar with the relevant evidence submitted by the parties and the analysis performed by both experts during the preparation of their reports. This will enable an expert to identify areas of disagreement with another expert and to clearly articulate the underlying reasons to the tribunal.

During the hearing, damages experts are often subject to direct, and possibly redirect, examination from the instructing lawyers, cross-examination from the opposing counsel and questions from the tribunal.

Direct examination can take the form of questions from the instructing lawyers or a presentation that will have been prepared and typically submitted beforehand to the parties and the tribunal, with the aim of summarising an expert's opinion and areas of agreements and disagreements with other experts.

Following this presentation, experts will typically be cross-examined by the opposing counsel on relevant areas of contention. It is essential during the cross-examination that experts remain conscious of their overriding duty to assist the tribunal; experts should remain independent and impartial at all times and seek to give clear answers to the questions put to them, to ensure they come across as credible. As with the drafting of an expert report, the responses given during cross-examination should be made with the target audience in mind (i.e., the tribunal), who may not be financial experts; the language used should be tailored accordingly, avoiding the use of jargon to the extent possible.

Experts may be subject to redirect examination, where the instructing lawyers ask them additional questions to clarify certain matters raised previously. Redirect examination can be a way for the instructing lawyers to take experts to additional evidence that they were not shown in their cross-examination.

Typically, time is allocated during the hearings for the tribunal to directly address questions to experts, to clarify certain points that may have arisen during cross-examination. Experts appointed by each party may be required to answer questions from the tribunal concurrently, in a process known as ‘expert conferencing’ or ‘hot-tubbing’. This process can be used by the tribunal to encourage the experts to find common ground, or to get to the bottom of the reasons for certain disagreements.

After the hearings, experts may be asked to provide further comments on quantum for the purpose of the post-hearing brief, which is used by the parties to highlight and address key issues that have arisen during the hearing process. In some cases, experts may be asked by the tribunal to assist with specific further issues to enable the tribunal to render the award; for example, to agree on the appropriate calculation of pre-award interest.

Conclusion

Much of the role of a damages expert is enshrined, either directly or indirectly, in existing arbitration rules and industry-standard guidance.

Even where this is not the case, damages experts should seek to apply best practice to satisfy their overriding duty to assist the tribunal by opining on matters within their specific area of expertise. In particular, experts should remain independent and objective at all stages of their involvement in the arbitration process, critically assessing the evidence provided to reach a transparent and well-reasoned opinion based on a supportable set of assumptions.

CHAPTER 9

Strategic Issues in Employing and Deploying Damages Experts

John A Trenor¹

Parties frequently engage experts to assist in developing, calculating and presenting their cases on damages to tribunals in international arbitration. These experts may specialise in economics, finance or accounting, or possess specialist business acumen in a particular industry, country or subject matter. Some damages experts offer scientific, technological or other technical skills. In many cases, they are engaged to provide quantitative ‘number-crunching’ capabilities or modelling experience, such as company valuation or cash flow analyses.

Given the flexibility inherent in international arbitration and the focus on party autonomy, parties often have significant ability to craft the procedures regarding the resolution of damages issues. Of course, tribunals are typically granted considerable discretion to determine the applicable procedures under most arbitration laws and rules, including as it pertains to the resolution of damages and expert evidence.

This chapter addresses a number of techniques and approaches that parties and their counsel, as well as tribunals, can consider to maximise the effectiveness of expert assistance on damages issues. It bears emphasis that the usefulness or appropriateness of a particular technique or approach depends significantly on the circumstances of the case at issue. What may work or be appropriate in one case may not work in another. One size does not fit all. Parties should work with tribunals to determine the most appropriate procedures in each case.

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Determining whether a damages expert is appropriate

One of the first strategic choices parties have to make regarding damages is whether to retain a damages expert and, if so, which expert.

It is important for parties to begin considering damages issues, together with liability issues, as early as possible, especially after a dispute has arisen but often before, to guide appropriate decision-making. Counsel experienced in damages issues can work closely with clients, especially the commercial and financial teams within companies, to provide preliminary assessments and to determine the issues that may arise and what type of damages expert may be appropriate.

Parties and their counsel often think first about whether a damages expert would help to present their case before the tribunal, but damages experts can be effective in helping to develop the damages case in the first place. Moreover, in many cases, damages issues are intertwined with merits issues, and thus the right experts can help parties and their counsel to develop the entire case. Knowing how strong a damages case may be or how to accurately quantify the likely damages that may be recovered can help influence a party's strategy from the outset, including whether to initiate an arbitration or assert a counterclaim.

Although damages experts can be extremely useful, they are obviously not necessary in every arbitration. In some cases, parties and their counsel can effectively quantify damages and present the damages case. Sophisticated counsel, with experience in damages issues, can often work with the in-house teams of the client – whether commercial, financial or other – to build and present the damages case.

Whether to engage a damages expert depends on a variety of factors, including the amount in dispute and the complexity of the damages issues. In cases involving small amounts in dispute, it may not be economical to engage damages experts. In cases with seemingly straightforward damages issues, it may not be necessary to engage damages experts. However, what may seem simple at the outset can be misleading, and an understanding of the complexity may develop over time.

Whether the opposing party has or is likely to engage a damages expert is another important consideration. It is not always necessary to engage a damages expert just because the other side has. There may even be strategic considerations about sending a message to the tribunal regarding the simplicity (or complexity) of the damages issues. However, it is important to fully consider the expectations of the tribunal and the assistance that damages expertise may provide, depending on the circumstances of the particular dispute.

The sophistication of the arbitrators on damages issues, if known, can also be an important factor in whether to engage a damages expert.

Of course, a party's financial resources and ability to pay for a damages expert influence the decision as well. In some instances, third-party funding may be an option.

Engaging the right damages expert

Engaging the right damages expert for the dispute is one of the most important decisions a party makes, apart from its choice of counsel.

Given that damages issues are governed by the applicable law and often linked with liability issues, the lawyers engaged by the parties typically work closely with the client to identify the right experts for the case.

A wide variety of factors influence the selection of the right damages experts, including:

- the scope and depth of relevant experience, expertise and education;
- quantitative skills;
- reputation;
- demeanour, persuasiveness and credibility;
- ability to communicate complex issues clearly and persuasively in writing and orally at the hearing in terms a tribunal can understand;
- experience in testifying at an arbitration hearing and, in particular, in facing cross-examination;
- experience with expert conferencing (also known as 'hot tubbing');
- cost; and
- availability.

Of course, it is critical to establish that the expert is independent of the parties and impartial. Counsel must enquire about the extent to which the potential expert has previously worked for, or has any other relationship with, any of the parties or counsel (including opposing counsel, if known). The potential expert must be conflict-free. It is important to review any available publications by the candidate to determine whether there are issue conflicts (i.e., positions taken by the candidate that might conflict with or undermine positions in the arbitration). These questions can be relevant not only for the individual candidate under consideration, but also for the organisation for which the expert works.

It is also worth enquiring whether the potential expert has any experience with experts retained by the other party or parties, if yet known. Experts often have experience of working with or against other experts or have heard stories from others who have that kind of experience. Often experts have useful insights on the strengths and weaknesses of their colleagues.

Of course, it is important to establish whether the potential expert is on board substantively with the party's case. If not, the party and its counsel must find another expert or revise the position the party intends to take.

Often, strategic questions arise as to whether to engage a damages expert who is a generalist, whether to engage a damages expert with experience in the particular industry or country involved, or whether it would be appropriate to hire separate experts. The strategic considerations depend heavily on the circumstances of the particular case, including the specific damages issues in dispute. Sometimes, it is difficult to find the desired expertise in one person. In such cases, it may be worth considering whether to engage multiple experts. That, in turn, raises questions about whether the multiple experts should work together or separately, submitting a joint report or separate reports. Depending on the circumstances, multiple experts might be inefficient or excessively expensive, or otherwise unnecessary.

Counsel for a party typically research a number of potential experts (sometimes dozens) to best match the needs of the case with the expert's skill set. Counsel often interview a short list of candidates, occasionally with client participation, to make a final decision.

There are a number of issues that may arise with the formal terms of the engagement itself. Although these are beyond the scope of this chapter, two are worth brief mention. First, in some jurisdictions, it is important for the lawyers to engage the experts on behalf of the client (rather than have the client engage the experts directly) to maximise the protection of legal privilege. Second, when considering the terms of compensation for the expert, care should be taken to preserve the impartiality of the expert. This is often addressed through payment based on hourly fees or a fixed fee for the matter (or fixed fees for various stages).

Working with damages experts

Advance planning by counsel working in conjunction with damages experts, once engaged, and by tribunals and the parties to establish the procedures for addressing how evidence from damages experts will be presented, is critical for maximising the beneficial role that such experts can play.

For parties and their counsel, this advance planning typically starts with a detailed production schedule for ensuring that the experts are effectively integrated into the development of the damages case and that expert reports are prepared in a timely fashion in close coordination with the preparation of the parties' memorials.

In many cases, it takes time to develop the appropriate methodology for assessing and quantifying damages. This frequently entails a collaborative process involving the expert, counsel and the client that may take weeks or even months to develop, taking on board the parallel development of the factual and legal case, which influences the damages case. Counsel typically works with the expert to obtain relevant documents, data and other information from the client.

An early issue that often arises is whether to seek (or oppose) bifurcation of liability and damages.

The tribunal can play an important role by placing issues regarding damages and experts on the agenda for the first procedural conference so the parties are prepared to discuss tentative procedures for addressing expert evidence on damages. Of course, in most instances, the parties cannot be expected to have fully developed their damages cases at that early stage and may not be ready to take positions on the relevant procedural issues regarding the presentation of expert evidence. Indeed, in many instances the parties will not yet have engaged damages experts. That can frequently be the case for the claimant, and it is even more often the case for the respondent.

However, if the tribunal begins the discussion early, it can encourage the parties to begin planning and considering options. In some cases, tribunals recognise the difficulties in committing to procedures regarding the presentation of expert evidence on damages at the outset and schedule procedural conferences at various stages in the timetable to revisit these issues as the parties develop their respective cases on damages further.

One issue that may arise when the parties and tribunal discuss the procedural timetable is whether the expert reports should be submitted with the parties' legal and factual submissions, as is often the case in international arbitration, or at a later stage, either simultaneously or consecutively, whether in one round or two. Although there are pros and cons to different approaches, which may be influenced in part by differing views as to the role of the expert, it is often true that the parties and their counsel work closely with the experts they appoint to develop their cases, including on damages, and in many arbitrations it would not be possible or effective for parties to present their memorials without the support of accompanying expert damages reports.

Some tribunals propose – and occasionally even impose – off-the-shelf rules regarding the presentation of expert evidence. This can raise significant concerns among parties if the rules are not sufficiently flexible for proper application to the nuances of the case at issue. Although these rules may have worked in other cases, they may not be appropriate in others.

In considering which procedures are most appropriate for the particular case, it is obviously important to consider the costs, delays and potential distractions they may impose on the parties, through additional work to be performed not only by the experts but also by counsel and in-house personnel.

Effective presentation of damages issues in memorials and expert reports

Counsel play a critical role in presenting damages issues to the tribunal. Although the damages experts present their work in separate expert reports, it is the parties' memorials that the tribunal will read first, and it is counsel's presentation of the damages case that makes the first impression. The expert reports are often viewed, together with witness statements, as supporting materials, and it is counsel's role to integrate the expert's work into the memorials.

Counsel must work closely with the damages expert to develop and present a cohesive and comprehensible damages case, building on the relevant law, facts and expert analysis contained in the expert report.

To effectively present the damages case and the analysis of the damages experts, it is critical for the lawyers to fully understand the expert's methodology and analysis. This is important both for preparing written submissions and for the hearing, where it is essential in particular for effective cross-examination. Although this can be difficult at times, it is often apparent from the party's memorial when counsel do not fully understand the expert's analysis. This leads to less persuasive submissions and can even result in incorrect descriptions of the expert's work that undermine the client's case. A lack of clarity by counsel in describing the expert analysis can in turn make it more difficult for the tribunal to understand. Counsel who truly understand the expert's methodology and analysis are also better positioned to identify inconsistencies, weaknesses or other concerns in a draft report and can work with the expert to resolve them.

Counsel cannot effectively summarise and describe the expert's analysis without truly understanding the methodology that the damages experts use. Indeed, it is often important for counsel to work closely with the damages expert in developing the appropriate methodology. The theories of liability and damages must be mutually consistent.

Experts must have clear instructions on the scope of the issues to be addressed in any expert report, as well as any appropriate instructions as to legal parameters, facts, or other issues governing the calculation of damages. In most cases, it is counsel that instructs the experts in relation to the scope of their expert reports. Instructions received from counsel should be clearly identified and explained in the expert reports.

Counsel also assist in ensuring that the experts have access to the relevant facts, including documents and data, on which to assess damages. This is often a collaborative process in which counsel provide the expert with the information they have obtained and the experts identify additional information that is necessary or would be useful for their analysis. Counsel must also work with the experts to ensure that any assumptions made by the experts are appropriate and reasonable in the circumstances in light of the applicable law and facts. Assumptions made by the experts should be clearly identified and explained in the expert reports.

Many damages issues relate to application of the central principle that the claimant should be restored to the position it would have been in ‘but for’ or without the wrongful actions. This general principle that the wrongdoer must make full reparation for the injury caused by the wrongful act – whether that is a breach of contract or a treaty violation – often lies at the heart of many aspects of the damages case. However, as always, the devil is in the detail and the precise legal standard that governs the dispute.

Moreover, damages calculations must anticipate the legal determinations that the tribunal must make on issues of liability and damages to ensure that the damages model is useful in light of the decisions ultimately reached by the tribunal. That may require alternative situations by the experts if damages calculations are conducted before a finding of the scope of any liability. This emphasises the need for clear communication between counsel and experts (and between the tribunal and the parties, including their counsel and experts) and the need for clear understanding by the experts as to what this means for the purposes of quantifying damages.

It is important for counsel and experts to consider how best to present the damages assessment in a manner that enables the tribunal to understand the quantification associated with particular claims or theories and to avoid double counting or inconsistent decisions on liability and damages. For example, if a claimant alleges two separate grounds for breach of contract, the experts must assess what damages, if any, arise from either or both, avoid double counting and consider any interaction between the two. Sometimes separating the bases for damages is straightforward; in other cases, it can be extremely complicated.

Counsel can also assist the damages experts in helping to ensure that the expert reports are as easy to understand as possible. Counsel can provide useful input on drafts to identify passages that may not be readily understood by tribunal members who themselves are typically lawyers without technical backgrounds.

Experts, working with counsel, must communicate very complicated issues and seek to do so in clear, simple terms. It is not an easy task. Given that expert reports often address very complex topics, it can be helpful to move technical

details to annexes, so that the body of the reports focus on the key issues in dispute. In some cases, it may be appropriate to consider the body of the expert report as being targeted at the tribunal, while the annexes are targeted at the other side's experts, who are more interested in the details and backup calculations.

Visuals, such as charts, figures and tables, are extremely helpful presentation tools for damages issues, both in the memorials and in the expert reports. The effective use of visuals demonstrates the adage that a picture is worth a thousand words. Not only do visuals break up dense text, they can also help lay readers understand technical issues. However, ineffective visuals, such as charts or tables that are not explained well, can confuse the tribunal. Furthermore, misleading visuals can readily undermine a party's case. Typically, counsel work with the experts to propose various visuals that counsel believe would be useful to include in the expert reports, which can then be duplicated in the memorials to explain and support the damages case.

Another effective tool for experts to use in their reports is to walk the tribunal through the damages case in a table that sets forth the key steps in the quantification.

It is fairly standard practice that an expert must provide copies of all documents and data on which he or she has relied. Experts should ordinarily identify the source of all data used in a particular analysis, including citations to the record. Charts, figures and tables should include precise identification of the source material, including appropriate annexes with the actual data, methodology and calculations used.

Damages models

One of the core functions of the damages expert is to develop an appropriate model to calculate the damages.

Considerable thought must be given as to how simple or how complex the model should be. There is no clear approach that applies to every case. A simple model can be easier for a tribunal to understand, and it can be less costly and time-consuming for the expert to develop and for the other side and the tribunal to assess. However, an overly simple model may not be sufficiently realistic or accurate. A complex model may be more applicable to the facts at issue and arrive at a more precise estimate of damages. However, an overly complex model may be more likely to contain errors, create more grounds for disagreement on less critical issues, be more costly to create and for the other side and the tribunal to assess, and be less understandable to the tribunal. Often, the ideal model is a

compromise between simplicity and relevant detail that captures the key factors driving damages, without unnecessary complication that does not materially affect the results.

In some cases, issues regarding transparency arise when a damages expert seeks to use a proprietary model to quantify damages. Some experts have created their own confidential models that contain valuable work product. For example, the experts might rely on previously created models that they have refined over years of extensive (and expensive) market research, for use in consulting engagements with companies in the relevant industry. These models could have significant value for other companies in the industry or other experts who work in that industry.

In such cases, there may be tension between the willingness (or ability) of the expert engaged by one party to disclose its model and the ability of the other party to defend itself without access to the model. Ordinarily, experts are expected or required to disclose the information on which they rely. That typically extends to the damages model used by the expert. If an expert seeks to rely on a model that he or she is not willing or able to disclose, the tribunal ultimately may be called on to decide how to address this tension. In some cases, limited disclosure to attorneys only may provide a viable alternative; in other cases, even that may not be appropriate or possible, or disclosure that is limited may not be sufficient.

In a number of cases, one or both parties may seek to submit confidential documents, data or other information in support of the submissions. In such cases, the parties may agree on confidentiality undertakings to protect the confidential nature of the information. These undertakings can range from simple statements to detailed multi-page agreements. In some cases, the permitted recipients of the confidential information can be restricted, for example, to counsel and experts only, but there typically must be good reason for restrictions to be imposed. If a party seeks these types of restrictions, compromises may be possible in which disclosure is permitted to certain designated individuals at the client, or perhaps to non-commercial employees, such as in-house counsel. In rare instances, one of the parties may seek to prevent disclosure to the damages expert engaged by the other side. This can raise serious issues regarding equality of arms. If the parties are unable to reach agreement on the terms of the confidentiality undertakings and restrictions on disclosure, the tribunal must resolve the differences. Negotiation of these undertakings can be time-consuming and costly, so it is important for the party seeking to impose these types of restrictions to raise the issue as early as possible.

In some cases, damages models are so simple that they can be presented in the expert report itself, either in the form of a table or annex. In many other cases, damages experts create their models as spreadsheets in Microsoft Excel or similar software. This software offers remarkable functionality to address the simplest to much more complicated models.

However, the sophistication of the software can result in spreadsheets that are virtually indecipherable to non-experts. For example, numerous ‘commands’ available in the software are not at all self-explanatory and may conceal elaborate mathematical, logical, statistical or financial functions. Other functions, called ‘look up’ or reference functions, can be used to draw from data or calculations elsewhere in the spreadsheet or even from other spreadsheets or databases. Experts are even able to create their own functions as ‘add-ins’, which gives the software even greater functionality.

There are numerous ‘best practices’ that some advocate using in the creation of spreadsheets, although these may not be necessary or appropriate in all circumstances.

Obviously, each tab, column and row should contain clear headings identifying with appropriate precision the information contained therein. Moreover, the applicable unit of the data must be clearly stated, such as the relevant currency, whether the figures are set forth in ones, thousands or millions, or the relevant unit of measurement (e.g., kg, m³, kWh).

One of the most common recommended practices is that a spreadsheet should clearly differentiate between the three key parts of the model: the variable inputs; the calculations; and the outputs. If the spreadsheet is designed with this structure, the hope is that the model will be easier to understand. Some models even include tabs labelled as ‘inputs’, ‘calculations’ and ‘outputs’ to help the reader navigate through the model.

Another recommended practice is that the spreadsheet should start with an instruction or cover page that provides an overview of how the model is structured and how the spreadsheet flows from tab to tab.

In some instances, the inclusion of a ‘control panel’ that enables the user – including the tribunal – to adjust inputs for key parameters can be extremely useful. This optional feature is discussed further below.

If used appropriately, the use of colour-coding of rows, columns or cells can significantly help the reader understand how the model works.

Consistency in the structure of the spreadsheet helps to maximise readability and minimise errors. For example, using the same structure for similar tabs (such as consistent ordering of data into columns), and using the same formulae across similar tabs where possible, can make it much easier for the reader to understand the model.

Another common recommended practice is that all input data should include identification of the precise source for the data. Accurate documentation of the input data can help opposing experts to identify and resolve disagreements.

In contrast, presenting hard-coded data (i.e., the numerical results of calculations that are themselves not disclosed) is generally disfavoured in the absence of some justification, as it prevents the other side's expert from understanding the underlying inputs or calculations used to derive the hard-coded entries.

It can be extremely useful for the expert to include textual comments or explanations throughout the spreadsheet to allow opposing experts and the tribunal to understand the model.

Many recommend that calculations proceed step-by-step across multiple cells, rather than the use of multiple calculations per cell. This simplification of the calculations, as well as clear headings and appropriate comments, can go a long way to simplifying the spreadsheet and enabling the reader to understand how the model works.

Whether explained in the spreadsheet itself or in the accompanying expert report, the expert should indicate whether the input data has been adjusted, corrected, cleaned of outliers or typographical errors, among other things. The expert should also explain the basis for any such adjustments and, where appropriate, identify what changes were made to which data.

It is often useful for the expert to include cross-checks in the spreadsheet that automatically flag any errors and allow the reader to check the entry of data or the calculations for accuracy or to check that the output is realistic.

Another common recommendation is that the spreadsheet should be audited, if possible, by a separate team from the one that created it. Many other 'best practices' on various technical issues regarding the creation of spreadsheets are frequently recommended to guide experts in developing effective models while minimising errors.

Although these best practices can help make a spreadsheet easier to understand, implementing them is not always easy and is far from cost-free. Many of these recommendations can take considerable additional time to implement, which is not always available and can distract the experts from other tasks and lead to a significant increase in expert fees. Moreover, it is worth emphasising that many experts have no formal training in Microsoft Excel, and some of the best

experts or most accurate models may not follow these practices. To take the most basic example, simple models may not need any of these ‘bells and whistles’, as some may call them. However, the more complicated the model, or the larger the amount in dispute, the more likely it is that some of these recommendations may be advisable and cost-effective.

Control panels on spreadsheets

One option that can be extremely helpful for a tribunal is for one or both experts to prepare an interactive model that is set up with a ‘control panel’ tab in the spreadsheet that enables the user to adjust the input variables. The control panel tab typically includes pull-down options (or ‘radio buttons’ or ‘check boxes’) for various inputs, or, if the expert wants to provide even more flexibility, the user may have the ability to enter a specific number as a model input, perhaps within a predefined range between a minimum and maximum. After the user selects all required options, the spreadsheet then calculates damages on the basis of the user-selected input variables. Typically, the control panel includes a summary table of the key components of the damages calculations, which are updated instantaneously as the user selects different options from the pull-down menus.

A control panel can also include a pull-down menu to select the input data that the model uses (e.g., a claimant’s proposed data or a respondent’s proposed data or variations on both, such as adjusted or raw data).

The benefit of the control panel is that it allows the user to explore the effects on damages of variations in the input variables – without requiring the user to understand all (or indeed any) of the calculations in the spreadsheet. The user can also vary the input variables without fear of making mistakes or destroying the model. The control panel is very user-friendly and can be greatly welcomed by a tribunal.

As a basic example, the control panel might include a pull-down option for the user to select either simple or compound interest. If the user selects compound interest, another option is enabled, requiring the user to select the compounding period (e.g., annual, quarterly or daily). Another pull-down menu might ask the user to select from certain interest rates, such as the rate proposed by the claimant and the rate proposed by the respondent; or the expert could enable the user to choose from a longer list of options, such as Prime + 1 per cent, Prime + 2 per cent, and so on. If the expert wants to provide the user with more flexibility, the control panel could include a box in which the user can enter any interest rate; or the expert could enable the user to enter any interest rate within a certain range of realistic options. The control panel could also enable the user to select start and end dates for the accrual of interest.

As another basic example, if the damages calculation involves a valuation using a discounted cash flow (DCF) model, the expert could design the control panel to include pull-down options for such input variables as the valuation date, the weighted average cost of capital (WACC), the cash flow assumptions (e.g., claimant's or respondent's) and the growth rate, as well as many other more sophisticated options.

The degree of functionality that the expert offers to the user in the control panel can vary tremendously. For example, the expert can set it up so that certain options are disabled (or 'greyed out') if the user selects another incompatible option. In the context of the interest rate example above, the expert would likely set up the control panel so that the compounding period pull-down is disabled if the user has already selected simple interest (because no compounding period is relevant).

A control panel can also include options for different sets of circumstances. The expert can include a selection of pre-packaged circumstances that the user can choose from a pull-down menu, such as the claimant's position on all the input variables or the respondent's position. Numerous other situations are possible. Depending on the design of the spreadsheet, the expert could enable the user to vary specific input variables after selecting a particular option.

The control panel might also include a reset button, enabling the user to return to the default circumstances at any time.

The expert can also provide error messages or comments if certain inputs are selected. So, if the user entered a start date for the accrual of interest that predated the date of the breach, the spreadsheet could be set up to display an error message explaining why the input value is not possible.

A control panel can even be set up to track an agreed list of issues in dispute prepared by the parties. For each issue on the list, the control panel of the spreadsheet can set forth the various options available to the tribunal for each issue in dispute (whether through a pull-down menu or the ability to enter a specific number within a particular range). After the tribunal has deliberated and decided how it will decide each of the issues in dispute, it can enter its determinations into the control panel and immediately see the resulting damages calculation.

If properly designed, control panels can be extremely helpful to the user to understand the effects of various inputs on the outcome of the model, but they must be used with caution.

Joint reports and joint models

In some cases, the parties or the tribunal may explore the possibility of the submission of a joint report by both parties' experts. The idea behind a joint report is to identify areas of agreement and disagreement and, if possible, to encourage the experts to reach agreement on the model they use. Sometimes the tribunal might even request the parties to instruct their experts to work on preparing a joint model that offers certain functionality to facilitate the tribunal's calculation of damages.

Again, both joint reports and, particularly, joint models may raise significant questions regarding costs and potential delays. The preparation of both may require significant expense and time, and the ultimate usefulness of the joint product may vary significantly. For a joint exercise to lead to productive work-product, both parties' experts must participate cooperatively, which is sometimes easier said than done. Indeed, in many cases, the lists of areas of agreement are frequently limited to obvious or non-central issues. Clear guidance from and realistic expectations on the part of the tribunal, as well as appreciation of the potentially significant cost and delays that these joint efforts may entail, are important for this approach to be effective and worthwhile. If a joint exercise is to be pursued, it is critical to build sufficient time into the schedule, as it can distract experts from preparing their separate reports or preparing for the hearing.

Clearly, it is not always possible or worthwhile to pursue a joint report or a joint model. For example, in some cases, the damages experts may have entirely different approaches and may have created two entirely different models. The structure of the two models may be so different that there are not easy ways for one expert to adapt its model to accommodate different assumptions by the other side's expert. If the experts were instructed to prepare a joint model in such a case, it might merely consist of copying the two distinct models into one spreadsheet, assuming that is possible.

Even that may be of some benefit to the tribunal in some cases. Among other things, it might enable the tribunal to more easily compare the two models, particularly if there is a joint 'control panel' tab that allows the tribunal to calculate damages under both models based on the same key input variables. It can also be useful to determine why the different models reach different conclusions. The key differences may be identified more easily. However, if the different models rely on different inputs, this joint control panel may be less useful or may require a different approach to help inform the tribunal as to other differences between the experts' models.

Resolving differences between parties' damages experts

One of the most difficult aspects of damages disputes is to identify, understand and resolve the differences between the experts. The resolution of these differences is ultimately the responsibility of the tribunal tasked with rendering an award resolving the dispute before it. However, the parties – through their counsel and experts – can play an important part in assisting the tribunal in this regard. There are a number of techniques that can assist the tribunal, but first it is necessary to understand the scope of potential differences between the experts.

Understanding assumptions and methodologies

The different assumptions that experts make can lead to differences in the way the experts construct their models and in the inputs that they enter into their models, resulting in different outputs and therefore different damages calculations. Experts may make different assumptions for any number of reasons, including:

- education or training;
- experience on other matters, whether similar or dissimilar;
- lack of experience on similar matters;
- communications with the client or counsel about facts and law;
- formal instructions received from counsel;
- understanding of the applicable contracts, treaties or other legal instruments based on commercial or other experience of the experts;
- review of documents, data or other evidence formally introduced in the case (such as witness statements);
- review of documents, data or other evidence provided by the client or counsel but not submitted in the case; and
- review of publications or documents obtained elsewhere.

Frequently, experts make assumptions that are not stated in their reports. Their silence can be intentional or inadvertent. Indeed, in some instances, experts may not even realise they are making certain assumptions that may prove to be unfounded or, at a minimum, subject to disagreement. For example, an expert may assume a certain fact as a given based on discussions with the client or counsel or based on prior experience, yet the other expert has assumed a different possibility. These differences can often be difficult to identify, as they are not explained in the expert reports and can often only be ascertained upon close examination of the damages model. These details can be buried deep in a Microsoft Excel spreadsheet, particularly if its design is not consistent with best practices. This is why experts are encouraged to state all assumptions in their reports to minimise the risk of any unstated assumptions.

In addition to different assumptions, experts frequently disagree on the methodologies they employ. Experts may disagree on the appropriate methodology for many of the same reasons identified above based on their experience, communications with or instructions from the client, and understanding of the applicable law and facts. The experts may also disagree on the level of simplification or complexity appropriate in the model.

At its most basic, the experts may disagree on the appropriate methodology because they are seeking to answer different questions. It is important, therefore, to confirm whether the experts are assessing damage to the same thing (such as the whole company, a specific business unit or particular assets), whether they are assuming the same key dates (such as date of breach or valuation date) and whether they are on the same page in other key respects.

Key differences between experts

Experts can and do disagree on any number of issues. The following are a few examples about which experts often disagree:

- the timing of key events, the duration of the events causing the damage and whether the damage is ongoing or temporary;
- the assumptions underlying the 'but for' situation – what would have happened without the damaging conduct;
- estimates of future cash flows or growth rates;
- the appropriate discount rate;
- whether to rely on information or data after a certain date (such as the valuation date) and if so what weight to give that information;
- the appropriate statistical approaches, including such basic issues as the use of the arithmetic mean or the median;
- the level of statistical significance appropriate for the analysis;
- the appropriateness of various benchmarks or comparators and whether adjustments should be made to benchmarked data and, if so, which ones;
- the applicability of interest and how it should be calculated;
- the proper treatment of currency conversion issues; and
- the proper treatment of tax issues.

Many of these issues are addressed in other chapters in this publication.

Importance of accurate, robust data

Another area for significant disagreement between experts can be the underlying data that they input into the damages model. In some instances, it is relatively easy to determine whether the experts are using the same data. In other instances, it requires further investigation.

Another area for disagreement between experts is the extent to which the data must be cleaned or corrected before being entered into the model. Many are familiar with the acronym GIGO, meaning garbage in, garbage out. If the input data is not accurate, the output will not be meaningful, regardless of the sophistication of the model.

To take an example, assume that the input data consists of sales data from the company or from some third party (e.g., aggregate data collected by a government statistical agency or a third-party commercial vendor). If the data has not been assessed for the inclusion of possible errors, the model may produce distorted, or even nonsensical, output.

Experts must assess whether the input data needs to be cleaned of errors, outliers, impossible or unrealistic data, among other things. The question then turns to how best to determine which data points are errors or outliers. Errors or outliers can be identified manually, through sampling or other methods, and the most appropriate method must be assessed in the circumstances. This depends on the exercise of judgement by the experts, who may disagree on the need to remove or adjust data points and the proper method for identifying them. Moreover, experts can disagree on what to do with the data points identified; for example, whether the outliers should be removed from the data set or corrected. To identify any such differences between the experts in their approaches to the underlying data, it is important for each expert to indicate clearly in the expert reports what steps have been taken in this regard and to explain the reasons and process undertaken.

A related issue is the extent to which the experts agree on the appropriateness of making adjustments to certain data, such as comparative benchmarks, to account for differences between the target and the comparators. The appropriateness of these adjustments and the specific adjustments to be made again require judgement on the part of the experts. In any event, it is important for the experts to identify any adjustments made and provide explanations of the reasons for them in the expert reports.

Procedures and techniques to assist in understanding experts' analysis

There are numerous procedures and techniques, some of which are discussed below, that can assist a tribunal in understanding and resolving disagreements between damages experts. Many are directed at understanding how the experts' analysis would change using other data or assumptions (such as data or assumptions relied on by the other expert or as instructed by the tribunal). Of course, a well-designed damages model (perhaps including a control panel), in conjunction with a clear expert report persuasively explaining that model and the reasons for one expert's disagreement with the other, may be the most effective technique. In addition, clear identification of the instructions received and assumptions made by an expert, as well as the basis for disagreement with the other expert's assumptions, are important to help the tribunal understand the basis of the experts' analyses and any disagreements between them.

Sensitivity analysis

A common technique that can be used to demonstrate the effect of certain variables on the damages calculation is sensitivity analysis. Put simply, sensitivity analysis can show the effects on damages (or even on a specific component of the model) based on the increase or decrease of an input variable by certain percentages or absolute values. The approach offers several potential benefits.

First, as its name suggests, sensitivity analysis is used to demonstrate the sensitivity of the output of the model to variations in a key input. This helps to demonstrate which inputs are the most important drivers in the model and which are not. This can be extremely useful to enable the experts – and ultimately the tribunal – to focus on the key input variables that truly matter for the damages calculation. It may well be that the experts disagree on any number of input variables in the model, but not all are equally important to the damages calculation. Some may simply have no material effect and can, in appropriate circumstances, be disregarded or at least given less attention than the key input variables. Of course, if the experts disagree about a number of less significant input variables, the collective effect of those variables can matter greatly. And there can be disagreements between the parties and experts as to what 'significant' or 'material' really mean. That can depend on the amount in dispute: a US\$1 million variation in damages could be material in a smaller dispute but would be far less determinative in a billion-dollar dispute.

Second, sensitivity analysis can help to demonstrate the numerical range of possible outcomes (e.g., minimum and maximum values) based on reasonable variation of the particular input variable. Identifying this range can assist in narrowing the scope of the disagreements between the experts.

Third, sensitivity analysis can be used as an effective presentation tool to readily display the various damages calculations based on the specific values of the input variable that have been proposed.

A sensitivity analysis can often be presented effectively in a table in the expert report with the options for the input variable set out in the first column and the corresponding damages calculations set out in the second column. The results of a sensitivity analysis can also be presented in a chart depicting the line or curve representing the relationship between the input variable and the damages calculation, with the input variable depicted on the x-axis and the resulting damages figures displayed on the y-axis. The more sensitive the damages calculation is to the input variable, the steeper the line will be; conversely, a relatively flat slope indicates that the input variable has little to no effect on the damages calculation.

Fourth, sensitivity analysis can be used to identify potential flaws in the model where the output is unrealistic based on a reasonable variation in the input variable. In such a situation, the model should be re-evaluated, or the reasonableness of the variation in the input variable should be reconsidered.

One common example in which sensitivity analysis is used is to show the extent to which a DCF analysis varies depending on the discount rate (i.e., the WACC used). An expert can use sensitivity analysis to demonstrate that increasing or decreasing the WACC can have a multimillion-dollar effect on the damages calculation. This is not necessarily a consequence of the specific DCF model used but may simply be a function of the effect of the time value of money inherent in the DCF methodology and emphasises the importance of using an appropriate discount rate in the model.

There are many other input variables that can be assessed using sensitivity analysis, including the applicable interest rate, the growth rate (such as the terminal growth rate of a DCF model), profit margins, tax rates and many more on which the experts might disagree.

It is also possible to present the results of more complex sensitivity analyses in a matrix displaying the possible variations of the first input across the columns and the possible variations of the second input across the rows. However, if sensitivity analyses are presented for multiple variables, attention must be paid to whether the effects of the variables on the damages calculation are interrelated.

Of course, like most techniques, sensitivity analysis is subject to limitations and can be misused or ineffectively deployed. The variations in the input variable must be reasonable for the outcome of the sensitivity analysis to have meaning. Experts often disagree about what constitutes a 'reasonable' variation of the particular input variable. In some cases, parties or experts will include a sensitivity analysis with extreme or unlikely examples meant to convey the impression that

the model is more sensitive to variation in output than it really is when reasonable variations in the inputs are used. Conversely, parties or experts will present sensitivity analysis with unrealistically narrow variation in the input variable in an effort to convey the opposite impression.

Sometimes, parties or experts may structure the sensitivity analysis to leave the impression with the tribunal that the midpoint of the range is the most reasonable, but this depends on whether the variation in the input variable is equally reasonable in both directions. It is also not uncommon for an expert to present a range of variation of the input variable with the expert's own assumption towards the middle and with the other expert's assumption outside the range of what is purportedly 'reasonable', or at the extreme end of the presented range. That may simply be due to the relative 'reasonableness' of each expert's assumption, or in some cases it can be the result of an effort by an expert to portray the other expert's assumption as 'unreasonable' in the circumstances. Of course, it is the role of the tribunal to determine whether the range of variation of the particular input variable presented in the sensitivity analysis is truly reasonable in the circumstances and which figure within that range is the most appropriate to use in calculating damages.

A potentially useful variation is where different sets of circumstances with multiple input variables as a package are analysed and compared. For example, one type of analysis would be to present the best case, worst case and most likely case. It is also possible to assign probabilities to each set of circumstances and to weight the outcomes to present a weighted damages calculation based on all the situations considered. Again, however, these analyses have limitations.

There are other related, far more complicated analyses beyond the scope of this chapter that can be used to study the model.

Pre-hearing meetings of experts

Another procedural technique that is often considered is a pre-hearing meeting between both experts. Although not appropriate in all arbitrations, the idea is that such meetings may facilitate the identification of areas of disagreement that can be narrowed through more informal discussions or areas of agreement that have not been clearly identified or realised. Prior to any such meetings, the experts' communication is likely to have been limited to the exchange of written expert reports, and they may feel like they are 'writing' past each other. Sitting down together in an effort to identify and understand the basis for any disagreements may prove to be extremely valuable.

If such a meeting is agreed by the parties or directed by the tribunal, it is important to arrange the procedure in advance so that both experts – and the parties and their counsel – have a common understanding of how the meeting will proceed. Advance preparation can also maximise the likelihood that the meeting is productive. When to schedule the meeting, or indeed how many meetings to arrange, are important first steps that depend on the circumstances of the case.

Frequently, the parties agree or the tribunal directs that such meetings will occur on a without prejudice basis, with the objective to foster open discussion. However, it is not uncommon for such meetings to be viewed as an unwanted exercise by some and a distraction from more pressing demands, such as hearing preparation if the hearing is scheduled to follow closely thereafter. In considering whether to hold such meetings, and if so when, it is important to avoid disrupting this hearing preparation by the experts, which can be extensive. Ideally, time will be built into the procedural schedule in advance to avoid unnecessary disruption.

Often, the question arises whether the experts should meet with or without the presence of counsel. There are pros and cons to both approaches, but in either case the role of the expert and the purpose of the meeting must be clearly defined and clearly understood. Experts are not authorised by the clients that have engaged them to settle aspects of the dispute or to make binding commitments; rather, the experts have been engaged to assist the parties and the tribunal in understanding the damages aspects of the case. They cannot formally resolve the issues on behalf of the parties because they do not represent the parties in that capacity.

Experts do not run cases on behalf of the clients that engaged them, nor do they necessarily know all aspects of the case. Often, the role of experts is limited, or does not perfectly correspond with that of their colleagues.

There are often reasons why the parties and their counsel favour the presence of counsel at the expert meetings to understand the issues being discussed and how they affect the case, and to offer guidance on the relevance of legal or factual issues that the experts may not know. It is often true that the experts themselves prefer counsel to attend as well, particularly if they are unfamiliar with the process or uncertain about their roles. However, the presence of counsel should not be an excuse to undermine the purpose of the joint expert meeting, which is typically designed to identify areas of agreement and to narrow areas of disagreement between the experts as to their damages analyses.

There can be further complications with arranging a joint meeting of the experts in cases in which there are multiple experts for one or both parties and the experts do not necessarily line up on similar issues. One possible solution is to arrange for all the experts to attend, but that type of meeting can become more burdensome, costly and less efficient.

List of agreed and disagreed points

Building on the idea behind pre-hearing meetings of the experts is the related procedural technique of asking or directing the experts to prepare a list of the key points on which they agree or disagree. As with pre-hearing meetings, there are differing views among parties, counsel and experts as to the benefits of such a task. For some, the feeling is that the experts have expressed their opinions in their written submissions, and it is unreasonable to expect the experts to change these opinions simply by working with their counterparty to prepare a list of agreed and disagreed points.

Before determining whether such steps are likely to be productive, it is important to consider the time and cost of pre-hearing meetings or lists of agreed and disagreed points. As noted, these steps may significantly distract the experts from other responsibilities, including preparation for the hearing.

These techniques can be effective if the parties, their counsel and experts – and ultimately the tribunal – believe that there is likely to be room for further agreement on key issues, or if the scope of disagreement is not yet clearly identified in the expert reports. In contrast, if the experts are far apart or have radically different approaches, these techniques may be distractions. Too often, the experts are so far apart on their positions that the experts end up listing issues of secondary or tertiary importance simply to find some room for agreement. The exercise can risk losing its purpose in these circumstances.

Joint reports

Taking the idea of joint lists one step further, in some cases, tribunals have proposed the possibility of a joint report prepared by both experts, as discussed above. In some instances, the joint report would be submitted prior to the hearing; in others, it would be submitted after the hearing. The primary objective in both situations is to encourage or enable the experts to narrow the scope of disagreements and focus on areas of agreement.

The considerations to take into account before proposing a joint report are similar to those discussed above, with the added concern that a joint report is likely to add significantly to costs and delay.

Expert presentations

An effective procedural technique that is used in many cases is the submission of expert presentations at or before the hearing. These expert presentations are often prepared as Microsoft PowerPoint slide packs, which are presented orally at the hearing in lieu of direct examination. The key benefit of expert presentations following the exchange of expert reports is that each expert can summarise

his or her opinion on damages issues and highlight the areas of agreement and disagreement from his or her perspective. It is often critical to allow experts to summarise their key positions and update the tribunal on developments at the time of the hearing.

If such presentations are to be made, it is important to reach agreement on the procedures in advance. For example, questions arise as to when the experts should submit written copies of the slide packs – at the hearing or in advance – and whether the presentations should be exchanged simultaneously. Other issues to consider are whether to restrict the time allowed for oral presentation. Often, these issues are left to the parties, to allocate their time as they best see fit, taking into account guidance from the tribunal about what it would find most beneficial from its perspective.

Many parties, counsel and experts believe that expert presentations are time well spent. They offer the experts an ability to present often very complex concepts with the support of visuals such as charts, figures, tables, and occasionally even the spreadsheets themselves in which they have created their models. For example, in some cases, it is extremely useful to have each expert walk through the organisation and functionality of its model.

Typically, the tribunal is encouraged to ask questions during the oral presentations, but counsel and experts are not. Rather, counsel are expected to save questions for cross-examination, and experts are expected to wait until expert conferencing, if agreed. A well-prepared tribunal can use the time to ask pertinent questions to understand precisely how each model works so that it is in a good position to navigate the models after the hearing while preparing its award on damages.

Expert conferencing

It has become increasingly common for the parties to agree, or for the tribunal to direct, that the experts appear before the tribunal for questioning simultaneously, a technique generally referred to as expert conferencing and colloquially called ‘hot tubbing’. The objective is to provide an opportunity for the tribunal to hear from both experts at the same time, so that the tribunal members and counsel can ask both experts questions and allow the experts to respond and react to each other.

Again, if expert conferencing is agreed, it is important to establish the specific procedures in advance. This includes agreement on the order of expert conferencing at the hearing. Typically, it is scheduled to occur after expert presentations and cross-examination by counsel. The idea is that differences between the experts’ positions will be clearer and more defined following cross-examination.

Agreement should also be reached on how much time to devote to expert conferencing and how that time will be assessed to each party for the purposes of overall hearing time allocation. Typically, it is assessed equally to both parties.

Other procedural issues to consider are whether the tribunal intends to identify in advance the areas of discussion that it expects the experts to discuss and whether expert conferencing will proceed topic by topic or on all topics at once. It is often useful for the tribunal to prepare a list of issues or questions in advance and, in some cases, to provide the list to the experts in advance. In addition, it is important to determine who is permitted to ask questions during expert conferencing: the tribunal members or counsel for the parties, or both.

If expert conferencing is arranged, it almost always should be in addition to expert presentations, where appropriate, and cross-examination by counsel. Expert conferencing is intended to achieve different objectives from presentations and cross-examination and should not be seen as an alternative, which would be likely to deny the right of the parties to present their cases through experts and to cross-examine the expert engaged by the other side.

As with pre-hearing meetings of experts, it is not always clear which experts line up on similar issues, potentially further complicating the procedure for expert conferencing. If there are multiple experts on one or both sides, expert conferencing with all experts heard simultaneously could become unwieldy or seen as unequal to both sides.

It is important for the tribunal to manage any expert conferencing to ensure fairness to both parties and to ensure that the objectives are achieved and the agreed procedure is followed.

Tribunal-appointed experts

Another procedural technique that some tribunals consider is whether to appoint its own expert to assist in resolving disagreements between the party-appointed experts. Given the significant expense and delays that this can create, careful consideration should be given to the likely advantages and disadvantages.

Parties, counsel and party-appointed experts often have significant reservations about the utility of a tribunal-appointed expert. These may include concerns regarding how much influence the tribunal-appointed expert may wield in resolving damages issues. It is important that the tribunal, appointed by the parties pursuant to the agreed appointment procedure, resolves the parties' dispute and not a tribunal-appointed expert.

There are also often significant concerns on the part of parties about whether the tribunal has identified the right expert for the dispute. Concerns have been raised by parties that the tribunal's selection of the tribunal-appointed expert may

inadvertently dictate the outcome, for example, if the expert holds certain views (e.g., majority or minority views) on the key damages issues in dispute or has particular expertise or experience that may sway his or her views in a particular direction, risking a pre-ordained outcome.

A tribunal should only reach a decision on whether to appoint its own expert after hearing from the parties. Many different factors may be relevant to such a decision, and it should be fully informed based on views expressed by the parties.

The role of the tribunal-appointed expert should be clearly defined in advance. He or she might be engaged to produce a report commenting on the positions taken by the party-appointed experts (i.e., a third view on the damages issues in dispute). In some cases, tribunals have engaged experts solely for the purpose of implementing the tribunal's decision to ensure that it has properly applied the model in light of the tribunal's conclusions.

The process must be clearly defined, including what information will be provided to the tribunal-appointed expert, what opportunity that he or she will have to request further information and the process for doing so, what timetable the tribunal-appointed expert will operate on and whether he or she can communicate privately with the tribunal. The precise terms of the tribunal-appointed expert's instructions should be discussed and agreed in advance.

The parties must have an opportunity to provide comments on the proposed expert before appointment, after being provided with background materials setting forth the proposed expert's education, expertise and experience, and other relevant disclosures, including a statement of independence and impartiality.

If a tribunal-appointed expert is engaged, the parties must also have a full opportunity to be heard in relation to the analysis or views expressed by that expert. This includes allowing the parties and their own experts to respond to any expert report submitted by the tribunal-appointed expert; this includes allowing the parties to cross-examine the tribunal-appointed expert at the hearing. It may also extend to permitting each of the party-appointed experts to ask the tribunal-appointed expert questions. The party-appointed experts should also have the opportunity to comment on the tribunal-appointed expert's work at the hearing. It may also include the involvement of the tribunal-appointed expert in expert conferencing at the hearing.

On a related point, some have raised the question of whether a tribunal can appoint an administrative secretary for quantum issues, with the individual having relevant quantitative skills. This may raise some of the same issues discussed above. Moreover, this raises concerns about the proper role of a tribunal secretary, who is supposed to be administrative in function, and whether the secretary is delegated with decision-making power on a *de facto* basis.

Another related technique would be for the tribunal itself to engage with its own damages model. This can have significant negative consequences for one or both parties. The model can be flawed – ranging from simple mathematical errors with significant consequences to fundamental errors in the methodology employed. The assumptions can be flawed or incompatible with the model. Further, the model or the assumptions can be incompatible with the commercial relationship between the parties.

To the extent that the tribunal seeks to pursue its own model, it is critical that the parties and experts have the opportunity to review and comment.

Conclusion

To maximise the effectiveness of expert assistance on damages issues, the parties and the tribunal can consider a wide variety of techniques and approaches. The potential benefits should be weighed against the potential costs, delays and distractions. Advance planning and discussion of the procedures is important to reach agreement on which are best suited for the particular arbitration and how they will be applied. When used appropriately, these techniques and procedures can help the tribunal understand the parties' respective damages cases and resolve the parties' differences in a fundamentally sound manner, while reducing the risk of conceptual, computational or other errors in the ultimate award.

Part III

Approaches and Methods for the Assessment and Quantification of Damages

CHAPTER 10

Overview of Damages and Accounting Basics

Gervase MacGregor and Susan Blower¹

Introduction

In this chapter, we set out an overview of how damages are calculated in international arbitration, and we include an explanation of some of the fundamentals of accounting on which the damages calculation is necessarily based. Unlike law, which may fundamentally differ between jurisdictions, accounting and damages are based on accounting and economic concepts that are common to all jurisdictions – although any damages calculation for any particular arbitration dispute will need to be rooted in the legal principles of the law that governs that arbitration.

Accounting basics

Double-entry bookkeeping

A fundamental building block of accountancy is the principle of double-entry bookkeeping. This means that every accounting transaction that is recorded in a set of company accounts is effectively entered twice; this helps ensure that the accounts include all the company's transactions and are free from input errors (although the accounts may still include errors or fraud, where the transactions have been recorded wrongly). For example, if a company is recording all the payments from a set of bank statements in its accounts, it will record all these payments as debits to various accounts, such as purchases of raw materials or purchases of machinery, and it will also record all the payments as credits to the bank account (i.e., reductions in the bank balance – for an accountant, a credit to the bank account is a reduction, while a debit is an increase).

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The development of computerised enterprise systems means that double-entry is often hidden from view but it remains the key structure in accounting and explains why balance sheets balance and the components of a set of financial statements reconcile with each other. Despite the ever-increasing sophistication of accounting systems, the basic process for recording financial transactions remains a double-entry journal posting to ledger accounts that are then grouped and summarised for financial reporting and monitoring purposes.

A company normally prepares its accounts annually by extracting a trial balance from its accounting system and turning this into a set of financial statements. The trial balance lists the total value of items debited or credited to each particular accounting category in the year; so, for example, it will include the total of purchases of raw materials, the total of salaries and other employee benefits, the total of entertaining costs, the total of purchases of fixed assets and so forth.

Financial statements

From the trial balance, a company prepares its financial statements, which comprise a profit and loss account, a balance sheet, a cash flow statement and explanatory notes. The profit and loss account records the company's income and expenses, together with certain accounting adjustments, such as depreciation, to arrive at the profit or loss after tax for the year. The cash flow statement also records the company's transactions for the year, but on the basis of the money flowing into and out of the company, showing, for example, how the company has financed its purchases by way of loans or net reduction in its bank balances. The balance sheet summarises the state of the company at the end of the year, showing its assets and liabilities, with double-entry bookkeeping recording the overall balance as accumulated profit or loss. Changes to financial reporting standards can affect what is recorded in a company's financial statements. Following the introduction of International Financial Reporting Standard (IFRS) 16, for example, right of use assets, such as operating leases, are now reflected in the balance sheet, whereas previously these assets were reflected only as an annual lease charge in the profit and loss account. Financial statements also include a large number notes, which include details of the accounting policies adopted by the company and more detailed explanations of many of the summary items included in the profit and loss account and balance sheet. Disclosure notes can reveal key areas of risk for a business that do not meet the threshold for inclusion in the accounts, such as contingent liabilities.

An important page in the financial statements is the audit report. Most large companies have to have their accounts audited by a qualified firm of auditors, who review all the company's accounting transactions and financial statements

on a sample basis, and conclude on whether the financial statements show a true and fair view of the company's transactions in the year, and that they comply with accounting standards and include all the disclosures the financial statements are required to include. Audit reports are prepared on a formulaic basis, whereby the auditors note any exceptions from a 'clean' audit report; consequently, lawyers and other users of financial statements are well advised to carefully consider the implications of a qualified audit report on the financial statements of any company they are reviewing.

International Financial Reporting Standards

To ensure adherence to accounting principles and to ensure reasonable consistency between different companies, accountants have developed standard ways of accounting for specific items. Thus, large international companies are often obliged to prepare their accounts in accordance with IFRS,² which set out standard ways of accounting for particular transactions, such as revenue, fixed assets and depreciation.

In this short introduction, we do not comment on how every type of transaction is accounted for under IFRS, but we briefly comment on a few types of transactions that often arise in international arbitration cases:

- *The accruals concept:* Accountants record income and expenses on the basis of the accounting period that is affected by the income or expense. For example, for a company with a calendar-year accounting period, a payment of 12 months' rent in September will be recorded as four months in the period up to December and eight months in the following period.
- *Revenue:* Sales are generally recorded at the value received by the company, but IFRS include a number of detailed rules, for example, in relation to recording transactions at 'fair value', recording revenue on long-term contracts and recording transactions in the correct period.
- *Depreciation.* This is a very important accounting concept whereby tangible (e.g., land, buildings, machinery) and intangible (e.g., intellectual property, patents, goodwill) assets are recorded at cost or 'fair value' in the balance sheet,

2 Not all companies prepare their accounts in accordance with IFRS. For example, US companies normally prepare their accounts in accordance with US generally accepted accounting practice (GAAP), and smaller UK companies may use UK GAAP. There are differences in how certain transactions have to be recorded between these different accounting standards – and these differences may have a material effect on the financial statements.

but are then depreciated over their useful lives. For example, if a piece of machinery has an estimated life of 10 years, depreciation at 10 per cent of its value is charged as a cost in the profit and loss account each year.

- *Impairment.* Companies are required to test their cash-generating units to ensure that they remain worth at least the value at which they are recorded in the financial statements. Thus, for example, if a company has overpaid for an asset, it should then record an impairment provision against the cost of the asset.
- *Contingent liabilities.* Companies are required to recognise a liability when it is likely that they will be required to make a payment in respect of the item in the future. When there is less likelihood of having to make a payment or it is not possible to calculate the amount of such a future payment, the company records a contingent liability in the notes to the accounts, but does not record the amount as an expense.
- *Related-party transactions.* Companies are required to list transactions with related parties in their financial statements. The related-party note can be a useful place to understand the relationship between entities that appear to be under common ownership.

Flexibility, consistency and estimates

Preparers of financial statements often face a choice of ways of applying accounting policies; for example, the depreciation rate. Indeed, one of the challenging areas of interpreting accounting information is that one is often choosing between two or more reasonable treatments. Within this flexibility, there is the need for preparers to be consistent in their treatment from year to year.

The very nature of business means that preparers are faced with uncertainty, meaning that estimates must be made. The word ‘reasonable’ is a key adjective in accounting; the use of judgement is a key task.

Within all this, one must not forget the ‘dark side’ of accounting: the aggressive accounting policies in areas such as income recognition, provisions and impairment – indeed, all areas where one is faced with choice, has to use judgement and can push reasonableness to the limits and beyond.

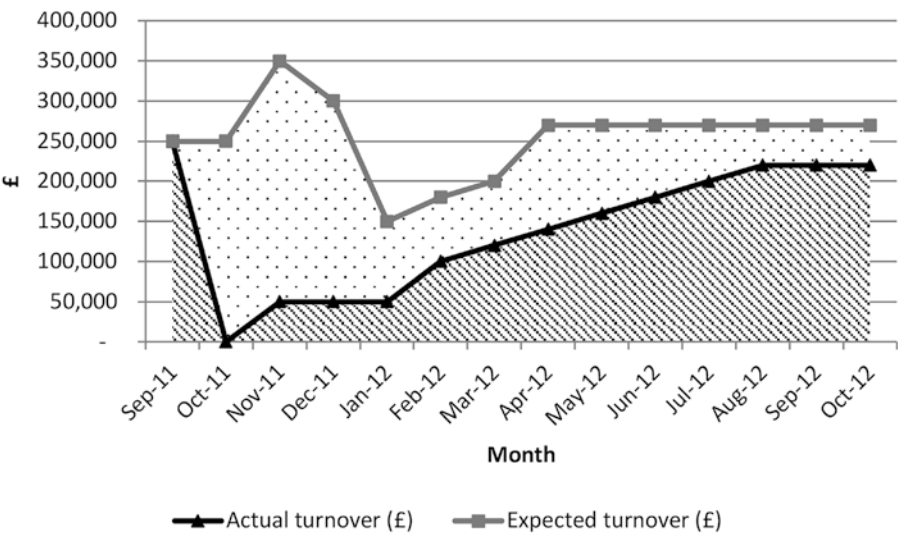
It is worth bearing all of this in mind in relation to damages claims, because accounts are the building blocks of quantum.

Basic principles of damages – loss of profit

If an entity has suffered damage but still continues in operation, the goal of a damages award is to put the claimant back in the position in which it would have been had the company not suffered the damage; for example, if a contract had not been breached. On this basis, forensic accountants, valuers and economists have developed the ‘but for’ principle as the basis for calculating damages, whereby damages are based on the difference between what would have happened ‘but for’ the breach of contract or other intervening event and what actually happened.

The second limb is normally relatively straightforward; for example, the profit the claimant actually made. What is more difficult is calculating what would have happened if the contract had not been breached (i.e., the but-for situation).

The but-for situation needs to be realistic, and one needs to remember that the calculation can only ever be an estimate – because nobody can ever actually know with complete certainty what would have happened in an alternative universe in which the breach of contract, or treaty, never occurred. The but-for situation also needs to be possible (e.g., it takes into account the production capacity of the company’s factory). The graph, below, illustrates the basic calculation of economic damages:



The degree of damage suffered by a claimant in a commercial arbitration is likely to be based on the profits that it would have earned had the breach of contract not occurred, but that it did not actually earn. Although in theory one can simply estimate the profits in a but-for situation, the calculation is likely to be more accurate if the loss of profit is broken down into its constituent parts, which are:

- loss of gross revenue;
- gross profit margin, as a percentage;
- variable overheads; and
- fixed overheads.

The damages expert tends to estimate the loss of future revenue of a business as a separate exercise – this is often the parameter that drives profitability, and it may also be the most difficult and subjective number to estimate. However many companies' gross profit margins remain reasonably constant as a percentage of sales, and this constant margin may be reflected in the company's budgets – so in many cases it may be fairly uncontroversial to assume that the gross profit margin in the future will be the same as in the past.

Overhead costs are those a company incurs that are not directly related to producing its output for sale. When calculating overheads, it is important to distinguish between variable overheads that are linked to sales (such as transport and distribution costs) and fixed overheads that remain the same regardless of the level of sales (such as general and administrative costs). Variable costs need to be deducted in calculating the future loss of profits, whereas fixed costs may not change at all whether the company is selling anything or not, and so they are generally not deducted in a loss of profits calculation.

Estimating what would have happened in the future 'but for'

The most important part of a damages calculation is estimating what would have happened had the breach not occurred. There are three commonly used ways of doing this:

- *The company's own forecast.* If the company had its own forecast of the future profits it expected to make, this may be the best data to use to estimate what would have happened but for the breach. However, before relying on a forecast, one needs to consider the purpose for which it was prepared, and how accurate it is likely to be. If the forecast was prepared for the company's bank, which had carried out due diligence and lent the claimant money based on this forecast, and if the company's actual results during the past five years have always been within 5 per cent of its forecasts, one could feel reasonably confident in relying on the forecast. If, however, the company's forecast was limited

to a single sheet of paper prepared by the directors after the breach of contract occurred, and it had never actually achieved its budget in the past, one would not feel confident in relying on the forecast without first determining whether serious adjustments must be made to it.

- *Extrapolating from the past to the future.* When a company has been operating for many years, and has a track record of always achieving a certain level of sales and profit, and where profits have grown consistently at, say, 5 per cent per year, the best estimate of future profits may be an extrapolation of past profits. This may be based on professional judgement, or it may be based on a statistical regression line, which estimates the future based on the past.
- *Comparison with what actually happened to a similar company or store.* If one can find a similar company operating in the same field, and one can see that the claimant's results have been closely correlated with the results of that company in the past, the best way of estimating what would have happened may be to consider what actually happened to the comparator company.

Frequently arising issues

Having set out the basic principles of how damages are calculated, some issues that frequently arise in arbitration include the following:

- *Lack of trading history:* The claimant may have no history of trading. Many claims arise very early on in the life cycle of a project, for example, because one party terminated the contract while a factory was still being built and before it started trading. If the future cash flows can be estimated reasonably reliably, damages can be calculated on the basis of the net present value model, following which the value of a project is equal to the cash flows expected over the project's life, discounted by an appropriate discount rate.³ However, if the future profits cannot be estimated reliably, the only fair basis for damages may be the amount of costs the claimant has actually incurred.⁴
- *How long should one claim for?* If the company has been driven out of business and has gone into liquidation, normal practice is for the claim to be based on the 'valuation' model discussed below. However, if the claim is based on the company using the damages recovered from the respondent to recapitalise its business and start trading again, key questions include how long that will take and what resources it will require for the company to restore its business to its previous level of operations.

³ As, for example, in *CMS v. Argentina*.

⁴ As, for example, in *Metalclad Corporation v. Mexico*.

- *The use of hindsight*: A key legal question is whether one should take account of hindsight in calculating damages. This may depend on the jurisdiction of the claim – for example, the traditional position in English law was that damages for breach of contract were evaluated at the date of the claim, but this has been modified by the case of *Golden Strait Corporation v. Nippon Yusen Kubishika Kaisha* (known as the Golden Victory),⁵ in which the House of Lords held that achieving an accurate assessment of damages based on the losses that had actually happened was more important than considerations of contractual certainty and finality. In other jurisdictions, the use of hindsight in calculating damages is the default position.
- *Sunk costs*: Generally, costs that have already been incurred at the date of the loss cannot be claimed in addition to lost future profits. This is because profits can only be generated if the factory that will be used to generate them already exists, and so it would be double-counting to claim for both loss of profits and the cost of building the factory.
- *Overhead recovery rates*: An issue that often arises is the definition of what exactly is a cost. For example, the cost of employees may be measured as the amount actually paid to them (including overtime, pension, etc.) divided by the number of hours they work, or as the hourly ‘charge-out rate’ (which may be equal to direct salary cost multiplied by a factor of 3 or 4, to take account of the general and administrative and other fixed cost overheads of the company) or the rate that is charged by a service company in the group.
- *Management time*: Again, the principles here may vary between jurisdictions but, generally, the rule is that one can claim damages for lost management time only if the claimant can demonstrate that this management time would otherwise have been spent on generating profits on other projects. This is because management time is a fixed cost that would have been incurred whether or not the event causing the loss had occurred.
- *Compensation for loss of an opportunity or return on investment*: A claim may include an element of loss that is premised on the assumption that had the claimant not suffered damage, it would have invested monies in a particular project or opportunity, yielding a certain return. Generally, compensating a claimant in this manner rewards a claimant with a return, which is a function of a commercial risk to which it was not exposed. It can also result in claimants

5 [2007] UKHL 12.

cherry-picking a high return investment out of a portfolio composed of both profitable and loss-making ventures, and assumes that such an opportunity was available to the claimant at the time.

- *The date adopted for the quantification of damages:* Damages are usually assessed at the date of breach but claims may also be calculated at a hypothetical date of a future award. The adoption of the latter approach can raise issues around the use of hindsight, and the risk attached to the cash flows in question.

The chapter on assessing damages for breach of contract discusses the valuation of damages for breach of contract in greater detail.

Basic principles of damages – valuation

If the asset has been expropriated or the company has gone into liquidation, the normal way of calculating damages is the ‘valuation’ basis. This is because the actual value of the asset or company tends to be zero, while the but-for value tends to be the value of the company immediately before the event of expropriation. Consequently, this approach is commonly used to quantify damages in investment treaty expropriation cases.

On this basis, the loss is calculated in accordance with the normal ways of estimating ‘fair market value’, which are as follows:

- *The income (or discounted cash flow (DCF)) approach.* This approach is commonly used because it can be applied to any company or project that has reliable projections of future income. The approach involves estimating the future cash flows from the company or the project, and then discounting these back to a net present value by applying a suitable discount rate. The big challenges in applying this approach in practice are calculating reliable cash flows into the future and calculating the discount rate. This approach is discussed in further detail in the chapters on income approach and the discounted cash flow methodology and on determining the weighted average cost of capital. The concept of the net present value is this – a dollar today is worth more in economic terms than a dollar in a year’s time. Indeed, if I have a dollar today and place it in a bank account, even with the current low interest rate, I will still have more than a dollar in a year’s time. This simple insight is the basis for discounting. The key, of course – and one can see this when one considers how interest rates have changed during the past decade – is what is a suitable rate at which to discount.
- *The market (or earnings) approach.* This approach values a company by multiplying its annual earnings by a factor based on multiples applicable to other similar quoted companies. This is the method more commonly used for

valuing companies being bought and sold in the real world. It is often used as a check on a valuation given by the income approach. This approach is discussed in further detail in the chapter on market or comparables approach. A company may also be valued on the basis of comparable transactions in similar companies or of the company itself.

- *The net assets approach.* This approach values a company on the basis of the value of its assets. The value of its assets (e.g., its machinery) is based on the resale value of those assets, which in practice may be based on their cost, their second-hand value or their replacement cost, adjusted for depreciation during the period in which they have been operating. As this approach does not take any account of the ability of the assets to generate profits in the future, it tends to give a lower value than the income and the market approaches, and it tends to be used in situations when the company itself has gone into liquidation and will never operate again. It is also used in start-up situations when there is insufficient certainty about future cash flows to use the income approach, and so tribunals value the company on the basis of the costs incurred to date on building the plant. This approach is discussed in further detail in the chapter on valuation approaches.

Other issues

Tax

If the goal of a damages award is to place the claimant in the same post-tax position as it would have been in if the relevant breach or expropriation had not occurred, the damages calculation must take account of tax. Thus, both the actual and the but-for calculations should be carried out on a post-tax basis. If the tax rates have changed considerably over time, or if damages awards are taxed on a different basis from income, or if dividends from a project would have been subject to withholding tax, but a damages award is not, the impact of tax may be considerable. Consequently, care must be taken to make sure that tax has been treated consistently in the damages calculation.

Currency

The choice of currency in which a claim is made may have a very considerable effect on the size of the claim, particularly in developing economies or economies with hyperinflation. Again, legal principles may vary between jurisdictions, but the general principle is that the claimant should be compensated for what it has lost. Thus, damages should generally be calculated in the currency in which the loss of profit or the increased costs have been suffered. A claimant generally also

has a right to be compensated in a freely convertible currency – so, even if the damages are calculated in a local currency, the tribunal may wish to translate the award into US dollars or euros at the rate of exchange on the date of the award.

Interest

As some awards are rendered many years after the date of the breach or expropriation, an award for interest is often a very sizeable element of an award. The purpose of pre-award interest is to compensate the claimant for not having had its money over the period from the date of the breach to the date of the award, and consequently, it is often based on the claimant's marginal borrowing rate, to compensate the claimant for the additional cost it incurred in borrowing money. Other bases for calculating interest include the rate the claimant could have earned from putting the money in a deposit account, the risk-free rate and the respondent's borrowing rate, which are discussed in greater detail in the chapter on interest, which also considers the appropriate interest rate for post-award interest. As indicated above, a claimant may also claim on this basis for a loss of an opportunity forgone because it was deprived of funds available for investment.

Finally, by way of introduction, the tribunal needs to decide whether to award interest on a simple or a compound basis; although the simple basis used to be the default basis in some jurisdictions, and still is in certain countries, it is generally acknowledged today that the compound basis (which results in a higher award) more accurately compensates claimants for what they would actually have done with the money if they had had it earlier.

It is also important that the interest rate used is based on the currency of the claim, as it makes no economic sense for the award to be in a hard currency, with a high interest rate based on a soft currency that is expected to depreciate.

Data management and modelling

The final topic we consider in this chapter is the use of modelling and statistics in damages awards.

Models

As discussed earlier, the but-for and DCF approaches to damages generally require the damages expert to prepare a model of what would have happened in the future. This may be a simple one-page spreadsheet or it may be a 100-page inter-linked corporate finance workbook forecasting the future profit and loss account and balance sheet of the company, showing when all the borrowings would have been repaid, etc. Such complex models are commonly prepared by banks and

project finance initiative transactions, so that the company and banks can understand when the project is anticipated to produce income and how borrowings will be repaid.

A model that was prepared at the time and was relied on by a bank for lending money to a company is likely to be more reliable than a model that was prepared by the company solely for an arbitration, and that may be biased in favour of the claimant.

There is a major risk that models include errors. Consequently, it is vital that models are prepared in a systematic way, and that they are systematically checked by an independent third party. For example, the Institute of Chartered Accountants in England and Wales has prepared a helpful booklet entitled 'Twenty principles for good spreadsheet practice'.

It can also be helpful, where matters of disagreement between experts are clearly delineated, for both experts to agree on the use of a joint financial model, where sensitivities can be run clearly indicating the output of different assumptions on the damages calculation.

Sampling

Where there is a large population of data, it may not be possible or cost-efficient to review or to test every item in the population, and the most efficient way of considering the validity of the data may be to use a sampling methodology. If the data population includes 10 large items comprising 90 per cent of the data, a valid sampling methodology may be to review those 10 items as part of a judgement sample. However, where the population includes thousands of similar small items, the only statistically reliable method may be to select a sample of the items and test these. To rely on the output of the sample of items tested, the sample should be selected in a statistically valid way, such as by cumulative monetary sampling, which selects items on the basis of every so many dollars, and thus includes the possibility of selecting all the items in the population, but biased towards larger items; if a sample is selected in this way, any errors found can also be extrapolated across the entire population to give an estimated error rate in the entire population.

Statistics

Statistics can be a useful tool to use in damages quantification. Two of the most commonly used statistical tools are the following:

- *Regression analysis.* In graphical terms, regression analysis is plotting certain points on a graph, such as historic profits during the previous 10 years, and then using the past to forecast future profits, by drawing a straight line into

the future. This approach has the advantage that the output can be shown to have a statistical basis, rather than simply being based on the damages expert's judgement, and a coefficient of correlation can be calculated, indicating how reliable the particular regression analysis is. More complicated regression tools can also be used.

- *Seasonal adjustment.* If there is a seasonal pattern to a company's sales, seasonal adjustment may be needed to estimate future profits.

Finally, there are other more sophisticated statistical tools that can also be used to improve the reliability of damages calculations. Many of these have yet to gain traction with decision makers and experts. However, with low-cost add-ins increasingly available for spreadsheets, the humble laptop has a powerful means of crunching vast amounts of data in stochastic approaches that attempt to model more accurately the effects of uncertainty. One can expect to see more use of stochastic approaches in damages, such as the Monte Carlo method.

Conclusion

Damages calculations are rooted in a claimant's financial accounts, and the accounting principles on which these are based need to be understood to arrive at a reliable quantification of loss. The basic approach to calculating damages is to compare the claimant's actual position with the position it would have been in but for the intervening event causing the loss; this requires an analysis of revenue, gross profit margin, variable and fixed costs, and projections of the future. If a claimant has lost all its business, such as in an expropriation, the normal method of valuation is the fair market value of the business immediately before the expropriation, which is normally calculated using the income, market or assets approach.

CHAPTER 11

Assessing Damages for Breach of Contract

Karthik Balisagar and Tim Battrick¹

Introduction

Contracting parties usually expect to obtain an economic benefit from the contracts they enter. When those contracts are breached, the remedy claimed often (but not always)² takes the form of compensatory damages. One common measure of compensatory damages is ‘expectation damages’, which aim to put the claimant, so far as money can do it, back in the position in which it would have been had the contract been performed.³

Expectation damages can be calculated by comparing:

- the financial position that the claimant would have been in absent any breach (i.e., if the respondent had performed the contract) (the ‘but-for position’); and
- the financial position the claimant is actually in given the effects of the breach (the ‘actual position’).

Financial experts often carry out a significant amount of work to construct these two sets of circumstances. Before an expert performs this work, certain steps must be taken in coordination with the legal team to identify the analysis to be performed.

1 Karthik Balisagar is a senior managing director and Tim Battrick is a managing director at FTI Consulting LLP. The authors thank Marco Shek, a senior director at FTI Consulting, for his assistance in the preparation of this chapter.

2 Other remedies include specific performance and non-compensatory damages such as restitutionary damages, nominal damages, exemplary damages and liquidated damages.

3 Under English law, this principle is set out in *Robinson v Harman* (1848) 1 Exch. 850 (154 E.R. 363), at 855: ‘The rule of the common law is, that where a party sustains a loss by reason of a breach of contract, he is, so far as money can do it, to be placed in the same situation, with respect to damages, as if the contract had been performed’.

In this chapter, we discuss some common issues that financial experts, lawyers and tribunals may need to consider when assessing compensatory damages:

- the importance of establishing causation in assessing damages;
- the limit to damages based on the foreseeability principle;
- the date of assessment and use of hindsight;
- the period over which the loss should be assessed and the relevance of mitigation;
- implementation of the loss calculation;
- dealing with uncertainty in financial information; and
- one alternative measure of loss: reliance damages.

We refer to our own experience in disputes and to publicly available decisions in litigation and arbitration cases to illustrate these issues. Given the confidential nature of arbitration awards, many of our examples are drawn from litigation, in particular English litigation. In our practical experience, as financial experts who are not lawyers, different legal systems or jurisdictions can have much in common when it comes to measuring compensation, despite using different terminology. That said, the devil can be in the detail of the differences that do exist, and different approaches in law pertaining to, for example, the effects of uncertainty or the burden or standard of proof, can have significant consequences in some cases on possible outcomes for claimants and respondents. It is vital that financial and other experts involved in claims for compensation for breach of contract seek, and obtain, appropriate instruction on factors that depend on questions of law. It may also be important to understand any effects of terms in the contract relevant to the assessment of damages, such as limitations on damages.

To illustrate our discussion, we sometimes refer to the following hypothetical example.

An investor engages a construction company to build a hotel. The hotel is not built to the agreed specification and, when open and operated, is significantly less profitable than the investor had expected it to be. The investor claims the construction company breached its contract. When quantifying the investor's loss, the financial experts and lawyers will have to ask the following questions:

- Did the contractor's failure to stick to the agreed specification cause the investor to suffer any losses at all?
- Were profits lower than expected solely because of the actions of the construction company or as a result of other factors, such as an overly ambitious forecast or an unexpected decline in tourism in the region?

- Did the claimant take any responsive measures to reduce its loss, such as remedial works or a change in pricing strategy?
- Is the contractor liable for the loss of profits resulting from the hotel being denied a specific business opportunity of which the contractor was unaware?

Causation

In our hotel example, the breach of contract might be easily observable and proven, but the investor will still need to demonstrate a causal link between the breach and the losses it has suffered. If the defect resulted in poor ventilation, this may result in poor reviews and fewer guests; however, if the defect meant that the aesthetics of the building were changed in an unnoticeable manner, the breach may not have resulted in any loss. Establishing causation is an important step in assessing damages in many breach of contract claims. The relevant standard of causation depends on the applicable law. Businesses operate in complex environments and their financial performance is affected by multiple factors, so isolating the effect of the alleged breach will not always be straightforward.

One example of a case in which the court found that a breach did not result in any loss to the claimant is *Marathon Asset Management LLP v. Seddon*. Two former employees of the claimant had breached their contractual duties by taking confidential information, but the court awarded only nominal damages of £2 because the employees' actions had not caused their former employer any financial loss.⁴

If the relevant causation is not proven to the requisite standard then any quantification of damages may be irrelevant to the outcome of the dispute. Extreme instances of this are akin to the proverbial loss of a battle 'for want of a nail'. In these cases, the loss claimed may be too remote to be recoverable.

Foreseeability

The law in many jurisdictions limits damages for breach of contract to losses that could be reasonably foreseen. This principle of foreseeability may be relevant when damages flowing from the breach are associated with very specific circumstances of the parties. Suppose the hotel in our example lost the opportunity to host an unusually profitable fashion show (which was not contemplated by either the investor or the contractor when the contract was made) as a result of its exhibition halls not being built to the specified dimension. Is the construction company liable for such a loss of opportunity?

⁴ *Marathon Asset Management LLP & Anor v. Seddon & Ors* [2017] EWHC 300.

Depending on the applicable law, different tests of foreseeability may apply to determine whether such loss of opportunity is recoverable. Financial experts should understand from their instructing counsel whether particular circumstances of the claimant should be considered when assessing damages. In the example above, whether the loss of opportunity should be considered may depend on whether the respondent had knowledge of such opportunities (or could reasonably foresee such losses arising from the breach).

Date of assessment and use of hindsight

The correct date of assessment is a legal issue that may depend on the facts of the case. In our experience, the appropriate date of assessment is one of the first and most important issues that financial experts should discuss with their instructing counsel when constructing the actual and but-for positions. The date of assessment determines the information that should have been known and reasonably knowable by the parties with respect to both the subject company (such as financial forecasts based on contemporaneous business information) and wider market conditions (such as expectations of future commodity prices, interest rates, etc.)

The date of assessment can have a significant effect on the amount of damages assessed. Various legal considerations affect this decision. For example, in investment treaty disputes, differences between lawful or unlawful expropriation of assets may be an important legal consideration when considering the appropriate date of assessment. Consider *Yukos v. Russia*. In this case, the tribunal found that the appropriate date of assessment should be either the date of expropriation (December 2004) or the date of the award (which it deemed to be 30 June 2014) and that the claimant should be entitled to the higher of the valuations at the two dates. The choice of the date of assessment was found to affect the amount of damages by a factor of three.⁵ There have been events in recent years that have also had a very significant effect on the value of some assets but within considerably shorter spaces of time than this, such as the covid-19 pandemic and Russia's invasion of Ukraine.

⁵ Based on the tribunal's calculation, damages assessed at 19 December 2004 were US\$21.988 billion, whereas damages assessed at 30 June 2014 were US\$66.694 billion. *Yukos Universal Limited (Isle of Man) v. The Russian Federation*, PCA Case No. AA 227, Final Award dated 18 July 2014, at 1763–69 and 1819–26.

In breach of contract claims, a general starting point is that damages are assessed as at the date of breach.⁶ However, this is not a strict rule, and courts and tribunals have taken into account subsequent events when they deem it appropriate to do so. In the case of *Golden Victory*, the date of assessment was a key matter because a war broke out after the repudiation of the contract. The court took this subsequent information into account as it found it ‘necessary or just to do so in order to give effect to the compensatory principle’.⁷

It may be difficult sometimes to identify a single date of breach. In our hotel example, construction may have taken place over multiple years and it is possible that a series of breaches took place on multiple dates. In other situations, it may be difficult to assess losses reliably given the information set available to the parties at the date of the breach and the great uncertainty at the time of the breach of its effects.

Losses up to the date of assessment are considered past losses and any losses beyond that date are considered ‘future losses’. A discounted cash flow approach is often applied to calculate the present value of future losses using an appropriate discount rate. Further, pre-award interest may be applied to past losses and losses assessed on a past date, up to the date of award. The two diagrams below illustrate the different mechanics of discounting and interest calculations when assessing lost profits at two different dates of assessment, with the simplistic assumption that no external factors materially affected the actual and but-for positions between the two dates. However, in reality, the relevant information sets available on these two dates may differ significantly, for example because of significant movements in commodity prices or a global pandemic. These are all reasons why the appropriate date of assessment is one of the first and most important issues that financial experts should discuss with their instructing counsel when constructing the actual and but-for positions.

6 *Miliangos v. George Frank (Textiles) Ltd* [1976] AC 443.

7 *Golden Strait Corporation v. Nippon Yusen Kubishika Kaisha* [2007] UKHL 12, at 13.

Figure 1: Illustrative diagram using date of breach as date of assessment

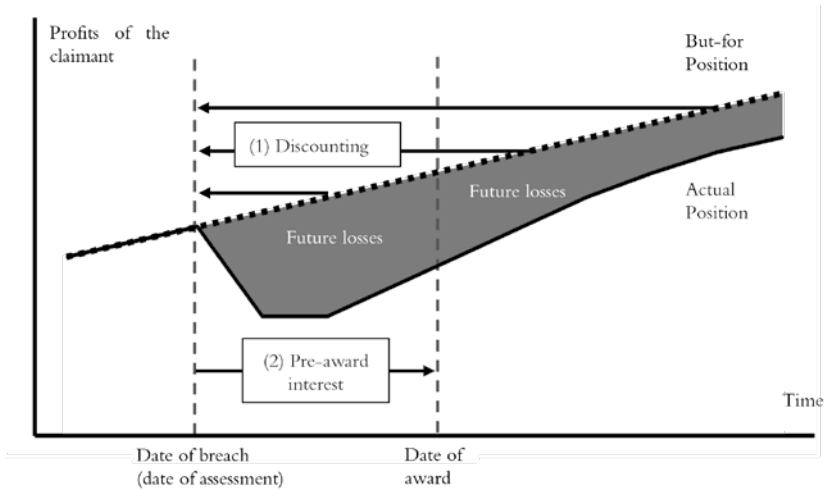
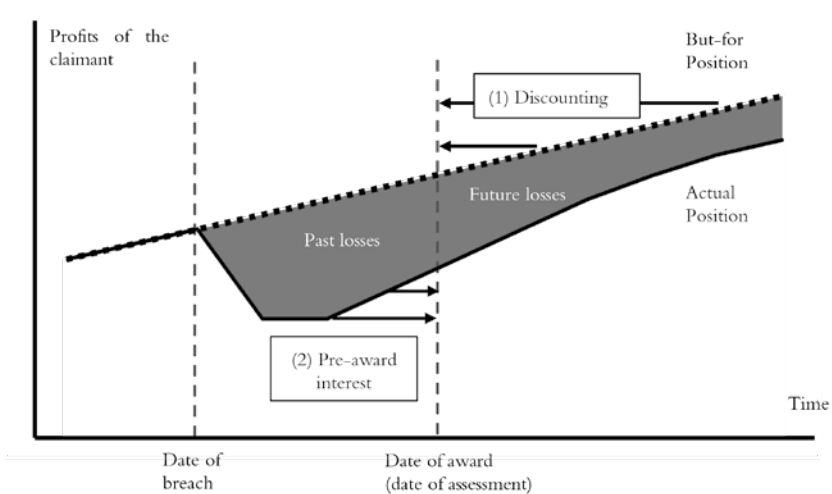


Figure 2: Illustrative diagram using current date (date of award) as date of assessment



Period of loss and mitigation

Depending on the effects of the breach, the period of loss may be disputed by the parties. Take an example in which a licensee of a luxury retail brand breaches the terms of the licensing agreement by selling goods below an agreed sales price. The experts have been asked to assess the loss that the claimant (the licensor) suffered as a result of the respondent's actions, which tarnished the claimant's reputation as a luxury brand. A key question will be the period of loss, which may depend on the time needed for the claimant to 'rebuild' its brand.

In many cases, the injured party will not be compensated for losses that it could have avoided by taking reasonable steps in mitigation. It is sometimes reasonable to assume that, after a certain period, the performance of the injured party will recover to what it would have been in the absence of any breach, as a result of the mitigating actions. In our hotel example, the hotel may be able to generate the same profits as if it had been constructed to different specifications as soon as appropriate remedial works have been completed. Alternatively, the effect of the breach will persist indefinitely.

As an aside, the remedial costs required (or spent) to cure the breach may sometimes be relevant in assessing the losses suffered by the claimant. Taking our hotel example, if the only effect of the breach was to cause remedial costs of US\$1 million to be incurred to reconstruct the hotel to the contracted specification, then this sum may reflect the amount of the claimant's loss. Whether this is an appropriate measure of damages will depend on the facts and appropriate law. In *Ruxley Electronics & Construction Ltd v. Forsyth*, Forsyth claimed costs to rebuild a swimming pool that was shallower than specified. The House of Lords found that, as the pool was safe to dive into, the cost of cure was not proportionate to the loss in value. It awarded a small sum of damages to cover the claimant's reduction in amenity.⁸ The law may take a different approach to this situation in different jurisdictions.

In rare instances, the act of mitigation may eliminate entirely any loss suffered. In *British Westinghouse Electric and Manufacturing Co Ltd v. Underground Electric Rlys Co of London Ltd*, the claimant purchased steam turbines from the defendant, which were found to be defective, and sought damages to recover the cost of substitute turbines. The House of Lords held that the savings from the more effective substitutes that the claimant bought exceeded their costs, so the claimant recovered nothing under this head.⁹

Implementing the loss calculation

When performing a loss assessment, it is not necessary to consider explicitly all aspects of the actual and but-for positions. If aspects of the claimant's financial position are identical in these two positions, these aspects will cancel out when the actual and but-for scenarios are compared. As an example, if the hotel owner

⁸ *Ruxley Electronics & Construction Ltd v. Forsyth* [1996] AC 344.

⁹ *British Westinghouse Electric and Manufacturing Co Ltd v. Underground Electric Railways Co of London Ltd* [1912] AC 673.

in our example also has hotels in other countries whose performance has not been affected by the events surrounding the one hotel in question, then these properties need not be considered explicitly in any loss calculation.

If the breach has an isolated effect on a single aspect of the business's performance, then the loss can be calculated by examining this incremental effect of the breach on the business's performance. If the breach has a more extensive effect on different aspects of the claimant's business, it may be preferable to calculate the actual and but-for positions explicitly and only then to calculate the loss as the difference between the two. This ensures clarity on the expert's view of the effect of the breach on the claimant's individual revenue and cost streams, which could be affected by the breach to different extents and in differing ways across time. By way of example, the authors have seen claims that identify the revenues that the claimant has lost as a result of the breach but are silent on the effect (if any) of the breach on the claimant's costs. These types of calculations will often result in an incorrect estimate of the loss amount.

Dealing with uncertainty in financial information

There is necessarily a degree of uncertainty in estimating the but-for position because it represents a hypothetical situation. There is often also uncertainty associated with the future element of the actual position.

One factor affecting the reliability of a loss assessment is the amount of relevant information available. The authors have advised on cases in which the information available has been limited by factors that one of the parties has argued have been outside its control. These include the loss of documents because of war, water damage, fire and the passage of time. The parties in these cases disagreed on whether the weight to be placed on the quantum analysis was affected by the availability of the information.

To assist them in developing financial projections, financial experts may seek to understand the markets in which the relevant business operates (sometimes with the aid of an industry expert), to review contemporaneous indications of expectations, and to apply cross-checks to their assumptions and conclusions. Financial experts often make use of business plans and forecasts made by the parties as starting points when assessing financial performance in the but-for position. The parties may disagree, however, on whether a given forecast presents a balanced view of the prospects of the business. This is particularly likely to be the case when the forecast anticipates a marked change in the business's historical performance, or when the forecast performance relies on factors outside the control of the parties.

To reflect the uncertainty in their assessment, experts may present multiple scenarios for the but-for position or conclude on a range of loss figures. As we explain below, parties and tribunals sometimes consider the assessment of reliance damages when it is not possible to present a well-supported assessment of expectation damages owing to the uncertainties involved.

Reliance damages (wasted costs)

Reliance damages are another form of compensatory relief. Reliance damages are assessed based on the costs wasted by the claimant in reliance on the contract. In effect, reliance damages return the claimant to the position it would have been in had the contract never been made.

Owing to the difference in the premise of the but-for position, reliance damages are a strict alternative to expectation damages. Parties should be mindful not to ‘double count’ wasted costs in claims for expectation damages. As put by the tribunal in *Himpurna v. Indonesia*: “To ask for the full amount of the future revenue stream [expectation damages] when also claiming recoupment of all investments [reliance damages] is wanting to have your cake and eat it too.”¹⁰

If claimants cannot present a well-supported assessment of their expectation losses (for instance, because the business has little track record or an unproven business model), they may claim as an alternative for reliance damages.¹¹ In many circumstances, the expected benefit to the claimant of performing the contract will be at least as great as the costs incurred in reliance on the contract. This is because a claimant will not typically have entered a contract unless it expected to profit from doing so. If that is no longer the case by the time of the breach, the claimant may be prohibited (as a matter of law) from making a claim for wasted costs.

If a claimant seeks reliance damages, key questions for the expert and legal team can include the following:

- Is it possible to isolate those costs incurred in reliance on the contract rather than relating to other activities?
- What accounting evidence is required to confirm that a cost has been incurred? Is it sufficient to reconcile costs to an accounting system or is it necessary to trace costs back to bank statements and cash outgoings?

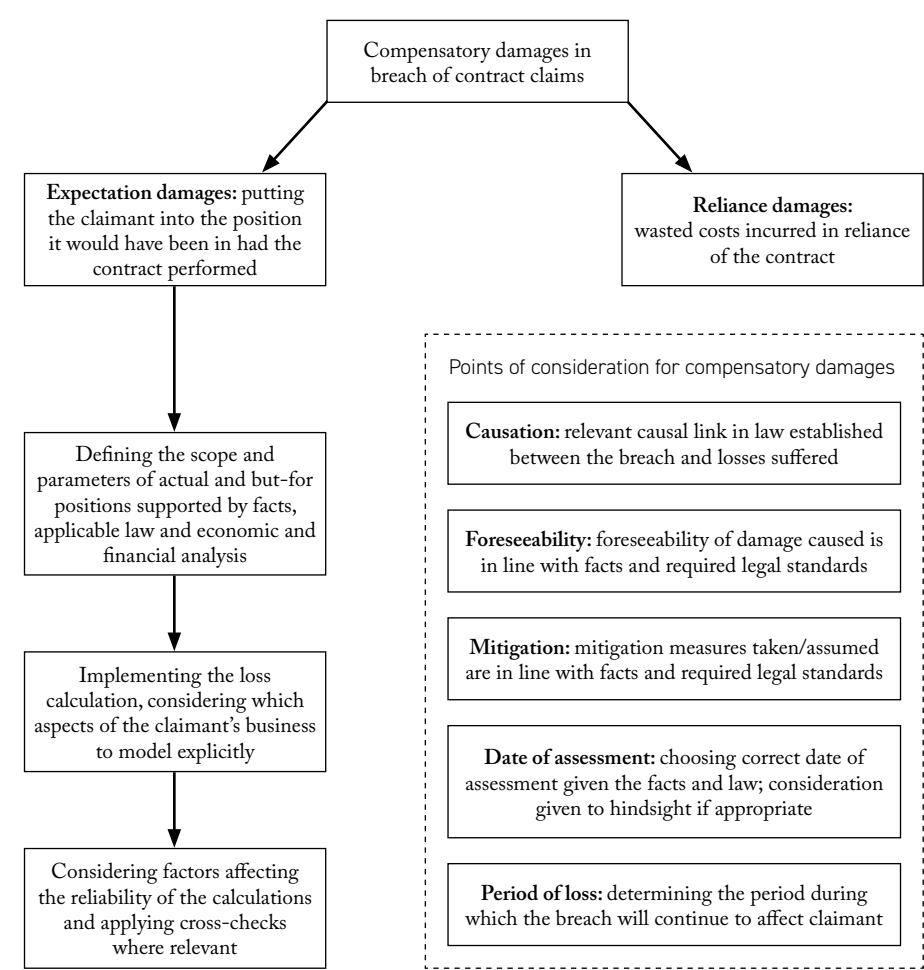
10 *Himpurna California Energy Ltd v. PT (Persero) Perusahaan Listrik Negara*, Final Award, dated 4 May 1999, at [242].

11 *Metalclad Corporation v. The United Mexican States*, ICSID Case No. ARB(AF)/97/1, Award dated 30 August 2000, at 119–22.

- Were the costs incurred excessive?
- Is there any evidence to suggest that the claimant would not have (at least) recovered all its costs if the contract was performed?
- Has the claimant received any benefit as a result of its expenditure? As an example, the costs claimed may include the cost of acquiring an asset that could be sold. Should credit be given for this benefit?

Conclusions

Every case will have specific circumstances and the issues for the expert and legal team to address will be informed by the facts and the relevant law. We have covered a series of questions that legal teams may need to consider with their experts when quantifying the damages in a breach of contract case. We also offer a flowchart below that may provide a starting point (but not an exhaustive list) when quantifying a claim for damages.



CHAPTER 12

The Applicable Valuation Approach

Roula Harfouche and Joseph Kirby¹

Introduction

Complex damages assessments often involve the valuation, at a specific point in time, of a financial asset or the economic rights to a stream of profits or cash flows. Valuation may also be directly relevant to a damages assessment if the claim relates to a diminution in the value of a tangible or intangible asset as a result of an alleged breach. Assessing the amount of damages that appropriately compensates the injured party for the loss of its ability or expectation to earn cash flows into the future, or for the diminution of value of its assets, can be a complex financial matter.

In this chapter, we discuss the fundamental drivers of value, describe the primary approaches and methods used to reflect those drivers to arrive at a value, and set out the key considerations in selecting an appropriate valuation approach or method.

Introduction to concept of value

Before turning to the primary approaches for valuing an asset, it is important to understand what we mean by ‘value’. In financial terms, the value of an asset is derived from its ability to generate benefits to its owner in the future. For a business investment, those ‘benefits’ are generally the cash flows that ownership of the investment is expected to generate. These can include the cash flows generated from the operation of the business, as well as any cash generated from the sale of its constituent assets.

¹ Roula Harfouche is a partner and Joseph Kirby is an associate director at HKA. The authors wish to thank Jana Lefranc and Colin Johnson for their comments on this chapter.

The value is not simply a function of the amounts of these expected cash flows but also of their timing and the degree of uncertainty, or ‘risk’, attached to them. Consider two investments: investment A will yield \$100 with certainty tomorrow and investment B will yield \$100 with certainty in a year’s time. Investors will generally attach a lower value to investment B, mainly because receiving the money now from investment A would allow them to either spend it or invest it for a year and earn a return in that period. This is a concept referred to as the ‘time value of money’. Now consider investment C, which is also expected to yield \$100 in a year’s time, but the precise amount it will yield is uncertain: with some probability it may yield less than \$100 and with some probability it may yield more than \$100 in a year’s time, such that the ‘expected value’ in statistical terms (i.e., the probability weighted set of all possible outcomes) is \$100. Prudent (or risk-averse) investors would attach a lower value to investment C than to investment B, given the certainty of the latter.

Expectations as to the future benefits to be derived from an asset, the timing of those benefits and the risks associated with them are likely to evolve over time. Valuation, therefore, is not static and will typically vary over time as facts evolve and expectations as to the future change. For any valuation, therefore, a specific valuation date must be defined. It is a fundamental principle of valuation that only information that is known or knowable (i.e., could reasonably have been available to a prospective investor) as at the valuation date may be reflected in the valuation, although this is not always true for damages assessments. In a damages assessment context, the selection of the appropriate valuation date is a complex matter and may be informed by a number of factors, including the factual background to the dispute and legal arguments as to the appropriate basis of compensation. The most commonly used valuation dates tend to be the date of breach and the date of award. In dispute contexts, using information that became available only after the valuation date (i.e., using hindsight) may sometimes be acceptable.

Main valuation approaches

There are three primary approaches used to value an asset: the income approach, the market approach and the cost approach (sometimes referred to as the asset-based approach). Within each of these approaches, there are several possible methods for applying the approach. As already noted, the fundamental drivers of the value of an asset are the level, timing and riskiness of its expected cash flows. Under the income approach, these are explicitly estimated by the valuer. This approach, therefore, can be classified as an ‘explicit’ valuation approach. The market approach and the cost approach, by contrast, are ‘implicit’ approaches, whereby the fundamental drivers of value are not assessed explicitly but by reference to benchmarks

that should implicitly reflect these drivers of value. In the case of the market approach, transaction prices are taken to reflect the views of the buyer (or buyers) and seller (or sellers) in that transaction as to the drivers of value for the asset in question. This transaction price, as discussed further below, may, then, be taken as a valuation benchmark. Under the cost approach, the cost incurred to purchase or construct the asset is taken as a valuation benchmark. Regardless of whether the fundamental drivers of the asset or company value are set out explicitly under the income approach, or implicitly under the market approach or cost approach, it is important to understand that each of these approaches is ultimately seeking to value the same thing. Which of the approaches is most appropriate in any given case is dependent on a number of factors, including the quality of information available, the strengths and weaknesses of the respective approaches and the nature of the asset, as explained further below.²

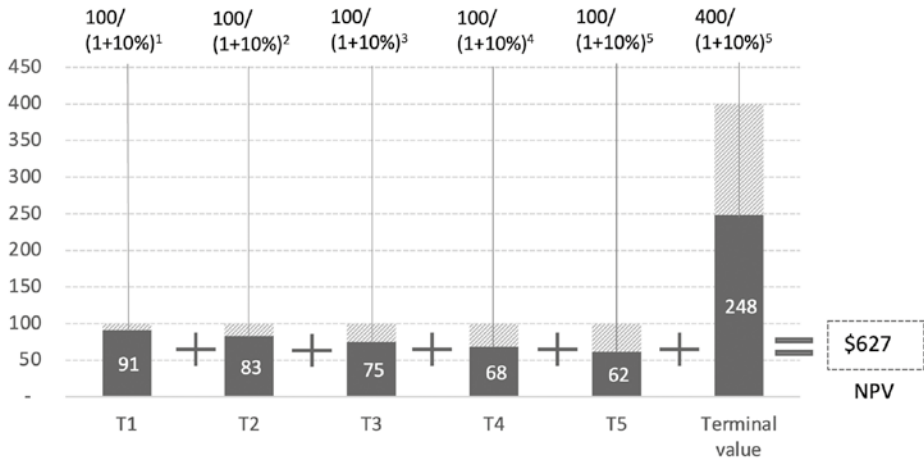
Income approach

The income approach is commonly used, both in disputes and in other contexts, such as transactions. Although a number of different methods are used to implement the income approach, as the International Valuation Standards Council notes in its International Valuation Standards (IVS), they are all variations of the discounted cash flow (DCF) method, and involve the application of the same concepts.³ The DCF method involves forecasting cash flows over a certain period (the explicit forecast period) and discounting these at a rate that reflects the time value of money and the level of risk attached to these cash flows, so as to derive their net present value. Any value of the assets beyond the explicit forecast period is reflected through the inclusion of a 'terminal value' at the end of that period.

2 Aswath Damodaran, 'Damodaran on Valuation – Security Analysis for Investment and Corporate Finance' (2nd edition), page 245.

3 International Valuation Standards (IVS), 105 2022: 50.1.

Figure 1: Illustrative example DCF calculation



Example: DCF calculation for an asset with expected cash flows of \$100 paid at the end of each year over a five-year forecast period, and with a terminal value of \$400 as at the end of the five-year period, discounted at a rate of 10 per cent. The shaded areas show the undiscounted cash flows and the solid areas the discounted cash flows.

The reliable application of this approach depends, therefore, on the ability to reliably forecast cash flows over a number of years and to estimate a reasonable discount rate. Typically, a DCF valuation can be highly sensitive to changes in each of these two components.

The construction of cash flow forecasts typically involves making certain assumptions, or judgements, as to the key inputs to the future level of cash that is generated – be it the future price at which the good is sold, the volume of sales, the appropriate level of costs and, therefore, of margins, the amount of investment required to achieve the projected sales, and so on. For the DCF valuation to be reliable, it is important to have a reliable basis for the selection of these inputs. This means that the quality and availability of relevant information is crucial. This is often interpreted to mean that a DCF is only reliable where there is an established track record of profitability for the business in question. However, this is not necessarily the case. Ultimately, future operating performance is what drives future cash flow forecasts, and although historical operating performance may be a useful indicator of, or cross-check to, future expected performance, other

information may also be useful. For example, an oil producer at the point of the first production of oil will have no historical profits but its future profits may be derived reliably from well-established, proved reserves, which will be sold at well-published spot and future/forward prices and for which there are also numerous available third-party forecasts – in this case one would not necessarily conclude that there is no reliable basis for forecasting future performance.

The discount rate used to convert a stream of future cash flows into a present value should account for the time value of money and the risk attached to these cash flows. The methods most commonly used to estimate the discount rates are covered in other chapters of this book. All else being equal, the sensitivity of a DCF valuation to the selection of the discount rate is higher if a large proportion of the asset's cash flows is expected to be generated further into the future, as compared with cases in which a large proportion of the asset's cash flows is expected in the short term.

Market approach

The market approach is a relative valuation approach whereby the value of an asset or business is assessed by reference to the prices paid for comparable assets or businesses. Under this approach, valuation is conducted by comparison 'with identical or comparable (that is similar) assets for which price information is available'.⁴ This price information includes:

- the price at which transactions for comparable companies have taken place (sometimes referred to as the comparable transactions method); or
- the price at which shares in comparable companies are publicly traded (sometimes referred to as the guideline publicly traded comparable method).

The application of both methods requires the identification of companies that are sufficiently comparable such that this price information provides a reliable benchmark for the valuation of the asset being valued. As explained above, the fundamental drivers of value are the future cash flow trajectory (i.e., both the level and the timing of cash flows) and their risk. Therefore, to identify comparable companies, it is necessary to identify companies with similar cash flow growth profiles and levels of perceived risk to the company being valued.

4 IVS 105 2022: 20.1.

Generally, the single most relevant comparable company will be the company itself, and where information as to the prices paid in prior transactions or the listed share price of the company is available, this will often provide a useful valuation benchmark – albeit care must be taken to check whether the company's economic prospects have materially changed between the date of the prior transaction and the valuation date, or whether the prior transaction occurred under any circumstances that limit its use as a valuation benchmark, for example, if it was not conducted on arm's length terms.

Where other comparable companies are selected, in practice valuers typically select companies that are similar to the company being valued in terms of having similar business operations, the assumption being that this means the subject company and the comparable companies are expected to experience similar growth in profitability at similar risks.⁵ This similarity can be assessed by considering a number of factors, such as market segment, product mix, geography, size, growth rates, and so on. Because these companies may be of a different scale from the company being valued, valuers often rely on their relative value, rather than absolute value, as a benchmark. This is typically done by reference to valuation multiples, whereby the enterprise value (EV) or equity value of the comparable company is scaled by dividing it by an operating metric (e.g., number of rooms for a hotel) or a financial metric (e.g., an earnings measure such as EBITDA (earnings before interest, tax, depreciation and amortisation)), either using historical measures (sometimes referred to as 'trailing' multiples), current year measures that may reflect a combination of actual and forecast budgeted results for the remainder of the year ('current' multiples) or forecast measures for future years ('forward' multiples). When the comparable transactions method is used, it results in applying 'transaction multiples' and when the guideline publicly traded comparable method is used, it results in applying 'trading multiples'.

The most commonly used multiples and the bases for their selection are covered in other chapters of this book.

5 Aswath Damodaran, *Damodaran on Valuation: Security Analysis for Investment and Corporate Finance* (2nd edition, 2006), page 245.

Cost approach

The IVS state:

The cost approach provides an indication of value using the economic principle that a buyer will pay no more for an asset than the cost to obtain an asset of equal utility, whether by purchase or by construction, unless undue time, inconvenience, risk or other factors are involved. The approach provides an indication of value by calculating the current replacement or reproduction cost of an asset and making deductions for physical deterioration and all other relevant forms of obsolescence.⁶

The cost approach may be applicable when it is reasonably feasible to recreate a business with similar utility as the business being valued by purchase or construction of its constituent assets. This is the case when:

- the value of the business can be fully or mainly attributed to its identifiable tangible and intangible assets;
- information as to the cost to purchase or construct those assets is readily available; and
- the costs of purchase or construction reflect the value to the business of those assets.

This will be the case for a business that is no longer a going concern, whose future cash flows will be obtained via a liquidation of its assets. This may also be the case for certain businesses, such as banks, whose assets are regularly marked-to-market, or property holding companies, whose portfolio is regularly valued. However, for many going concern businesses, significant value is derived from intangible assets such as brand value, customer relationships and goodwill in the broader sense of the word (i.e., the benefits of combining the different assets of the company such that the value of the whole is greater than the sum of the parts). These assets are difficult to identify, and it is difficult to estimate a replacement or reproduction cost for them. For this type of business, cost approach methods are likely to be less applicable, except as a floor value or as a cross-check.

It is important to note that the cost approach does not involve taking the historical or investment costs of the assets (i.e., the sunk costs) but may involve starting with historical costs less depreciation, to the extent that historical costs are a reasonable proxy for current value.

6 IVS 105 2022: 60.1.

Summary of valuation approaches

The key features of the three main valuation approaches are summarised in the table below, in relation to the valuation of a company.

Valuation approach	Key features
Income approach	Involves forecasting future cash flows to be derived from the subject company and discounting them at a discount rate that reflects the time value of money and the risks attached to the forecasts to arrive at a present value as at the valuation date
Market approach	Relative valuation approach. Involves valuing the subject company by applying the trading or transaction multiples of comparable companies (at or around the valuation date) to the corresponding metric of the subject company
Cost approach	Involves valuing the subject company by adding the replacement or reproduction cost of the assets on its balance sheet and deducting the value of its liabilities. Typically excludes the value of goodwill and other intangible assets not recognised on the subject company's balance sheet

Summary of strengths and weaknesses of main valuation approaches

Each valuation approach has certain strengths and weaknesses, as summarised in the table below.

Valuation approach	Strengths	Weaknesses
Income approach	Flexible – can be applied to value different types of assets, including those with a finite lifespan Transparent – assumptions are set out explicitly so they can each be adjusted and the effects of these adjustments on value can be clearly measured Often used in the context of transactions and by equity analysts	Can be complicated or onerous (or both) to prepare and check. Requires reliable multi-year cash flow forecasts prepared around the valuation date Requires a solid basis for estimating the discount rate, e.g., comparable traded companies (see below) Risk of garbage in garbage out (GIGO) for many of the assumptions used in forecasting future cash flows or estimating the discount rate

Valuation approach	Strengths	Weaknesses
Market approach	Based on prices paid in actual transactions by (presumably) knowledgeable market players Can be simpler and quicker to apply than income approach because it does not require as much information In principle, it uses three components: 1) the numerator (EV or equity value) of the comparable companies; 2) the denominator (e.g., EBITDA) for the comparable companies; and 3) the corresponding denominator for the subject company Often used in the context of transactions and by equity analysts	Requires sufficiently comparable companies being publicly traded or having been acquired around the valuation date The analysis of each of the three components of a multiple may involve significant complexity, such that what may appear to be a simple calculation can in fact require significant time and effort to produce Risk of GIGO concentrated on the three components used, so the effects on value of any of the three components being incorrect is high
Cost approach	Can also be quicker to apply than the income approach, although it does require an analysis of all the assets and liabilities on the balance sheet of a company May be appealing as the basis for damages if a tribunal is not satisfied that the company has any value in excess of the sum of the value of the constituent assets Can be appropriate if a liquidation of the business is expected	Likely to reflect a floor value because it excludes the value of goodwill and intangible assets not on the balance sheet, so does not reflect the potential of the combination of assets to add value in the future For a company, assets and liabilities can be difficult to value (see weaknesses of the two approaches above), so valuers often assume the book value of the assets and liabilities (i.e., their purchase costs less accounting depreciation) reflects their market value, which is not often the case

Selecting the appropriate valuation approach or approaches

The nature of the company or asset being valued and the quantity and quality of available information will determine which approach is feasible, and which approach or approaches may be preferable in any given case. The decision as to how much weight to put on the income approach value will depend largely on the availability of sufficient information to construct well-supported cash flow forecasts, whereas the decision as to how much weight to put on the market approach will depend on the availability of market transactions involving companies or

assets that are sufficiently comparable to the subject company or asset. The decision to apply the cost approach is more a function of the nature of the business being valued and the circumstances in which the valuation is required, with the cost approach being more suited to businesses for which the value of goodwill (in the wider sense of the word) is expected to be low.

It is not reasonable to generalise or apply any rules rigidly without proper consideration of the specifics of each case. The IVS recommend considering more than one valuation approach if and wherever possible:

Valuers are not required to use more than one method for the valuation of an asset, particularly when the valuer has a high degree of confidence in the accuracy and reliability of a single method, given the facts and circumstances of the valuation engagement. However, valuers should consider the use of multiple approaches and methods and more than one valuation approach or method should be considered and may be used to arrive at an indication of value, particularly when there are insufficient factual or observable inputs for a single method to produce a reliable conclusion.⁷

We would recommend considering as many valuation approaches as is reasonably feasible in the situation at hand, given the practical limitations in terms of information, time and budget. If the income approach is used, then a substantial part of the information required to use the market approach is likely to have already been collected, and thus the incremental time and cost of applying the market approach are likely to be limited.

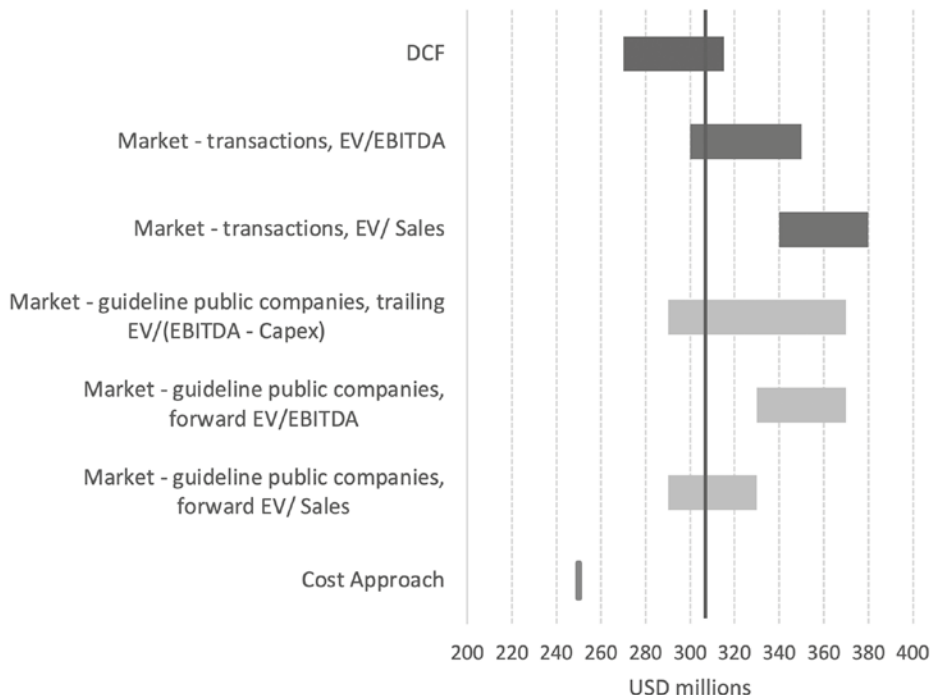
If one valuation approach is particularly suited to the situation, we would consider using another valuation approach only as a cross-check of the value derived from the main valuation approach. For example, the valuation of a discrete cash flow stream over a finite period may require the use of the income approach, as those specific cash flows can be explicitly reflected, whereas the market approach is likely to be less suitable if the available price information relates to transactions in comparable companies or assets that are expected to continue operating for the foreseeable future or for a different period from that of the subject asset. In such a case, the market approach may nevertheless provide a sense check – for example, an implied multiple from the DCF valuation that is significantly higher than the multiples observed for large listed comparable companies would require checks and explanations.

7 IVS 105 2022: 10.4.

If there are issues with all the valuation approaches, such that none is clearly preferable, we would consider using several valuation approaches, and within each valuation approach, more than one valuation method. We would then triangulate and rationalise the different values obtained. For example, we might consider using both the comparable transactions method and the guideline publicly traded comparable method within the market approach, and consider using a DCF arriving at an enterprise value and a DCF arriving at an equity value.

For each application of a valuation method, it may also be appropriate to consider a range of values, reflecting a reasonable range of key valuation inputs, such as a range of discount rates in a DCF valuation or a range of multiples within a comparable transactions method. An example of a resulting set of valuation ranges is shown in Figure 2, below.

Figure 2: Illustrative summary of valuation ranges obtained using different methods



To arrive at a final opinion on value, a number of options could be used, after the differences between the values obtained have been rationalised and the valuations or assumptions have been adjusted, if needed:

- select the simple average of the values obtained from the different valuation methods or approaches;

- select a weighted average of the values obtained from the different valuation methods or approaches, with different weights being given to the values obtained from those methods or approaches. There are no general rules as to what weights to place on the different valuation outputs. Rather, this is an area for reasoned judgement and therefore, for controversy and differences of opinion between valuers; and
- select the value derived from a preferred valuation approach or method, having checked that this value is not an outlier compared with the values obtained from the other valuation methods or approaches. For example, this could be done by selecting the top end of the DCF value range, which would be consistent with the value ranges obtained in most of the other methods (see the vertical line in Figure 2, above).

Valuation approaches and damages assessment bases used in disputes

Data on parties' and tribunals' preferred valuation approaches is limited, particularly in commercial arbitration. A 2020 Queen Mary University of London study of International Chamber of Commerce awards found that sunk costs was proposed by claimants as the basis for claims in 63 per cent of cases, the income approach in 29 per cent of cases and the market approach in only 5 per cent of cases.⁸ A study of investment treaty awards published by PwC in 2017 showed that the income approach was proposed by claimants in 51 per cent of cases, with sunk costs being preferred in 14 per cent of cases and the market approach in 6 per cent of cases.⁹ The PwC research also shows that the DCF method was the method most commonly preferred by tribunals (in about 45 per cent of cases), with historical cost or investment cost (i.e., sunk costs) being preferred in about 35 per cent of cases and the market approach in about 10 per cent of cases.¹⁰ It is important to remember that taking sunk costs is not a valuation approach but an alternative damages assessment basis.

8 Queen Mary University of London study, page 14 – search for 'RITM3762683_Queen Mary research paper_IR_V04.indd' at qmul.ac.uk (last accessed 26 September 2022).

9 id.

10 'PwC International Arbitration damages research: 2017 update', page 6, available at [pwc-international-arbitration-damages-research-2017.pdf](https://www.pwc.com/international-arbitration-damages-research-2017.pdf) (last accessed 26 September 2022).

Summary

We have described the fundamental drivers of the value of economic assets and explained the main features, strengths and weaknesses of the main approaches used to value assets. Although the appropriateness and application of each of these valuation approaches are complex matters, we have set out the key considerations that are likely to be relevant to their applicability in the assessment of damages. There are no general rules as to the applicability of a valuation approach by reference to the nature of the asset or company to be valued or the nature of the dispute. Therefore, considering all available valuation approaches would be a good place to start.

CHAPTER 13

Income Approach and the Discounted Cash Flow Methodology

Alexander Demuth¹

Introduction

When applying the income approach, the theory of business valuation determines the value of a business by assessing the present value of its future net cash flows.² Since the requirement of full compensation is generally interpreted to put the damaged party into the same economic (i.e., financial) situation it would have been in but for the wrongful act, the methodology and approaches widely accepted for business valuation are also applied in the determination of damages.³

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2 cf. Aswath Damodaran, *Damodaran on Valuation – Security Analysis for Investment and Corporate Finance*, Second Edition, 2006 (Damodaran (2006)), p. 10; Tim Koller, Marc Goedhart and David Wessels, *Valuation – Measuring and Managing the Value of Companies*, Sixth edition, 2015 (Koller et al. (2015)), p. 137; Mark Kantor, *Valuation for Arbitration – Compensation Standards, Valuation Methods and Expert Evidence*, 2008 (Kantor (2008)), pp. 8 ff. or Joseph J Galanti, Business Valuation, in *Litigation Services Handbook – The Role of the Financial Expert*, Sixth Edition, 2017 (Galanti (2017)), pp. 9 ff.

3 cf. Mark A Allen, Robert E Hall and Victoria A Lazear, 'Reference Guide on Estimation of Economic Damages', in *Reference Manual on Scientific Evidence*, Third edition, 2011 (Allen et al. (2011)), p. 448; or Michael K Dunbar, Elizabeth A Evans and Roman L Weil, 'Ex Ante versus Ex Post Damages Calculations', in *Litigation Services Handbook – The Role of the Financial Expert*, Sixth edition, 2017 (Dunbar et al. (2017)), p. 1.

The following sections briefly introduce the discounted cash flow (DCF) methodology and its approaches, and then discuss, in the context of international arbitration, its application to the assessment of damages, the assumptions required to use adequately and reliably this methodology and the documentation required to support its results.

Discounted cash flow methodology

Introduction

The DCF methodology determines the business value as the present value of expected future net cash flows discounted at a rate reflecting the time value of money and the risks attributable to these cash flows.⁴ Within the different approaches applied for valuing a business, it ‘comes with the best theoretical credentials’⁵ and ‘remains a favourite of practitioners and academics because it relies solely on the flow of cash in and out of the company, rather than on accounting-based earnings’.⁶ It is, therefore, less prone to manipulation through the use of accounting policies⁷ and avoids divergent results from the use of different accounting principles (e.g., International Financial Reporting Standards (IFRS) or United States Generally Accepted Accounting Principles (US-GAAP)).

The DCF method distinguishes two general approaches, depending on whether the value is determined for only the equity investment in the business (known as equity valuation approach) or the entire business (known as enterprise valuation approach). Both approaches are broadly accepted but vary with regard to the relevant cash flows and discount rates.⁸

Equity valuation approach

The equity valuation approach calculates the value of equity by discounting the future net cash flows after debt payments and reinvestment needs (known as free cash flow to equity) at a rate reflecting only the cost of equity.⁹

4 For an overview of other valuation methodologies, see other chapters in this Guide on various valuation approaches.

5 Damodaran (2006), p. 10; cf. Kantor (2008), pp. 131 f.

6 Koller et al. (2015), p. 137.

7 cf. Patrick A Gaughan, Henry Fuentes and Laura Bonanomi, ‘Cash Flow vs. Net Income In Commercial Litigation’, *Litigation Economics Digest* 1(1), 1995, p. 13.

8 Aswath Damodaran, *Investment Valuation –Tools and Techniques for Determining the Value of Any Asset*, Third edition 2012 (Damodaran (2012)), pp. 12 ff.

9 cf. Damodaran (2006), p. 12; or Damodaran (2012), p. 351.

Enterprise valuation approach

The enterprise valuation approach calculates the enterprise value of the business through discounting the future net cash flows before debt payments and after reinvestment needs (known as free cash flow to the firm) at a rate reflecting the cost of all sources of capital, applying a blended cost of capital.¹⁰ The equity value can be derived from the enterprise value by deducting the market value of non-equity claims¹¹ (i.e., primarily interest-bearing debt).

The weighted average cost of capital (WACC) approach is the most commonly used enterprise valuation approach.¹² It is often used in applying a constant discount rate, which would require a stable capital structure (i.e., a constant ratio of the market value of debt to the market value of equity). However, since the capital structure typically changes over time, the use of a constant WACC may not be appropriate. Instead, it needs to be adjusted throughout the valuation period to reflect the changes in the capital structure.¹³

Application of discounted cash flow methodology

Introduction

The use of the DCF methodology will generally require some modification to quantify damages in international arbitration, as the required full compensation may necessitate a 'damages computation that is markedly different than a standard business valuation'.¹⁴

10 cf. Damodaran (2006), pp. 11 and 209; Damodaran (2012), p. 380; or Koller et al. (2015), p. 138.

11 cf. Koller et al. (2015), pp. 150ff. for a list of the most common non-equity claims.

12 Alternatively, the adjusted present value (APV) approach can be employed, which determines the enterprise value by first calculating the enterprise value of the business assuming no leverage (i.e., no non-equity claims) and second, adding thereto the value of the tax implications of debt financing (i.e., the value of the tax deductibility of interest expenses). Theoretically, the APV and weighted average cost of capital (WACC) approaches should determine an identical business value, as the only distinction between them is how the impact of debt financing is considered. cf. Koller et al. (2015), p. 137; or Damodaran (2006), p. 215.

13 Even though modelling these changes requires an iteration and, therefore, is more complex than using a constant WACC, the use of a period-specific WACC has become market standard as supported by Damodaran (2006), p. 194: '[O]ne of the biggest strengths of the [WACC] model is the ease with which changes in the financing mix can be built into the valuation through the discount rate.'

14 Everett P Harry, 'Lost Profits and Lost Business Value – Differing Damages Measures', *Dunn on Damages*, Issue 1, Winter 2010 (Harry (2010)), p. 6.

First, the standard approach to determine full compensation is a comparison of the damaged party's actual situation with the situation it would have been in 'but for' the wrongful act (i.e., the but-for method).

Second, depending on the facts and circumstances, damages will be assessed as a loss in business value or as lost profits.

Third, although business valuation is typically based on the information available at the valuation date (the *ex ante* approach), the quantification of damages also regularly considers information available up to the date of the assessment (the *ex post* approach).

Fourth, notwithstanding the foregoing, in some instances the quantification of damages may be made easier by directly assessing the cash flow resulting from the wrongful act (direct assessment) than by comparing two sets of cash flows with and without the influences of the wrongful act (indirect assessment).

And fifth, a prerequisite of a useful damage quantification is the consistent application of these concepts, including the use of a proper valuation model.

The but-for method

The but-for method determines the amount required to compensate the damaged party by comparing its actual position to the hypothetical position it would be in but for the wrongful act.¹⁵ The but-for situation always refers to a hypothetical situation and thus cannot be established with certainty, but needs to comply with the principle of reasonable certainty and avoid undue speculation. In contrast, the actual situation is generally observable (e.g., from the damaged party's accounting records). Nonetheless, the actual situation may also require adjustments, most importantly with regard to the identification, assessment and elimination of other factors that may have influenced the actual situation but are not attributable to the wrongful act¹⁶ (e.g., external factors such as a market decline). Furthermore, to the extent that the damages continue beyond the date of the damages assessment, the actual situation will necessarily also include a financial forecast of the expected actual development.¹⁷

15 cf. Allen et al. (2011), p. 432; or European Commission, 'Practical Guide, Quantifying Harm in Actions for Damages based on Breaches of Article 101 or 102 of the Treaty on the Functioning of the European Union', 2013 (EC (2013)), p. 7. Although this guide is concerned with antitrust issues, the methods discussed equally aim for full compensation of the damaged party.

16 cf. Richard A Pollack, Scott M Bouchner, Craig M Enos, Colin A Johns and John D Moyl, 'AICPA Practice Aid 06-4', *Calculating Lost Profits*, 2006 (Pollack et al. (2006)), p. 20.

17 cf. Pollack et al. (2006), p. 27.

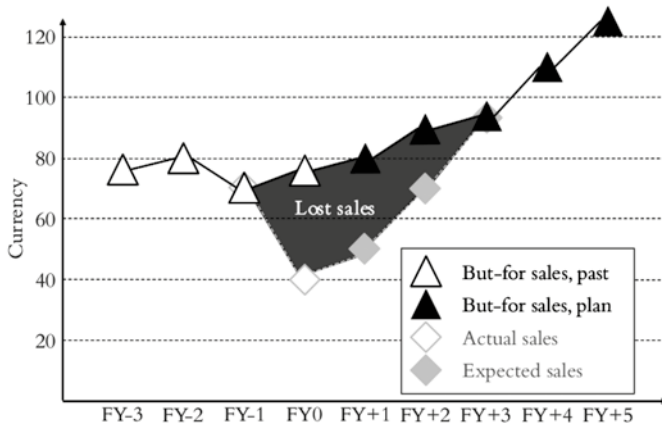
Figure 1: Visualisation of lost sales

Figure 1 visualises the but-for approach. Here, lost sales are determined by comparing but-for sales to actual sales and, since the damages period extends beyond the valuation date, also to expected sales (i.e., the sales expected considering the damaging event).

Loss in business value versus lost profits

Applying the income approach, damages may be assessed as the loss in business value or as lost profits.¹⁸ Although the loss in business value is determined as the difference between the present value of all future earnings or cash flows of the business with and without the wrongful act (i.e., by comparison of two business values), lost profits represent the difference between the earnings or cash flows with or without the wrongful act during the damages period.¹⁹

Even though the loss in business value is conceptually comparable to a standard business valuation, the latter aims to determine the fair value of a business based on objective measures, which may not be applicable to the damaged party, thus rendering its results inappropriate for the determination of damages.²⁰ These approaches only converge for damages incurred through the destruction of a business, since these are generally assessed as the market value of the business at the time of loss.²¹

¹⁸ cf. Harry (2010), p. 6.

¹⁹ cf. Kenneth M Kolaski and Mark Kuga, 'Measuring Commercial Damages via Lost Profits or Loss of Business Value: Are these Measures Redundant or Distinguishable?', *Journal of Law and Commerce*, Autumn 1998 (Kolaski/Kuga (1998)), p. 1.

²⁰ cf. Harry (2010), pp. 6f.

²¹ cf. Kolaski/Kuga (1998), p. 5.

The lost profit approach calculates damages as but-for profits less actual profits, where but-for profits are determined as but-for revenues that would have been earned during the damages period but for the wrongful act, less the avoided cost (i.e., the incremental costs that were not incurred because of the loss of revenue).²²

In comparison, an important conceptual distinction between the loss in business value and lost profits is the time horizon considered in the damages assessment and the additional assumptions and considerations required for the loss in business value as a result thereof (e.g., the discussion of a terminal value or growth rate).²³ Since, *ceteris paribus*, both concepts should theoretically determine the same amount of damages for a finite damages period during which a reduction of earnings or cash flow has been caused by a wrongful act, the use of the lost profits approach appears preferable to avoid these additional assumptions required for the loss in business value approach.

Another important distinction relates to the information used. Although the assessment of the loss in business value typically only considers information available (i.e., known or knowable) at the date of the wrongful act, the determination of lost profits typically also includes information available until the date of the damages calculation (i.e., makes use of hindsight).²⁴

As lost profits are theoretically a subset of the loss in business value, double recovery needs to be avoided when both concepts are applied in parallel.²⁵ Furthermore, it is discussed whether a claim for lost profits may be limited by the business value at the date of loss.²⁶

Ex ante versus ex post approach

When assessing damages, the ‘unavoidable issue of temporal perspective’²⁷ needs to be addressed (i.e., whether to apply the *ex ante* or the *ex post* approach). The *ex ante* approach quantifies damages as at the date of breach and thus requires

22 cf. Pollack et al. (2006), para. 4; or Elizabeth A Evans, Phil J Innes and Daniel G Lentz, ‘Damages Theories and Causation Issues’, *Litigation Services Handbook – The Role of the Financial Expert*, Sixth edition, 2017 (Evans et al. (2017)), pp. 35 f.

23 See section titled ‘Developing and reviewing terminal value and terminal growth rate’, below.

24 See section titled ‘Ex ante v. ex post approach’, below.

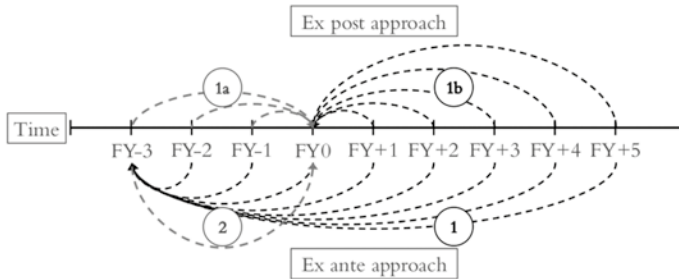
25 cf. Kolaski/Kuga (1998), pp. 10 f.

26 cf. Kolaski/Kuga (1998), p. 9; or James L Plummer, ‘Is the Value of a Firm the Upper Limit of Future Lost Profits in Business Litigation?’, *Litigation Economics Digest* 1(1), 1995 (Plummer (1995)).

27 John D Taurman and Jeffrey C Bodington, ‘Measuring damage to a firm’s profitability: ex ante or ex post?’, *The Antitrust Bulletin*, Spring 1992 (Taurman/Bodington (1992)), p. 59.

all damages to be discounted back to that date. In contrast, the *ex post* approach quantifies damages as at the date of the award (or hearing) and thus requires damages prior to that date to be compounded to that date, if permitted,²⁸ and damages after that date to be discounted back to that date. Further, the *ex ante* approach 'relies on all information that was known or knowable as of the date of the breach'²⁹ whereas the *ex post* approach 'relies on all information that is known or knowable up to the date of trial'.³⁰

Figure 2: Visualisation of the *ex post* and *ex ante* approaches



In Figure 2, the date of breach is (FY-3) and the date of the award (or hearing) is (FY0).

The *ex ante* approach requires, first, to discount all cash flows subsequent to the breach (i.e., for FY-2 to FY+5) to the date of the breach (i.e., FY-3) (Step 1) and, second, to compound the net present value of these discounted cash flows to the date of the award (i.e., FY0) applying pre-award interest (Step 2).

In contrast, the *ex post* approach requires to compound cash flows prior to the date of the award (or hearing) to that date (i.e., FY0) (Step 1a) and to discount all cash flows after the date of the award (or hearing) to that date (Step 1b).³¹

One argument for the *ex ante* approach refers to the allocation of risk as it properly measures the damages at the time of the wrongful act, capturing the probability of the entire spectrum of outcomes, whereas the *ex post* approach converts a risky business into a certain outcome.³²

28 cf. Pollack et al. (2006), pp. 33f. for a discussion of prejudgment interest on past losses.

29 Pollack et al. (2006), p. 36; cf. Dunbar et al. (2017), pp. 2f.

30 Pollack et al. (2006), p. 36; cf. Dunbar et al. (2017), p. 3

31 See the chapters on weighted average cost of capital and pre-award interest later in this Guide.

32 cf. Dunbar et al. (2017), pp. 4f.

Although the *ex ante* approach is thus ‘confined to reasonable expectations at the time’,³³ the reconstruction of the information available and reasonable expectations as at the date of the wrongful act may prove difficult and are ‘vulnerable to actual data’.³⁴ To overcome these difficulties, typical reference materials include historic financials, contemporaneous forecasts and budgets, industry or market studies, including studies published shortly after the time, assuming that the information was available prior to their publication, or contemporaneous analyst coverage. To ensure consistency with this approach, subsequent information, including about mitigation, should not be considered.³⁵ Nevertheless, sometimes subsequent information is used as a benchmark to assess the reasonability of the contemporaneous financial forecast.³⁶

The *ex post* approach is arguably better suited to warrant full compensation (i.e., putting the damaged party in the same position it would have been in but for the wrongful act at any time),³⁷ not least through the use of hindsight, which reduces uncertainty. However, the use of hindsight may also influence the development of the hypothetical but-for situation, potentially allowing for subtle manipulation.³⁸ Furthermore, the *ex post* approach may result in the damages award exceeding the fair value of which the damaged party was deprived, as hindsight will clarify whether risks have materialised (i.e., ‘the claim for compensation may appear to be worth more than the opportunity itself’).³⁹ Finally, damages will vary over time until the end of the damages period as new information becomes available.⁴⁰

In practice, a hybrid approach can sometimes be found ‘in which all lost profits are discounted back to the date of the breach, but the practitioner would rely on all information that was available up to the date of trial’,⁴¹ thereby using the book of wisdom to eliminate ‘some speculation as to what the cash flows would have been’.⁴²

33 Taurman/Bodington (1992), p. 71.

34 George P Roach, ‘Correcting Uncertain Prophecies: An Analysis of Business Consequential Damages’, *The Review of Litigation*, Winter 2003 (Roach (2003)), p. 68; cf. Dunbar et al. (2012), p. 4.

35 cf. Dunbar et al. (2017), p. 5.

36 cf. Taurman/Bodington (1992), p. 77; or Roach (2003), p. 38.

37 cf. Dunbar et al. (2017), pp. 8f.

38 cf. Taurman/Bodington (1992), p. 71.

39 Taurman/Bodington (1992), p. 79; cf. Dunbar et al. (2017), p. 9.

40 cf. Dunbar et al. (2017), p. 9.

41 Pollack et al. (2006), p. 36; cf. Taurman/Bodington (1992), at footnote 16, discussing the mixture of *ex ante* and *ex post* information as being flawed.

42 Dunbar et al. (2017), pp. 10f.

Since both approaches are widely accepted and neither is theoretically unsound, their applicability and reasonability need to be carefully assessed, considering the facts and circumstances of the individual case, as their results may vary significantly.⁴³

Direct versus indirect assessment of damages

Damages can be assessed directly or indirectly, depending on whether the consequences of a wrongful act on the relevant cash flow can be identified and quantified distinctly.

As the direct assessment of damages avoids the need to compare the actual with a hypothetical cash flow and the cash flows used are identified based on their causal dependence on the wrongful act, this approach appears preferable from an evidential perspective. However, this approach may underestimate the amount of damages by failing to identify all direct influences on the cash flow and its inability to capture consequential damages or mitigating factors. Furthermore, even if identified, these consequential damages or mitigating factors are typically not directly quantifiable (i.e., their effect on the cash flow cannot be assessed in isolation). Consequently, the direct assessment of damages is practically limited to narrowly defined damages occurring over a reasonable, short period.

In contrast, the indirect assessment of damages is based on a comparison of the actual with a hypothetical cash flow but for the wrongful act⁴⁴ and thus implicitly considers all financial effects, including consequential damages and mitigating factors. However, this approach may overestimate the amount of damages by including financial effects unrelated to the wrongful act. Therefore, one of the most important issues is to identify, to quantify and to exclude the financial implications of unrelated influences from the damages calculation to the extent possible.⁴⁵

Use of a valuation model

Practically, the choice of whether to use a rather simple or a more sophisticated valuation model is often influenced by the availability of financial and other information and the approach applied. Although the direct assessment of damages lends itself to a simpler model, the indirect assessment of damages typically necessitates an integrated model.

43 cf. Roach (2003), pp. 35 ff.; or Taurman/Bodington (1992), pp. 67 and 97.

44 See section titled 'The but-for method', above.

45 cf. Pollack (2006), p. 20.

Accordingly, a simple model may include only a cash flow projection, whereas an integrated financial model typically includes financial projections for the income statement, the balance sheet and the cash flow statement. The integration refers to financial and other interdependencies modelled between input parameters, calculations and results (e.g., a change in revenue resulting in an adjustment to trade receivables and thereby also to net working capital).⁴⁶

Best practice requires a financial model to distinguish between the input parameters, the calculation itself and the output of results.⁴⁷ Best practice further requires simplicity as ‘more detail creates the need for more inputs, with the potential for error in each one, and generates more complicated models’.⁴⁸ This will also improve the reviewability of the financial model, thus enabling an easier understanding and assessment of the mathematical accuracy and the applicability of the financial model for the specific damages quantification.⁴⁹

In conclusion, a financial model should focus on the most important issues (i.e., the key value drivers or key financial parameters with a more than insignificant influence on the result) but at the same time should not oversimplify the reality.

Assumptions required to adequately use DCF methodology in international arbitration

Introduction

The determination of a business value, as well as the determination of damages, is based on a few general but key parameters that need to be determined depending on the individual facts and circumstances (i.e., the valuation object, the valuation date and the valuation or loss period).

Once these parameters have been decided, the financial information that coincides with these decisions must be determined, including the relevant prospective financial information to be used; for example, a business plan or a financial forecast, whether or not to consider a terminal value, the applicable currencies and exchange rates, if any, and whether or not inflation needs to be considered expressly.

46 Given the complexity of integrated financial models, the use of computer-based tools, e.g., spreadsheet software, is market standard.

47 cf. Koller et al. (2015), pp. 229 ff.

48 Damodaran (2006), p. 8.

49 cf. Kantor (2008), pp. 301 ff., suggesting that the arbitral tribunal should obtain the financial models.

Having determined the relevant cash flows, the time value of money and the riskiness of the cash flows need to be considered by calculating the present value of the cash flows through compounding of past cash flows, if applicable, and discounting of future cash flows to the valuation date.

Finally, to fully compensate for the wrongful act, the tax implications of the potential award need to be considered.

Key parameters

Valuation object

The valuation object represents the business to be valued or the damages to be assessed. The appropriateness of the result is directly dependent on a distinct and definable identification of the valuation object, considering the prerequisite of causation.⁵⁰ The more narrowly the valuation object is defined, the fewer other influences will affect the result of the calculation and, consequently, the less information and fewer adjustments will be required. Therefore, damages should be determined on the basis of the smallest entity or unit for which individual cash flows can be determined; for example, a company, a business unit, a profit centre or a product.⁵¹ The identification of the relevant cash flows attributable to the valuation object will typically involve a review of the existing internal and external financial reporting; for example, annual, quarterly or monthly financial statements, (monthly) management reporting, profit or cost centre reporting, or reporting on cost units such as products or projects.

Valuation date

As the value of businesses varies over time as a consequence of changes in the markets or the business itself, the appropriate date as at which the valuation object is to be valued must be identified.⁵² Although the valuation date is primarily a technical issue (i.e., it represents the point in time to which all past cash flows are compounded and all future cash flows are discounted),⁵³ it also determines which

50 cf. Pollack et al. (2006), pp. 19f., discussing the requirements of transaction causation and loss causation.

51 cf. the concept of the International Financial Reporting Standards (IFRS) Cash Generating Units as defined in IAS (impairment of assets) 36.6, or the similar concept of the United States Generally Accepted Accounting Principles (US-GAAP) Reporting Units as described in ASC 350-20-35-33ff. of the Financial Accounting Standards Board.

52 cf. Damodaran (2006), p. 5; or Galanti (2017), p. 7.

53 See section titled 'Considering an appropriate discount rate', below.

information can, should or must be used;⁵⁴ may significantly affect the damages assessment (e.g., by determining the information to be used, such as day rates, or by determining the remaining useful life of a damaged asset; and will reference the starting date for pre-award or prejudgment interest calculation, if applicable.

Valuation or loss period

Although business valuation generally assumes a perpetual valuation period, the loss period needs to consider the time from the commencement of the wrongful act until the cessation of its economic effects on the damaged party.⁵⁵ Therefore, the loss period will generally be limited, for example, by the contractual terms or the return of the business to customary levels.⁵⁶

In a breach of contract matter, the loss period will usually extend over the remaining contract term, which may include contract renewals based on an analysis of the history of renewals, considering potential negotiations prior to the breach and other facts and circumstances as a result of which a renewal could not have been avoided (e.g., a sole supplier agreement).⁵⁷

In the absence of a contractual limitation, there is a rebuttable assumption that the damaged business will return to its customary levels over a definite period, thus limiting the damages period.

Other than with regard to the destruction of a business,⁵⁸ damages will have a perpetual or indefinite effect only in rare circumstances. Only in these situations does a terminal value need to be considered,⁵⁹ suggesting use of the loss in business value approach.

54 See section titled 'Ex ante v. ex post approach', above.

55 cf. James R Hitchner, *Financial Valuation, Applications and Models*, Fourth Edition, 2017 (Hitchner (2017)), p. 1020.

56 cf. Pollack et al. (2006), p. 3.

57 cf. *ibid.*, at p. 23.

58 cf. Kolaski/Kuga (1998), p. 5.

59 See section titled 'Developing and reviewing terminal value and terminal growth rate', below.

Financials

Introduction

Determining the free cash flow to firm as a basis for the business valuation or assessment of damages requires the existence or projection of an integrated set of financial statements (i.e., an income statement, a balance sheet and a cash flow statement).⁶⁰

Furthermore, when considering an indefinite valuation or loss period, a terminal value and a terminal growth rate must be considered.

Finally, depending on the facts and circumstances, special attention may be required with regard to currencies and exchange rates or inflation.

Developing and reviewing prospective financial information

The income statement

Introduction

The income statement reports a business's financial performance over a specific period. It is used to assess the business's ability to produce net income for its owners. The analysis of historic income statements typically focuses on revenues and costs and often reveals relevant information to be used in the preparation or review of prospective financial information (e.g., financial ratios such as the gross margin). When assessing income statements, the accounting principles⁶¹ applied must be considered, as material deviations may exist in the way these recognise or measure revenue or cost.

Often, the analysis of past and expected or planned performance commences with an assessment of revenues and profitability, such as gross profit, earnings before interest, taxes, depreciation and amortisation (EBITDA), earnings before interest and taxes or (net) income. Any trends or issues identified in this initial assessment then form the basis for a further, more detailed, analysis of components of revenues and costs (e.g., considering markets, products or type of costs).

⁶⁰ cf. Koller et al. (2015), pp. 232f.

⁶¹ e.g., IFRS, US-GAAP, or other.

Figure 3: Sample analysis of sales and profitability, including financial ratios

(currency)	FY-3	FY-2	FY-1	FY0	FY+1	FY+2	FY+3	FY+4	FY+5
Sales	75.0	80.0	70.0	75.0	80.0	90.0	95.0	110.0	125.0
Gross profit	17,5	20,0	15,0	20,0	25,0	30,0	35,0	40,0	50,0
EBITDA	7,5	10,0	5,0	10,0	10,0	12,5	15,0	17,5	25,0
Margin analysis									
(i) Gross profit	23.3%	25.0%	21.4%	26.7%	31.3%	33.3%	36.8%	36.4%	40.0%
(ii) EBITDA	10.0%	12.5%	7.1%	13.3%	12.5%	13.9%	15.8%	15.9%	20.0%
Year-over-year growth									
(i) Sales	n/a	6.7%	(12.5%)	7.1%	6.7%	12.5%	5.6%	15.8%	25.0%
(ii) Gross profit	n/a	14.3%	(25.0%)	33.3%	25.0%	20.0%	16.7%	14.3%	33.3%
(iii) EBITDA	n/a	33.3%	(50.0%)	100.0%	0%	25.0%	20.0%	16.7%	42.9%

Figure 3 summarises an analysis of sales and profitability (i.e., gross profit and EBITDA). The margin analysis calculates gross profit and EBITDA margins and, thereby, enables a comparison of past performance (FY-3 to FY-1), expected current performance (FY0) and budgeted or planned future performance (FY+1 to FY+5). In this example, a steady increase of sales and profitability is planned that may require explanation considering the historical profit level and fluctuations, particularly in EBITDA. The calculated year-over-year growth identifies the increase in sales and profitability compared with the preceding year, thereby helping to identify trends and outliers. In this example, the year-over-year growth in the last planning period (FY+5) significantly exceeds previous years and, thus, would require an explanation.

Developing and reviewing revenue projections

Revenue is generally defined as the gross inflow of economic benefits arising from an entity’s operating activities, such as sales of goods or services. It represents the product of the volume of goods and services sold and their corresponding prices.

The assessment or projection of revenues (or lost revenues) needs to consider the economic environment of the business (i.e., the demand for its products or services, the supply of materials, people and know-how, the type of competition and number of competitors, and potential disruption, for example, the substitution of the products or services by other products or services). Sources to identify or validate such influences are, among other things, market share analyses, market studies, industry studies, analyst coverage, financial reporting of the business or its competitors, analyst coverage or information derived from the business itself (e.g., information memoranda).

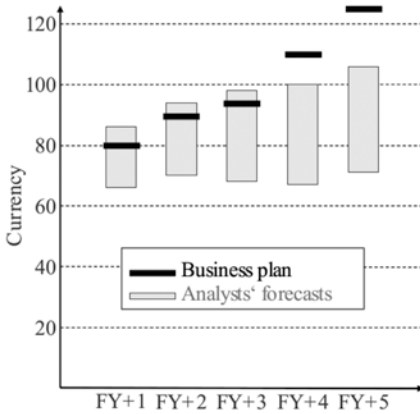
Figure 4: Sample comparison of sales projected in business plan with analysts' forecasts

Figure 4 illustrates the comparison of the sales projected in a business plan (see Figure 2) to the forecasts prepared by a number of analysts in their coverage of the company or industry and, thereby, enables an assessment of whether the plan is in line with other market participants' expectations. In this example, the later planning years seem overly optimistic when compared with the outside perspective and, thus, would require an explanation.

Revenues (or lost revenues) are at the heart of the financial statement analysis and projection, as almost every other line item directly or indirectly depends on them⁶² and their projection is likely to be 'the most controversial part of any damages estimate in a business case because it requires so many assumptions'.⁶³

The determination of lost revenues (i.e., those revenues 'that would have been earned but for the wrongful act')⁶⁴ is the first step in establishing lost profits. This concept aims to identify only incremental revenues and requires a careful analysis of causality to avoid both the inclusion of revenues unaffected by the wrongful act and the exclusion of revenues affected by the wrongful act. The approaches used most frequently to determine lost revenues are (1) the before-and-after method, (2) the yardstick or benchmark method, and (3) reference to contractual terms.⁶⁵ Alternatively, time-series models or econometric models may be employed.⁶⁶

⁶² cf. Koller et al. (2015), p. 233.

⁶³ Allen et al. (2011), p. 499.

⁶⁴ Pollack et al. (2006), p. 3.

⁶⁵ cf. Pollack et al. (2006), p. 25; or EC (2013), p. 14 ff., referring to comparator-based methods.

⁶⁶ cf. Carroll B Foster, Robert R Trout and Patrick A Gaughan, 'Losses in Commercial Litigation', *Journal of Forensic Economics* 6(3), 1993 (Foster et al. (1993)), pp. 184 ff.

The before-and-after method compares a period during which the revenue is affected by the wrongful act (loss or damages period) with a period of unaffected revenues (benchmark or base period). Importantly, the benchmark period needs to be a reliable indicator that is representative of the damaged party's reasonable prospects. Although, generally, a longer benchmark period will produce more reliable observations, sometimes even a very short period (only a few months) may be acceptable. However, the unavailability of a reliable benchmark period because of, for example, a lack of a track record, renders the before-and-after method inappropriate. As the selection of the benchmark period may have a significant effect on the damages, it requires a convincing reasoning and consistent application (e.g., it should be identical for revenues and cost). Generally, the before-and-after method is considered the most reliable approach, as it makes use of verifiable data rather than projections (e.g., the damaged party's accounting records).⁶⁷ The lost revenues are determined as the difference between the revenues of the benchmark period and the damages period, assuming that, but for the wrongful act, the same level of revenue should have been obtained. If a growth trend is observable during the benchmark period, or revenue growth is expected based on other information, the projected revenues may consider a growth rate. While typically this growth rate is derived and extended from the benchmark period, this approach may not always be suitable, especially with young businesses or in declining markets.⁶⁸ Finally, the before-and-after method requires the analysis of whether other factors, such as changes in the economic conditions (e.g., inflation, general price erosion, changes in demand, changes in competition or mismanagement of the business) have caused or contributed to the deviation of the actual revenue from the but-for revenue and to control (i.e., eliminate) these other factors to avoid overcompensation or under-compensation of the damaged party.⁶⁹ This may also involve the elimination of such factors from the actual financial data to isolate

67 cf. Robert M Lloyd, 'Proving Damages for Lost Profits: The Before-and-After Method', 2014, University of Tennessee (Lloyd (2014)), p. 1; or EC (2013), p. 16.

68 cf. James Plummer and Gerald McGowin, 'Key Issues in Measuring Lost Profits', *Journal of Forensic Economics*, Vol. 6, No. 3, 1993, p. 232 (Plummer/McGowin (1993)); or Kolaski/Kuga (1998), p. 2; and refer to the section titled 'Developing and reviewing prospective financial information', below, for a further discussion on the determination of growth rates.

69 cf. Pollack et al. (2006), pp. 20 and 25 f.; or Lloyd (2014), pp. 6 ff.

the marginal effect of the wrongful act.⁷⁰ Failure to control these other factors may result in phantom losses or significantly exaggerate lost revenues, resulting in unreasonable and unjustified damages.⁷¹

The yardstick or benchmark method also relies on observable information but refers to similar assets or businesses. Therefore, its use and reliability is dependent on the identification of a truly comparable business and the availability of the required information. Possible yardsticks or benchmarks include revenue from the same business in a different geographical market, revenue projections developed prior to the wrongful act, revenues of a similar business with comparable market characteristics, sufficiently similar revenues of third parties, or industry averages. Importantly, the use of the comparable information typically involves adjustments to eliminate any differences between the valuation object and the comparable business (e.g., with regard to sales volume or geographical footprint). Finally, the yardstick or benchmark method requires control over other factors that may have influenced the actual results of either the valuation object or the comparable business to avoid overcompensation or under-compensation.⁷²

In a breach of contract matter, the contract typically provides details for material assumptions that must be considered (e.g., sales volume, prices, (remaining) contract term).⁷³

Finally, the projection of (lost) revenues must be sense-checked to ensure the reasonableness of the results. These checks may refer to external information, such as market studies, market share analysis, analyst coverage, competitor analysis or industry experts, or may use internal information, such as capacity constraints or the assessment of earlier performance, including budget-to-actual comparisons.⁷⁴

70 cf. Roach (2003), p. 56.

71 cf. Jonathan T Tomlin and David R Merrell, 'The Accuracy and Manipulability of Lost Profits Damages Calculations: Should the Trier of Fact be "Reasonably Certain"?', *The Tennessee Journal of Business Law*, Vol. 7, 2006 (Tomlin/Merrell (2006)), p. 303 ff.; or EC (2013), p. 16.

72 cf. Pollack et al. (2006), p. 26; or EC (2013), pp. 19f.

73 cf. Pollack et al. (2006), p. 26.

74 cf. *ibid.*, at p. 27.

Developing and reviewing cost projections

Although, generally, costs cover a business's gross outflow of economic benefits (i.e., the money used), the concept of avoided cost referred to in the assessment of lost profits considers only 'those incremental costs that were not incurred because of the loss of the revenue'.⁷⁵ As with lost revenues, the 'calculation of avoided costs is a common area of disagreement about damages'.⁷⁶

In an income statement compliant with the internationally prevailing cost of sales method, the major cost categories are cost of goods sold, selling, general and administrative expenses, and other expenses.⁷⁷ The costs of goods sold reflect the costs directly attributable to the production of goods or services rendered and typically include direct labour and material costs. Although they are generally expected to vary directly with revenues, they may also include fixed costs (e.g., the depreciation of machinery and equipment used in the production). Conversely, selling, general and administrative expenses, as well as other expenses, primarily include costs not directly related to revenue (e.g., compensation of officers, office supplies or vehicle costs) but they may also include costs that vary with levels of revenue (e.g., marketing spend or advertising costs).⁷⁸

The distinction between variable and fixed costs is an important aspect of the identification and quantification of avoided costs, as these do not consider fixed costs that would have been the same with or without the wrongful act.⁷⁹ The assessment of whether or not costs are variable (i.e., will change with each unit of production) or fixed (i.e., will not change irrespective of the units of production) needs to consider that almost no cost is purely variable or fixed. Depending on the level of production, some costs are fixed within certain levels but vary outside these levels (e.g., semi-variable cost). Furthermore, the duration of the loss period needs to be considered, as a longer loss period will result in more costs being considered variable or semi-variable because they could be avoided.⁸⁰ And although some costs may vary directly with revenues, they may, nonetheless, not or no longer be avoidable; for example, costs of goods sold already incurred for finished products that cannot be delivered because of the wrongful act.⁸¹ Consequently, the appli-

75 *ibid.*, at p. 3.

76 Allen et al. (2011), p. 449.

77 In other formats of the income statement, e.g., the nature of expense method, the distinction between variable and fixed costs can be even less discernible.

78 cf. Allen et al. (2011), p. 450; or Foster (1993), pp. 183f.

79 cf. Pollack et al. (2006), p. 29; Allen et al. (2011), p. 499; or Plummer/McGowin (1993), p. 233.

80 cf. Foster et al. (1993), p. 193; or Plummer (1995), p. 31.

81 cf. Pollack et al. (2006), p. 30; or Allen (2011), p. 450.

cation of the concept of avoided costs requires a thorough understanding of the damaged party's cost structure to identify the major cost drivers and other factors that may affect particular costs.⁸² This also entails the identification and adjustment for extraordinary and other unusual costs to reflect the ordinary business activity.⁸³

Generally, external financial reporting will not provide a sufficient level of detail to differentiate between fixed and variable costs and, therefore, more detailed information is required on the level of individual cost categories, cost centre or cost units,⁸⁴ which will be available to varying degrees and in various formats. A thorough review and analysis of this actual cost information, typically involving monthly, quarterly or yearly cost information, as well as useful planning measures (e.g., standard costs) form the basis for the development or review of cost expectations. Based thereon, either non-statistical or statistical methods may be applied to determine which costs vary with revenue.

Non-statistical methods include:

- an account analysis (i.e., a review of a detailed general ledger or chart of accounts to subjectively identify variable costs);
- the identification of direct costs relating to an activity or product (e.g., direct labour and material costs);
- the use of standard costs or other reports available from the damaged party;
- the use of ratio analysis (i.e., cost allocation in proportion to a specific measure, such as labour hours or unit of production);
- reference to industry standards (i.e., based on industry studies or comparable information); or
- a percentage of sales approach (i.e., the determination of a per cent quota for each avoided cost in relation to revenues).

These approaches may capture incremental costs incompletely, are prone to errors and are highly subjective. Their application, therefore, requires comprehensive and reasonable documentation.⁸⁵

82 cf. Pollack et al. (2006), p. 29; or Foster et al (1993), p. 193.

83 cf. Damodaran (2006), pp. 91 f.

84 cf. Plummer/McGowin (1993), p. 233.

85 cf. Pollack et al. (2006), pp. 30 f.

More reliable statistical methods⁸⁶ include regression analysis,⁸⁷ which identifies patterns in the relationship between revenues and costs, including the extent to which certain costs are influenced by revenues. In addition, the quality of the regression analysis (i.e., the predictive power of the regression model) can be back-tested to the benchmark period and statistically corroborated by an analysis of the correlation coefficient. The reasonable use of a regression analysis is primarily dependent on a sufficient number of observations (i.e., data)⁸⁸ and a thorough understanding of the business to formulate valid hypotheses. Econometric techniques may further improve the assessment but require even more information.⁸⁹

To the extent available and existent, contractual agreements will need to be considered irrespective of the approach and may determine, for example, the purchase price and volumes for materials and services.

To assess the reasonability of the resulting costs, cost ratios may be compared internally with prior periods, other markets and other products, or externally with competitors or market information.⁹⁰ In addition, the reasonability is frequently assessed by reference to margins, especially to the gross margin.⁹¹ This comparison, however, needs to recognise the lack of comparability, as lost profit does not equate to the definition of net income. Instead, the lost profit margin is best described as incremental profit margin (i.e., the change of net income as a result of the lost revenues). Because of its composition, it should typically fall between the historic gross profit margin and historic net profit margin.⁹² Furthermore, for longer loss periods, this incremental profit margin should decline over time, reflecting the business adjustments of the damaged party (i.e., mitigation).⁹³

86 See the chapter on the use of econometric and statistical analysis and tools later in this Guide.

87 cf. Pollack et al. (2006), p. 31; Allen (2011), p. 450; Foster et al. (1993), p. 191; or Plummer/McGowin (1993), pp. 233f.

88 cf. EC (2013), pp. 24f.

89 cf. *ibid.*, at p. 32.

90 cf. Pollack et al. (2006), p. 32.

91 cf. Foster et al. (1993), p. 181.

92 cf. Plummer/McGowin (1993), p. 232; or Foster et al. (1993), p. 181.

93 cf. Plummer/McGowin (1993), p. 235; or Allen et al. (2011), p. 450.

Considering corporate income taxes

Whereas business valuation typically considers after-tax results,⁹⁴ damages are generally determined on a pre-tax basis, assuming that any compensation will be taxed at the level of the damaged party.⁹⁵

When corporate income taxes are considered, it needs to be decided whether a marginal tax rate or the effective tax rate is applied. Although the marginal tax rate can be read from the applicable tax law and assumes that the corporate income tax for the business or damages is independent of any other tax issues, the effective tax rate is determined by reference to actual financial information comparing the tax payments with the income before tax, thereby considering any company-specific tax issues.

To the extent existent, corporate income tax loss carry-forwards need to be considered to the extent that they are applicable to the damaged business and could be used to offset its future tax payment obligations. Determining the timing and amount of this offsetting typically requires detailed tax planning.

A further complication may result from the business's operation in multiple tax jurisdictions. Not only are these likely to provide for different corporate income tax rates, they may also define taxable income differently. Furthermore, based on local tax law or double tax treaties, international taxation will usually involve the deduction of foreign taxes or the exemption of foreign income from local corporate income taxes under certain restrictions.

Balance sheet

Introduction

The balance sheet is a financial statement that captures a business's assets, liabilities and equity at a specific point in time. A review of historic balance sheets and their development over time typically focuses on capital expenditures, net working capital and net debt, and often reveals relevant information to be used in the preparation or review of prospective financial information (e.g., financial ratios such as the equity ratio or liquidity ratios and their development over time). When assessing balance sheets, the accounting principles⁹⁶ applied must be considered, as material deviations may exist in the way these rules recognise or measure assets, liabilities or equity.

⁹⁴ cf. Damodaran (2006), pp. 92 ff.

⁹⁵ See section titled 'Considering a tax step-up', below.

⁹⁶ e.g., IFRS, US-GAAP, or others.

For the valuation of a business or the assessment of damages as a loss in business value, the balance sheet, in addition to the income statement, is required as a basis on which to develop the statement of cash flows.⁹⁷ As the determination of damages as lost profits typically assumes lost revenues and avoided cost to be equivalent to cash flow, a balance sheet is not always required.

Developing and reviewing projected capital expenditures

Capital expenditure (or capex) refers to the use of funds to acquire or to extend the useful life of long-lived assets (i.e., assets, providing future economic benefit to the business beyond the current year or reporting period). These costs will be recognised in the income statement of the business as depreciation or amortisation over the useful life of the asset.

The analysis of past investment spending should identify and differentiate between investments for growth and investments for maintenance to assess the level of investments required to sustain the business and the related cash outflow in future periods. It should also review past patterns of investments to identify issues such as cyclicality that would require periods of peak investments.

The analysis of the financial projection should focus on whether the investment spending is in line with actual observations, or if any changes thereto are reasonable and sufficiently explained; for example, after a period of growth, the business may reach a steadier state, resulting in a decline of growth investments or, conversely, the budget may consider significant growth that requires increased investment spending in the near term.

To assess the reasonability and consistency of the projected financial information, the level of long-lived assets may be compared with the level of revenue, assuming that a certain level of long-lived assets is required to deliver the business's products or services.⁹⁸ In addition, a comparison of the sales volumes required to obtain the projected revenues with the volumes of production may identify capacity constraints.

Furthermore, benchmarking against competitors or industry standards may identify inconsistencies that could indicate insufficient investment spend. This analysis should also involve an assessment of the market size (volume) and the

97 cf. Brealey et al. (2012), pp. 63ff., the 'indirect approach' derives the cash flow statement from the income statement and changes in balance sheet positions.

98 cf. Koller et al. (2015), p. 244.

respective market shares (volume) to ensure that sufficient capacity is available to service the expected market share of the business and to compare the expected growth of the market with the growth assumed for the business.

Developing and reviewing projected net working capital

Net working capital is generally defined as current assets less current liabilities at a specific point in time. It is used to assess a business's short-term financial health and its efficiency in converting products into revenue. Although in practice there are numerous definitions to match the requirements of a specific business, the narrowest definition will typically entail inventories, trade accounts receivable and trade accounts payable.⁹⁹

To analyse actual levels of net working capital and to project future levels of net working capital, the working capital turnover ratio¹⁰⁰ can be considered, which measures the utilisation of working capital to generate revenues. Furthermore, three key metrics¹⁰¹ are frequently referred to, namely:

- days sales of inventory (DSI),¹⁰² which is a measure of inventory effectiveness indicating the number of days it takes to convert inventory into revenue;
- days sales outstanding (DSO),¹⁰³ which indicates the number of days it takes to collect the cash following the sale; and
- days payables outstanding (DPO),¹⁰⁴ which indicates the number of days the business uses to pay its suppliers after the purchase or acquisition of their products or services.

These metrics can be combined into the cash conversion cycle,¹⁰⁵ which indicates the length of time the cash used to acquire resources needs to be financed before cash is received from the business's operation.

⁹⁹ These items will generally also be included in any derivation of the net working capital definition.

¹⁰⁰ Working capital turnover ratio = Revenue / Working Capital, whereas revenue is typically for 12 months and working capital is the average working capital over that same period.

¹⁰¹ cf. Koller et al. (2015), pp. 245f.

¹⁰² Days Sales of Inventory = (inventory / cost of sales) * 365, assuming a period of one year; also referred to as Days Inventory Outstanding.

¹⁰³ Days Sales Outstanding = (trade accounts receivable / revenues) * 365, assuming a period of one year.

¹⁰⁴ Days Payables Outstanding = (trade accounts payable / cost of sales) * 365, assuming a period of one year.

¹⁰⁵ Cash conversion cycle = Days Sales of Inventory + Days Sales Outstanding – Days Payables Outstanding.

The analysis of these metrics over time may indicate changes in the business (e.g., new products or markets) or in business processes (e.g., in the introduction of a just-in-time production) or changes in the financing of the business (e.g., by extending the period before paying creditors). Significant changes will require an explanation and an assessment of their sustainability (e.g., a projected increase in working capital may result from an unrealistic assumption regarding payment terms).

Benchmarking these metrics with comparable companies or industry standards will further indicate the competitiveness of the terms and, thus, their likely market acceptance (e.g., a much longer DPO in comparison to competitors may not be sustainable with suppliers).

Developing and reviewing projected financing (net debt)

Net debt is generally defined as interest-bearing debt less cash and cash equivalents (i.e., current assets that can quickly be liquidated for cash) at a specific point in time. It indicates a business's ability to pay off its debts using its available cash and highly liquid assets.

The analysis of historic levels of net debt should indicate the level and structure of financing required to sustain a business's operations and can be used to assess the reasonableness of financial projections. Whereas long-term debt will typically be based on contractual agreements (e.g., loans), which should form the basis for the projection of these debt items, including a potential repayment or renewal, short-term debt is often agreed as an overdraft facility or a borrowing limit. Consequently, a financial projection needs to consider these limits.

Benchmarking with comparable companies or industry standards may identify variations of the level or structure of indebtedness and may indicate an adjustment to the debt level.

Considering special items

In addition to the foregoing, there are special items that may be subject to discussion and potential disagreement as their inclusion or exclusion in working capital, net debt or the valuation as such will directly affect the business value. However, in the context of determining damages, these special items will often be unaffected by the wrongful act and, thus, their consideration is not required as their value will be equivalent in both the but-for situation and the actual situation.

First, non-operating assets should be excluded from the valuation as they do not contribute to the generation of income or cash flow in the normal course of operations (e.g., an investment into unused land). If required, these assets should be valued at their fair value as at the valuation date and added to the business value.¹⁰⁶

Second, although cash is generally directly assessable, there may be circumstances that require special attention. Trapped cash is cash on the balance sheet that is not available for use in the business or distribution to its owners, as it is designated for some other purpose (e.g., as a collateral or fiduciary deposits). Also, sometimes there is a discussion of the level of cash required to operate the business,¹⁰⁷ which, if one agrees with this concept, would not be available for use in the business or distribution to its owners, thereby reducing the value of the business.¹⁰⁸

Third, financial instruments may require a thorough analysis to determine whether or not they are financial assets or liabilities, and their effect on the future net cash generation.

Fourth, debt-like items (i.e., items that will result in future cash outflows and typically bear interest) are frequently subject to disagreement and dispute as the inclusion or exclusion within net debt will directly result in different business values. Examples of debt-like items include pension accruals (which reflect the future pension payments to former employees and are recorded on the balance sheet at their present value), capital leases or environmental contingencies.

Cash flow statement

The cash flow statement is a financial statement that provides information about cash receipts and cash payments of a business during a specific period to support the assessment of the business's ability to generate future net cash flows, among other things.¹⁰⁹

It usually distinguishes between the cash flows from operating, investing and financing activities. The cash flow from operations resembles the main revenue-producing activities of the business that are not investing or financing activities (i.e., the production and sale of products or services). The cash flow from investing activities depicts the amount of cash invested in the purchase, or

¹⁰⁶ cf. Koller et al. (2015), pp. 149 and 247.

¹⁰⁷ cf. *ibid.*, at p. 140.

¹⁰⁸ See section titled 'The discounted cash flow methodology: Introduction', above.

¹⁰⁹ cf. Statement of Financial Accounting Standards No. 95, Statement of Cash Flows, paras. 4f.

received from the sale, of long-lived assets.¹¹⁰ The cash flow from financing activities¹¹¹ provides information about the funding of the business by both equity and debt investors.¹¹²

For the valuation of a business or the assessment of damages as a loss in business value, the cash flow statement is typically derived from the projected income statement and balance sheet.¹¹³ The analysis of the actual or historic free cash flow to the firm may provide support in assessing or reviewing the reasonableness of the projected free cash flow to the firm.

Otherwise, the determination of damages as lost profits typically does not require the preparation of a statement of cash flows in full compliance with the applicable accounting standards but will focus directly on the cash flows derived from lost revenues and avoided costs.

Developing and reviewing terminal value and terminal growth rate

The terminal value represents the present value of all future cash flows at a specific point in time. To consider a stable growth of these cash flows a terminal growth rate is typically applied (perpetual growth model).¹¹⁴

When the valuation or damage period is not limited (i.e., infinite), the detailed planning period¹¹⁵ must be extended to consider what is known as a 'terminal year'. The terminal year represents the income or cash flow expected for every year after the detailed planning period and, thus, using the present value of an ordinary annuity,¹¹⁶ captures the value of the business for all periods beyond the detailed planning period. As the terminal value frequently contributes the majority of the business value, its determination requires caution and should be based on reliable assumptions.¹¹⁷

110 See section titled 'Developing and reviewing projected capital expenditures', above.

111 Note that interest expenses relating to financial debt can be included either within the cash flow from financing or the cash flow from operations in compliance with IFRS, whereas it is included within the cash flow from operations in compliance with US-GAAP.

112 cf. Statement of Financial Accounting Standards No. 95 or Statement of Cash Flows and International Accounting Standard 7, Statement of Cash Flows.

113 In contrast to this 'indirect' cash flow method, the 'direct' cash flow method is based on an identification and allocation of transfer of funds.

114 cf. Koller et al. (2015), pp. 229f.

115 See section titled 'The valuation or loss period', above.

116 An ordinary annuity is a series of equal payments made at the end of consecutive periods.

117 cf. Koller et al. (2015), pp. 259f.

First, the business should be in a steady state at the end of the detailed planning period (i.e., no major changes or disruptions should be expected for the business or its environment as these could not be captured in the terminal year). Accordingly, to the extent that these events and circumstances are known or foreseeable, they must be considered in extended planning periods prior to the terminal year.¹¹⁸

Second, it is generally assumed that a business will grow over time. The growth rate can have a major effect on the business value and, therefore, must be determined very diligently. To determine a reasonable growth rate, the historic development of the business, its competitors and its markets should be considered. In addition, fundamental data, such as long-term inflation forecasts or projected growth of the relevant economies (e.g., forecast growth of gross domestic product), should be considered. It seems reasonable to argue that a company's growth rate 'typically approaches industry growth rates very quickly, and few companies can be expected to grow faster than the economy for long periods'.¹¹⁹

Practically, growth rates vary significantly, depending on the geography's economic outlook or the business's industry outlook, among other things. For developed countries, the growth rate will typically be lower than the expected inflation rate, assuming that, in mature markets, the business will not be able to pass on the entire cost increase to its customers.

The financial projection should consider that growth requires investments, specifically in long-lived assets and net working capital, which in turn require financing.¹²⁰ An integrated financial model will consider these requirements, which will reduce the free cash flow and, thus, the business value.

Common pitfalls in the use of the growth rate include the wrongful application of the growth rate to all line items of the income statement individually, thereby ignoring the relations of revenues, and an understatement of growth resulting from an overly conservative perception of uncertainty.¹²¹

Considering currency and exchange rates

A business value as well as damages need to be determined in a specific currency. Therefore, financial projections denominated in another currency need to be converted, applying an appropriate exchange rate.

118 cf. Damodaran (2006), p. 153; or Koller et al. (2015), p. 542.

119 Koller et al. (2015), p. 263; cf. Damodaran (2006), p. 146.

120 cf. Damodaran (2006), pp. 148 ff.

121 cf. Koller et al. (2015), pp. 271 ff.

Theoretically, the most precise approach would be to translate all foreign currency transactions with the exchange rate on the date of the transaction. In practice though, balance sheet items are typically converted by applying the exchange rate as at the date of the balance sheet, whereas income statement items are converted by applying an average exchange rate for the period covered.

For the conversion of cash flows, two methods are commonly applied: the forward-rate method and the spot-rate method. The former uses forward exchange rates to convert the projected cash flows from foreign to domestic currency. Accordingly, the discount rate applied must consider domestic cost of capital. In contrast, the spot-rate method converts the present value of the projected foreign currency cash flows into a domestic present value applying the exchange rate as at the valuation date. Consequently, the discount rate applied must consider the foreign cost of capital. Both approaches are broadly accepted, but consistent use of the appropriate discount rate must be ensured.¹²²

Considering inflation

Inflation is defined as an increase in the price level of goods and services in an economy and is measured by the inflation rate, generally the annual percentage change in consumer prices.¹²³ Generally, valuation as well as damages assessment implicitly considers inflation (i.e., the financial forecast includes any potential adjustment for expected inflation and, thus, inflation must not be considered separately).¹²⁴ However, in instances of very high and unstable inflation, or even hyperinflation (i.e., an extremely rapid or out-of-control inflation of more than 50 per cent per month), inflation must be considered separately.¹²⁵

Considering an appropriate discount rate

To consider the time value of money and the specific risks associated with the business, when applying the DCF methodology, the free cash flow to the firm is compounded or discounted to the valuation date applying an appropriate discount rate.¹²⁶ The same principles apply to the determination of damages (i.e., past and future lost profits or cash flows are compounded or discounted to the valuation

122 cf. Koller et al. (2015), p. 490.

123 cf., for example, US Bureau of Labor Statistics, at www.bls.gov.

124 cf. Allen et al. (2011), pp. 451 ff. for further discussion.

125 cf. Damodaran (2006), p. 36.

126 cf. *ibid.*, at p. 10.

date applying an appropriate discount rate),¹²⁷ which may significantly differ from the discount rate appropriate for the valuation of a business. The appropriate discount rate is usually a matter of substantial dispute.¹²⁸

Although there are many approaches to determine the appropriate discount rate, depending on the cash flows to be discounted, the concept of WACC is the most commonly used methodology and enjoys broad acceptance.¹²⁹

Sometimes, risk adjustments in addition to the risk premium already captured within the WACC are discussed to reflect facts and circumstances specific to the market or the valuation object; for example, a country risk premium, a small firm premium or an inflation premium.

The country risk premium is usually derived from a comparison of two countries' bond rates (i.e., as a country bond default spread). It considers the additional risk that a specific country with an immature market may present in comparison to the mature markets from which the financial information to determine the WACC has been derived; for example, a WACC based on US-listed companies is adjusted to reflect the different risk of an investment in an emerging country with little historical data or data too volatile to yield a meaningful estimate of the risk premium.¹³⁰

Some empirical studies indicate that the capital asset pricing model,¹³¹ which is used to determine the equity risk premium within the WACC, may understate the more volatile returns of small firms. A small firm premium is discussed to consider the additional risk or the additional return an investor would require when investing in a smaller firm than those included in the determination of the WACC components (i.e., stock-listed companies). Although this premium is regularly applied in the valuation of privately held businesses, various standard setters and market participants have issued contradictory publications and its existence is seriously questioned.¹³²

127 cf. Pollack et al. (2006), pp. 35 ff.; or Robert L Dunn and Everett P Harry, 'Modeling and Discounting Future Damages', *Journal of Accountancy*, January 2002 (Dunn/Harry (2002)), p. 3.

128 cf. Allen et al. (2011), p. 500.

129 cf. Koller et al. (2015), p. 148; or Pollack et al. (2006), pp. 35 ff.; see the chapter on determining the weighted average cost of capital later in this Guide.

130 cf. Damodaran (2006) pp. 41 ff.

131 cf. Pollack et al. (2006), pp. 38 ff.; or Allen et al. (2011), p. 459.

132 cf. Damodaran (2006), p. 57.

When expectations with regard to inflation rates differ between the market used to derive the risk premium included in the WACC (e.g., the United States) and the market in which the valuation object operates and generates cash flows (e.g., an emerging country), an inflation premium may be used to bridge the gap between expected inflation rates.¹³³

Considering a tax step-up

Compliant with the objective of full compensation and its assessment on the basis of after-tax free cash flow available to the damaged party, the tax implication of receiving a damages award needs to be considered to avoid double taxation.¹³⁴

In the case of an after-tax analysis, as commonly applied in business valuation and the determination of a loss in business value, the award should include, therefore, both the present value of the after-tax cash flows and the taxes payable on the award.¹³⁵ In contrast, since lost profit damages are generally taxable as ordinary income, these damages should be determined on a pre-tax basis.¹³⁶

For lost profits, a commonly used approach to calculate pre-tax damages is to apply the after-tax discount rate to the pre-tax cash flow.¹³⁷ However, this approach will only produce the correct damages when the corporate income tax rate applicable to the lost profits is identical to the corporate income tax rate used in the taxation of the award. This prerequisite may not be fulfilled as a result of divergent tax laws or changes in tax law¹³⁸ (e.g., changes to the corporate income tax rate, or different corporate income tax rates applicable in different tax jurisdictions). For example, income and cash flow may be generated and subject to corporate income tax globally at various corporate income tax rates while the claimant resides in a specific country, resulting in the damages award being taxed

133 cf. *ibid.*, at p. 61.

134 cf. Robert P. Schweihs, 'Measuring Lost Profits Economic Damages on a Pretax Basis', *Dispute Resolution Insights*, Summer 2010 (Schweihs (2010)), p. 11; see the chapter on taxation and currency issues in damages awards later in this Guide.

135 cf. Schweihs (2010), p. 10.

136 cf. Jill Kennedy and Tim Sherman, 'Tax Treatment of Damages Awards', in *Litigation Services Handbook – The Role of the Financial Expert*, Sixth edition, 2017 (Kennedy/Sherman (2017)), p. 1; Pollack et al. (2006), p. 43; Allen et al. (2011), p. 449; Schweihs (2010), p. 10; or Hitchner (2017), p. 1026.

137 cf. Pollack et al. (2006), p. 43; or Schweihs (2010), pp. 12f., including a numerical example.

138 cf. Schweihs (2010), p. 13.

at the corporate income tax rate applicable in that country. In these circumstances, the after-tax present value of damages needs to be grossed up, using the corporate income tax rate applicable to the damages award.¹³⁹

Documentation required to support results of DCF methodology

Documentation is an essential part of determining damages in international arbitration as, ultimately, the arbitral tribunal should be provided with sufficient evidence for its evaluation of whether the damages have been substantiated with reasonable certainty.¹⁴⁰

To establish reasonable certainty, an opinion should be based on the use of an accepted methodology, its reliable application to the facts and circumstances of the matter, and sufficient, reasonable and unbiased source data, facts and assumptions.¹⁴¹

As discussed above, the DCF methodology is widely used and accepted.¹⁴² Furthermore, it can be applied reliably to the measurement of damages in international arbitration.¹⁴³

Therefore, the acceptance of the damages assessment primarily depends on a complete documentation of the source data and facts, reliable evidence for the assumptions used and a comprehensible explanation of the analysis and calculations employed. Sources reasonably referred to in damages measurement include, but are not limited to, official government publications and databases, independent researches and studies, audited financial statements and company filings, accounting records maintained in the ordinary course of business, management reports prepared in the ordinary course of business or documents produced for the arbitration.¹⁴⁴

139 cf. Pollack et al. (2006), p. 43; or Schweihs (2010), p. 10.

140 cf. Pollack et al. (2006), p. 3; for discussion of the 'reasonable certain' criteria, refer to American Institute of Certified Public Accountants, Forensic & Valuation Services Practice Aid, 'Attaining Reasonable Certainty in Economic Damages Calculations', 2015; or Robert M Lloyd, 'The Reasonable Certainty Requirement in Lost Profits Litigation: What It Really Means', University of Tennessee, 2010).

141 cf. Pollack et al. (2006), p. 57.

142 See section titled 'The discounted cash flow methodology', above; cf. Allen et al. (2011), p. 431.

143 See section titled 'Application of the discounted cash flow methodology to the assessment of damages in international arbitration', above.

144 cf. Allen et al. (2011), p. 484.

CHAPTER 14

Best Practices and Issues that Arise in DCF Models

Gervase MacGregor and Michael Smith¹

Introduction

As is discussed in other chapters of this book, the discounted cash flow (DCF) model has become an established tool in calculating damages claims in international arbitrations. This is because it can be used to calculate a claim for damages in many situations for any company that has reliable projections of future income. It also enables tribunals to base any damages amount on what is most likely to have happened to a claimant. Whether or not sufficient evidence exists for the tribunal to put its confidence in the output of the DCF model is hotly debated, but that is beyond the scope of this chapter.

Given this extensive use of DCF models and their importance to damages, it is important that arbitrators, lawyers and experts have a good understanding of model construction, the assumptions that underlie such models and the circumstances under which it is appropriate to use them. There are many badly constructed and badly explained models, but often it is left to the other side's expert to try to understand the model and to explain its problems to the tribunal. In our view, reliance entirely on the experts is inadequate and it is necessary for a tribunal to understand the model if it is going to rely on it for an award of damages.

This chapter seeks to provide a guide for arbitrators to the key questions they should be asking when considering damages based on a DCF model. We look at the basics of DCF models, their construction and key issues that often arise in damages models.

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Basics of DCF models

The DCF approach involves estimating the future cash flows of a company (or project), and then discounting these back to the net present value as at the valuation date (typically the date of the alleged breach) by applying a suitable discount rate. The big challenges in applying the DCF approach are calculating both a company's future cash flows and the appropriate discount rate.

Components of future cash flows

Within a DCF model, a company's future cash flows will typically comprise the following components:

- sales revenue earned from operations;
- less operating costs – direct and indirect costs of making the product or providing the service;
- less taxes – the corporation tax due on the operating profits (sales revenue less the operating costs) of the company;
- less investments in assets – for example, the cost of buying buildings, land, machinery, equipment and vehicles;
- plus non-cash items – including amortisation and depreciation, which are costs to reflect the decrease in value of intangible and tangible assets over their expected useful life. As these costs are charged to the profit and loss account, they will have been included within the 'operating costs' figure, above, which is deducted from 'sales revenue earned from operations'. By adding these non-cash items here, they are removed from the cash flows; and
- less change in working capital – working capital is the cash a company needs for day-to-day operations and is calculated as current assets² less current liabilities.³ If the change in working capital between periods is positive (i.e., working capital has increased), this is treated as a cost in the cash flow as it shows that more cash is tied up in working capital than in the previous period.

The first three components of the cash flow (sales revenue, operating costs and taxes) are essentially the net profit of a company, and will be based on figures included in the company's profit and loss account.

2 Examples of current assets include short-term assets, such as debtors (money due from customers) and stock.

3 Examples of current liabilities include short-term liabilities, such as creditors (money due to suppliers).

Discount rate

The discount rate is applied to reduce the value of the future cash flows to the present value as at the valuation date.

Future cash flows need to be reduced because of the concept that a dollar today is worth more in economic terms than a dollar in a year's time, which is because of two factors:

- the time value of money – if you receive \$1 today and place it in an interest-bearing bank account, in a year's time you will have the \$1 plus interest, which is therefore worth more than receiving the \$1 in a year's time; and
- the risk and uncertainty attached to future cash flows – this means you would be prepared to accept a guaranteed lower lump sum today (e.g., \$0.90) rather than being subjected to the future risk and uncertainty of possibly receiving \$1 in a year's time.

The discount rate is often one of the biggest factors affecting a damages claim. In international arbitrations, the methodology underlying the calculation of the discount rate has become reasonably settled and generally agreed among arbitrators; however, there are many major arguments about the parameters and assumptions applied to calculate it. For the purposes of this chapter, we do not go into the details of how a discount rate is calculated.

Arbitrators should understand how sensitive the present value of the forecast cash flows are to changes in the discount rate for each particular case. To this end, the key concepts to be aware of include:

- a higher discount rate will result in a lower present value for the forecast future cash flows and vice versa; and
- the further into the future a cash flow is, the more it will be discounted. For example, say the discount rate is 10 per cent, a forecast cash flow that was to occur two years into the future would be multiplied by 83 per cent⁴ to calculate its net present value, whereas a forecast cash flow that was to occur five years into the future would be multiplied by 62 per cent.⁵

This means that the greater the proportion of cash flows that are forecast to occur far into the future, the greater the effect on the damages figure resulting from a change in the discount rate.

⁴ $1/(1+10\%)^2$ years.

⁵ $1/(1+10\%)^5$ years.

DCF approach

The DCF approach can be used in a variety of circumstances, including the valuation of an entire company (for example, in quantifying damages in investment treaty expropriation cases), as well as the valuation of the loss of profits for a specific contract (for example, in quantifying damages because of an early termination of a contract).

The calculation of damages will entail comparing the net present cash flows with and without the alleged breach; that is, comparing the ‘but for’ scenario (the hypothetical situation the company would have been in if the alleged breach had not occurred) and the ‘actual’ scenario (the ‘actual’ situation of the company following the alleged breach).

The valuation period is from the date of the alleged breach until the point at which the alleged breach no longer has a financial impact on the company and, therefore, can be either:

- a definite period, whereby it is assumed that, in the future, the company will return to its pre-breach levels of performance (i.e., its previous levels of sales or profits); for example, a temporary factory closure or the early termination of a contract; or
- an indefinite period, whereby it is assumed that the value of the company is lost forever and will never return to the pre-breach levels; for example, the expropriation of a company.

With an indefinite period, it is necessary to calculate a terminal value for the company, as forecasting cash flows beyond a certain period is impractical.

The terminal value represents the sum of all future cash flows beyond the explicit forecast period. The explicit forecast period is typically until the forecast cash flows are in a steady state whereby no major changes to the company are expected that could have any impact on the future cash flows.

The terminal value is important as it can often represent the majority of the value or loss calculated in the DCF model.

Construction of DCF models and spreadsheets

DCF models are typically constructed using a spreadsheet. It is easy to overlook this basic tool and, indeed, tribunals probably rarely see the underlying native copy of the DCF spreadsheet model. For this reason, the next subsection discusses the principles of good spreadsheet design.

Spreadsheets

Spreadsheets are ubiquitous in calculating damages in international arbitrations. They are easy to use and represent a common language among finance people.

The flexible nature of Microsoft Excel – by far the most popular spreadsheet software program – means that a user can develop a highly complicated model very quickly, which is not necessarily well designed.

Importantly, badly designed spreadsheets are very difficult to review. They are also more likely to contain errors, which is a cause for concern given that all spreadsheets are inherently prone to errors – a great many errors. Raymond Panko, of the University of Hawaii's Shidler Business School, carried out extensive research into spreadsheet error and presented his findings in a paper entitled 'What we know about spreadsheet errors'. There were three important conclusions:

- spreadsheet errors are rare on a per cell basis, but in large spreadsheets at least one incorrect bottom line value is likely to be present;
- errors are extremely difficult to detect and correct; and
- spreadsheet developers are overconfident about the accuracy of their spreadsheets.⁶

Other research cited by Panko indicates that more than 90 per cent of spreadsheets contain errors and that 5 per cent of cells reviewed have errors, including 'mechanical errors' (e.g., typos), logic errors (e.g., incorrect formulas) and omission errors (e.g., leaving something out of the spreadsheet that should be there).⁷ One occasionally sees damages awards making reference to errors in spreadsheet models – the *Yukos* award is a good example.⁸

DCF spreadsheet models for damages claims can range significantly in their complexity, from basic models (e.g., with only a few worksheets, simple formulas and relatively few inputs) to highly complex models (e.g., with numerous worksheets, complicated formulas and lots of inputs).

Although it is difficult to guarantee that a complex DCF model is entirely free of errors, if best practice is followed in terms of the model design and quality control and testing of the model, this minimises the risk of material errors and

6 Raymond Panko, 'What we know about spreadsheet errors', in *Journal of End User Computing* special issue on 'Scaling Up End User Development', Volume 10, No. 2, Spring 1998, pp. 15–21, revised January 2005.

7 id.

8 *Yukos Universal Limited (Isle of Man) v. The Russian Federation*, Final Award dated 18 July 2014, paras. 1744–45.

inconsistencies being included in the model. We set out below the best practice in relation to the design and review of DCF models, with the key principles applicable to both basic and complex models.

Design of the model

If a DCF model is well formatted and labelled (e.g., notes are included that explain how figures have been calculated, it is clear which figures are inputs and which are calculations, and the sources of any inputs are clear), the model should be fully understandable, even from PDF prints of each worksheet, and even for complex spreadsheets that could run to hundreds of pages in a printed copy.

If a DCF model is well designed (and thus easy to use and understand) and shared with the other party in plenty of time for a model review to be undertaken, it should be possible for both experts to agree that the model is arithmetically accurate given the inputs and calculations included in the model. The experts and the tribunal can then be free to concentrate its enquiry, challenge and debate on the key issues with regard to the model, such as whether the commercial assumptions are reasonable, whether alternative inputs should be used (the common example is the discount rate or interest rate that should be applied) and the overall methodology used.

If a DCF model is poorly designed, the task of reviewing the model or trying to make changes to assumptions can be very difficult, as it becomes difficult even to understand how the model and the calculations within it are working, including what implicit assumptions are being made as part of the calculations and, thus, whether the model is accurate. For example, if the sources of the inputs are not clearly labelled within the model, it becomes difficult to agree the input figures contained in the model back to the source data.

The first responsibility for preparing a robust model lies with the preparer of the model. We suggest that preparers follow a number of basic principles around design. There are a number of guides that can be followed, for example, the Institute of Chartered Accountants in England and Wales publishes a list of 20 principles for good spreadsheet practice. The list that our own firm uses contains the following.

Structure

A well-designed model will have a clear and easy-to-follow structure, following best practice, including separate worksheets as follows:

- *input worksheets*: these should include only hard-coded input data and assumptions required for the calculation; for example, the assumed percentage change in sales revenue each year during the forecast period. They should not include calculations (other than potentially a sum or average calculation, e.g., summing monthly revenues to calculate the annual revenue). The inputs will then flow into the calculation worksheets;
- *calculation worksheets*: these should include only the detailed calculations required to assess loss, such as the calculation of the cash flow for the company in the but-for scenario during the relevant period. They should not include any hard-coded input data; any input data required in the calculation worksheet should be linked by a formula to the relevant input cell within the input worksheets. The calculations will then flow into the output worksheet; and
- *output worksheet*: this will generally be only a single worksheet and can be thought of as the ‘summary’ worksheet that provides the final output of the model based on the figures contained in the calculation worksheets (i.e., the overall loss incurred by the company as a result of the alleged breach). This should not include any hard-coded input data or calculations but rather should link to the relevant cells within the calculation worksheets.

Depending on the case, the output worksheet may take the form of a ‘dashboard’, which collects the key inputs of the model that can be varied and presents the headline outputs. Dashboards are useful to show the quantum result in a range of scenarios with different combinations of inputs and assumptions.

A well-constructed dashboard should be intuitive and capable of being used without any prior knowledge of Microsoft Excel; this is achieved with the inclusion of drop-down lists, automatic error messages that highlight errors, ‘reset’ buttons, and so on. This allows the tribunal to amend the inputs and assumptions within the model to understand the loss for a range of scenarios.

An illustrative example of a dashboard is shown below.

Ability to change inputs, including removing heads of claim and amending other key drivers

Automatically changes to 'N/A' if the head of claim is not included

Button to reset the inputs to the claimant's case

Reset to Claimant's case

31/12/2017

12%

Simple or compound interest

Interest calculated at LIBOR plus

Compound

5%

12%

13%

14%

15%

Drop-down list to vary discount rate

Inputs which can be varied clearly identified by use of shading of cells

Total damages summarised based on the inputs selected

APPENDIX 8.1 – CALCULATION OF LOSS						
Dashboard						
INPUTS						
Heads of claim	Include in claim?	Claimant's % of market				
Europe	Yes	6%				
USA	No	N/A				
Other key inputs						
Valuation date	31/12/2017				Simple or compound interest	Compound
Discount rate	12%				Interest calculated at LIBOR plus	5%
OUTPUTS						
DAMAGES (DISCOUNTED)	Units	2018	2019	2020	2021	Total
Europe	£m	10.2	10.5	11.1	12.3	44.1
USA	£m	-	-	-	-	-
Total	£m	10.2	10.5	11.1	12.3	44.1
Interest	£m	1.5	1.1	0.8	0.4	3.8
TOTAL DAMAGES PLUS INTEREST	£m	10.2	11.6	11.9	12.7	47.9

The more complex models will usually contain numerous input and calculation worksheets. If this is the case, all the worksheets for each category should be grouped together within the spreadsheet. Typically, input worksheets will be grouped together on the right of the tabbed worksheets, which then flow into the calculation worksheets in the middle, with the output worksheet on the left. In a well-designed spreadsheet with many worksheets, data will then flow through a model in one direction, from right to left across the tabbed worksheets.

Finally, each worksheet should be labelled clearly to explain its purpose. If a model has numerous worksheets, it can be helpful also to have a contents page as the first worksheet that sets out the title and purpose for each worksheet and the structure of the calculation.

Consistency

Spreadsheets should have consistent design features, for example:

- *left-right consistency*: each row should contain one formula copied across each row; and
- *column consistency*: the same period should be in the same column on each worksheet.

Clarity

We all recognise that spreadsheets can be complex, but this does not mean they should lack clarity. In particular, calculations should not be more complex than necessary, as the more complex a calculation becomes, the more difficult and time-consuming it is to understand the calculation and to verify that it is correct.

Best practice, therefore, is to use the shortest and simplest formula possible for each calculation, with complex multi-step formulas broken down into a series of steps on separate rows or columns.

Documentation

Documentation is key to understanding any model.

Within each worksheet, the basis of each figure should be labelled clearly. For example:

- *inputs*: references should be provided to the source document or an explanation setting out how the assumption was arrived at;
- *links*: cross-references should be provided between the different worksheets within the spreadsheet; and
- *calculations*: these should either be clear from the face of the spreadsheet (i.e., without looking at the formula, such as the total of the rows immediately above) or explained in a note within the spreadsheet.

For more complex models, a user guide to the model should be included that sets out:

- the structure of the model;
- the flow of information through the calculation (i.e., how the different worksheets within the model link to each other);
- whether any inputs are variable inputs and can be flexed (e.g., drop-down lists that allow different interest rates to be selected); and
- explanations of any complex formulas, macros⁹ or non-standard program add-ins¹⁰ contained within the model.

⁹ Macros are a set of programming instructions that the model preparer writes using computing code (known as VBA code). Macros can be used in Microsoft Excel to perform calculations.

¹⁰ Program add-ins can be installed into Microsoft Excel to perform particular calculations. For example, the Monte Carlo add-in can be used to run multiple simulations of a calculation where an input is based on a random number.

Quality control and testing

The model should contain elements of quality control such as adequate and explicit cross-checks; for example, a formula that checks that a balance sheet does balance, or a formula that flags where a calculated number that should always be positive is negative. In more complex models that contain a lot of error checks, it can be helpful to summarise all these checks in a single worksheet within the spreadsheet.

In addition, given that spreadsheets are inherently prone to errors, it is best practice for all DCF models used in international arbitration to be verified by a team independent of the team that prepared them. This independent team should verify the model by confirming that the inputs agree to the source documents and that the formulas within the model are correct (for example, all the relevant years are included within a formula calculating the total).

Although some experts have company rules that require the verification of a firm work-product (and some have specialist teams who focus only on verifying models), this is not the case for all experts.

Particular issues that arise in DCF models

A key commercial issue that arises in DCF models relates to the forecast cash flows, in particular the growth of those cash flows.

Forecast cash flows

The overall problem one faces with forecast cash flows is that they are, by their nature, forecasts and, therefore, composed of inherently uncertain items.

Revenues are traditionally the most difficult item within the cash flow to forecast. Costs of sales are generally easier to forecast than revenues and, in some cases, may even be based on revenues (e.g., where the cost of sales is calculated as a set percentage of sales volume). Overheads are normally the easiest to forecast, particularly fixed overheads that do not change as production changes (e.g., the rent paid on a factory is the same whether one unit or 500 units of product are made).

The overall commercial assumptions underpinning each element of the cash flow forecast (as set out above) need to be looked at sceptically with a view to answering the following two questions: (1) What supports them? (2) Do they make sense?

In particular, the growth of the cash flows can often be a big area of debate among the parties.

Growth of cash flows

One of the biggest areas of contention in a DCF valuation is likely to be the growth of the cash flows built into them, whereby the growth includes:

- the assumed year-on-year growth of the cash flows during the forecast period (which is driven by the growth in the individual components of the cash flow – i.e., revenues, costs, etc.); and
- the assumed stable growth rate applied in the terminal value (for those cases where a terminal value is required).

In simple terms, the main causes of the growth of a company's cash flows include:

- an increase in the volume of goods or services produced and sold, through increasing its capacity by investment in assets or in labour (e.g., a cake manufacturer could increase its production by hiring more workers or by buying additional equipment);
- an increase in the volume of goods or services produced and sold, through increasing productivity (the cake manufacturer could increase its production by increasing the productivity of its existing machinery or workforce);
- an increase in the price charged for the good or service sold (the cake manufacturer could charge its customers more for each cake); or
- an increase in efficiency such that the same level of production and sales can be achieved for a decreased cost (the cake manufacturer could reduce wastage of flour and butter to cut the costs of raw materials).

When assessing the level of growth assumed within a DCF model, it is important to understand the causes of the growth and determine whether these are reasonable. For example, although a company can cut its costs (either as a one-off or over the course of a few years) to grow its cash flows, a company cannot continually cut costs year on year forever, otherwise eventually costs would reduce to zero.

In practice, generally, companies do not experience consistent growth rates year on year. Although a consistent growth rate across a forecast period makes modelling easier, it may be unrealistic to achieve for a sustained period.

Whatever the level of growth that the expert assumes (whether that is no growth, negative growth, or small or large positive growth), the tribunal and the other party's expert should question whether the assumed level of growth makes sense in the context of:

- the historical performance of the company;
- the growth of the market in which the company operates;

- the size of the company – the larger the company, the more difficult it becomes for it to generate the same percentage growth it realised when it was smaller;
- the level of investment that is assumed in the model; and
- the level of working capital that is assumed in the model.

Overall, growth assumptions should always be looked at thoughtfully and the reasons for the growth fully understood.

Growth of market

It is important to be aware that no company can grow at a rate above that of the market in which it operates for a sustained period. High-growth companies will always see growth fall off eventually, as the market is always looking for returns, and any industry or sector enjoying high or above average returns will see competitors entering the market, which in turn drives down growth.

Chasing more growth and more returns often means companies need to enter new markets. However, this can then expose a company to increased competition and make the company more complex; both of these can limit the growth that can be achieved by expanding into new markets.

Size of the company

In terms of size, the bigger the company, the more difficult it becomes for it to generate the same percentage growth it realised when it was smaller. For example, a small company that had been selling 100 units can grow by 10 per cent by selling an additional 10 units (10 per cent of 100 units), whereas a large company that had been selling 100,000 units will have to sell an additional 10,000 units to grow by 10 per cent. Selling an additional 10 units is clearly much easier than selling an additional 10,000 units.

A potential cross-check can be to compare the growth of companies of a similar size in the same market to the growth forecast in the DCF model.

Investment

As noted above, to support the growth of cash flows, a company can invest in assets (also known as capital), such as:

- purchasing machinery to add a new production line;
- investing in a new information technology system to improve efficiency and productivity; or
- purchasing new premises to sell in new regions.

It is important to assess whether the level of investment assumed in the DCF model is reasonable, based on the assumed level of growth of the cash flows.

A key consideration will be to understand the cause of the growth in the cash flows. It logically follows that the more the growth in the cash flows is driven by making investments in capital (rather than through making investments in labour, increasing productivity, increasing the sales price or increasing efficiency), the higher the level of investment in capital that should be included in the DCF model.

Another consideration is the industry in which the company operates. All other things being equal, to achieve the same level of growth, a company operating in a capital-intensive industry¹¹ will need to invest in more capital than a company operating in a labour-intensive industry.¹²

The other party's expert and the tribunal should also consider what the implied return on investment is, given the assumed level of investment and growth within the DCF model.

Say a company is forecasting a growth rate in cash flows of 20 per cent per year over five years and that during this same period the company is investing 10 per cent of those cash flows per year. This implies massive returns on the new capital invested and could indicate that either the investment rate is understated or the growth rate is overstated, or a combination of both. Either an increase in the investment rate or a decrease in the growth rate would lead to a reduction in the forecast cash flows. Well-constructed models will include calculations of ratios, such as the return on investment, as part of the quality control and testing undertaken, which can be reviewed easily to identify any unexpected results arising from the combination of assumptions made.

It is worth bearing in mind that the level of investment used in a DCF model should allow not only for investment in new capital to improve growth but also investment to maintain the company's existing capital base. The investment required to maintain a company's existing capital base will depend in part on the industry in which the company operates (i.e., whether it is a capital-intensive industry).

11 Capital-intensive industries require high levels of capital to produce their goods or services. Examples include oil production, telecommunications and transportation (e.g., railways and airlines).

12 Labour-intensive industries require high levels of labour to produce their goods or services. Examples include hospitality and professional services (e.g., lawyers and accountants).

Working capital requirements

Any assumptions about growth require the following question to be considered: What is the financial impact on working capital?

As noted above, working capital is the cash a company needs for its day-to-day operations and is calculated as current assets (such as stock and debtors) less current liabilities (such as creditors).

In most cases, the growth of a company requires greater amounts of working capital, which must then be factored into the forecast cash flows. It is therefore important to consider whether the level of working capital assumed in the forecast cash flows is consistent with the assumed level of growth of the cash flows.

As a general rule, if the value of sales is growing then the company's working capital needs will also grow. This is because if the value of sales increases, this will usually lead to an increase in debtors (money due from customers) and this causes the working capital requirement to increase. For example, if sales increase by 5 per cent, a reasonable assumption is usually that debtors also increase by 5 per cent, which (assuming no other changes) then increases the working capital requirement by 5 per cent.

If the DCF model forecasts an increase in sales revenue but no increase in working capital, although there may be reasons that explain this, the other party's expert and the tribunal should understand these reasons and challenge whether they are reasonable.

Terminal value

All companies mature (unless they truncate). In valuation terms, this is referred to as having a stable or constant growth rate and is reflected by the calculation of the terminal value – essentially the value of the future cash flows on the day the company reaches maturity.

Growth rates in the terminal value is another area where modelling mistakes can be made. If a terminal value calculation assumes a 5 per cent stable growth rate, the expert is assuming that the company's cash flow will grow at 5 per cent per annum in perpetuity.

To assess at a high level whether the stable growth rate used in the terminal value calculation is reasonable, there are two key points that tribunals should consider.

First, stable growth rates for a company cannot be more than the long-term growth rate in the economy in which the company operates. The reason is simple – such an assumption would mean the company eventually grows larger than the economy in which it operates.

Second, a stable growth rate is in fact likely to be lower than the growth in the economy. An economy is made up of high-growth and stable-growth companies, with the growth rate of the economy an average of all these individual companies' growth rates. This means that stable-growth companies will have growth rates lower than the growth rate of the economy, and high-growth companies will have growth rates higher than the growth rate of the economy.

Role of tribunal in relation to the model

On the basis that quantum has been calculated by both parties' experts, the tribunal may receive one or two models, depending on whether a common model has been agreed by the experts.

If the experts do not agree on a common model, it is helpful for the tribunal to understand where the disagreements lie. Some common areas of disagreement include:

- different instructions;
- legal issues;
- commercial assumptions;
- sources for the data;
- design of the model; and
- complexity of the model.

We set out below a checklist of questions that a tribunal can consider when determining whether it can rely on a model, which focus on determining whether the model is fit for purpose based on the requirements of the tribunal.

Questions to consider	Guidance
Quality control checks	
1 What quality control checks have been carried out on the model, either by the expert who prepared it or by the other party's expert?	It is important that the tribunal questions whether the model has been thoroughly verified internally by the expert that produced the model, or by the other party's expert, or both.
2 Have the inputs been agreed to the source documents?	If the experts each produce their own model, the tribunal can confirm whether both sides agree that the other party's model is arithmetically correct (given the inputs and assumptions used in the model).
3 Have the formulas been checked (i.e., are they arithmetically correct)?	Depending on the case, the tribunal may also consider whether it should have an independent model verification carried out. If a model does contain errors, the tribunal should understand from the experts how many errors there are and how material they are (i.e., the effects on the loss when corrected), as well as the ease with which the errors can be rectified. It is difficult and may be virtually impossible to verify the model independently without a native copy of it (i.e., an Excel version that includes all the formulas used).
Assumptions applied	
4 What assumptions have been made in the model?	It is critical that the tribunal is comfortable with the assumptions adopted in the model.
5 Does the tribunal consider these assumptions are reasonable? In particular: • what supports these assumptions? • do they make sense?	The key assumptions should be set out in the expert's report or the model itself. If the assumptions being made are not clear, the tribunal should go back to the experts to ask for clarification.

Questions to consider	Guidance
Amendments to inputs/assumptions	
6 Does the tribunal want to consider the quantum under multiple scenarios with different combinations of inputs and assumptions? If yes, see question 7.	The tribunal may want to consider multiple scenarios. The model may already have the functionality built in to allow the tribunal to change between the different scenarios it wants to consider, for example, by inclusion of a dashboard that clearly shows the inputs and assumptions that can be amended. If the model is properly built, changing between scenarios should require no Excel knowledge by the user (e.g., through the inclusion of drop-down lists or buttons). If this functionality is not built in, the model may be flexible enough that it is relatively simple for the expert to add this in for the tribunal. In some cases, the model may have been built in such a way that it cannot be amended to allow for different scenarios, which may render it not fit for purpose. We would caution against a tribunal amending the model itself to include new scenarios without assistance from the experts, as this may lead to: • inappropriate combinations of inputs that do not make economic sense given the facts of the case; or • unexpected results, previously not envisaged by the expert, which are then treated incorrectly based on how the model is set up.
Multiple heads of claims	
8 Are there multiple separate heads of claim? If yes, see questions 9 to 11.	When there are multiple heads of claim, there may be disagreement between the parties regarding whether a particular element should be included in the claim as a matter of law.
9 Does the model include all the heads of claim?	Being able to remove elements of a claim, and assess the effects on quantum, can therefore be helpful for the tribunal. This functionality may already be included in the model but, if not, the tribunal can request the expert to add this in.
10 Are the separate heads of claim clearly split in the model?	
11 Can the model be adjusted to exclude particular heads of claim?	
Calculation method	
12 Is the overall calculation method appropriate?	It is important to consider whether the overall calculation method is appropriate, such that it reflects the reality of the situation and contains an appropriate level of complexity (neither unnecessarily complex nor oversimplifying the situation).
Duration of damages	
13 Are damages ongoing?	If damages are ongoing but the model only calculates damages and includes data up to a certain date (e.g., the date the expert report was prepared), the tribunal should request that the expert updates the model to the required date (e.g., to update interest up to the date of the award).

Our recommended approach for the tribunal to approach quantum is as follows:

- the tribunal decides which model it can rely on (taking into account the questions set out above);
- the tribunal makes its determinations of the issues in dispute in relation to the model (e.g., which discount rate should be applied, which growth rate of revenue should be used). In some cases, to make its determinations, the tribunal may request that the experts run a number of variations through the model to understand the effects of different assumptions on the overall loss (if this functionality is not already built into the model to allow the tribunal to carry this out itself); and
- depending on the model, the tribunal or the experts (or the expert appointed by the tribunal, if there is one) can then input the determinations into the model, with the resulting output equalling the amount of the damages to be awarded.

In the absence of their own tribunal-appointed expert, unless the quantum calculations are very simple, tribunals should be wary of undertaking their own calculations of damages, as they will potentially suffer from three overall problems:

- the damages calculated may be based on a methodology that is flawed because of complexities in the models of which the tribunal has not taken full account;
- in coming up with something novel or hybrid, the tribunal may be adopting something on which the parties will argue they have not been able to make adequate submissions; and
- it amplifies the risk that the award itself may contain arithmetical errors, which can open up the opportunity of challenging or discontent with the whole arbitration process. For example, in one of our cases, the tribunal copied and pasted profit figures from one spreadsheet into another – but this did not take account of the effect of tax or inflation.

Conclusion

We believe that well-constructed DCF models that have undergone adequate review, and that are sufficiently explained and documented, are key to effective awards in arbitration in which damages are likely to be complex. They are also likely to lead to a more efficient arbitral process.

In addition, a properly constructed DCF is more likely to result in the key drivers of value and the commercial assumptions underlying them being properly analysed and challenged more effectively.

Conversely, poorly constructed models that have not been undergone quality control testing lead to inefficiencies in arbitration with resources devoted to arguments about model design and corrections of errors.

As a fundamental point, it is very important that DCF models in arbitrations are well designed and properly reviewed if they are to be used by a tribunal. If they are not, then any figure they produce may be subject to doubt.

CHAPTER 15

Determining the Weighted Average Cost of Capital

Charles Jonscher¹

Introduction

The financial impact of a damaging action normally stretches some years into the future; indeed, it may continue without limit, as when a firm loses a line of business that might otherwise have lasted indefinitely. If a damages calculation were based on a simple arithmetic summation of the estimated damage for each future year, the claimant could be greatly overcompensated – for permanently damaged businesses, infinite awards would result.²

To correctly assess financial damages, it is necessary to apply a conversion factor that discounts a forecast loss in a future year for the purpose of compensating it reasonably today. The measure used to effect this discount is known as the weighted average cost of capital, or WACC.

This chapter sets out the principles underlying the WACC as applied in damage assessments and presents current best practice in its estimation.

1 Charles Jonscher is president of the CET Group of Companies.

2 If a discounted cash flow (DCF) model shows damage to a business in all future years, and no time discount is applied, the loss calculation will consist of an infinite sum of (undiscounted) future losses; mathematically this is likely to yield an infinite compensation figure.

Basic principles

A damages award often compensates a claimant in advance: the claimant receives payment, now, to replace income that, absent the damaging act, would have been earned in the future. Money has time value, and it is self-evident that an award must incorporate an adjustment – a downwards adjustment, or discount – to reflect any advance component of compensation.

A first step to effect this adjustment would be to discount future years' assessed losses by a prevailing interest rate (more specifically by what is known as the risk-free interest rate).³ Applying a discount based on an interest rate would ensure that the financial award has been adjusted to reflect what we might term the pure time factor – the passage of time between the award and any future losses that the award is intended to compensate.⁴

However, while discounting on the basis of an interest rate would adjust an award for the fact that future losses to the business are paid in advance, it would not adjust the award for the fact that the future losses are subject to uncertainty. It is not reasonable or fair to recompense, dollar for dollar, uncertain future losses with a certain payment today. A fair compensation in respect of future years' lost earnings must incorporate an adjustment to reflect the uncertain character of those future earnings.

The discipline of financial economics has established a procedure to convert forecast future cash flows of a business to an equivalent present-day value, to reflect both the passage of time and the uncertainty of those future cash flows. The procedure is to calculate, by analysis of financial market data, the cost of capital of the business and, more specifically, the WACC. The WACC is a blend of the firm's cost of debt (interest) and cost of equity, the average being weighted by the proportions (or weights) of debt and equity financing available to the firm.

The WACC is built up from a number of inputs, or components. One of the components is the prevailing (risk-free) interest rate; in the completed financial damages calculation, the inclusion of this component will account for the time value of money in the economy. Other components of the WACC are concerned with the volatility and riskiness of business investment; the inclusion of these

3 The risk-free interest rate is discussed later in this chapter.

4 The successful claimant could place on deposit that part of the award that relates to any given future year's losses; by the time that year arrives, the deposit would have grown, by accumulation of interest, to be equal to the amount that the claimant is estimated to lose in that year through the damaging action.

components will ensure that the completed financial damages assessment accounts for the uncertainty associated with a business's future earnings. The components of the WACC are discussed in detail later in this chapter.

Effectively the WACC teases out the consensus of the broad business community – investors, executives, analysts – as to the fair discount to apply when replacing a future uncertain gain by a current and certain one. Just as information on prevailing interest rates in an economy reveals the time value of money to participants in that economy, so securities market data (information, for example, on share prices) can reveal the reasonable adjustment to apply to forecast company earnings to account for the uncertainty and volatility associated with those earnings.

Like an interest rate, the WACC is expressed as a percentage per year; for illustration, a WACC of 7 per cent per annum signifies that money received this year is worth 7 per cent more to the business than money that it forecasts to receive next year. Also, like an interest rate, its effect compounds through time. Note that WACCs are inevitably much higher than prevailing interest rates, meaning that – not surprisingly – the fair adjustment in respect of uncertainty of earnings is significantly larger in practice than the adjustment in respect of the passage of time.

The WACC is now universally accepted in commercial arbitration practice as the correct figure to apply as the discount rate in the financial discounted cash flow (DCF) model used to assist in damages assessment. The line of business for which the WACC is calculated is the damaged business of the claimant, and the resulting WACC figure is entered as the discount rate in the financial damages calculation.

In summary, when the WACC is applied to a financial damages model, the calculation of damages adjusts properly – or as well as modern finance theory allows – for both the pure time effect (that money available now is more valuable than money received later) and in respect of risk and uncertainty (a damages award should compensate fairly, with a definite payment now, a loss of profit that the claimant's business may incur in the future).

Estimating the WACC

The WACC has not been developed specifically for damage assessment; it is a very widely used analytic tool. For example:

- a firm's management applies the WACC to help it decide whether to proceed with an investment proposal, such as a new capital project or a corporate acquisition;
- auditors use a firm's WACC for the purposes of financial reporting;

- brokers and investment bankers use WACCs in connection with the purchase, sale or issuance of shares and in connection with acquisitions, mergers or spin-offs; and
- government bodies use WACCs to assess fair and allowable prices and profits in regulated industries.

In a damages assessment, the figure arrived at for the WACC is likely to have a very important effect on the level of financial claim – particularly if, as in most major claims, long-term losses are alleged.⁵ By way of example, with all other inputs to the financial analysis of damages kept constant, a movement of the WACC estimate by just one percentage point (say from 7 per cent per annum to 6 per cent per annum), could increase the final claim by 15 per cent.⁶ In a proceeding involving long-term damage, there will almost certainly be no other single figure entering the financial model to which the final claim is as sensitive.

For this reason, the correct assessment of the WACC is of great importance in commercial arbitrations. The professional expertise required differs from that required to create the financial (DCF) model into which the WACC figure is inserted. The creation of a DCF model of a firm requires very detailed knowledge of the industry in which the firm operates, to ensure that the model contains high-quality line-by-line data on revenues and costs. By contrast, as will become clear in this chapter, WACC estimation requires very detailed knowledge of financial markets – of stock market volatilities, bond market yields and the quantitative analysis thereof.⁷

The WACC is estimated on the basis of six components or inputs, each of which is discussed below.

5 If the damage can be completely remedied in the short term – if, for example, equipment is damaged and is replaced – then the level of WACC will have only a modest effect on the final level of the financial claim. If, however, the claim is for the loss of a business position or business opportunity, the claim will be for damage that is permanent, or at least very long term, and the level of the WACC will have a large effect on the level of the claim.

6 If a broadly constant long-term loss of earnings is alleged, the final calculation of damages will respond, very roughly, in inverse relation to a change in the assessed annual percentage WACC. However, this is an approximate heuristic guide only; many factors will affect the detailed mathematical relationship between the WACC estimate and the final claim level; a greater weight on near-term losses will tend to reduce the sensitivity of the final claim to the level of the WACC, while the inclusion of a perpetual growth factor in the DCF model will tend to increase the sensitivity.

7 WACC estimation has therefore become a distinct sector of expertise in damages proceedings (and, indeed, merits a specialist chapter in this book).

Risk-free rate

A starting point for assessing the WACC is the risk-free rate, which is the prevailing rate of interest paid on debt to a lender considered completely credit-worthy. In broad terms, the remaining inputs to a firm's WACC act to increase the cost of capital above the risk-free rate.⁸

The risk-free rate does not have an objective existence – there is no such thing as a loan without risk of default. As with other parameters entering the WACC formula, the risk-free rate is a construct of finance theory, and must be estimated by means of proxies or approximations.

The accepted approximation to the risk-free rate is the yield on government bonds issued in the relevant currency. In the case of a claim based on US dollars, this is the return to US Treasury bonds. Although holding these bonds is not completely risk-free, the chance of repayment is considered extremely high – or, in any event, 'as good as it gets'. When the currency of the financial model is other than US dollars, the risk-free rate is estimated on the basis of the return on bonds issued in that currency – usually the bonds issued by the relevant national treasury.⁹

The actual estimation process for the risk-free rate typically involves calculating an average yield for primary offering tenders taking place close to the damages reference date, for bond maturities of, say, five, 10 and 20 years.¹⁰

Debt risk premium

The debt risk premium is the additional return, above the risk-free rate, which a firm must pay to its debt holders to compensate for the risk that the terms of the loan will not be honoured.

8 The exception is the tax rate, which acts to reduce the firm's cost of capital due to the tax deductibility of debt repayments.

9 Complications arise if the bonds of the national treasury in question are considered a poor risk. Fortunately for estimation purposes, national treasuries typically issue bonds both in their own currency and in a global reserve currency, such as US dollars or euros. The premium that the government in question pays on, say, its US dollar bonds over US government rates serves as a measure of the perceived risk of that government defaulting, and can therefore be used to adjust the rate on its local currency bonds to arrive at a good estimate of the local currency risk-free rate.

10 The selection of bond maturities is important, as bonds of different maturities typically have significantly different yields, and an incorrect selection of maturities can introduce significant errors into the WACC. Broadly, the basket of bond maturities should be selected that best reflects, in the judgement of a qualified expert, the future time pattern of damages in the financial model.

The debt risk premium is relatively easy to assess if the claimant firm issues bonds: the return on those bonds is compared with the return on bonds with similar maturity issued by government. If the firm itself does not issue bonds – or as further input to the estimation procedure even if it does – the premium can be estimated by analysing the return to the bonds of firms with similar perceived risk profiles, such as competitor businesses of similar size.

The debt risk premium is widely studied by investment banks, stockbrokers and other institutions. Experts assigned to a proceeding can supplement a direct analysis of this WACC input with a review of the estimates published by reputable third parties.

Equity risk premium

The equity risk premium is the amount by which, over a long term, stock markets generate higher returns for investors than do holdings in (near risk-free) government bonds. As its name implies, it is the premium paid to equity investors to compensate them for the risk – volatility, uncertainty – of stock market investing. It is a figure that applies to stock markets generally, rather than to a firm specifically.

Experts in arbitrations do not attempt to calculate this parameter from primary data sources – that would be a major computational task. The figure is stable over quite long periods, and general practice allows the expert to review financial and academic literature and apply a consensus estimate. Currently, the equity risk premium stands at about 5 per cent per annum for major stock markets.

Beta

Although the equity risk premium (discussed immediately above) reflects the return investors expect to make by investing in shares generally, it does not reflect the return investors expect to make by investing in a particular firm's shares. Finance theory holds that the firm-specific return is obtained by multiplying the equity risk premium by a 'risk multiplier' known as 'beta' (after its Greek symbol (β)). The beta is a measure of the volatility of the firm's share value relative to volatility in the stock market as a whole.¹¹

11 Mathematically, the beta of a firm's shares is the covariance of the return on the firm's equity and the return to the stock market, divided by the variance of the return to the stock market.

The estimation of a firm's beta is one of the most difficult parts of a WACC estimation.¹² Although competent finance professionals can undertake the necessary computations themselves, in an arbitration setting, experts typically rely on third-party estimates published on commercial database services, such as Bloomberg. A value of beta obtained by careful selection and averaging of reputable third-party estimates may be more reliable, and easier to defend, than a fresh set of calculations produced by the expert.¹³

Although the estimation of beta is complex, its interpretation is relatively straightforward. A firm's beta reflects the degree to which the firm's business is affected strongly or weakly by general economic turbulence. In broad terms, a firm whose business has a high degree of resilience in the face of economic cycles will have a beta (or risk multiplier) of less than 1; examples are firms supplying staple or essential goods. A firm whose business is heavily affected by economic cycles will have a beta of greater than 1: examples are firms supplying discretionary goods. Fortunately, the expert in an arbitration does not have to speculate as to whether the firm's output has greater or lesser risk – the assessment of beta is a mathematical process that relies only on analysis of share price volatility data.

Debt-equity ratio

The debt-equity ratio generates the 'weights' in the weighted average cost of capital. As with the beta, its estimation presents significant challenges to the expert in an arbitration setting: there are a number of alternative approaches to its assessment, which produce different results; there is little by way of directly applicable published assessments; and the final WACC computation is quite sensitive to the figure selected.

12 The estimation of beta is sensitive to the selection of data analysed. To increase the sample size, it is recommended that the estimation is supplemented by inclusion of companies considered comparable in their riskiness to the firm in question – to the extent possible, of companies in the same line of business and of similar scale. The application of beta values from a comparable company group is not straightforward (even if the betas are taken from third-party sources); good practice requires that the comparisons are made not directly on the basis of firms' betas but on the basis of a related parameter known as the asset beta. Discussion of the conversion of betas to asset betas and vice versa is beyond the scope of this chapter.

13 Care must be taken when interpreting other parties' beta estimates (and, indeed, in working generally with the beta parameter) to differentiate between what are known as the unlevered beta and the levered beta. Again, a discussion of these variants of the beta parameter is beyond the scope of this chapter.

The expert must seek to identify the ratio of debt to equity that optimises the value of the firm to its owners. The degree to which a firm sources its capital from debt as opposed to equity markets is (within limits) a matter of its choice – it can issue more debt or more equity; consequently one approach to estimation is simply to take the ratio of debt to equity present in the firm at the time of the assessment. However, in practice, direct measurements of the actual debt and equity levels of the firm in question may not produce a good estimate of the optimal debt-to-equity ratio as required for a WACC estimation.¹⁴ Practice has shown that a better estimate is achieved by taking an average (such as the median) of the debt-to-equity ratios of a group of companies deemed by the expert to be comparable for the WACC estimation purpose – typically companies in the same industry.

Other measurement problems arise because there are conflicting definitions as to what constitutes debt; good practice requires the expert to follow quite detailed guidance as to which debt categories should be included when calculating the debt-to-equity ratio for the purpose of assessing a WACC.¹⁵

Nevertheless, this ratio can be assessed, with diligence and by following good practice, to a good standard of accuracy.

Tax rate

The presence of the tax rate as an input to the WACC calculation arises because payment of interest on debt can be offset against a company's taxable profits. This tax deductibility, known as a tax shield, reduces the effective cost of debt capital compared to the cost of equity capital; there is no analogous offsetting of dividend payments (i.e., payments to equity shareholders) against corporation tax.

Generally, the determination of the tax rate for a WACC estimation is straightforward: the expert applies the marginal rate of tax on corporate profits, as specified in the tax statutes applicable to the jurisdiction in which the relevant profits are taxed.

14 Firms do not, as a practical matter, continually fine-tune their ratio of debt to equity to maintain an optimal level implied by finance theory; among other difficulties, they would have to issue or retire debt every time their share price moved.

15 Debt should normally include all borrowings, capital leases, licence fee liabilities and liabilities embedded in financial instruments, and should be reduced by the level of cash holdings, marketable securities, investments available for sale and receivables from financial instruments.

There are, nevertheless, some precautions to be observed: the tax rate entering the WACC calculation may be different from the tax rate used to estimate post-tax cash flows in the DCF model;¹⁶ and the tax rate must be adjusted downwards for WACC estimation purposes if the profits of the firm are insufficient, over a relevant period, to cover all interest payments; in that event, the tax shield will not be fully effective.

With the six above-mentioned inputs correctly estimated, the calculation of the WACC itself and its insertion into the DCF model of damages are straightforward. The six inputs are entered into a standard formula that generates the WACC figure.¹⁷ This is then entered as the discount rate input into the financial model. The mechanics of the model ensure that any future cash flows are discounted back by the discount rate to the present day (strictly, to the reference date), compounded annually.

Concluding reflections

The development of a technique to determine the fair present-day value of future (and uncertain) cash flows by analysis of objectively measurable data, such as share price volatility, was a landmark in financial economics.¹⁸ For damages proceedings, the development has meant that the discount rate – the WACC – entering a financial model can be calculated on the basis of evidential data, lending objectivity to the seemingly intractable task of accounting for forecasting uncertainty.

What the theory and practice of WACC estimation has done for dispute resolution is to introduce objectivity (and some degree of precision) into what would otherwise be a highly speculative aspect of claim evaluation. When an arbitration proceeding is presented with a model of how the business would have performed in an undamaged situation, it is clear that predicted profits, in general, must be discounted to arrive at a fair compensation – a forecast gain (or loss) is not equal in value to a certain gain (or loss). The WACC methodology requires

16 The tax rate entering the WACC calculation must be the marginal rate of tax on each extra unit of profit generated. The tax rate used to calculate post-tax cash flows in the same DCF model will be average rates of tax on the total profit (for a given period).

17 The formula is: $WACC = [R_f + (\beta \times ERP)] \times (1 - g) + [(R_f + DRP) \times (1 - T)] \times g$, where $g = DER / (1 + DER)$ and the remaining symbols have the following meanings: R_f is the Risk-Free Rate; β is the Beta; ERP is the Equity Risk Premium; DRP is the Debt Risk Premium; DER is the Debt-Equity Ratio; and T is the Tax Rate.

18 The theory, developed in the 1960s, earned its authors the Nobel Prize in Economics.

that the experts estimate this discount by analysing the best available current data (on such metrics as stock price volatility). The experts can still disagree on the discount, but the disagreement can be resolved by reference to evidence.

It is essential, however, that those involved in commercial arbitrations have absolute clarity as to which forecasting uncertainties are, and which are not, taken into account by the inclusion in the financial model of a WACC-based discount.

The WACC takes into account the discount that is generally applied by market practitioners – investors, executives and analysts – to the value of forecast future cash flows, to reflect the level of risk and uncertainty normal in a firm and a line of business comparable to the one under review.

The WACC cannot, and does not, take into account the possibility that the forecast (typically of undamaged cash flows) may simply be biased. In lay terms, the forecast, at the time of its creation, must be equally likely to be too low as too high.¹⁹ The WACC adjusts the claim for the effects of business risk and randomness, not for the possibility that the forecast was set too high, perhaps by one of the parties. The judgement as to whether an expert forecast is deliberately biased, rather than merely uncertain, remains one for the arbitral process, on which the WACC is silent.

Finally, and obviously, the WACC adjustment does not adjust a claim for errors or bias in the estimation of the extent to which the undamaged and damaged cash flows differ.

The above limitations having been noted, the WACC remains a powerful and now standard tool in DCF calculation of damages, bringing a high level of objectivity to accounting for the time value of money and for the uncertainties of business outcomes.

19 In mathematical terms, the forecast must be set at the centre of the probability distribution of future outcomes.

ANNEX

Worked example

This annex contains a worked example of the derivation of the WACC of ABC Inc (ABC), a hypothetical major food products company listed on the New York Stock Exchange. The currency of the valuation is the United States dollar and the valuation date is 1 July 2022 (the Reference Date). As noted in the main text of this chapter, the assessment of a WACC in the context of a dispute resolution proceeding requires quite detailed analysis of financial (debt and equity) securities. By contrast, this worked example is simplified, presenting each step in outline only.

We first obtain values for each of the six input parameters of the WACC equation.

Risk-free rate

For the risk-free rate (R_f) applicable to this worked example, we use the mean of the yields of US Treasury five-year, 10-year and 20-year bonds as at (or very near) the Reference Date. The respective yields were 2.88 per cent, 2.88 per cent and 3.35 per cent. The mean of these values is 3.04 per cent; hence R_f , expressed as a fraction, is 0.0304.

Debt risk premium

ABC's debt risk premium (DRP) is assessed in this example as the margin by which yields of its corporate bonds exceed the yields of similar-tenor US Treasury bonds, at or around the Reference Date. We estimate this margin at 2.00 per cent; hence DRP expressed as a fraction is 0.02. For illustration and comparison, selected 10-year corporate bonds issued by major US food products companies in the 36 months prior to the Reference Date have had yields with the following premiums over 10-year US Treasury bonds: Campbell Soup Co, 1.75 per cent; General Mills Inc, 2.18 per cent; Kraft Heinz Co, 2.11 per cent; and McCormick and Co, 1.74 per cent.

Equity risk premium

As noted in the main text of this chapter, experts engaged in WACC assessments for damages select a value for the equity risk premium (ERP) that reflects, in their view, the current consensus of financial practitioners and academic researchers. The current consensus of this research in regard to US stock markets is that the ERP is between 5.3 per cent and 5.7 per cent. We apply to this assessment a value of 5.5 per cent, or 0.055.

Beta

The value of beta (β) is obtained by computational analysis of the volatility of a firm's stock price. As in the case of the ERP, it is normal for experts in damages proceedings to rely on published third-party calculations of β rather than to undertake the computations themselves. For illustration, the major food companies General Mills Inc, Kellogg Co and Kraft Heinz Co have published beta figures of 0.57, 0.61 and 1.01 respectively. We assume for the hypothetical company ABC a consensus published β of 0.7.

Debt-equity ratio

The book value debt-equity ratios (DERs) of major US companies are widely published, and in the case of the food products industry, the average ratio is somewhat above unity. However, substantial adjustments must be made to these ratios before they can correctly be applied as the DER for WACC assessment. Most importantly, market rather than book value (of both debt and equity) should be used, which results normally in a much lower ratio. For the purpose of this worked example, we assume that the DER of ABC, after the necessary adjustments, is 0.6.

Tax rate

The statutory tax rate (T) in the United States is currently 21 per cent. For the present purpose, we assume that the effective marginal tax rate of ABC is equal to the statutory rate (a common assumption). Hence, we carry forward to the WACC formula a T of 0.21.

We then enter these six parameter values ($R_f = 0.0304$, $DRP = 0.02$, $ERP = 0.055$, $\beta = 0.7$, $DER = 0.6$ and $T = 0.21$) into the standard formula:

$$WACC = [R_f + (\beta \times ERP)] \times (1 - g) + [(R_f + DRP) \times (1 - T)] \times g,$$

where $g = DER/(1 + DER)$.

The following result is obtained:

$$WACC = 0.0580$$

Expressed as a percentage, the WACC is 5.8 per cent. We therefore assess the WACC of ABC at 5.8 per cent per annum, with a Reference Date of 1 July 2022.

It is instructive to disassemble this WACC result into components, as follows:

- the cost of equity [$R_f + (\beta \times ERP)$] is equal to 0.0689, or 6.89 per cent;
- the after-tax cost of debt [$(R_f + DRP) \times (1 - T)$] is equal to 0.0398, or 3.98 per cent;

- the value g , which equates to the proportion of debt (gearing) in the capital structure, is equal to 0.375;
- the value $(1 - g)$, which equates to the proportion of equity in the capital structure, is equal to 0.625; and
- the WACC is then the weighted average of the cost of equity (6.89 per cent) and the after-tax cost of debt (3.98 per cent), with respective weightings $(1-g)$ and g .

CHAPTER 16

Assessing a 'Modern' DCF Valuation

Stuart Amor, Jose Alzate and Thomas Maassen¹

Introduction

Following the *Tethyan v. Pakistan* award,² where the tribunal awarded US\$4.1 billion in damages, there has been increased interest in the 'Modern' DCF valuation approach by some in the arbitration community.

In this chapter, we first explain what is meant by the 'Modern' DCF, being somewhat of a misnomer given that this valuation approach has been discussed in academic circles for decades. We then explain what makes this valuation approach potentially appealing in theory.

In the remainder of the chapter, we explore some relevant factors to consider when evaluating a valuation performed using the 'Modern' DCF approach. First, we consider the challenges in implementing a 'Modern' DCF valuation and, therefore, how the theoretical appeal of this approach can be difficult to exploit in practice. Second, we explain that this method does not appear to be commonly used by market participants to value companies or projects. This is particularly relevant to damages assessments based on standards of value commonly used in arbitration such as 'market value' and 'fair market value'.

We end the chapter with a summary of the tribunal's decision in the *Tethyan v. Pakistan* award in respect of its reliance on the 'Modern' DCF.

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² *Tethyan Copper Company Pty Limited v. Islamic Republic of Pakistan*, ICSID Case No. ARB/12/1, Award dated 12 July 2019 (*Tethyan v. Pakistan Award*), ¶ 1858. We refer to the claimant as 'Tethyan', the respondent as 'Pakistan' and the case as '*Tethyan v. Pakistan*'.

Income approaches and the 'Modern' or certainty equivalent DCF

In general terms, income approaches seek to arrive at the value of an asset by reference to the present value, as at a given date, of the future income stream that is expected to be derived from the asset.³

In the most commonly used income approach, the standard DCF approach, the valuer forecasts the expected (that is, probability weighted) future cash flows and discounts these at a risk-adjusted discount rate that reflects both the time value of money (through the risk-free rate) and the systematic risks attached to them (through the incorporation of a risk premium).

An alternative approach is to directly adjust the expected future cash flows for systematic risks and to discount these risk-adjusted cash flows at a risk-free rate that reflects only the time value of money.⁴ Under this approach, the expected cash flows are replaced with their 'certainty equivalents'. In terms of financial economics, the concept of a certainty equivalent refers to the certain (that is, risk-free) pay-off that would make a risk-averse investor indifferent about opting for either the certain pay-off or a higher expected pay-off that is subject to risk.⁵ In other words, this alternative approach is based on the principle that a risk-averse investor would be indifferent between owning the subject asset with its expected cash flows and owning an alternative asset with lower but certain cash flows.

This latter approach goes by various names, including the 'Modern' and the 'certainty equivalent' DCF. We prefer the latter terminology as it is more descriptive of the approach, and therefore use it in the remainder of this chapter. The

3 International Valuation Standards Council (IVSC), IVS 105: Valuation approaches and methods states that the income approach 'provides an indication of value by converting future cash flows to a single current value. Under the income approach, the value of an asset is determined by reference to the value of income, cash flow or cost savings generated by the asset'. IVSC: ¶ 40.1.

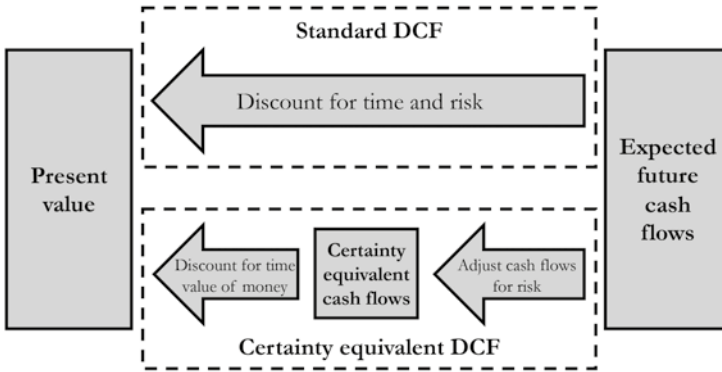
4 In both cases, we refer to 'systematic' risks. By systematic risks, we mean those risks that cannot be diversified away (for example, some of the oil price risk associated with the value of an oil well cannot be fully diversified away by holding a broad portfolio of assets and, therefore, is a systematic risk). This is because, according to financial theory, the market does not compensate investors for taking on risk that they can diversify away.

5 For instance, an investor might be indifferent between receiving \$30 with certainty and receiving an uncertain pay-off that can be either \$0 or \$100 with equal probability. In this example, \$30 would be the certainty equivalent of the risky cash flow with expected pay-off of \$50 ($\$0 * 50\% + \$100 * 50\% = \$50$). The exact value or discount of the certainty equivalent will depend on the investor's degree of risk aversion.

term 'Modern' DCF is also more open to misinterpretation, considering that, as far as we are aware, this method has been discussed in academic circles since at least the 1960s.⁶

The two approaches are summarised in Figure 1, below.

Figure 1: Summary of standard DCF and certainty equivalent DCF



The term 'Modern' DCF is sometimes used to encompass more than just the methodology described above, whereby the subject asset's expected cash flows are replaced with their certainty equivalents and then discounted at a risk-free rate.

First, the term is sometimes used to encompass the incorporation of an additional concept, real options, into a valuation.⁷ Real options can be defined as management's 'opportunities to modify projects as the future unfolds'.⁸ As an example of a real option, the manager of an oil well may be able to shut-in (stop) production when oil prices decline and restart production if oil prices subsequently increase. In fact, real options can be used to complement any income

⁶ For example, in Alexander A Robichek and Stewart C Myers, 'Conceptual problems in the use of risk-adjusted discount rates' in *The Journal of Finance*, Volume 21, Issue 4 (December 1966), pp. 727–30.

⁷ For instance, the claimant in *Tethyan v. Pakistan* submitted that the 'Modern' DCF 'incorporates management's flexibility to choose different options in response to evolving circumstances'. *Tethyan v. Pakistan Award*, ¶ 224.

⁸ Richard A Brealey, Stewart C Myers and Franklin Allen, *Principles of Corporate Finance*, Chapter 10 (tenth edition, 2010), p. 240.

approach, including one performed using the standard DCF.⁹ In other words, the use of real options is not a necessary element of a 'Modern' or certainty equivalent DCF, and real options can be used in other contexts.

Second, the term is sometimes used to encompass adjustments made to expected cash flows to account for asymmetric risks.¹⁰ An example of an asymmetric risk is the risk of a blowout of an oil well. In fact, asymmetric risks, or indeed any other risks that are not systematic, should be reflected in the expected cash flows under any income approach, including the standard DCF.

Thus, the difference between the 'Modern' or certainty equivalent DCF and the standard DCF approaches is in the way they adjust for systematic risks.

Theoretical appeal of the certainty equivalent DCF

As discussed above, the certainty equivalent DCF has been discussed in academic circles for decades. It is also discussed in the International Financial Reporting Standards (IFRS), which state that both the standard DCF and the certainty equivalent DCF can 'in theory' be used to assess the fair value of a project or company.¹¹

To present the theoretical appeal of the certainty equivalent DCF, it can be helpful to consider the arguments presented to the tribunal in the *Tethyan v. Pakistan* award.

In particular, the claimant's expert, who put forward a valuation based on this approach, argued that the certainty equivalent DCF can resort to 'very good market signals as to how the market values [systematic] risks'.¹²

9 For instance, Van Putten and MacMillan state that 'it seems clear to us that discounted cash flow analysis and real options are complementary and that a project's total value is the sum of their values. The DCF valuation captures a base estimate of value; the option valuation adds in the impact of the positive potential uncertainty'. See Alexander B van Putten and Ian MacMillan, 'Making Real Options Really Work', *Harvard Business Review* (December 2004).

10 For instance, the claimant in *Tethyan v. Pakistan* submitted that '[t]he modern DCF method more accurately discounts future cash flows for . . . asymmetric risks'. *Tethyan v. Pakistan* Award, ¶ 224.

11 International Financial Reporting Standards (IFRS), 13, ¶ B29. As explained below, the IFRS definition of 'fair value' is broadly the same as the IVS definition of 'market value', discussed below.

12 *Tethyan v. Pakistan* Award, ¶ 346. As discussed in footnotes 7 and 10 above, the claimant also submitted that this method more accurately accounts for asymmetric risks and can incorporate management's flexibility. However, as set out above, these are in fact not unique – or necessary – features of the certainty equivalent DCF.

The reference to market signals is to the price of hedging contracts, such as futures or forward contracts.¹³ Futures and forward contracts involve a commitment to sell (or purchase) a given number of units of a product at a contractually agreed future date at a certain price. The use of such contracts eliminates the uncertainty in the price at which the predetermined number of units can be sold at the future date. Therefore, the prices of hedging contracts could, in theory, allow valuers to rely on market signals to assess certainty equivalent future prices of certain traded commodities. These, in turn, could be used to estimate certainty equivalents of select components of an asset's net cash flows.

The claimant's expert also referred to a 2012 letter from the Special Committee of the Canadian Institute of Mining, Metallurgy and Petroleum on the Valuation of Mineral Properties (CIMVal) to the International Valuation Standards Council (IVSC).¹⁴ In this letter, CIMVal explains that its members generally use an income approach 'where there is sufficient information available to estimate future cash flows generated by a metals-related investment',¹⁵ and describes the standard DCF and the certainty equivalent DCF as two income approaches used to value these investments.¹⁶

CIMVal points to two reasons a valuer might use the certainty equivalent DCF. First, the certainty equivalent DCF allows for the use of targeted risk adjustments for different components of the net cash flows.¹⁷ Second, CIMVal

13 This approach was used by the claimant's expert in *Tethyan v. Pakistan Award*, ¶ 1425.

14 The tribunal considered the letter to be 'good evidence of the valuation methodology likely in practice to have been used by an actual buyer in the limited market for large-scale mining enterprises at the relevant time'. *Tethyan v. Pakistan Award*, ¶¶ 347, 348.

15 Letter to IVSC on behalf of CIMVal (Special Committee on the Valuation of Mineral Properties at the Canadian Institute of Mining, Metallurgy and Petroleum), 22 October 2012, available at <https://paperzz.com/doc/7603199/012-cimval---international-valuation-standards-council> (last accessed 18 October 2022).

16 CIMVal also states that the certainty equivalent DCF is 'a recognized DCF method for fair value estimates under accounting guidelines and well supported in valuation and finance theory literature'. Letter to IVSC, op. cit. note 15. We discuss the academic commentary surrounding the certainty equivalent DCF and the IFRS's recognition of this approach above.

17 CIMVal states: 'A CeQ [certainty equivalent] DCF approach does not make use of an aggregate discount rate though an implied aggregate discount rate can be derived. The CeQ approach uses targeted risk-adjustments for select cash flow components. These adjustments are done within the CAPM [capital asset pricing model] framework. Market-related uncertainties such as metal and energy prices are risk-adjusted with the CAPM while project-specific uncertainties may be modelled directly with no risk-adjustment. A residual risk adjustment may be necessary to adjust previously risk-adjusted cash flows for risk not explicitly recognized in the model before a final adjustment for the time value of money.' Letter to IVSC, op. cit. note 15.

considers a reason that the certainty equivalent DCF may be used for long-life assets is that it does not assume that risk compounds constantly over time.¹⁸ However, academics and CIMVal acknowledge that, in principle, the standard DCF approach can be adjusted to deal with both these issues, if that were to be desired by the valuer.¹⁹

Therefore, the main appeal of the certainty equivalent DCF, relative to other income approaches, is that, in theory, it can allow a valuer to rely on market information to adjust expected cash flows for systematic risks. We discuss the practical challenges with achieving this below.

Challenges of implementing the certainty equivalent DCF in practice

As explained above, valuers using the certainty equivalent DCF often rely on futures and forward contract prices as market signals to estimate certainty equivalent cash flows for select cash flow components of an asset's net cash flows.²⁰

Futures and forward contracts are most prevalent in commodity markets. Hence some valuers propose that the certainty equivalent DCF can be used to value commodity assets, including projects in the resource and power sectors.²¹ In

18 CIMVal states: 'A by-product of using the CeQ [certainty equivalent] DCF method is that [the] effective aggregate discount rate implied by this analysis can change with the variation of cash flow uncertainty as a result of changes in operating leverage and other project characteristics. This may be one reason that this approach is used.' Letter to IVSC, op. cit. note 15.

19 In a standard DCF, different discount rates can in principle be used for different cash flows or time periods, although this is rarely done by market participants in practice. In response to the question 'Do you use multiple discount rates to reflect the changing risk profile as an extractive process moves through its life cycle?', CIMVal states: 'Sometimes. For example, in cases where a static DCF [standard DCF] is being used, higher discount rates may be applied to reflect uncertainties not related to time (such as applying higher discount rates to more geologically uncertain resources)'. Letter to IVSC, op. cit. note 15. Brealey, Myers and Allen (op. cit. note 8, p. 233) state that 'where risk clearly does not increase steadily', one should either 'break the project into segments within which the same [risk-adjusted] discount rate can be reasonably used' or 'use the certainty-equivalent version of the DCF model'.

20 Although there may be other methods by which certainty equivalent cash flows can be obtained from expected cash flows, generally these methods are purely academic, rely on subjective adjustments or are difficult to apply in practice. For example, 'utility functions', which specify the level of 'utility' of an individual for different financial outcomes, can in theory be used to assess certainty equivalent cash flows, but it is not practically possible to accurately assess investors' utility functions. See Professor Aswath Damodaran, 'Risk adjusted value', pp. 10–11.

21 For instance, CIMVal stated in its 2012 letter that the certainty equivalent DCF 'is used for select types of real assets such as natural resource projects'. Letter to IVSC, op. cit. note 15.

other sectors (for instance, hospitality), such contracts are generally not available to eliminate systematic risks of select cash flow components. Therefore, in the following discussion, we focus on resource projects.

The first challenge with using the certainty equivalent DCF approach is that resource projects typically have a lifespan of several years to a few decades. This can be substantially longer than the maturity of liquid hedging contracts. There is often no market, let alone a liquid market, for futures and forward contracts beyond a few initial years.²² This is illustrated in the table below, which shows the average daily traded value of front month and longer maturity futures contracts for different commodities.

Table 1: Futures contracts, average daily value of contracts traded in 2021/22 (US\$ million)²³

Commodity	1 month	1 year	2 years	3 years	4 years
Oil	15,861.8	356.8	52.4	6.4	1.0
Copper	2,274.9	49.5	14.7	1.8	0.7
Aluminium	1,367.8	33.6	3.2	0.4	0.0

As Table 1 shows, liquidity drops off steeply the further out the maturity of the futures contract. For example, there is currently limited traded value in futures contracts with expiry beyond three years for oil and copper and beyond two years for aluminium.²⁴ In such illiquid markets, prices may not act as reliable market signals. Further into the future, there is often no market for futures and forward contracts at all.

22 Another challenge is that publicly traded futures contracts relate to the delivery of a particular commodity (of a particular standard) at a particular location. Therefore, there may be a mismatch between the commodity used in the project and that underpinning the futures contract.

23 Average daily value traded between 1 July 2021 and 30 June 2022. This is based on generic futures contracts expiring in 1 month, 13 months, 25 months, 37 months and 49 months, respectively. Oil is based on futures contracts for Brent oil. Copper and aluminium are based on futures contracts traded on the London Metal Exchange. Source: FTI Consulting analysis of Bloomberg data.

24 In addition, in all three cases, the value of the futures contracts traded with expiry in one year (and thereafter) was dwarfed by the value of one-month contracts, which some analysts use to assess spot prices.

As a result, valuers using this approach must resort to projecting certainty equivalent prices forward (often for most of the duration of the DCF analysis), for instance by extrapolating from (illiquid) long-term futures and forward prices or by adjusting long-term price forecasts. These forecasts will necessarily involve the valuers' judgement.

As an illustration of this issue, in *Tethyan v. Pakistan*, the claimant's expert relied on the forward curve for commodity prices and extrapolated prices beyond this to estimate certainty equivalent cash flows for years extended into the future. The tribunal observed that '[i]t is undisputed that there is no market pricing of the systematic risk extending over a 56-year mine life'. To account for this, the tribunal in that case applied a residual risk reduction of 25 per cent to the claimant's expert's assessment of the project's cash flows to adjust for this long-term pricing risk.²⁵

Furthermore, resource projects' future production and sales volumes are usually uncertain (often highly uncertain in early-stage projects), and these volumes may have a significant systematic risk component.²⁶ To the extent that there are systematic risk components to forecast future production, a valuer using the certainty equivalent DCF should also adjust expected cash flows for these risks when arriving at the certainty equivalent cash flows.

Another challenge with the implementation of this approach is that, in addition to adjusting cash flows for revenue pricing and volume risk, a valuer using the certainty equivalent DCF needs to adjust the other components of net cash flows for other sources of systematic risk. For instance, resource projects are prone to delays and capital expenditure cost overruns. According to studies from 2014 and 2022, accountancy firm EY found that 73 per cent of large oil and gas projects take longer to complete than forecast and 64 per cent of large mining projects

25 Specifically, the tribunal stated: 'It is undisputed that there is no market pricing of the systematic risk extending over a 56-year mine life and Prof. Davis specifically agreed at the Hearing on Quantum that the cash flows acquired by the buyer would remain "highly uncertain and highly risky." The Tribunal therefore concludes that it is likely that a buyer would have assigned a price to assuming this long-term risk by reducing its expectation of the cash flows that the Reko Diq project would generate over the life of the mine by 25%. This results in a reduction of the value of Claimant's investment by USD 2,430 million.' *Tethyan v. Pakistan* Award, ¶¶ 1425, 1440, 1441, 1521 and 1596.

26 For example, companies may ramp up resource production during periods of high commodity prices, and slow down production during periods of low prices. This would be an issue if a single expected production forecast is modelled, but can be theoretically addressed through the combination of a certainty equivalent DCF approach and a Monte Carlo simulation (real options pricing).

suffer cost or schedule overruns (or both).²⁷ To the extent that there are systematic risk components to any such delays and cost overruns, a valuer using the certainty equivalent DCF should adjust expected cash flows for these risks when arriving at the certainty equivalent cash flows.²⁸

A valuer also needs to account for any systematic risks associated with the various components of costs in a resource project. Although forward or futures contracts may exist for some of these components, such as the price of steel, markets for these contracts are also illiquid beyond a few years. For the remaining components, such as labour costs and taxes, futures contract prices are not available. These costs can be substantial, are subject to change, particularly over long periods, and these changes may also have a significant systematic component to them. They will need to be adjusted for, therefore, in arriving at certainty equivalent cash flows, without the possibility of relying on any market signals.

As a result, when estimating certainty equivalent cash flows as part of a certainty equivalent DCF, it is not possible to rely solely on market evidence provided by futures and forward prices. Rather, the valuer will need to make further assumptions, which will invariably involve substantial judgement. This is recognised in the CIMVal letter, in which CIMVal states that '[a] residual risk adjustment may be necessary to adjust previously risk-adjusted cash flows for risks not explicitly recognized in the model before a final adjustment for the time value of money'.²⁹

The choice of valuation approach is not performed in a vacuum. Rather, valuers will consider what the best valuation approach to apply is, given the evidence available and the specific circumstances that apply to each case. According to the IFRS, whether the certainty equivalent DCF or the standard DCF should be applied 'will depend on facts and circumstances specific to the asset or liability being measured, the extent to which sufficient data are available and the judgment applied'.³⁰

As described above, under the standard DCF, rather than adjusting cash flows for systematic risk, valuers will adjust the valuation for systematic risk by estimating a risk premium that is incorporated in the discount rate. Different valuers may assess different risk premiums for the same project at the same date

27 'Spotlight on oil and gas megaprojects', EY, 2014. 'How better project management can boost mining's capital productivity', EY, 2022.

28 For example, initial capital expenditure may include significant labour costs, and those costs may have a systematic component.

29 Letter to IVSC, op. cit. note 15.

30 IFRS 13, ¶ B30.

if they rely on different evidence. Although the valuer's judgement is required in deciding what evidence to rely on, this evidence is usually based on verifiable market data. For instance, under the capital pricing asset model (CAPM) model (the model most commonly used to estimate risk premiums), valuers of US companies and projects need to determine the equity risk premium and the project or company's beta.³¹ These variables can be estimated based on observable data on market returns, prices and correlations.³²

Therefore, although the certainty equivalent DCF's proposition of relying on market signals to adjust expected cash flows for systematic risks is appealing in theory, in practice these market signals are often unavailable for large components of an asset's expected net cash flows. Adjusting such components to assess their certainty equivalent values typically requires substantial judgement by the valuer, as there is often little or no evidence available of what an appropriate adjustment would be. The standard DCF also requires judgement by the valuer when assessing the risk premium to apply to the discount rate. However, the judgement required in this respect is usually to assess how much weight should be put on different pieces of available market evidence.

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- 31 There is debate in academic circles regarding the validity or otherwise of the models used to estimate risk premiums, often centred around the CAPM. A summary of this literature is outside the scope of this chapter. For the interested reader, Brealey, Myers and Allen (op. cit. note 8, p. 196) summarise their opinion on the CAPM as follows: 'The capital asset pricing model captures these ideas in a simple way. That is why financial managers find it a convenient tool for coming to grips with the slippery notion of risk and why nearly three-quarters of them use it to estimate the cost of capital. It is also why economists often use the capital asset pricing model to demonstrate important ideas in finance even when there are other ways to prove these ideas. But that does not mean that the capital asset pricing model is ultimate truth. We will see later that it has several unsatisfactory features, and we will look at some alternative theories. Nobody knows whether one of these alternative theories is eventually going to come out on top or whether there are other, better models of risk and return that have not yet seen the light of day.'
- 32 For example, some valuers estimate the equity risk premium using the historical performance of equity compared with government bonds. Other valuers use current market prices and forecasts to estimate an implied future equity risk premium. The equity risk premium is generally multiplied by the 'beta', which valuers typically estimate using the correlation between the historical returns on equity of similar companies and the historical returns of the market as a whole, although different valuers may calculate this differently (for example, using different market indexes, time periods and time intervals).

Lack of use of the certainty equivalent DCF by market participants

Market value and fair market value are standards of value commonly used in international arbitration. The International Valuation Standards (IVS) define 'market value' as 'the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion'.³³ This is broadly similar to the Organisation for Economic Co-operation and Development and the US Internal Revenue Service definitions of 'fair market value' and the IFRS accounting standards definition of 'fair value'.³⁴

Market value and fair market value should reflect the price agreed 'between a willing buyer and a willing seller in an arm's length transaction'.³⁵ The IVS explain that to assess market value using an income approach, a valuer should use 'inputs and assumptions that would be adopted by [market] participants'.³⁶ It follows, therefore, that a relevant factor when evaluating a valuation in the context of an assessment of (fair) market value is whether a valuer's approach reflects the inputs and assumptions that market participants would adopt in the same circumstances. When this is not the case, the likelihood will increase that the subject valuation may not reflect what willing parties would have agreed to in the market.

A potential drawback of the certainty equivalent DCF approach, when used to assess market value or fair market value, is that it does not appear to be widely used by market participants when valuing companies or projects.

In *Tethyan v. Pakistan*, the claimant's expert pointed to one transaction in the mining industry in which it was applied.³⁷ However, according to the respondent, this transaction was described in the press as 'the worst mining deal ever'.³⁸ It is

33 IVS 104 Bases of Value, IVSC, ¶ 30.1.

34 The Organisation for Economic Co-operation and Development defines 'fair market value' as 'the price a willing buyer would pay a willing seller in a transaction on the open market', while the US Internal Revenue Service defines it as 'the price at which the property would change hands between a willing buyer and a willing seller, neither being under compulsion to buy or sell and both having reasonable knowledge of relevant facts'. IFRS 13 explains the 'fair value' of an asset or liability 'is a market-based measurement', namely 'the price at which an orderly transaction to sell the asset or to transfer the liability would take place between market participants at the measurement date under current market conditions'. IVS 104 Bases of Value, IVSC, ¶¶ 30.1, 100.1, 110.1; and IFRS 13, ¶ 2.

35 IVS 104 Bases of Value, IVSC, ¶ 30.1.

36 IVS 104 Bases of Value, IVSC, ¶ 30.5.

37 *Tethyan v. Pakistan* Award, ¶ 254.

38 *ibid.*, ¶ 254.

not clear, therefore, that this transaction reflected the 'inputs and assumptions' normally adopted by market participants. The authors are not aware of any other transactions in which the certainty equivalent DCF was used in mining or in any other sector.³⁹

In *Tethyan v. Pakistan*, in response to the respondent's argument that the certainty equivalent DCF is not used in the mining industry, the claimant's expert referred to the 2012 CIMVal letter described above.⁴⁰ As summarised above, CIMVal identifies both the certainty equivalent DCF and the standard DCF as appropriate income approaches to value metals-related investment where sufficient information is available to estimate future cash flows, and discusses why a valuer might use the certainty equivalent DCF. In this letter, CIMVal does not suggest that this approach is widely used by market participants.⁴¹

We are also not aware of any surveys that discuss the assumptions adopted by market participants in the certainty equivalent DCF, which may reflect that this approach is relatively uncommon.

In our experience, when a market participant has used an income approach to value an asset, this has involved the use of the standard DCF approach. There are also many surveys documenting the assumptions used by valuers and managers when assessing the risk-adjusted discount rate that is used in the standard DCF approach⁴² and, therefore, of the 'inputs and assumptions' that are being adopted in practice by market participants.

The relative use of the standard DCF and certainty equivalent DCF among market participants is reflected in their relative use in arbitration. For instance, we reviewed the 24 publicly available arbitration awards of damages of more than

39 This includes the experience of one of the authors at various investment banks (between 1994 and 2015, Stuart Amor worked at Credit Suisse, ING, UniCredit and RFC Ambrian) as either an equity analyst covering the oil and gas industry or as a global head of research overseeing the bank's coverage of all sectors, including mining.

40 *Tethyan v. Pakistan* Award, ¶ 347.

41 In its 'Standards and Guidelines for Valuation of Mineral Properties', dated February 2003, CIMVal comments that the certainty equivalent DCF was '[n]ot widely used and not widely understood but gaining in acceptance'. CIMVal refers to the certainty equivalent DCF as an 'Option Pricing' income approach; available at <https://mrmr.cim.org/media/1020/cimval-standards-guidelines.pdf> (last accessed 18 October 2022).

42 For instance, Professor Pablo Fernandez regularly conducts surveys of the risk-free rate and equity risk premium used by analysts, managers of companies and finance and economics professors. For example, see Survey: market risk premium and risk-free rate used for 95 countries in 2022, Fernandez et al., 24 May 2022.

US\$100 million recorded on the 'italaw' website.⁴³ We found that, of the 14 awards that identify the valuation approach relied on by the tribunal, the tribunal used the income approach in 11 cases.⁴⁴ All 11 of those awards relied on the standard DCF rather than other income approaches.⁴⁵ Other than *Tethyan v. Pakistan*,⁴⁶ we are not aware of any case in which the certainty equivalent DCF was relied on in some capacity in awarding damages.

As discussed above, the suitability of different income approaches depends on the available evidence and specific circumstances of each case. The evidence of the limited use of the certainty equivalent DCF by market participants, relative to the standard DCF, suggests that in most cases the specific circumstances and available evidence might better support a standard DCF approach.⁴⁷ The limited use of the certainty equivalent DCF does not appear to be explained by the purported recency of this methodology, since, as discussed above, this approach has co-existed with the standard DCF for around six decades.

Conclusions

The main appeal of the certainty equivalent approach is that, in theory, it can allow a valuer to rely on market information to adjust expected cash flows for systematic risks, such that these risk-adjusted cash flows can then be discounted

43 We used the filter on the italaw website (<https://www.italaw.com/>) to identify all awards for which damages of more than US\$100 million were recorded as at August 2022.

44 Some of these 11 awards combined the income approach with other approaches. For instance, in ICSID Case No. ARB/13/1, the tribunal relied on the income approach for some heads of claim and the cost approach for others. In the remaining three awards where it did not rely on an income approach, the tribunal instead used a market (comparable) approach, a cost approach and a combination of a market approach and a cost approach.

45 Based on our review, the tribunal relied on a standard DCF approach in the awards in the following 11 cases: SCC Case No. V 2014/163; ICC Case No. 20549/ASM/JPA (C-20550/ASM); ICSID Cases No. ARB(AF)/09/1, No. ARB/13/1, No. ARB/08/6, No. ARB/13/36, No. ARB/13/31, No. ARB/11/25, No. ARB/07/27 and No. ARB/15/44; and MCCI Case No. A-2013/29.

46 The *Tethyan v. Pakistan* award was not included in the results of our italaw search described above as its damages were not recorded on the italaw website.

47 The limited use of the certainty equivalent DCF relative to the standard DCF might also be related to the complexities involved in estimating certainty equivalent cash flows as discussed above. For instance, Professor Damodaran explains that estimating a discount rate using risk and return models such as CAPM is 'a convenient way of adjusting for risk and it is no surprise that they are in the toolboxes of most analysts who deal with risky investments'. Regarding the estimation of certainty equivalent cash flows, he explains that the practical challenges of doing so remain 'daunting'. Damodaran, 'Risk adjusted value', pp. 5 and 10.

at the risk-free rate. This approach differs from the standard DCF, the most commonly used income approach, in which the systematic risk is accounted for by applying a risk premium to the discount rate, which is then applied to the expected cash flows.

In this chapter, we have explored two relevant factors to consider when evaluating a valuation performed using the certainty equivalent DCF approach.

First, the theoretical appeal of the certainty equivalent DCF can be challenging to exploit in practice. We explain that, in most circumstances, the information that would allow a valuer to rely on market signals to adjust all the components of a project or company's expected net cash flows for systematic risk is usually unavailable or incomplete. As a result, valuers may need to use their judgement to make assumptions for which there is often little or no market evidence. Although valuers applying the standard DCF will also need to rely on judgement to assess the appropriate risk premium, that judgement will usually involve deciding what weight should be applied to several different pieces of available market data.

Second, standards of value commonly used in damages assessments in arbitration, such as fair market value and fair value, explain that the valuation approach should reflect the inputs and assumptions that would be adopted by market participants. This may be problematic for the certainty equivalent DCF approach because this method does not appear to be commonly used by market participants to value companies or projects. It may be difficult, therefore, to assess whether the certainty equivalent assumptions used by a valuer would in fact reflect those of market participants. Despite co-existing with the certainty equivalent DCF for around six decades, the standard DCF remains much more commonly used by market participants, including in the industries that are in theory well suited to the application of the certainty equivalent DCF (namely, mining, oil and gas and power).

Use of the certainty equivalent DCF in *Tethyan v. Pakistan*

The *Tethyan v. Pakistan* award, in which the tribunal awarded US\$4.1 billion in damages,¹ arose from a dispute between Pakistan and Tethyan, an Australian mining company, in relation to a mining licence application by Tethyan.²

The tribunal in this matter expressed a preference for an income approach, stating 'the Tribunal is convinced that in the particular circumstances of this case, it is appropriate . . . to determine [the claimant's] future profits by using a DCF method'.³

The claimant's expert used a certainty equivalent DCF to assess damages.⁴ The tribunal observed that it had 'not been provided with a traditional [standard] DCF calculation by either Party, or any other income-based calculation' besides the claimant's expert's certainty equivalent DCF.⁵ The tribunal had to decide, therefore, whether to rely on the claimant's expert's certainty equivalent DCF or to use an alternative to the income approach.

The tribunal decided to rely on the certainty equivalent DCF prepared by the claimant's expert. However, the tribunal introduced further 'residual risk adjustments' to the certainty equivalent cash flows for systematic risks, which it considered had not been 'fully captured in the available market data' and the extrapolation of such data.⁶ In particular, the tribunal concluded that 'it is likely that a buyer would have assigned a price to assuming this long-term risk by reducing its expectation of the cash flows'. The tribunal therefore reduced the cash flows assessed by the claimant's expert by 25 per cent, leading to a reduction in value of US\$2,430 million (about 60 per cent of the tribunal's pre-interest award of US\$4,087 million).⁷

1 *Tethyan v. Pakistan* Award, ¶¶ 1601, 1858.

2 *ibid.*, ¶ 86.

3 *ibid.*, ¶ 335.

4 *ibid.*, ¶ 336.

5 *ibid.*, ¶ 1651.

6 *ibid.*, ¶ 1521.

7 *ibid.*, ¶¶ 1600, 1601.

CHAPTER 17

Market or Comparables Approach

Richard Hern, Zuzana Janeckova and Yue Yin¹

Introduction

The market or comparables approach is one of the three main valuation approaches commonly used for the purpose of quantum damages assessment in international arbitration.²

Within the valuation community, the market approach is typically defined as a valuation method that determines the value of an asset based on observable market prices of other assets with similar characteristics, referred to as ‘comparables’. The comparables valuation method relies on the economic principle of ‘law of one price’, which states that two assets with similar characteristics should trade at a similar price, otherwise an arbitrage opportunity would exist.³

In general, the most compelling evidence of the market value of an asset is the actual price received in an arm’s-length transaction for the sale of that very asset. Hence, if the asset subject to the dispute is directly listed or has been sold recently, it is possible to use stock price data or recent transaction prices as a basis

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- 1 Richard Hern is a managing director, Zuzana Janeckova is an associate director and Yue Yin is a consultant at NERA Economic Consulting
 - 2 The three main methods for estimating the market value of an asset or business are: (1) market-based approach: estimates market value of an asset or business by reference to similar businesses, business ownership interests, and securities that have been sold in the market (comparables analysis); (2) income-based approach: estimates the market value of an asset by calculating the present value of expected future benefits (e.g., discounted cash flows or dividends); and (3) asset-based approach: estimates the market value of a business as the market value of its assets less the market value of its liabilities (e.g., based on adjusting the assets and liabilities in the balance sheet to their market value).
 - 3 An arbitrage is defined as a trade that leads to a certain profit with no risk. In efficient markets, market participants move market prices by trading on these opportunities, eliminating them as a result.

for estimating the market value of the asset directly. In practice, however, a robust measure of the relevant market price of the asset under dispute may not be available, because, for example:

- the business is privately held or is a subsidiary of a larger group;
- transactions involving the asset have happened but are outdated and may not reflect current market conditions; or
- the business is listed but the changes in market values may not directly reflect the ‘damage’ that has been suffered (e.g., the changes also reflect the possibility of litigation or the market is illiquid).

In such cases, valuation experts may have to rely instead on listed market prices or prices paid in recent transactions of ‘comparable’ assets to estimate the market value of the asset under dispute. The comparables valuation method is generally regarded as a complement to the traditional discounted cash flow (DCF) method. Both rely on the same fundamental principle that economic agents value assets based on the expected future benefits from owning these assets. In the case of the DCF method, expected benefits in the form of cash flows are explicitly modelled and discounted back to the valuation date using an appropriate discount rate, which reflects risks around the expected cash flows. In the case of a comparables valuation, prices of the comparable assets themselves reflect the expectations of market participants around future cash flows and risks for these assets. As a result, the comparables method and the DCF method complement each other and, when implemented correctly, should produce valuation results that support each other, given that they are both based on fundamental drivers of value: the future expected future benefits of owning a given asset.

There are many challenges with applying a comparables-based valuation framework, not least the challenge of finding relevant market comparators, which may be difficult if the asset has rare characteristics or uncommon product markets. There are also challenges involved in adjusting comparator data for different characteristics, such as operating geographies, regulatory environment or competitive position. However, notwithstanding these challenges, the use of a comparables valuation framework is a very common approach and, since it is based on real market data, it has a strong intuitive appeal for application in damages assessments. It can also provide important cross-checks to other methods of valuation.

The rest of this chapter is structured as follows. First, we discuss the key steps of a standard comparables valuation approach. Then we present two case studies, illustrating when the comparables valuation method may be appropriate and when not. Finally, we discuss possible extensions to a standard comparables valuation approach that can be used in arbitration cases.

Key steps of implementing a comparables-based valuation

The key steps in estimating the market value of an asset using the comparables valuation method include the following:

- *Step 1:* Understand the characteristics and valuation drivers of the asset being valued (these may include geography, sector, profitability, growth prospects, cost structure, competitive position, etc.).
- *Step 2:* Obtain a set of comparable assets with observable market prices.
- *Step 3:* Calculate appropriate valuation multiples for the comparable assets (e.g., enterprise value (EV) to earnings before interest, tax, depreciation and amortisation (EBITDA)).⁴
- *Step 4:* Apply the comparables-based multiples to the asset being valued.
- *Step 5:* Review the results and cross-check with alternative valuation methods.

Step 1: Understand characteristics and valuation drivers of asset being valued

As with any other valuation technique, the first step in a comparables-based valuation is to understand the asset being valued and to identify the key value drivers. It is important to have a good understanding of the asset's characteristics, such as its geography, industry, business model, recent financial performance, the economic environment in which it operates, the outlook for the business and industry as a whole and any other relevant factors that may affect the asset's value.

If the asset being valued is a large or even a publicly listed company, then it is typically possible to obtain relevant information from the company's annual accounts, financial data providers, analyst reports or specialised industry reports. If the asset is small, privately held or rarely traded, information may be less readily available. In this situation, it is important to review all available materials concerning the company's business operations and finances (including, for example, management accounts, documentation prepared for any historical sales of the asset or management business plans) to extract information that may be used to determine the relevant value drivers.

This step is very important, since a comparables-based valuation is only as good as the comparators themselves, and a thorough understanding of the asset being valued is the necessary prerequisite for identifying good comparators. In

⁴ The ratio of enterprise value (EV) to earnings before interest, taxes, depreciation and amortisation (EBITDA).

addition to the company's characteristics, it is also important to understand the industry-specific value drivers and fundamental metrics, which are useful both for finding relevant comparators and for identifying appropriate valuation multiples.

For example, consider a situation in which the valuation expert is trying to estimate the market value of a private company (i.e., stock price data is not available) that is a telecommunications provider in a small emerging market country. Without further research, a naïve approach may be to identify relevant comparators as international listed telecommunications companies. However, further research may reveal that the target company offers primarily a fixed line telephony service and has been experiencing declining revenues and profit margins for the past few years because of tough competition in the mobile market, which had been growing at the expense of the fixed line market. Using this additional information about the company's characteristics, the valuation expert would screen the universe of listed comparators more effectively, identifying only companies that provide a similar service (i.e., primarily fixed lines) and have been subject to similar market trends as relevant comparators for the target company.

Step 2: Obtain a set of comparable assets with observable market prices

The second step in a comparables-based valuation is to identify a set of assets with observable market prices that most closely resemble the characteristics and value drivers of the asset being valued. Ideally, the valuation expert wants to find comparable assets that closely match all the characteristics of the asset being valued as identified in Step 1. Of course, in reality, no two assets are identical, and the focus, therefore, should be on key value drivers that affect expected cash flows and risks.

When searching for comparators, the general approach is to start with the universe of all potentially comparable assets with observable market prices, and to narrow down the list using a set of selection criteria that is transparent and replicable.

For example, if the valuation required identifying a comparator set for an oil and gas company operating in Europe, the first step could be to build an initial candidate list based on the asset class, industry and operating geography (e.g., European publicly listed equities within the oil and gas industry). When building the initial list, it is also important to check that the market prices for potential comparators reflect a reliable estimate of their market values, for example by ensuring that the stock prices of listed candidate comparators are liquid, or when considering comparable private transactions, ensuring that these were undertaken on an arm's-length basis, since a comparator is useful only if there is a reliable estimate of its market price.

There is no universal method of narrowing down the initial list to obtain the final comparator set and a significant degree of judgement is required at this stage. Ultimately, the objective of the selection process is to ensure that the comparators and the target asset share similar prospects in terms of expected future cash flows and risks, which are the key drivers of value. Factors that drive future cash flows and risks will differ across assets, but we provide some examples in Table 1, below, of quantitative and qualitative factors that can be analysed when assessing comparability of the candidates to the target asset.

Table 1: Examples of quantitative and qualitative factors considered when selecting comparators

More quantitative factors	
	Asset characteristics (e.g., size or scale)
	Historical and expected profitability (e.g., profit margins, return on assets)
	Historical and expected growth rates (e.g., revenue growth rate)
	Historical and expected volatilities (e.g., earnings volatility)
	Capital structure and debt considerations
	Timing (when did the comparable transaction occur)
More qualitative factors	
	Business characteristics (e.g., type of product or service – luxury v. necessity; customer and supplier base – concentrated v. diversified, competitive position and risks, technological risk, cost structure)
	Location/geography (e.g., macroeconomic factors, regulatory rules, tax rules)
	Stage in a company's life cycle (early stage v. mature business)

In addition to the above factors, it is also important to consider whether there are any idiosyncratic factors affecting the market prices of potential comparators. For example, valuation experts may want to exclude comparators that are experiencing financial distress, are involved in merger or acquisition activities, or are undergoing corporate restructuring, since these company-specific events would affect the market prices of these assets, making them potentially not comparable to the asset being valued.

Finally, there is often a trade-off between the number of comparators and comparability: although it may be beneficial to have a larger comparator set to increase the reliability of the analysis, this often comes at a cost of reducing comparability. There is no rule on the minimum number of comparators required for a comparables-based valuation and judgement is needed. In some cases where listed comparators are abundant, it may be possible to obtain a relatively sizeable comparator set even when applying strict screening criteria. However, often in disputes, the asset being valued has some unique characteristics such that few

comparable assets may be available. In these cases, the valuation expert may need to apply judgement and make necessary adjustments to the available comparators to extract a relevant estimate of market value for the target asset.

Step 3: Calculate appropriate valuation multiples for comparable assets

Once the comparator companies are selected, the next step is to select and calculate their valuation multiples, which typically measure the ratio of value in the numerator to a scaling factor, such as size or cash flows, in the denominator.

As with the selection of comparators, the choice of the valuation multiple is a matter of judgement and depends on the asset being valued. In general, valuation multiples can be divided into two groups:

- *equity multiples*: ratios of the market value of equity to some measure of fundamental value, such as earnings or sales; and
- *enterprise value multiples*: ratios of the market value of the entire company (i.e., the value of equity plus debt) to a measure of fundamental value for the entire company.

The scaling factor in the denominator can reflect a measure of earnings, revenues or other fundamental driver of value that is specific to the asset. Table 2, below, provides some examples of valuation multiples for different fundamental value drivers.

Table 2: Examples of common valuation multiples

Fundamental measure	Equity multiples	Enterprise value multiples
Earnings	Price-to-earnings (P/E)	• EV-to-EBITDA • EV-to-EBIT • EV-to-FCF
Revenues	Price-to-sales	EV-to-sales
Book value	Price-to-book	-

When choosing the relevant multiple to use, the valuation expert needs to consider the specific situation of the asset being valued and its main value drivers. Certain ratios are considered to be more relevant for some sectors (e.g., equity multiples are typically used to value financial services firms, since neither enterprise value nor operating income can be easily estimated for banks or insurance companies).⁵

5 Aswath Damodaran (2013), 'Valuing financial services firms', *Journal of Financial Perspectives*, Ernst & Young Global Financial Services Institute, Volume 1 – Issue 1, p. 14.

In addition, valuation experts sometimes consider valuation multiples that are calculated based on sector-specific operating measures. For example, for commodity companies such as oil exploration and production companies or mining companies, whose earnings are generated by selling the underlying commodity, the valuation multiple can be scaled by the number of units of the commodity in reserves (e.g., EV per barrel of oil in reserves or EV per ounce of gold in reserves). For subscription-based companies, such as internet service providers, the valuation multiple can be scaled by the number of subscribers (e.g., EV-to-subscribers). Similarly, for retailers, the value can be scaled by the number of customers (e.g., EV-to-number of customers).⁶

It is better typically to use several valuation multiples to avoid placing undue weight on any single measure. If different multiples lead to different implied valuations, then it is important to understand the reasons behind the differences and select the relevant ratios that best reflect the fundamental drivers of value. It can also be important to take account of the time profile of multiples to identify comparators that have been growing at similar rates.

Once the valuation multiples are selected, the next step is to calculate the multiples for the selected comparator set. When calculating the multiples, adjustments may need to be made, for example to account for transitory, non-recurring components of earnings that are company specific; transitory components of earnings ascribable to cyclicity (business or industry cyclicity); differences in accounting methods (when different companies' stocks are being compared) or potential dilution of earnings per share (if a price-to-earnings ratio is being used). Additional adjustments may also be necessary to account for different rights (e.g., voting or cash flow rights) associated with different classes of equity.

Step 4: Apply comparables-based multiples to asset being valued

After the valuation expert has identified a set of close comparators and calculated their valuation multiples, the next step is to apply the multiples to the asset being valued to estimate the implied market value.

To obtain a single market value estimate, it is common to use the median or the average of the valuation multiples from the comparator set.⁷ Another option is to use a range for the multiples if the valuation expert believes that neither the

6 Aswath Damodaran (2012), *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset*, Third edition, pp. 572–73.

7 Valuations based on the median are less sensitive to the presence of outliers or missing data than arithmetic averages.

mean nor the median of the comparators is representative of the target company. The use of a range also captures the uncertainty in the market value estimate. Afterwards, the valuation expert can analyse where the target company lies within the range, for example, based on which comparator is the most comparable to the target company in terms of the relevant value drivers.

The final step is to multiply the selected comparator multiple with the relevant fundamental measure of value for the target asset (e.g., EBITDA, earnings) to arrive at the estimated market value of the asset being valued.

Step 5: Review results and cross-check with alternative valuation methods

The final step of the multiples-based valuation involves sense-checking the results and comparing with other valuation methods.

One useful sense check is to step back and look at the range of the valuation multiples for the comparators and implied value for the target asset. If this range is very wide, this may indicate that some of the selected comparators were in fact not very comparable to the target asset across some important dimension and it would be necessary to go back and re-evaluate the comparator set or control for the differences in some other way. When using different valuation multiples, it is important to compare the valuation results with each other and understand the drivers of any observed differences (e.g., differences between implied values using revenue and EBITDA multiples could be explained by differences in companies' cost structures or profit margins). This analysis may reveal that a certain valuation multiple is more relevant than another or help to determine where in the range of comparator multiples the target asset is likely to lie.

Finally, it is important to cross-check the results of the multiples-based valuation against alternative valuation methods, notably the DCF. As explained in the Introduction, the two methods both rely on the same fundamental principle that the value of an asset is based on the expected future benefits of owning this asset and hence, when implemented correctly, should produce valuation results that support each other. If this is not the case, then the valuation expert should investigate whether the comparators selected are truly comparable to the target asset or whether the DCF assumptions need to be revised to reflect market expectations of future cash flows and risks for comparable assets.

Examples of using comparator-based valuations in different contexts

In this section, we present two stylised examples to illustrate that, in some circumstances, the evidence from the comparator-based valuation may represent a reliable basis for estimating a market value of the target asset, while in others, the results may not be as robust.

Example 1

Applying comparator-based valuation to a hypothetical US-regulated electric utility

We consider a hypothetical valuation of a privately owned regulated electric utility operating in the United States. The use of comparator-based evidence has a long tradition in US rate base proceedings, where it has been used for the purpose of estimating the cost of capital of regulated utilities,⁸ and the techniques used by experts for selecting relevant comparators for cost of capital estimation can also be used for a comparator-based valuation of the company itself.

For regulated utilities, the key driver of future cash flows and risks is the regulatory regime to which the utility is subject, as this determines the prices that the utility can charge its customers and consequently the profits it can earn for its investors. US electric utilities are typically subject to ‘cost of service regulation’, with regulated revenues set such that the utility recovers its costs, including a fair and reasonable return on its invested capital. The high-level regulatory rules for electric (and, indeed, also gas) utilities are common across all US states and, therefore, a reasonable starting point for selecting comparators for the hypothetical target company would be to consider all US publicly listed electric and gas utilities.

Given that the United States is a large and developed market, the initial list would be likely to include a large number of comparators, which could be further narrowed down based on relevant criteria. Experts who estimate cost of capital for US regulated utilities commonly apply a range of quantitative and qualitative criteria to exclude candidate companies from the initial comparator list, including, for example, removing comparators that do not derive the majority of their earnings from regulated activities; removing comparators that are too small or too big relative to the target company; removing companies with credit ratings below investment grade if the target is above investment grade; removing non-dividend-paying companies when the target pays dividends; or removing companies that have recently been involved in mergers or acquisitions or are undergoing restructuring.

Applying these criteria would provide a set of relevant comparators for which the valuation expert can proceed to calculate valuation multiples. In this hypothetical example, we assume the expert chooses the standard EV-to-revenue, EV-to-EBITDA and EV-to-EBIT (earnings before interest and tax) multiples, commonly used in business valuation. An additional multiple that could be used for regulated utilities includes EV-to-regulated asset base. The regulated asset

8 Jeff D Makholm (2015), ‘A Half-Century of Computing the Cost of Capital for Utilities at NERA’ (NERA Economic Consulting).

base measures the invested capital of a utility business, which is commonly used as a basis of calculating the allowed rate of return and, hence, represents an important driver of value.

In Figure 1, below, we show the hypothetical results of the valuation multiples calculation for the comparator companies, alongside descriptive statistics for the distribution of the valuation multiples.

Figure 1: Illustrative example of valuation multiples for comparable US regulated utilities

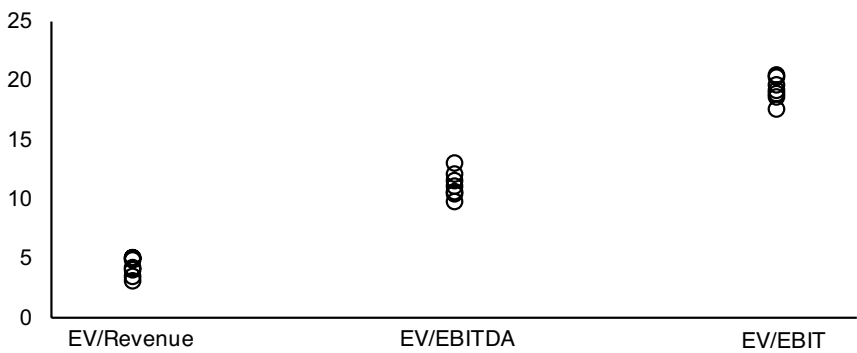


Table 3: Characteristics of the distribution of comparator multiples (illustration)

Central tendency measures			
Mean	4.3x	11.1x	19.2x
Median	4.3x	11.3x	19.3x
Dispersion measures			
Standard deviation	0.8x	1.1x	1.0x
Minimum	3.2x	9.8x	17.6x
Maximum	5.1x	13.1x	20.5x

As Table 3, above, shows, the mean and median of the multiples are very close, which indicates the limited presence of outliers. Moreover, the dispersion of the different valuation multiples, as measured by the standard deviation, is relatively narrow. This suggests that the comparator set includes a relatively homogeneous group of companies with similar value drivers in terms of expected future cash flows and risks.

The valuation expert can proceed, therefore, with estimating the market value of the target company based on the comparator multiples with a reasonably high degree of confidence. Given the limited variation in the multiples, and if the expert

has no reason to believe that the target company is different from the median company, the expert may use the median for each multiple as a basis of estimating the market value for the target company. This is illustrated in Table 4, below.

Table 4: Illustrative example of estimating market value using multiples approach

	Unit		Revenues	EBITDA	EBIT
Fundamental value for target	US\$ millions	A	1,500	560	335
Comparator multiple (median)	Multiple	B	4.3x	11.1x	19.2x
Implied market value of target	US\$ millions	$C=A*B$	6,450	6,216	6,432

The calculation shows similar implied market values for the target company, irrespective of which valuation ratio the expert uses. The expert could then proceed to compare the results of the multiples-based analysis with alternative valuations based on DCF to help conclude a final market value estimate.

As demonstrated above, the hypothetical comparators-based valuation for a US-regulated electric utility appears to provide robust results. This is because the United States represents a mature, developed market with a large number of candidate comparator companies relevant for the analysis, and the regulation of electric utilities operates under similar rules across all US states. This means that the key fundamental drivers of value (e.g., regulatory regime, country risk, institutional risks, macroeconomic factors) are common across all candidate comparators, and once the valuation expert removes comparators subject to company-specific risks (e.g., companies with low credit rating, companies in distress, companies who do not pay dividends), the expert obtains a relatively narrow set of valuation multiples, which in turn provides a relatively narrow implied market value for the target company.

Example 2

Applying comparator-based valuation to a telecommunications company in a small evolving island country

As shown in Example 1, comparable-based valuation can be an effective tool when there are a number of comparable assets with observable market prices available that operate under similar economic conditions. However, this valuation method can become less effective if the asset being valued is more unusual in one or more aspects of its operating environment, making it difficult to identify suitable comparators.

Consider a second example in which the asset being valued is a privately owned telecommunications company operating in a small evolving island country called Cobra Island. Let us assume that a valuation expert has applied a comparator-based valuation approach and identified a set of listed telecommunications providers from various countries, producing a range of EV-to-EBITDA multiples, as summarised in Table 5, below. The expert then proceeded to value the target company in Cobra Island based on the median EV-to-EBITDA ratio.

Table 5: Illustrative example of multiples for comparator telecommunications companies

Company	Country	EV-to-EBITDA
Telco A	Fook Island	5.2x
Telco B	San Theodoro	7.3x
Telco C	Nuevo Rico	1.7x
Telco D	Freedonia	9.5x
Telco E	Kurjikistan	12.4x
Telco F	Costaguana	3.4x
Telco G	Digitopolis	10.9x
Median		7.3x

A review of the expert’s evidence reveals that, unlike in the previous hypothetical example of US utilities, the range of comparator multiples is very wide (from 1.7x to 12.4x), with the maximum multiple more than seven times higher than the minimum. In other words, this means that the price per unit of EBITDA that investors pay for the selected comparators is very different, which indicates that the comparator valuations are driven by factors that have not been controlled for by the expert. A valuation simply based on the median of the EV-to-EBITDA is unlikely to be robust in this example, unless the expert has analysed and confirmed that the median comparator company is indeed comparable to the target company.

One potential issue with the above analysis is that the comparator companies are from different countries. There are a range of country-specific factors, such as macroeconomic, institutional, regulatory or tax, that could cause differences in expected cash flows and risks for telecommunications operators in these different countries, resulting in the observed wide range of valuation multiples.

In addition to country risk, the differences in valuations may also be driven by differences in other operating characteristics across the comparators. Even though they are all telecommunications companies, there could be inherent differences in operational factors, such as subscriber growth rates, penetration rates for different market segments, average revenues per subscriber or sparsity of the network.

However, factors such as country risk or differences in operational factors can be qualitative in nature and it may be difficult to make adjustments to the comparator valuation multiples for these factors. One option would be to restrict the sample to include only companies with similar country risks and operational risks, but in practice this may involve subjective judgement and it may be difficult to identify the comparators.

Overall, this example illustrates that a standard comparators-based approach may become more difficult to implement when the asset being valued has qualitative characteristics (e.g., country risk or operational characteristics) that it does not share with potential comparator companies. In such cases, the valuation expert can try to identify the comparators that appear most to resemble the target company, although this may be difficult to implement in practice as qualitative factors cannot easily be measured or adjusted for.

Potential extensions of comparables-based valuation approach applicable in damages estimation

In the previous sections, we discussed how the standard comparables-based approach is applied in the context of business valuation. We now present some potential extensions in which comparables-based evidence may be used for estimating quantum damages in the context of international arbitration.

Extension 1

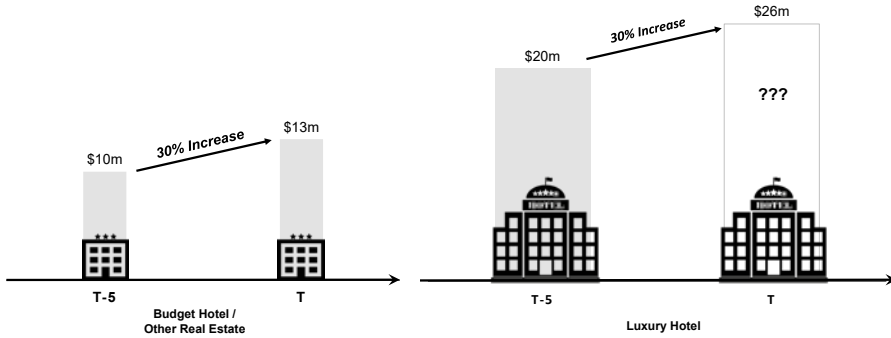
Applying comparables-based approach to value an asset with unique characteristics based on historical transaction prices

As discussed above, the application of a comparables-based approach can only be successful if the valuation expert is able to identify comparable assets with observable market prices. However, frequently the assets subject to disputes in arbitration cases have unique characteristics, which implies that comparable assets with observable market prices are simply not available. In these types of cases, it may be possible to rely on historical transaction prices for the asset under dispute and roll forward the historical price, which captures the unique characteristics of the asset to the valuation date, using comparator-based evidence on *changes* in market prices of similar assets over time.

For example, consider a situation in which the valuation expert is trying to value a luxury hotel in an evolving country. The asset under dispute is the only luxury hotel in the relevant area and the market values of other hotels in the region are not available. In this case, it may be difficult to find relevant comparator hotels to be used as a basis of the valuation. However, assume that the valuation expert knows that, five years prior to the valuation date, the investor purchased the

hotel for US\$20 million. The expert could therefore analyse market information on changes in real estate prices (e.g., changes in prices of commercial property, or changes in transaction prices of other hotels in the region or country). Even though the available comparator evidence may not provide relevant indicators of the *level* of value for the target asset because of its unique characteristics, it may provide relevant evidence on the *changes* in values of similar types of assets over time, which can then be applied to the historical purchase price to estimate an up-to-date market value, as illustrated in Figure 2, below.

Figure 2: Increase in market value of comparable assets may be used to estimate increase in market value of target asset



The above method may work when the conditions and operating environment of the asset are relatively constant over time. Using the historical transaction value and rolling it forwards with a price index may be a good proxy for estimating the market value at a subsequent point in time.

Extension 2

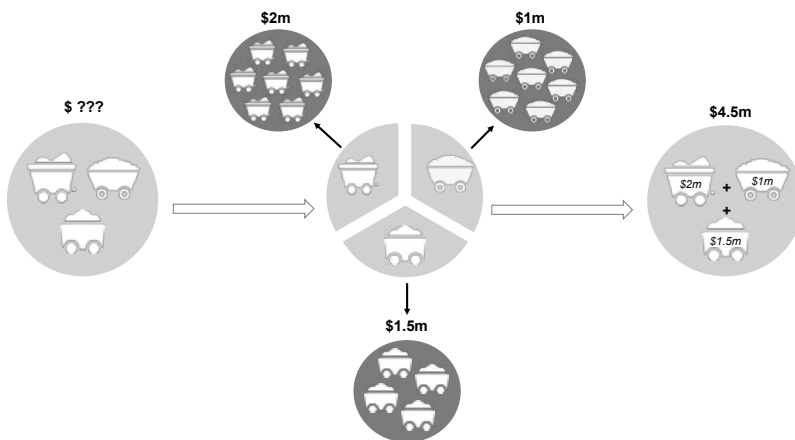
Using different comparators to value different segments of company activities

Another situation in which the valuation expert may not be successful in finding relevant comparators would be where a company engages in a range of different activities. In such a case, the valuation expert may nevertheless be able to find good comparators for different segments of a company's activities and value the business as the sum of these different activities.

For example, consider a privately held mining company that generates revenues from producing gold, zinc and copper from its various mines. Assume that there are no comparable companies operating the same portfolio of mines in the

relevant proportions. However, the valuation expert may be able to divide the company's mine portfolio into three segments and value them separately, based on relevant comparators for each segment. The sum of the values for each segment then provides an estimate of the total market value of the company, as illustrated in Figure 3, below.

Figure 3: Assets may be valued using comparators for individual business segments instead of asset as a whole



The above method may work well when no relevant comparators exist for the company's activities as a whole but where good comparators exist for the individual segments in which the company operates – in this case, gold, zinc and copper.

The above decomposition analysis may also be applied when the valuation expert is trying to estimate damages for a company with observable market value but where only a part of the assets is subject to dispute. The expert can use the same approach described above to estimate the market value of the assets that are not subject to dispute and calculate the value of the assets under dispute as the residual. This method may work if good comparators exist for the segments of the company that are not subject to dispute and where the value of the asset subject to dispute constitutes a sizeable portion of the overall business. In such cases, the valuation expert can be relatively confident in the valuation of the asset not subject to dispute, which in turn gives the expert confidence in the valuation of the asset subject to dispute calculated as the residual.

Conclusions

The market or comparables-based valuation method serves as an alternative and complement to the income-based and asset-based valuation methods. The most compelling evidence of the market value of an asset is the actual price paid in an arm's-length transaction for that asset or the listed price in a liquid market. Comparables-based valuation is an alternative in cases when direct market data on the value of the asset is not available. The use of comparables-based valuation to estimate accurately the market value of an asset critically depends on the availability of relevant comparator companies with observable market prices. It will be more effective, therefore, in situations where there are a number of listed assets or market transactions, ideally in the same geographical locations and with similar economic characteristics as the target asset. The valuation expert should go through a rigorous screening process to select relevant comparators and present objective evidence to determine an appropriate comparator set. In many cases, comparator evidence may not give precise answers on market valuations, but it may determine plausible ranges that can be used as cross-checks against other valuation methods (such as DCF). Comparator evidence can also be used to determine values for other parts of listed businesses not subject to the dispute or to roll forward historical prices for assets when direct comparators are not available.

CHAPTER 18

Accounting-Based Valuation Approach

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The standard for most valuations in the context of international arbitration is fair market value (FMV). Where FMV can be observed directly, it is often the starting point. Because the value of assets derives from the future cash flows they provide to the owner, discounted cash flow (DCF) is a primary method when estimates of future cash flows are reliable. When the asset is not traded, but reasonable benchmark assets are traded or can be purchased, they can be used to estimate or to infer the market value of the subject assets with corresponding adjustments.

What happens when none of these methods is available? The best approach may be to use accounting-based measures of asset value. This does not mean simply assuming that the value of an asset recorded in the accounts represents its market value. That is unlikely. Rather the accounting-based asset value (AAV) provides a starting point. Estimating market value requires an understanding of the accounting standards under which the asset was recorded and adjustments to reflect, among other things, the difference between economic and accounting depreciation, the evolution (favourable or unfavourable) of important risks, the effects of competition, and the macroeconomic environment (interest rates, inflation, exchange rates and economic growth prospects). These factors make the application of AAV challenging but they must be considered to infer reasonable market values.

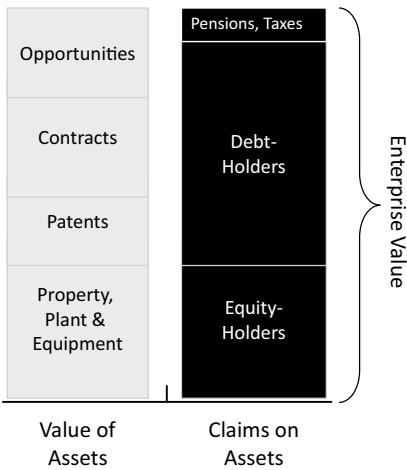
This chapter explores situations when AAV may be appropriate and raises issues that may affect the interpretation of accounting values in the search for market value when other methods cannot be applied. We also consider certain special cases: both debt and assets that are regulated on the basis of accounting values.

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Background

The first step in a valuation exercise is to determine what is being valued. When a valuation is required in an arbitration, it typically will concern either an asset or a liability of an investor or a corporation, or the company itself. As Figure 1 illustrates, below, this can include the valuation of specific assets (such as a plant, a contract or a patent) or specific claims over a company’s assets (e.g., equity versus debt), or all assets of a business (known as the enterprise value). It is also possible to value a specific conduct (such as the effects of illegal anti-competitive practices) or a specific opportunity (e.g., the loss of ability to launch a new product or venture) or legal rights (such as intellectual property rights).

Figure 1: The object of valuation



In most cases, the assets or liabilities being valued will correspond to some set of accounting entries in financial statements of the relevant entities.² Financial statements provide information to a wide range of users about a company’s financial position and performance at a point in time. Of course, the frequency with which financial statements are released affects the reliability and usefulness of accounting data. More importantly, companies prepare financial statements that comply with specific accounting standards and at regular intervals, usually as required by

2 Importantly, as we explain below, some assets and liabilities are not reported in the financial statements.

regulation.³ Complying with accounting standards is essential in that it provides a common language that all companies use in their reporting, which allows users to make comparisons between companies. However, rules imposed by the accounting standards limit the scope and usefulness of the information contained in the financial statements for valuation purposes, where the focus is forward-looking (i.e., based on future cash-generating potential) and market-based. For arbitration purposes, the frequency with which financial statements are released affects the reliability and usefulness of accounting data.

In the rest of the chapter, we discuss the AAV method, in which the information in the financial accounts is used to determine value. We describe the most common rules used in financial accounts and the adjustments accounting entries typically require to estimate forward-looking, market-based value. Finally, we highlight two examples, debt and regulated industries, for which information in the financial accounts can provide more straightforward guidance on estimating value.

Fundamental principles of valuation

Before turning to the question of when the AAV method is most useful, we review some basic principles in valuation relevant to the notion of market value of an asset.

Market value, or FMV, is the most commonly applied valuation standard in international arbitration. FMV is defined as ‘the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm’s length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion’.⁴

A fundamental principle of financial economics is that the market value of any asset is determined by its ability to generate future cash flows to the owner. Therefore, a valuation amounts to the market value today of the right to receive those future cash flows. All valuation methods attempt to measure market value either directly or indirectly. When a valuer can reliably forecast cash flows and the relevant risks can be properly assessed, an income-based approach, such as

3 The two main sets of accounting standards for financial reporting are the International Financial Reporting Standards (IFRS) and the Generally Accepted Accounting Principles (GAAP). Many national accounting systems use IFRS, a major exception being the United States, where the GAAP still apply. There is an ongoing effort by the bodies supporting the two systems to reduce or eliminate the differences between the two systems.

4 International Valuation Standards 2020, ¶ 30.1.

the DCF method, is typically the primary valuation approach.⁵ In the DCF method, the valuer projects explicitly an asset's cash flows into the future. The market value of the asset is then derived by summing all future expected (or probability-weighted) cash flows, adjusted for timing and risk through the application of an appropriate discount rate.

Another technique is the market approach, also referred to as the comparables or relative valuation approach. In this method, the valuer assesses value relative to, or in comparison with, the observed market values of similar assets for which information is available. The approach is based on another fundamental principle of economics, the law of one price, which states that identical assets must sell for the same price, otherwise opportunities for risk-free profit would exist by buying the cheaper asset and simultaneously selling the more expensive one. In practice, the asset being valued usually is not identical to the assets whose market values can be observed, and the valuer must make appropriate adjustments. This means that the market approach relies critically on the similarity, or comparability, of the assets being valued and on the ability to make the necessary adjustments. The technique is often used as a cross-check on the valuation produced by a DCF. When future expected cash flows cannot be estimated with sufficient reliability for a DCF, the market approach may be the primary valuation method.

Accounting-based asset valuation

What is AAV?

The third valuation approach is generally referred to as the asset-based valuation (ABV) method, which values a company as the collection of its individual assets and liabilities. Although it is sometimes called the costs method, ABV does not value the assets at cost but rather at the estimated market value of each asset or liability. A special type of ABV is the AAV method, in which the valuer turns to information from the financial statements as a starting point to determine FMV of an asset or liability.

Three types of financial accounting statements are predominantly used for AAV:

- the balance sheet (or statement of financial position) is the main source of information when trying to determine the accounting or the book value of a company's assets or liabilities. Its role is to present a snapshot of the company's assets, liabilities and equity at a given moment;

⁵ Of course, if the asset or company being valued is itself publicly traded or has been sold or traded close to the valuation date, and under similar conditions to the valuation situation, then the observed market value typically takes priority.

- the income statement⁶ presents a company's financial performance during a particular period, usually a quarter, half-year or year. The income statement shows a company's accounting revenues, expenses and net income (profit) and their components; and
- the cash flow statement⁷ reports the sources and uses of cash during a particular period. It provides additional information since the income statement is usually prepared on an accrual (non-cash) basis.

When is AAV used in arbitration?

Parties to an arbitration may argue in favour of an AAV method when they consider that an income or a market approach is not appropriate. They may argue that projections of cash flows could not be estimated with reasonable certainty and would be speculative⁸ or that the business being valued is not a going concern.⁹

If there is insufficient information to quantify the cash flows and there are no reliable comparables, an AAV method may serve as a valuation tool of last resort.

6 More precisely either a single statement of comprehensive income or a statement of comprehensive income and an income statement.

7 Some companies also publish a statement of changes in equity tracing the owners' investment over time.

8 'Speculative' should not be confused with 'low-probability'. Take an expropriated investment that has a known probability, say 10 per cent, of generating \$10 million in profit and a 90 per cent chance of yielding nothing. Nine out of 10 times, the claimant would have not made a profit but the expected profit of \$1 million is straightforward to assess and reliable. The key is that the probabilities can be reasonably estimated. Early-stage investments in the mining and oil sectors often have this type of pay-off structure. For example, exploration-stage mining projects have a high probability of failure, yet the market value of 'junior mining' companies, which can serve as benchmarks for relative valuation, is not zero and, in fact, can be quite large.

9 This may include, for example, (1) a low-margin business in a competitive industry that owns marketable real estate that has appreciated over time because of its development value (such that the value of the assets exceed the value of the business itself), (2) businesses in financial distress valued at the liquidation value of their individual assets, and (3) early-stage investments that lack historical information from which to calculate future cash flows with reasonable certainty. A frequently used definition is 'an enterprise consisting of income-producing assets which has been in operation for a sufficient period of time to generate the data required for the calculation of future income and which could have expected with reasonable certainty, if the taking had not occurred, to continue producing legitimate income over the course of its economic life in the general circumstances following the taking by the State'. (The World Bank Group, 'Legal Framework for the Treatment of Foreign Direct Investment: Volume II – Guidelines', Section IV, ¶ 6).

Book values are not all alike

The starting point for an AAV approach is usually the value recorded in the balance sheet, referred to as the book value. Depending on the type of asset or liability and on the accounting standards that apply, companies record assets and liabilities on their balance sheet as either historical cost or at fair value.¹⁰ It becomes clear from the start that using the book values indiscriminately can lead to inconsistent and unreliable valuations simply because of the different ways assets and liabilities are accounted for on balance sheets.

Accounting standards provide guidelines for when a company should record an asset or liability at fair value or at historical cost. Fair-value accounting usually applies to financial assets, including securities, derivatives and hedges, and employee stock options.¹¹ Fair value measurement implies regular revaluations so that the book value of the assets generally reflects the market value at the time of the revaluation as assessed by the company and reviewed by auditors.

Most commonly, companies will record assets at their original or historical cost, which is the cost required to purchase or create the asset and to bring it to the location ready to be used for its intended purpose.¹² These costs may include purchase cost, sales taxes, delivery charges, customs duties and set-up costs.¹³ Accounts will then depreciate the historical cost of the assets over their defined useful life, which is defined in accounting rules by broad categories of equipment (e.g., computer hardware) or left at the discretion of the company. The accounting useful life may differ substantially from the asset's actual economic life. Figure 2,

10 For the purposes of our discussion, we treat fair value to be a measure of market value. However, under certain circumstances, this is not the case.

11 Fair value accounting generally applies to financial assets but only if they are available for sale or held for trading. The financial assets that are held to maturity are recorded at historical cost and can be impaired to reflect a significant decrease in their market value compared with their book value.

12 Although financial statements record costs, and sometimes arbitration tribunals seek evidence of 'investment costs' or 'amounts invested', our focus here is not on costs but rather using accounting information to estimate market value.

13 These costs will be included on the balance sheet to the extent that they are *capitalised*, which means they are treated as investments recorded as an asset on the balance sheet. Sometimes certain costs are *expensed*, meaning that they are not included in the value of the asset recorded on the balance sheet but instead appear as expenses in the respective year's income statement.

below, illustrates an example of how the two accounting treatments would record value for an asset that (1) initially performs well, (2) undergoes an economic shock that reduces value, and then (3) sees some recovery.

Figure 2: Book values under historical cost and fair value measurement versus market value

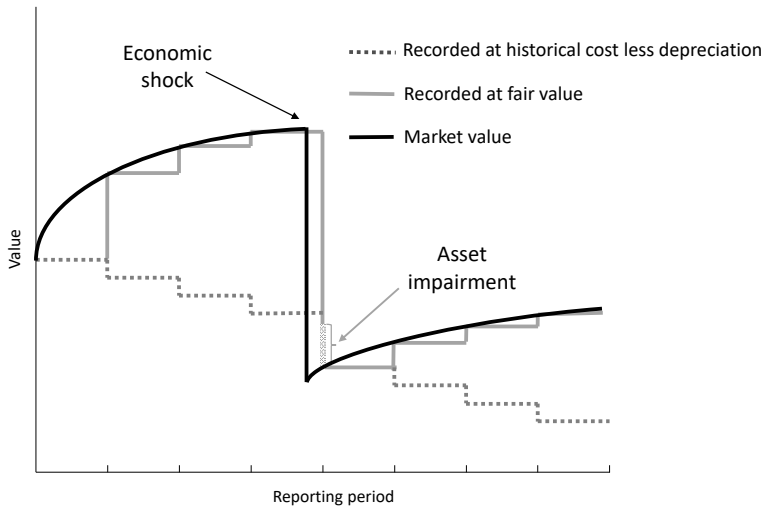


Figure 2 shows that under fair-value measurement (solid grey line), the value recorded in the accounts would follow market values (black line) at each revaluation date. The use of fair value accounting indicates that a market price typically exists for the asset, or a market approach is reliable, meaning that AAV will rarely apply. When book values are recorded at fair value, the AAV value can provide a cross-check for valuations obtained using the other approaches, assuming that the valuation date and assumptions used for the accounting valuation match those of the claim in question.¹⁴

For historical cost accounting, Figure 2 shows that, as time passes, the market value of assets may significantly depart from the value recorded in the accounts, indicated by the gap between the dotted grey and black lines. The book value

¹⁴ The book value of an asset recorded at fair value is obtained using either the income approach or the market valuation approach. Usually companies provide extensive disclosures with respect to the details of the accounting valuation; however, this is not always the case. Giving preference to the book value over other methods of valuation implies adopting the assumptions used to obtain that book value even when they are unknown.

of assets recorded at historical cost will decrease as depreciation, depletion and amortisation expenses are incurred, even while the real business may outperform expectations and increase in value.

In historical cost accounting, companies are usually required to carry out revaluations only when the market value falls below the book value, known as a write-down. Thus, the book value of an asset immediately after an impairment might be a good proxy for its FMV, as shown in Figure 2.¹⁵

From book value measured at historical cost to FMV

The basis for considering costs as a proxy for FMV at creation or purchase is of the expectation that market and competitive forces would push towards that end.

At inception, the investment should not be worth less than the expected cost, as otherwise a rational investor would not have progressed with the investment.

Similarly, in a fully competitive market, new investment should not be worth substantially more than the expected costs, owing to market pressures on prices and returns, though in less competitive markets that may arise, and it is the act of making such investments that in turn increases competition.¹⁶

However, these points hold only at the time the project starts. Over time, accounting values recorded at historical cost will almost certainly deviate from market values, meaning that book values require adjustments to approximate market values. Some experts have proposed this approach, usually referred to as the adjusted-balance sheet or adjusted book-value approach.¹⁷ We discuss some of the more common adjustments a valuer must consider to estimate FMV, which can be grouped into two main categories:

- adjustments to account for the passage of time, the resolution of risks or changes in market conditions between the reporting date and the valuation date; and
- adjustments that arise as a result of accounting conventions.

15 Under certain conditions, impairment reversals are possible under IFRS rules. Similarly to a write-down, the value immediately after an impairment reversal may also indicate a proxy for fair market value, as long as the reversal of the previous impairment is not total.

16 In simple terms, if investors could generate value of \$120 by investing \$100, then other investors would come into the market reducing prices until the value is \$100 for everyone.

17 American Society of Appraisers, ASA Business Valuation Standards, 2009, 'Definitions', p. 25.

Accounting for changes between reporting date and valuation date

There are a variety of adjustments to financial statements to account for changes between the reporting date and the valuation date. The following are some of the most important.

Time value of money and risk during construction

For assets that have long construction periods, recording them at historical cost ignores the fact that investors expect to earn a return on invested amounts. Let us suppose an asset costs \$100 to build up-front and will become productive in two years. At the start of production, assuming all market conditions evolve as expected, the book value of the asset would still be \$100¹⁸ but the asset must be worth more than \$100. No rational investor would invest \$100 in a risky asset at the start of construction only to receive an asset worth the same \$100 two years later, when construction is completed, when more could be earned during that period by making alternative investments. Investors will demand to earn the cost of capital for the asset, which is the return they could expect if investing in other assets of similar risk during the same period.¹⁹

Resolution of systematic risk

Investors do not value assets in isolation but as part of their portfolios. The more diversified a portfolio is, the smaller the effect of any single asset's specific risk on the variability of the portfolio's returns. However, systematic risk (also known as market risk) does not disappear in diversified portfolios because it correlates with all the assets in the portfolio. That is to say, systematic risk affects all assets. The risk that an asset value would drop along with the entire market if the global macroeconomic conditions deteriorate is an example of systematic risk. The cost of an asset reflects macroeconomic conditions at the time when the asset was developed or purchased. Unexpected changes in conditions, such as inflation, interest rates, commodity prices or exchange rates, will affect the market value of an asset.

¹⁸ Normally a company starts recording depreciation only when production starts.

¹⁹ We note that some assets partially address such a return by including interest accrued during construction in the capital base of an asset, which recognises the return demanded by debt investors. A full treatment of the cost should also include the return to equity and other investors. This is distinct from the application of pre-award or post-award interest. See M Alexis Maniatis, Florin Dorobantu and Fabricio Nunez, 'A Framework for Interest Awards in International Arbitration', 41 *Fordham Int'l L.J.* 821 (2018).

Resolution of project-specific risks

The cost of acquiring or developing an asset may diverge substantially from the market value of the investment once project-specific risks have resolved. Consider, for example, a lottery ticket that sells for \$10 for an opportunity to win a prize of \$1 million. If the ticket is the winner, its value is \$1 million, and its value would be zero otherwise. In either case, once the risk has resolved, the cost of the ticket (\$10) has no bearing on its value (either \$1 million or zero.)

Many projects in the resources sector are similar to this example. Companies invest resources in exploration with some expectation of success or failure. Once the uncertainty has resolved, the market value of the project will reflect the outcome, and will depart from the amounts spent in the effort. Similar, if often less extreme than the above example, non-systematic risks are present in many investments; for example, risks relating to new products.

Country risk

This refers to factors specific to the country in which the assets are located, including exposure to social conditions (e.g., risk of civil unrest) and political conditions (such as the chance of expropriation, regulatory changes or potentially discriminatory treatment). As with macroeconomic conditions, unexpected changes in the level of country risk will affect the market value of an asset. Moreover, for the calculation of damages, certain actions or potential actions may be excluded from the valuation as a matter of law. For example, parties often argue that the risk of expropriation, from which investors are protected in bilateral investment treaties, should be excluded in a related arbitration for damages.

Growth and competitive conditions

Expected growth rates vary significantly across companies, industries and geographies. However, a company's growth rate typically is expected to approach the industry growth rate over time, and few companies are able to grow more quickly than the economy for very long periods.

In the long term, competition will drive the return on a new investment to its cost of capital. Economists refer to such an investment as a zero economic profit investment or a zero net present value investment. New assets in competitive markets earn a return, but only equal to the return available to other investments of similar risk. Thus, in a fully competitive market, the market value of a new asset equals its cost.

In markets that are less competitive, assets may have market values above their costs. However, where extraordinary profits exist, they invite entry that will erode profitability over time as competition increases. This effect should be

considered. For example, if assets were developed or purchased at a time when little competition existed (and none was expected to develop), the acquisition cost and, hence, its book value will reflect these conditions and may overstate market value. Similarly, the market value of assets acquired in an industry that has since entered unanticipated decline, perhaps with excess capacity, may well fall below their historical cost.

Assets may earn extraordinary returns for extended periods in markets that are not fully competitive if the business or asset has a durable competitive advantage.²⁰ Businesses spend significant resources and time developing innovative products, creating brand loyalty and the perception of superior quality, to erect barriers to entry and protect long-term extraordinary profits. As we explain below, many of these expenditures are not included in the book value of the corresponding assets (i.e., they are not capitalised).

Adjustments that arise because of accounting conventions

Book values have to comply with the accounting standards in place at the time they are recorded. Although the accounting standards fulfil many useful roles, they do involve a certain degree of simplification and generalisation, which is not helpful when valuing an asset in the context of arbitration.

Non-balance sheet items

The most common approach to AAV considers the amounts recorded in the balance sheet of the company. However, the balance sheet assets will only measure costs that the company capitalises, meaning those costs that the accounts recognise as an investment, as opposed to an expense.

In broad terms, non-capitalised or expensed costs are those that are required to keep a business operating, such as leasing office space or paying salaries of employees. Capitalised costs are those incurred in the production of an income-generating asset, such as paying an engineering, procurement and construction contractor to build a power plant.

²⁰ This may include (1) innovative products that are difficult to copy or protected by patents, (2) perceived differences in quality or brand for which consumers are willing to pay a premium, (3) customers unwilling or unable to replace a product or service they use (i.e., high switching costs), and (4) industries in which large-scale production is more efficient than small-scale owing to economies of scale or scope such that a small or even a single producer is sufficient to supply all the market demand.

However, the distinction between these items is often not clear-cut; for example, the time spent by salaried employees in developing a new asset or product, or money spent on advertising: both are costs incurred to keep a business running but may create valuable assets at the same time. The choice to capitalise such costs or not relies on the judgement of the company and its auditors, and the accounting standards of the relevant jurisdiction. The accounts will only record non-capitalised costs on the income and cash flow statements in the period in which they were incurred.

Another example is goodwill that is generated internally: for instance, customer relationships, significant contracts or brand value created through a company's operations but for which the cost of creation cannot be easily quantified. Internally generated goodwill is not included on the balance sheet, specifically because of difficulties with measurement.

The objective of an AAV analysis that relies on historical costs is to capture the full effort expended to produce the asset in question, meaning that the analysis should include both the asset value recorded on the balance sheet and any incurred non-capitalised expenses that provide future benefits.

Depreciation

Depreciation is the method under which a company's accounts recognise the reduction in the accounting value of an asset during its useful life. The useful life of the asset refers to the length of time during which the asset depreciates; it is not the same as the economic life, which refers to the time span during which an asset earns more than the costs to maintain and operate it.²¹ The depreciation method (e.g., accelerated, linear or decelerated)²² and the useful life are either defined in accounting rules by broad categories of equipment or left at the discretion of the company. Very few tangible assets have cash flows structured in such

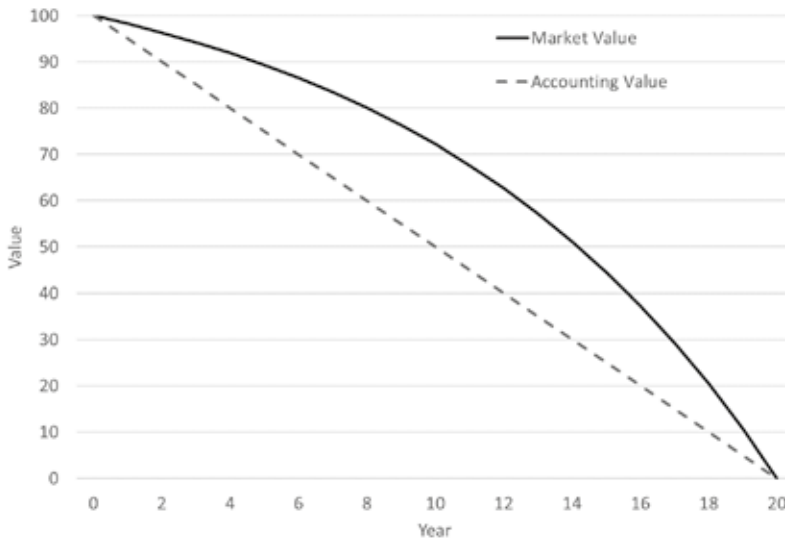
21 That is, when an asset is past its 'economic life', it is more profitable to replace or scrap it than to continue using it.

22 Accelerated depreciation allows the company to reduce the value of the asset by higher amounts in the first years of operations. Under linear depreciation, the company records a constant depreciation amount each year, while under decelerated depreciation, the company concentrates the higher depreciation amounts towards the end of the asset's useful life. Because depreciation is a tax-deductible expense, companies generally prefer accelerated methods, which reduce taxes earlier and increase them later in the asset's life, thereby increasing nearer-term cash flows.

a way that the value will decrease in the same way assumed by most accounting rules. As a result, book value measured at depreciated cost is typically divorced from market value.

Figure 3 illustrates how the two balances diverge over time for a sample asset paying a constant nominal amount each year for 20 years.²³

Figure 3: Impact of straight-line depreciation against market value



The dotted grey line indicates the amounts recorded on the balance sheet, which decline by the same amount (that is, in a straight line) during the asset's life. The black line indicates the market value of the asset during the same period. The feature of the market value is that it behaves more like a mortgage balance – the initial payments largely cover the return, and a smaller portion pays off the principal. The effect is that the market value is always above the book value.

Inventory

Companies maintain stocks of finished goods, raw materials and other production inputs that are intended for further processing and sale. These inventories are recorded as assets on the balance sheet. The value of inventory changes frequently as companies purchase new materials and sell finished goods. Under historical cost accounting, there are three main conventions to record inventory. The first in, first out (FIFO) rule assumes that items leave inventory in the same order they

²³ The example assumes a cost of capital equal to 10 per cent.

entered. The last in, first out (LIFO)²⁴ rule requires the opposite: items that have been in inventory the shortest time are assumed to leave first. Under the average cost convention, the value is carried at the weighted average cost of the items in inventory.

As for other assets, companies might be required to perform revaluations and record a write-down when the market value falls below the book value. In the case of inventories, this is known as the lower-of-cost-or-market rule. Under the main accounting standards, market value in this context usually refers to the replacement cost²⁵ of the inventory, as long as the market price is not above the net realisable value²⁶ or below that net realisable value, less the normal profit margin.

Given the different accounting conventions to value and revalue inventory, it is unlikely that the book value reflects market value.

Intangible assets

The intangible assets held by a company are those that do not have a physical presence. These items can include licence rights, branding, patents, goodwill and human capital. Intangible assets face many of the same issues as the tangible assets discussed above: the market value may depart from the expense incurred to generate or acquire the intangible asset reported in the accounts, and may not be capitalised in the balance sheet at all.

To begin, a valuer must consider carefully how the financial statements record the costs of the intangibles, and whether those records can reflect market value. For example, the search algorithm developed by Google is certainly worth more than the cost of the effort to create it. In such cases, historical costs recorded in the accounts, whether capitalised or not, do not offer a fair reflection of the true market value. In contrast, the cost of a short-term licence acquired through a competitive auction is more likely to be reflective of the market value of the licence.

An important intangible asset is goodwill. The concept of goodwill is often amorphous. One specific example is when a company purchases an asset for more than its 'fair value', reflecting synergies that the acquiring company values that another buyer would not.²⁷ To balance the accounts, the acquiring company

24 The last in, first out rule is permitted under GAAP but not under IFRS.

25 Replacement cost represents the price that a company would pay to replicate the utility of the asset, not the exact physical properties of the asset.

26 Net realisable value is defined as the estimated selling price minus estimated selling costs (e.g., completion or disposal).

27 In the presence of synergies, an acquired asset may be worth more to the acquirer than the price it pays. The reason is that, in competitive markets, the acquirer must only pay

transfers the assets into its own balance sheet at fair value and records the difference created by any synergies as goodwill. The total sum, asset plus goodwill, will equal the transaction price. In such cases, by using the accounting measure of goodwill to value an asset in addition to the fair value, the valuer is simply relying on a historical transaction price, and the value of the synergies, as they may have existed at the time. Rather than assessing value through the accounting records, a more transparent valuation practice would be to analyse whether the past transaction price is useful guidance for the specific valuation date.

Specific applications of AAV

In this section we consider two special cases – debt and regulated industries – for which information in the financial accounts can provide more straightforward guidance on estimating value.

Debt

Like any investment, the value of debt may diverge from the nominal outstanding amounts recorded in the accounts as market conditions and risks evolve.²⁸ Nevertheless, in many situations, valuers and arbitral tribunals take the FMV of debt to be equal to its book value. Such an assumption may be reasonable, because although overall conditions may change, debt has specific characteristics that limit the divergence from book value.

The nature of debt is that significant increases in the cash flows of the underlying company do not directly benefit the debt holders, who will receive only the promised cash flows even if the company becomes more valuable.²⁹ Moreover, should market conditions change, for example through lower interest rates, increasing the value of existing debt above its book value, a company may retain the option to refinance (in other words, pay down the expensive debt at face value and issue new debt). The result is that even in upside situations, the book value of debt would remain close to its market value.

more than the value to the potential buyer with the next-highest value, not its full value to the acquirer.

28 Funds trade billions of dollars of debt in financial markets every day and, certainly, they consider more information than the outstanding amounts.

29 We note that a company increasing in value may increase the market value of debt by improving the credit risk.

In general, the main movements in debt market value occur in downside situations.³⁰ If there is a possibility that the underlying asset may not be sufficient to repay debt, then investors will apply a discount to the book value of debt to reflect the fact that they may not recoup the full amounts.³¹ In this kind of situation, book value can no longer provide a reasonable guide, aside from an upper bound, and one must instead perform a cash flow analysis.

In practice, there are many types of debts and some will align more closely with the book value than others. A simple example is one of a bond with a variable interest rate versus a fixed interest rate. Variable rate debt will update interest payments for macroeconomic changes, realigning the payments with market conditions. The effect is to keep the market value of the debt closer to the book value. Conversely, the interest payments for fixed rate debt will not update, and market value will deviate more greatly from book value as interest rates change.³² A valuer must consider the specific characteristics of the existing debt to assess whether book value can provide a reasonable proxy for a market valuation.

Regulated industries

The example of debt offers insight into when historical amounts can be more useful: when the market value of the asset remains stable even as macroeconomic conditions change. Some assets in regulated industries share this characteristic.

As a general principle, many regulators design regulatory regimes to allow investors to earn a reasonable return on their investments. If investment amounts recorded in the accounts determine tariffs, which determine cash flows, it appears logical that the invested amounts can provide insight into value. However, there are many flavours of regulation and some will allow for greater departures from cost bases than others.

30 These situations are often important in the 'actual' circumstances of an arbitration case in which companies can be on the verge of insolvency.

31 We note that an inability to meet interest and principal repayments does not necessarily mean that the debt will trade at a discount.

32 For example, in 2000, Germany would have issued a 30-year bond paying annual interest of around 6 per cent. Currently there would be eight years left to run on this bond. These interest payments would be extremely valuable today as an equivalent 10-year bond yield is 2.3 per cent. As the German government cannot repurchase this bond from investors at face value, investors would pay far above the face value (or book value) of the bond to acquire the stream of payments. It would not be reasonable to value this debt with reference to the face value as would be recorded in the accounts.

We first consider assets with the strongest link to book values: those that rely directly on accounting information to determine tariffs in periodic reviews.³³ The aim of these price reviews will be to realign the cash flows of the company for investments and changes in macroeconomic conditions.

We can imagine a simplified example of a distribution network that has a regulated asset base of \$100 at the start of a regulatory period, based on the assets recognised in its accounts. During the regulatory period, the company invests \$20 and receives repayment of previous investments of \$10 through the tariffs reflecting its accounting depreciation.³⁴ In the following regulatory period, the balance sheet of the company will show \$110 (the starting value of \$100, plus the \$20 of additional investment, minus depreciation of \$10, reflecting repayment). The regulator will design tariffs for the following period allowing the company to earn a present value of \$110, equal to the balance sheet value of the assets.

Even in such cases, where value is determined via accounting information, market value may depart from the book values. Most modern regulatory regimes supplement tariffs with incentive mechanisms that reward efficiency and penalise inefficiency. If a company does better than the efficiency targets, then the company can expect rewards for investors and the asset will increase in value. Similarly, a company that does worse than the targets will expect to have lower value. The ultimate market value of the regulated asset will then be its accounting asset base plus or minus the effects of any incentive schemes.

Even in the absence of these schemes, it is widely recognised that, on average, regulated companies trade above book values. The underlying causes for this pattern are debated and may vary from company to company. Potential reasons include that rate-regulated companies may have intangible value, for example through branding or growth opportunities and synergies provided through their regulated assets.

FMV may also depart from the accounting value because of changes in macroeconomic conditions within each regulatory period. Although the future price control may adjust the tariff, the asset will earn the set cash flows (which may be above or below the market level) until the adjustment occurs.³⁵

33 Assets under such a regulation are normally those that require constant reinvestment, such as distribution networks.

34 This is in addition to a return on investment and operating costs.

35 An exception to this would be if the tariffs allow *ex post* adjustments to compensate for such movements in following regulatory periods.

In the case of companies under regulatory regimes not based on accounting information, movements away from accounting values may be larger, particularly where there is no regulatory mechanism in place to correct for such divergence. Many renewable power plants are regulated based on feed-in tariffs, which set a tariff regime for the lifetime of the power plant with no periodic reviews. By fixing a tariff with a certain design, the regulator transfers certain macroeconomic risks to the investor. For example, some tariffs are flat during the life of the asset, whereas others are indexed to inflation. Should inflation turn out different to expectations, the market value of the asset without indexation will deviate from its book value, while the asset with indexation will tend to stay closer, all else being equal.

Ultimately, for most regulated assets the primary valuation method will remain the DCF, as cash flows of regulated assets should be sufficiently predictable. A DCF will embed the effect of both relative efficiency and other effects of valuation through the resulting cash flows and discount rates. However, even in those cases, AAV can assist a market-based valuation in the calculation of a terminal value for a regulated company undergoing periodic reviews.

A terminal value is a valuation shortcut, whereby a single value represents the present value of all future cash flows beyond that date. To project the cash flows in perpetuity for a regulated asset, a valuer would have to predict the outcome of regulatory reviews in each future period. However, rather than reconstructing a tariff review, a valuer can simply start with the asset base for which the tariff seeks to provide compensation and make adjustments for external factors that can affect value, such as efficiency targets.

In summary, even for regulated assets, there are many reasons why market value can depart from invested amounts. However, given the nature of regulation, it may be useful to compare a valuation against historical investments.

Summary and proposed framework

We conclude by proposing a framework to guide the selection and implementation of the AAV approach. This framework, depicted in Figure 4, below, reflects fundamental economic and financial valuation principles.

When estimates of future cash flows can be observed or reliably estimated (step 1), the income approach (such as the DCF method) is the primary valuation tool (step 2).³⁶ If this is not feasible, but there are reasonable comparable traded assets (step 3), the market approach can be used to estimate or infer the market value of the assets in question provided that appropriate adjustments are made to reflect differences between the subject assets and the comparable assets (step 4).³⁷

When none of these methods is available, the valuer may turn to the financial accounts and use an AAV method (step 5). As explained earlier, the valuer must first understand the accounting standards used to record the assets in question.

If the assets are recorded at fair value (step 6), adopting the book value implicitly accepts the assumptions used in the financial accounts. So the valuer must consider whether the date of the financial accounts is close to the valuation date, and if the assumptions used in the accounts are appropriate for the valuation (step 7). If this is true, the book value may be used as a proxy for market value (step 8). When either the valuation date or assumptions in the accounts do not match those in the valuation at issue, another approach – income or market – must be used (step 9).

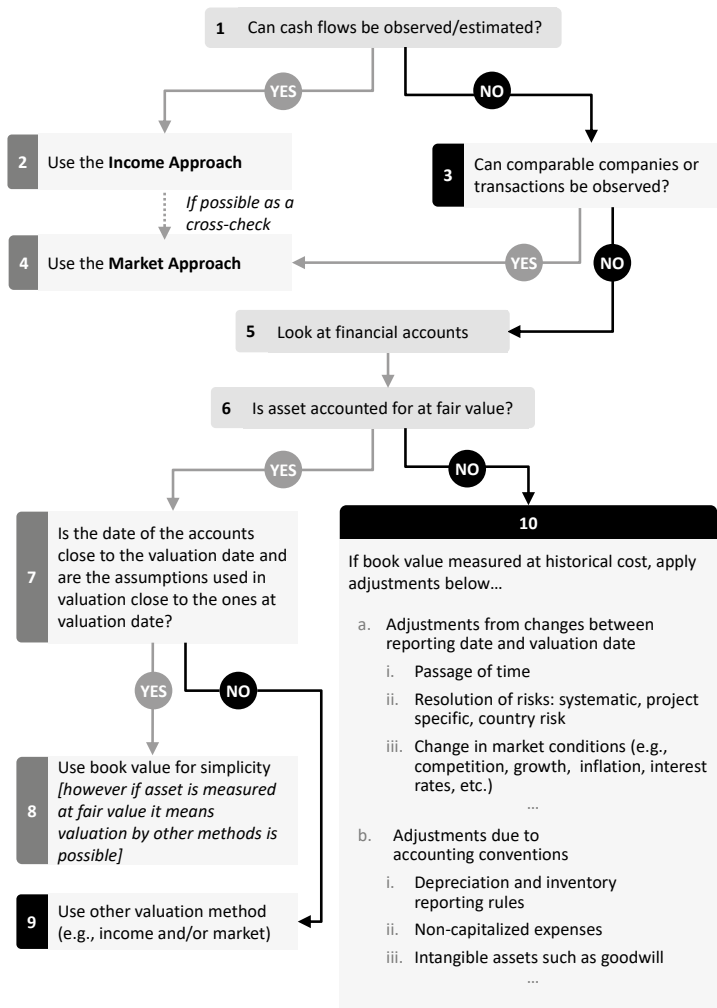
If the assets are recorded at historical cost (step 10), the values in the accounts will almost certainly fail to reflect market values, so book value will require adjustments. These adjustments arise from changes between the reporting and valuation date, which includes the passage of time, resolution of risks and changes in market conditions. Other adjustments are necessary because of accounting conventions, such as depreciation and inventory reporting rules. Accounting conventions also dictate the way companies report intangible assets – or perhaps not report them all, as is the case, for example, with non-capitalised expenses or internally generated goodwill.

The significant and unavoidable challenges that arise when starting from accounting values to determine market values render the application of AAV difficult and, therefore, it is typically considered only a valuation tool of last resort.

36 As noted previously, if the market value is observed directly because the asset or company being valued is itself publicly traded or has been sold or traded close to the valuation date, and under similar conditions to the valuation situation, then the observed market value should take priority.

37 As noted previously, the market approach is often used as a crosscheck on the valuation produced by a discounted cash flow (as depicted by the arrow going from step 2 to step 4 in Figure 4).

Figure 4: Guide for selection and implementation of AAV approach



CHAPTER 19

Country Risk

Tiago Duarte-Silva¹

One of the most frequent and difficult tasks in valuation is to assess how an asset's value is affected by its location in a foreign country. This effect, commonly known as country risk, is a reflection of the potentially adverse effects of the political, economic and financial risks of operating in a country. There is a wide supply of services providing investors with qualitative measures of country risk.² For example, the International Country Risk Guide by Political Risk Services (PRS) provides country-by-country measures along the lines of risk of expropriation, repatriation restrictions, corruption and risk of political unrest, and provides helpful maps with indicators for government stability, socio-economic conditions, investment profiles, internal conflicts, external conflicts, corruption, military involvement in politics, religious tensions, law and order, ethnic tensions, democratic accountability and bureaucracy quality. Other sources may include indicators for regions within countries or be specific to certain industries, such as the Fraser Institute mining survey.

Country risk is often a significant factor in estimating damages, but this is naturally more acute the riskier the country from where the damaged asset's cash flows come. For example, in *Gold Reserve v. Venezuela*, a higher assumption

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2 Some examples are Political Risk Services, the International Country Risk Guide, Aon, Institutional Investor, Standard & Poor's, Moody's and the World Bank.

concerning country risk by the respondent's expert implied a discrepancy between the damages calculated by the claimant's expert and the respondent's expert of more than US\$550 million, or almost 70 per cent of the claimant's expert's figure.³

There is a conceptual question of whether the value of an asset is affected by the country where it generates value. This is because one of the central tenets of finance is that the value of an asset is only affected by risks that are not diversifiable. In other words, if a particular asset's risk can be eliminated by sufficiently diversified investment across multiple assets, that risk is largely reduced, or even eliminated, and therefore is irrelevant to the asset's value. Based on this concept, sufficient diversification across multiple countries could eliminate the effects of a specific asset's country on its risk, and therefore country risk would be irrelevant to valuing that asset. One counterpoint to this perspective is that investors are not sufficiently diversified across countries and, therefore, country risk is still a value-relevant risk. Another commonly proposed counterpoint is that, even if investors are diversified, it may be difficult to diversify away country risk because it tends to be highly correlated across countries, especially in sudden downturns, as is attested by past economic crises across multiple emerging markets.⁴ More generally, the empirical data suggests that country risk influences investor returns.⁵ So, empirical data suggests investors price it, even if economic theory suggests it should be diversifiable.

This chapter lays out how investors account for country risk in their valuations, and how it should be incorporated in damages calculations, by describing the myriad approaches to its measurement and application. The content relies to some extent on an understanding of the workings of valuation methods that are covered in other chapters of this book.

Discounted cash flow method

Valuing an asset through the discounted cash flow method involves applying a discount rate to that asset's expected future cash flows to arrive at the current value of that asset. The discount rate is a function of two factors: (1) the time

3 *Gold Reserve Inc. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB(AF)/09/1, Award, 22 September 2014, pp. 216–220 – country risk premium: claimant's expert, 1.5 per cent; respondent's expert, 6.7 to 16.4 per cent. The claimant's expert's discounted cash flow value is after all adjustments by the tribunal, except country risk.

4 In theory, country risk could be diversified away even with positive correlation between countries.

5 See, e.g., Erb, C, Harvey, C and Viskanta, T, 'Expected Returns and Volatility in 135 Countries', *Journal of Portfolio Management*, 46–58 (Spring 1996).

value of money – a cash flow now is worth more than a cash flow some time in the future; and (2) risk – a safe future cash flow is worth more than an uncertain future cash flow. In algebraic terms, the appropriate discount rate to apply to future cash flows is the sum of a rate that reflects only the time value of money (the risk-free rate) and a risk premium.

It follows that, if generating a cash flow in a certain country implies that the cash flow is riskier, then the discount rate reflects that incremental risk through a higher risk premium: the country risk premium. This increment to the discount rate can be understood as a required return for investing in a country, as an adjustment to cash flow forecasts that do not reflect the underlying risks, or both. If understood as the former (a higher required return), then there is an implication that it reflects an undiversifiable risk, as explained above. In other words, a country risk premium on the discount rate represents systematic risk (i.e., risk that cannot be reduced or eliminated through diversification).

If understood as the latter (a downward adjustment to the cash flow forecasts), then the country risk premium on the discount rate is simply a way to transform optimistic cash flow forecasts into expected cash flow forecasts. In other words, it is a way to obtain the cash flow forecasts that are prescribed by the discounted cash flow method.

It may conceptually appear more straightforward to directly adjust the cash flow forecasts to arrive at the expected future cash flows. And this is indeed the method that the literature generally prescribes as the most theoretically correct adjustment to account for country risk and other risks: after projecting multiple cash flow situations into the future, the value of the asset can be calculated as the average of the values based on those various situations, weighted by their respective probabilities of occurring.^{6,7} Because country risk most often warrants a reduction in value, this method based on cash flow situations most often equates to considering additional downside situations and probability-weighting them. For a simplified example, suppose a project was forecast to generate \$10 million annually forever and the appropriate discount rate was 10 per cent, thus implying a

⁶ Brealey, R, Myers, S C and Allen, F, *Principles of Corporate Finance*, p. 232 (2011).

⁷ A variation of this method based on adjusting the cash flow forecasts is to adjust the projected cash flows by the cost of insuring against adverse outcomes relating to country risk. The rationale is that this insurance cost will already reflect the probability and expected downward effect on cash flows of country risk. A frequent hurdle with this approach is that often there is no coverage or market for the risks that would be modelled.

present value of \$100 million.⁸ Suppose also those \$10 million forecast cash flows were actually optimistic in the sense that they did not account for a downside situation with 20 per cent probability of \$0 cash flows. So, the expected cash flows were instead \$8 million per year ($\$10 \text{ million} \times 80 \text{ per cent} + \$0 \times 20 \text{ per cent}$) and, therefore, the project's present value is \$80 million instead.⁹

Because it is often difficult to explicitly set up various situations and their probabilities, a more common approach to value an asset subject to downside risk is to add an increment to the discount rate. The effect is the same – a reduction in value – because increasing the discount rate reduces the value of each future cash flow. These two methods – probability-weighted cash flows and adjusting the discount rate – are arithmetically equivalent. This means that an adjustment to the discount rate can be translated into, for example, a probability of total loss of an investment's value. Continuing the same example above, the correct value of \$80 million could just as well be obtained by applying a discount rate of 12.5 per cent to the forecast \$10 million cash flows.¹⁰ In other words, an increment (or country risk premium) of 2.5 per cent on top of the 10 per cent discount rate would lead to the same result as probability-weighting the cash flows.

A word of caution is warranted here. Sometimes, valuation professionals adjust cash flows downwards to account for country risks and also add a country risk premium to the discount rate. But if the expected cash flows are already depressed by certain country risks, adding a country risk premium that incorporates those same risks into the discount rate will double-count them, and therefore result in an inflated discount rate and an undervalued asset.¹¹

Measuring the effect of country risk on the discount rate

Measures based on sovereign default risk

Perhaps the most common way to measure country risk is to refer to the sovereign yield spread (i.e., the difference between the yield on a US dollar-denominated bond issued by the government of the respective country and the yield on a

8 \$10 million/10 per cent = \$100 million, based on a perpetuity value formula that current value is equal to annual cash flows divided by the discount rate.

9 \$8 million/10 per cent = \$80 million.

10 \$10 millions/12.5 per cent = \$80 million.

11 See, e.g., Bekaert, G, Harvey, C, Lundblad, C, Siegel, S, 'Political risk and international valuation', *Journal of Corporate Finance* 37, 1–23 (2016).

US Treasury bond of a similar maturity).¹² So suppose, for example, that the yield on a US Treasury bond is 2 per cent, but the respective country's sovereign bond of similar maturity yields 7 per cent. The sovereign yield spread is therefore 5 per cent. If the discount rate on a project that is not affected by risk outside the United States warrants a discount rate of 10 per cent, it would require a discount rate of 15 per cent if that project was instead affected by the respective country's risks.

The higher the spread between these two yields, the higher the risk that the respective country's government will default on its bonds and the lower the expected recovery to investors in the event of default. The rationale behind the use of the sovereign yield spread as a measure of country risk is that events that would cause a foreign government's default on its bonds (economic, social, political and other country factors) would also be likely to lead to downside outcomes for private assets. In other words, if a country's economic performance deteriorates, it is likely to affect both the risk of defaulting on its sovereign bonds and a variety of risks that are relevant to private enterprises, such as social instability, exchange rate volatility, supply chain issues and corporate taxes. Academic evidence that corporate bond spreads correlate with sovereign yield spreads supports the notion that sovereign default risk is associated with the risks to investors in private assets.¹³

Another commonly used measure of sovereign default risk is to use credit default swap (CDS) spreads. The CDS premium on a country's sovereign bonds is an insurance premium on the possibility of default on those bonds.¹⁴ For example, a CDS premium of 400 basis points (i.e., 4 per cent) means that insuring \$10 million of debt against default for a specified period (e.g., five years) would cost \$400,000 per year. So, the spread of that CDS premium over the CDS premium on a benchmark country's sovereign bonds (usually US Treasury bonds) reflects how much more default risk exists in that country's sovereign bonds.

12 The maturity of the sovereign bonds should be similar to that of the project being evaluated, while taking into account that the bonds are sufficiently traded to ensure that their respective yields are representative of the market's view.

13 See, e.g., Dittmar, R F and Yuan, K, 'Do sovereign bonds benefit corporate bonds in emerging markets?', *Review of Financial Studies* 21 (2008), 1983–2014; Cavallo, E A and Valenzuela, P, 'The determinants of corporate risk in emerging markets: an option-adjusted spread analysis', *International Journal of Financial Economics* 15 (2010), 59–74.

14 Although credit default swaps protect against sovereign default, buyers of credit default swap (CDS) are still exposed to counterparty risk (i.e., the risk that the seller of the CDS is not able to pay in the event of default).

Sovereign yields and other measures of country risk based on high-frequency market data have the advantage over qualitative measures or less frequently updated quantitative measures in that they reflect the market's up-to-date perspective. The importance of this feature can be illustrated with the example of Venezuela in the late 2000s: whereas its sovereign yield spread was close to 2 per cent by 2006–2007, it had risen to 6 per cent by 2008, and then over 18 per cent in 2009. So, for example, a cash flow of \$100 four years from the valuation date could have changed in present value from \$64, based on a 2 per cent country risk premium on the discount rate, to \$37, based on an 18 per cent country risk premium.¹⁵

Measures based on relative volatility

Another approach to measuring country risk is to compare the volatility of local equity or debt markets to the volatility of the corresponding reference market, most often the US equity or bond market. The most typical application of this measure is to calculate the ratio between the volatility of the local market and the volatility of the reference market, and then apply it as a multiplier to the market risk premium component of the discount rate.¹⁶ For example, if the risk-free rate is 2 per cent, beta is 1.0,¹⁷ the market risk premium is 7 per cent, the specific country's market has a volatility measured by standard deviation of 60 per cent per year and the reference market's volatility is 40 per cent per year, then the discount rate would be 2 per cent + 1.0 * 7 per cent * (60 per cent/40 per cent), or 12.5 per cent.¹⁸ Stated differently, the country risk increment on the discount rate is 1.0 * 7 per cent * (60 per cent/40 per cent – 1), or 3.5 per cent.

15 Assuming 10 per cent cost of capital excluding country risk

$(1 + 10 \text{ per cent} + 2 \text{ per cent})^4 = 0.64$; $(1 + 10 \text{ per cent} + 18 \text{ per cent})^4 = 0.37$.

16 Damodaran, A, 'Country risk and company exposure: theory and practice', *Journal of Applied Finance* 13 (2003), 63–76.

17 An asset's beta is a component of the capital asset pricing model that measures the sensitivity of the asset's value to the overall market or the economy. A beta of 1.0 means that the value of the asset changes by as much as the market, whereas a beta above 1.0 means that the value of the asset changes by more than the magnitude of market fluctuations and, conversely, a beta below 1.0 means that the value of the assets changes by less than the magnitude of market fluctuations.

18 Discount rate = risk-free rate + beta * market risk premium * (standard deviation of country's market / reference market's volatility). Although only undiversifiable risk should be relevant per mainstream finance theory, it is common to calculate these volatility ratios based on overall volatility (i.e., diversifiable and undiversifiable risk) and to measure that volatility with standard deviations, not variances.

Note that the observed volatility of the specific country's market may appear lower than it actually is if that market is not very liquid. Securities that trade infrequently will not show frequent changes in prices and, therefore, will appear to have very low volatility. So, if the specific country's market is illiquid, the ratio of relative volatilities may appear lower than it actually is and, therefore, the country risk premium would be underestimated.

Another issue that may warrant scrutiny is how concentrated the specific country's market is in specific companies or industries. Since highly concentrated markets are often more volatile than more diversified markets in many developed countries, the ratio of relative volatilities may be higher than others. If that concentration is high, it is possible that a method based on the volatility of the specific country's market is representative of the risks faced by those companies or industries, but not of the overall country risk or of the risk that is relevant to the asset that is being valued. So, for example, damages pursuant to a breach of contract relating to a power plant may not be fairly calculated using a country risk premium that is based on the local equity market's volatility if the vast majority of the market capitalisation in that market is represented by mining companies.

Yet another issue relates to situations in which the respective country's inflation rate is very different from that in the benchmark country (e.g., the United States), as one may need to measure the two market volatilities in the ratio in the same currency, so as to avoid inflation unduly affecting the ratio. In these situations, it is typical to convert the respective country's market returns into US dollars, for example, and only then calculate its volatility and the respective ratio of volatilities.

Other applications and measures

Most other commonly used methods are adjustments to these approaches based on sovereign yield spreads or volatility ratios. Some methods use the sovereign yield spread but, in trying to arrive at the cost of capital on equity, not debt, adjust the sovereign yield spread for equity's higher risk. One common way to do so is to multiply the sovereign yield spread with the worldwide ratio of equity market volatility to debt market volatility. Another similar way involves applying the local country's ratio of equity-to-debt volatility to the sovereign yield spread. So, for example, if the particular country's sovereign yield spread is 5 per cent, its equity

market has a volatility measured by a standard deviation of 40 per cent per year, and its sovereign bond market's volatility is 10 per cent per year, then the country risk premium would be 5 per cent $\times$ (40 per cent/10 per cent), or 20 per cent.¹⁹

It is sometimes the case that a country has not issued sovereign debt and does not have an equity or debt market, therefore hampering the use of the measures described above. One solution is using the Ibbotson/Morningstar's Country Risk Rating Model, which is based on regression analysis and the country's credit rating by *Institutional Investor* to arrive at an estimated required return associated with investing in a specific country. For example, the country risk rating model estimated that the required return on equity in March 2015 was 12.3 per cent in Colombia and 13.7 per cent in India, whereas it was 7.6 per cent in the United States.²⁰ Based on each country's credit rating and equity returns, this approach obtains the average relation between the cost of capital and the countries' credit ratings. This average relation is then useful for estimating the cost of capital in the many countries with *Institutional Investor* credit ratings but no sovereign debt. These costs of capital are based on regression analysis in academic research.²¹

Another solution when a country has not issued sovereign debt is to rely on qualitative measures of country risk. To be useful in calculating damages, those measures of country risk need to be translated into value. There are services that provide qualitative measures and their translation to value. One way of using qualitative measures is by utilising statistical analysis to infer the relation between qualitative scores and effects on discount rates. So, for example, a regression analysis between PRS scores and sovereign yield spreads could provide an estimate of what should be the sovereign yield spread for a country that has not issued sovereign debt but has a PRS score. Other versions of this type of analysis could focus, for example, on certain subsets of country risks and their relations with sovereign yield spreads.

19 Damodaran, A, 'Estimating equity risk premiums', Working paper (1999), New York University. Abuaf follows the same method, replacing the sovereign yield spread with a multiple of the country's CDS spread – Abuaf, N, 'Valuing emerging market equities – a pragmatic approach based on the empirical evidence', *Journal of Applied Corporate Finance* 27 (2015), 71–88.

20 Based on the linear model. The linear model assumes that risk increases in a linear fashion with the risk rating, whereas the logarithmic model assumes that risk increases in a non-linear fashion with the risk rating.

21 See Erb, C, Harvey, C and Viskanta, T, 'Country Risk and Global Equity Selection', *Journal of Portfolio Management* 21 (1995), 74–83.

In any case, qualitative measures and their quantitative derivations suffer from the subjective basis on which those risk scores were assessed and from not being exactly contemporaneous with the desired valuation date: if conditions change suddenly, the risk scores will not be updated immediately.

Other valuation methods

The comparables method essentially estimates damages as a reduction in a measure of profits multiplied by a benchmark ratio (or multiple) of value to that measure of profits.²² It is important to select (1) which multiple should be used and (2) which transacted assets and publicly traded assets are comparable. To be comparable, an asset should be of similar risk and growth. That is often proxied by industry and size, but care must be taken also to filter for assets for which country risk is not too dissimilar. For example, valuing a company with operations, clients and suppliers all based in the United States by using as a comparable an otherwise similar transaction in Venezuela will necessarily undervalue the US-based company. So, one needs to account for the effects of country-specific risks.

Note that multiples based on past transactions will not account for the changes in country risk over time. This aspect of using past transactions is often overlooked when using past transactions of the very asset being valued for damages purposes. If country risk changed between the transaction date and the valuation date, a transaction should only be included if it is possible to update that transaction's value to the valuation date. Similarly, if it is difficult to find publicly traded assets that are comparable and of similar country risk, then the valuation should only include them if it is possible to adjust the respective multiples for the country risk of the asset being valued. This exercise involves converting the chosen benchmark ratio into its discounted cash flow counterpart, updating the country risk and converting it back to its now-adjusted multiple.

Much like the comparables method, valuation of the asset in question based on the market capitalisation of its owner (known as the market capitalisation method) and cost-based methods (e.g., book value and expenditures to date) may warrant adjustments because of changes in country risk from the measurement date to the valuation date. If cost-based methods are based on book values that

22 EBITDA (earnings before interest, taxes, depreciation, and amortisation) is commonly used as a measure of profits that quantifies operating-level earnings. The particular measure of profits to be used depends on the value drivers of the asset being valued. For example, the particular measure to be used in a comparables approach often depends on the asset's industry, and multiples are often based on measures such as sales, number of production units or book value.

were reliant on fair values, for example, at the time of the acquisition of another company, then these book values may well require adjustments for changes in country risk since then. Also, depending on the legal standard of which risks should be included or excluded, these and other methods may demand adjustments for country risk, among other factors.

Relevant risks in a damages calculation

After having covered why country risk is relevant, the various forms of measuring it and how it is applied in different valuation methods, it is important to note the extent to which country risk should affect the asset's valuation or damages assessment.

Exposure

An asset's risk does not necessarily equate to the country's risk. For example, an asset that does not rely on local capital or labour inputs is less exposed to that country's conditions than one that uses those inputs. This notion has direct implications on the use of measures of country risk. For example, sovereign yield spreads are a function of the country risk for sovereign borrowers, but they may not reflect all the country risks faced by private businesses investing in the country. The government's default risk reflects only the effects of country risk to the extent that they affect the government's fiscal situation. Although these conditions will also affect local businesses to varying degrees, private businesses face other risks that do not factor into the government's default risk or are at least less related to it (for example, risks relating to expropriation, changes in corporate taxes, environmental regulations, labour market regulations, capital market regulations and foreign exchange controls). In other words, there are many government policy changes that can affect the profitability of operating in a given country. For this reason, sovereign default risk is not necessarily the maximum risk that private investors face and, therefore, the sovereign yield spread is not necessarily the maximum country risk that is relevant to an asset's value.

Conversely, it can be argued that not all the sovereign yield spread is relevant to the country risk faced by an asset's cash flows and, therefore, an asset's country risk can be lower than the sovereign default risk. Consistent with this notion, the tribunal in *Sempra v. Argentina* contended that the country risk premium associated with a private company was lower than the Argentinian sovereign default

risk.²³ Moreover, academic literature shows that the risks to private investors can be lower than the sovereign default risk. Empirically, this is evidenced by the fact that sovereign yields can be higher than those of corporate bonds, especially if those bonds were issued by firms with considerable earnings from exports or there is a very close relationship with a foreign firm or the home government.²⁴

Using only a portion of country risk to adjust an asset's discount rate is most often accomplished through multiplying the measure of country risk (e.g., sovereign yield spread) by a factor below 1. A factor below 1 implies that the asset's relevant country risk is lower than the average country risk of the assets in that country. One way proposed in the literature to estimate that factor is to average the asset's access to capital markets, its susceptibility to political risk and its financial importance to the investor.²⁵ Another way proposed in the practitioner literature assumes that the asset's exposure to country risk (commonly referred to as λ , or lambda) can be estimated through the proportion of the revenues or the operating margin of the asset that originates from the country in question or other items, such as having production plants in that country.²⁶ So, for example, an asset's λ would be the ratio between (1) the share of revenues generated by that asset in a given country and (2) the share of revenues generated by an average asset in the same country. More rigorous statistical approaches would measure λ through a regression of, for example, the asset's stock returns, if available, against the sovereign debt's returns.

In making adjustments of country-wide measures to reach the risk relevant to the asset in question, one should consider, for example, the weight of revenues and costs from the country, the location of production facilities, the exposure to local controls and regulatory pressures, and the degree of execution risk (e.g., unpredictable technical problems). One should also exercise due care in avoiding the frequent assumption that the company's headquarters equate to the location of its risks, as well as examine whether the asset or company is hedged against adverse actions (through insurance or derivatives, for example).

23 *Sempra Energy International v. The Argentine Republic*, ICSID Case No. ARB/02/16, Award, 28 September 2007.

24 Durbin, E and Ng, D, 'The sovereign ceiling and emerging market corporate bond spreads', *J. Int. Money Finance* 24 (2005), 631–49.

25 Zenner, M and Akaydin, E, 'A practical approach to the international valuation and capital allocation puzzle', *Global Corporate Finance Report* (2002) Salomon Smith Barney.

26 Damodaran, A, 'Country risk and company exposure: theory and practice', *Journal of Applied Finance* 13 (2003), 63–76.

Risks evaluated immediately prior to valuation date

The discussion so far indicates that, in most circumstances, higher country risk diminishes the value of the asset at issue and, therefore, reduces damages. This leads to the possibility that the government of a country pursues actions that increased country risk, subsequently causing harm to the asset or even expropriating it, in which case the value of the asset had already been diminished before that harm. So, it is possible that taking into account the respondent's actions that diminished the value of the asset prior to the valuation date may adhere to the concept of the economic consideration reflecting the market's perception but may also reward poor behaviour on the part of the respondent. In these circumstances, the claimant's position will often be that only the risks that are not protected by investment treaties (e.g., foreign exchange risk or general business conditions) are relevant to calculating damages and, therefore, all other risks should be excluded. The result is a lower discount rate and higher damages. Conversely, the respondent's position will often be that the claimant invested while aware of the risks and should not be compensated with a higher value as if those risks had not existed.

Tribunal decisions in recent years have generally tended towards incorporating all risks prior to the valuation date, therefore lowering assets' values and damages. However, tribunals vary in the inclusion or exclusion of components of country risk. The tribunal in *Saint Gobain* considered that the bilateral investment treaty and the arbitration did 'not serve the purpose of insuring Claimant against the general risks of investing in Venezuela that a willing buyer would take into account in its assessment of the purchase price it would pay' and, therefore, 'the country risk premium must reflect all political risks associated with investing in Venezuela, including the alleged general risk of being expropriated without payment of (sufficient) compensation'.²⁷ In *Venezuela Holdings*²⁸ and *Tidewater*,²⁹ the tribunals also decided to include expropriation risk. In contrast, the tribunal

27 *Saint Gobain Performance Plastics Europe v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/12/13, Award, 30 December 2016, paras. 718, 719, 723.

28 *Venezuela Holdings BV & Others v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/07/27, Award, 9 October 2014, paras. 364–54.

29 *Tidewater Investment SRL and Tidewater Caribe CA v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/10/5, Award, 13 March 2015.

in *Gold Reserve* decided to exclude expropriation risk, therefore not allowing it to reduce damages.³⁰ The tribunal in *Flughafen* trod a middle ground by excluding the increase in expropriation risk from the time of investment to the date of harm.³¹

Conclusions

It is well known that risk varies from country to country. And even if the concept of country risk may encounter theoretical challenges, adjustments to asset valuations based on country risk are routinely applied, owing to the empirical evidence of its existence and relevance to investors. Even within the same country, country risk varies, depending on time and assets. The country risk that is relevant to a particular project may be higher or lower than that country's country-wide measures of risk.

There is a wide variety of approaches to measure country risk and most of this variety is concentrated in adjustments to the discounted cash flow method of valuation. As the various approaches to measure country risk may often lead to different results, the correct approach, or approaches, must be chosen with due care.

30 *Gold Reserve Inc. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB(AF)/09/1, Award, 22 September 2014, pp. 216–20, paras. 840–41.

31 *Flughafen Zurich AG and Gestion e Ingenieria IDC SA v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/10/19, Award, 18 November 2014.

CHAPTER 20

Taxation and Currency Issues in Damages Awards

James Nicholson and Toni Dyson¹

Introduction

This chapter describes some of the issues that can contribute to the distortion of the value of awards received by claimants arising from the treatment of taxes and currency, and explores some possible approaches to reducing or eliminating potential distortions from an economic point of view.

Taxes, and particularly taxes on profits, are a fact of corporate life in the majority of jurisdictions. As a result, the treatment of tax in the calculation of awards of compensation made by tribunals in international commercial and investment treaty arbitration can have a significant effect on the value of an award to a recipient. Overcompensation and under-compensation are possible if taxes are not considered appropriately, or at all.

The treatment of taxation in relation to awards of damages, depending on the circumstances, may be a question of the law of damages before it is a question of the assessment of economic loss. In the taxation part of this chapter, we focus on questions of economic loss arising in this context. These issues can be complex, given the nature of the calculation of an award, its timing and the international context in which many claims are made. Perhaps partly as a result, this area has often been given limited attention by tribunals and parties to disputes.

Similarly, the treatment of currencies in the calculation of awards of damages can have a very significant effect on the value of damages received by a claimant, again potentially giving rise to overcompensation and under-compensation.

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Calculating damages in international arbitration

Famously, the calculation of an award of monetary damages in bilateral investment treaty (BIT) arbitrations is based on the principle established by the Permanent Court of International Justice (predecessor to the International Court of Justice) in the *Chorzów Factory* case of 1928: ‘reparation must, as far as possible, wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed’.² The *ex ante* position should be restored. A substantially similar principle generally applies in international commercial arbitration: that the claimant should be restored to the position it would have enjoyed but for the breaches found by the tribunal. We shall call this the ‘principle of full compensation’.

The principle of full compensation implies that any award should restore the claimant to the same position that it would have enjoyed but for its injuries, taking account of all relevant factors, including applicable taxation and relevant currency movements, both in considering the financial position the claimant would have been in but for the breach or breaches, and the financial position in which it actually finds itself.

Tax treatment of arbitration awards

Why does tax matter?

Taxation of corporate profits is well established in most jurisdictions.³ These taxes would often have applied to any additional profits a claimant would have made but for its injuries, and also often apply to any award received by a claimant.

The treatment of taxation by tribunals in setting awards can make an important difference to the net proceeds of an award to a claimant and, therefore, whether the principle of full compensation has been met. Put simply, if an award itself is subject to tax and the value of the award has been calculated by reference to profits lost on a post-tax basis, under-compensation of a claimant is likely to arise. In these circumstances, the principle of full compensation might imply, at its most straightforward, that it would be necessary for the claim to include a gross-up for tax payable on the award.

2 *Factory at Chorzów (Germany v. Poland)*, Merits, 1928 PCIJ (Ser. A) No. 17 (13 September) at [125].

3 Although individuals are often parties to international arbitration, we focus on the situation of corporations.

However, the question of tax is often largely and sometimes entirely disregarded by the parties to a dispute. The sources of this neglect are understandable:

- damages calculations are often already complex, time-consuming and expensive for the parties to prepare, before consideration of tax issues;
- tax is itself a complex area often requiring evidence from additional experts if it is to be examined in detail; and
- because the amount of taxes that would have been, or will be, paid in certain situations can depend on the performance in the future or hypothetical position of both the legal entity and its corporate group, treatment of tax issues may require an even broader scope for analysis and estimation than that required for other aspects of loss assessment.

Moreover, to assess the extent of taxes that a claimant will pay on any award, it is often necessary to make estimations concerning the future actual performance of the claimant (because, for example, a loss-making company may pay no taxes on an award, whereas the same company, if profitable, would pay taxes). When an estimation is compared with the future actual performance of a business it may result in dissatisfaction for one of the parties affected by an award of damages.

Below, we discuss some of the conceptual issues involved in considering the tax implications of damages awards, before giving an overview of tax issues in selected jurisdictions.

Issues raised by tax analysis

To illustrate the issues at hand, consider a relatively straightforward case in which a claimant is seeking compensation only for trading losses suffered in its home jurisdiction.

To analyse fully the tax treatment of the hypothetical lost profits, the following would need to be taken into account:

- Over which periods would the lost profits have arisen?
- What is the applicable corporation tax rate in each period?
- What is the basis of the calculation of taxable profits in each period (e.g., taking account of allowances, depreciation of assets for tax purposes and other factors)?
- To what extent are other losses available for offset either within the period, brought forward from earlier periods or surrendered from affiliates?

A similar analysis would be required in relation to the award claimed in compensation for the lost profits, which would need to take the following into account:

- On what basis will the award be subject to tax? Does it follow the taxation of the lost profits or is it treated as a separate source of income or gains subject to different rules?
- In which period would it be subject to tax? At the time of the claim, both the timing of any future award payment and the tax position of the claimant in the tax periods in which the award may be received are likely to be uncertain.

Further considerations come into play when the injury causes loss to an asset. Depending on the applicable jurisdiction, damage to an asset may result in a deemed disposal or part disposal of the asset for tax purposes, and any compensation for such a loss may be treated as proceeds of such a disposal. This may apply when the asset is tangible property, or intangible property such as a brand, which may be a recognised asset on the claimant's balance sheet. The capital gain or loss will be calculated according to applicable tax principles, deducting allowable costs (of acquisition, etc.) from the proceeds of disposal. This calculation may not be consistent with the method used to calculate the award, which may be by reference to loss of revenue, and this would need to be considered to ensure appropriate post-tax compensation.

Further refinement would be needed if a claimant is seeking compensation for profits that would have been generated partly or entirely in jurisdictions other than its home jurisdiction. This is very often the situation in BIT cases and for those commercial cases in which a parent company is claiming for losses suffered by its foreign subsidiaries.

Although international law may apply to the arbitration process, tax law is not international. Each jurisdiction has sovereign power to determine the taxation of companies resident or active in that jurisdiction. The exercise of this sovereignty can result in conflict with other jurisdictions or supranational bodies, as demonstrated by the intervention of the European Union in Apple's tax arrangements in Ireland, agreed by the Irish fiscal authority but attacked under EU State Aid principles. The diversity of approach to taxation generally is illustrated by the table

below, which summarises headline corporation tax rates by country.⁴ The method of identification of the profits subject to tax, taking account of reliefs, exemptions, losses and affiliated company tax positions, also varies.

Corporation tax rates in selected jurisdictions (2022) (excludes local tax charges)

Jurisdiction	Corporation tax rate
China	25%
France	25%
Germany	15%
Hong Kong	16.5%
Ireland	12.5%
Singapore	17%
Switzerland	8.5%
United Arab Emirates	0%*
United Kingdom	19%†
United States	21%
Venezuela	34%
* UAE has introduced a corporation tax regime at 9%, starting from June 2023	
† UK is due to raise the headline rate of corporation tax to 25% from April 2023	

In cross-border cases, therefore, it is necessary to consider whether there is symmetry of taxation between the lost profits on one hand (hypothetically subject to tax in the home jurisdiction of the injured company) and the award on the other hand (potentially taxable as income or capital gains when received by the injured company or an affiliate in another jurisdiction).

This situation also raises the question, in relation to commercial cases, of equity between jurisdictions, as well as between claimant and defendant; when tax is lost in one jurisdiction as a result of an injury inflicted on one company and paid in another jurisdiction as a result of compensation paid to a parent or affiliate in that other jurisdiction, some form of settlement might be expected between tax authorities in different jurisdictions. However, there is no mechanism in the

4 See Organisation for Economic Co-operation and Development, Tax Database (<https://www.oecd.org/tax> (last accessed 28 September 2022)); Trading Economics (www.tradingeconomics.com (last accessed 28 September 2022)); and KPMG corporate tax rates table (<https://home.kpmg/sg/en/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html> (last accessed 28 September 2022)).

established tax treaty system for tax fortuitously received in one jurisdiction to be reimbursed to another, so this type of process is not yet formally possible, in commercial cases at least.⁵

There is also the possibility of a claimant receiving an award calculated on a pre-tax basis, which is then not subject to tax; for example, if circumstances change or an alternative tax return position is taken. Such over-recovery would also be a violation of the principle of full compensation.

Perspectives from United Kingdom, United States and France

As the brief survey above indicates, the issues involved are complex, and a detailed analysis of tax issues risks creating a separate arbitration within the arbitration, requiring further evidence of fact and evidence from tax experts, among other things. We have never sensed an appetite from parties or tribunals for such a detailed investigation, which is understandable given the potential for excessive technical detail, creative assumptions and uncertainty of tax outcomes outside the control of the tribunal.

Before we discuss the steps that parties and tribunals can take towards implementing the principle of full compensation as far as taxation is concerned, we explore certain perspectives arising in the United Kingdom, the United States and France.

UK perspective

The case of *British Transport Commission v. Gourley*⁶ confirmed a general principle of compensation consistent with the principle of full compensation. However, the degree of approximation with which this principle is applied to the treatment of taxation on damages is variable.

The UK corporation tax treatment of an award of compensation is determined by the nature of the loss to which the award refers. When corporate trading activity has been damaged, and the award is calculated by reference to the loss of trading profits, it will be treated as taxable trading income. The timing of taxation of an award is likely to follow the period in which the award is recognised in the recipient's accounts.

5 Although see below for the tax treatment in France (and potentially other jurisdictions) of compensation for expropriations, as may be awarded under a bilateral investment treaty and otherwise.

6 [1955] UKHL 4, 3 All ER 796.

When compensation is claimed for damages other than loss of trade profits, it is necessary to determine whether the claim is in respect of a capital or revenue loss, and for capital losses, whether the loss relates to an underlying asset treated as chargeable for corporation tax purposes. A significant body of case law addresses the capital or revenue distinction, and UK statute defines chargeable assets. The area is complex and the facts will determine the UK tax treatment.

When compensation is claimed for permanent damage or deprivation of use of a fixed capital asset, it is possible that an award will be treated as a capital receipt. The tax treatment of the award will then be determined by whether the damage can be related to underlying property that is a chargeable asset for the purposes of calculating corporation tax on disposal (e.g., plant and machinery). In such cases, an award may be considered a deemed disposal or part-disposal of the asset, and a capital gain or loss would then arise for corporation tax purposes. It was established in the case of *Zim Properties*⁷ that the right to take court action in pursuit of compensation or damages is of itself an asset for capital gains tax purposes. This case concerned damages for professional negligence and, under current UK practice, a punitive tax cost can arise.

Intangible assets such as goodwill were also historically treated as chargeable assets for corporation tax purposes; however, specific rules now apply to intangibles acquired (from third parties) or created after April 2002, such that gains or losses on disposal will be treated as revenue income or loss.⁸

A capital receipt not related to an underlying chargeable asset will not be subject to corporation tax under general principles. However, the basis on which receipts are characterised as non-taxable capital is dependent on the underlying facts, subject to a wide range of case law precedent and, therefore, not clearly defined.

A UK-based claimant, therefore, would need to identify the nature of the lost profits (whether capital or revenue) to analyse the tax treatment of the amount claimed. To restore the *ex ante* position, the calculation of the amount of the award should take account of the tax treatment of both the loss and the award itself.

⁷ *Zim Properties Ltd v. Proctor*, 58 TC 371.

⁸ The taxation treatment of intangible assets, including goodwill, is now dealt with by the Corporation Taxes Act 2009, Part 8: Intangible Fixed Assets.

US and French perspectives

US courts have approached the issue of taxation of arbitration awards in the context of employment tribunal cases adopting a 'make whole' purpose that is broadly consistent with the principle of full compensation.⁹ These anti-discrimination cases are not directly relevant to the discussion relating to international commercial and investment treaty awards, but some insightful guidance emerges, such as the tribunal's emphasis on the significance of the particular facts of each case and placing the burden of proof on the claimant to establish any adverse tax consequences to be taken into account.

Turning to investment treaty cases involving US-based claimants, the award in the case of *Chevron and Texaco v. Ecuador*¹⁰ included lengthy analysis of the tax consequences in Ecuador of profits lost. After the Republic of Ecuador agreed that no further tax, penalties or interest would be payable on the award, the award was calculated net of tax. In *Corn Products v. Mexico*,¹¹ the net-of-tax award was made to a US parent rather than to the Mexican subsidiary, to ensure no additional taxes were payable in Mexico. It is not clear whether US taxes would ultimately have been payable by the claimants in these cases or whether this was relevant in the calculation of the award. If the awards were subject to tax in the United States, the *ex ante* position may not have been restored unless the profits lost in Mexico would also ultimately have been subject to US tax.

A final point of fairness arises in the context of investment treaty awards (analogous to the point above relating to jurisdictional fairness in commercial cases). In the case of the expropriation of a company by a government, the value taken by the expropriating government is as a first approximation of the after-tax value of the relevant entity. If an award against a government based on the pre-tax value of the entity is paid to the parent company, as is often the case for BIT awards (on the grounds that the award will be taxed in the parent company's jurisdiction), then the losing government will pay an award greater than the value taken. The excess between the value taken and the amount paid would then effectively be a tax windfall for the government of the parent company's jurisdiction.

9 *Eshelman v. Agere Systems Inc.*

10 *Chevron Corporation (USA) and Texaco Petroleum Company (USA) v. Republic of Ecuador* (March 2010), PCA Case No. 2009-23, cited in Nhu-Hoang Tran Thang, 'Tax Gross-Up Claims in Investment Treaty Arbitration' (February 2011).

11 *Corn Products International Inc v. United Mexican States* (March 2010), ICSID Case ARB(AF)/04/1, cited in Nhu-Hoang Tran Thang (op. cit. footnote 9).

It is perhaps to guard against such an outcome that the French General Tax Code stipulates that the French state will levy no taxes on awards paid in relation to expropriation or similar measures by a foreign government.¹²

Calculating tax impact in practice

One approach often used by a claimant is to quantify its claim before deducting any corporation taxes the affected entity would have paid, on the grounds that any award will itself be taxed, leaving the claimant's net position in line with the principle of full compensation. This approach is appropriate if the taxation of the lost profits would have been broadly in line with taxation of the award, both by reference to the method of calculation and marginal tax rate for the periods in question.

An alternative approach that is also often used is for a claimant to state its claim after deducting the taxes the entity would have paid, and to leave it to the tribunal to award the amount that would constitute full compensation post-tax. This approach essentially defers the question of taxation to the hearing or post-hearing stage. Such an approach would be appropriate if it is clear that the award itself would not be subject to tax. However, when the tax treatment of the award is not addressed at all, the claimant would be at risk of under-compensation.

As the great John Maynard Keynes¹³ was reported (after his death) to have said: 'It is better to be roughly right than precisely wrong.' In view of the limitations of the above approaches, it may improve the appropriateness of a given award at an acceptable cost to pursue the issue of taxation slightly further, to move in the direction of the 'right' award, than to leave this undone.

Given the complexities involved in assessing taxes, even at a relatively simplified level, it is likely to be useful to secure the input of individuals with hands-on experience of tax assessment in the relevant jurisdictions, to validate the approach being undertaken. This input may come from the parties' own finance teams or existing external taxation advisers. Several consulting firms active in the assessment of losses in international arbitration, including the authors' own firm, have tax groups that also offer expertise in this area.

12 Article 238 *bis* C.

13 John Maynard Keynes (1883–1946) is regarded as the founder of modern macroeconomics.

Arbitration awards and currency

Why does currency matter?

Issues of currency arise very frequently in assessing losses in international arbitration. The critical issue is not so much the currency in which any award is to be paid – unless the currency is truly exotic (unlikely) or subject to exchange controls (at least sometimes explicitly ruled out),¹⁴ a payment in one currency can today be quickly and very cheaply exchanged into another currency if the recipient wishes. The critical issues instead, are the currency in which the award is to be calculated and the dates on which any amounts in other currencies are to be translated into the award currency.

The following example (which mirrors several of the authors' recent cases) illustrates the effect this can have. Consider a loss suffered most immediately in a local currency, of 100 million currency units, and an award five years later. During the intervening period, local currency interest rates have been at 10 per cent, euro interest rates at 5 per cent and the exchange rate has depreciated from 10 to 20 local currency units to the euro, all as shown in the table below.

	Loss calculated in local currency			Loss calculated in euros		
	Local currency value	Exchange rate	Euro value	Local currency value	Exchange rate	Euro value
Loss at date of breach	100 million	10	10 million	100 million	10	10 million
Interest rate	10%					5%
Years to payment of award	5					5
Award including interest	161 million	20	8.1 million			12.8 million

Assume further that it is no contention between the parties that the award is to be paid in euros.

¹⁴ Sergey Ripinsky and Kevin Williams, in their book *Damages in International Investment Law* (British Institute of International and Comparative Law, 2008), cite the tribunal in *Vivendi v. Argentina* (ICSID Case No. ARB/97/3), and the Iran-US Claims Tribunal, both of which state that it is the 'frequent' or 'usual' practice of tribunals to provide for payment of damages in a convertible currency (footnote 2 to Chapter 10).

Straightforwardly, the euro value of the loss at the date of breach was €10 million. The respondent argues that the award is to be paid at the euro equivalent of the loss after it has been assessed in local currency and brought forward at the applicable rate of interest. Using this approach, the value of the award when paid is €8.1 million, as shown above (this is lower than the €10 million value of the loss at the date of breach, because the effect of the weakening of the local currency exchange rate more than offsets the relatively high interest rate).

The claimant argues, however, that the correct approach is to translate the loss into euros at the date of breach, using the then prevailing exchange rate, and then to add interest to the present. This gives rise to an award of €12.8 million, more than 50 per cent higher than the figure proposed by the respondent.¹⁵

The approach to currency selected by the tribunal, therefore, will have a significant effect on the amount recovered by the claimant. The effects of this general point can be far more dramatic than the illustrative example above; one case that was ultimately decided by the UK's House of Lords involved an award of the local currency equivalent at the date of payment of US\$20,000 that would have been nearly US\$3 million if translated into dollars at the date of breach.¹⁶

Legal approaches to currency and damages

The evolution of English law relating to currency and damages further illustrates the importance of this issue. For much of the 20th century, English law held that damages awarded in the English courts must be awarded in pounds sterling.¹⁷ Damages claimed in contract law were to be converted into pounds sterling at the date of the alleged breach, disregarding subsequent fluctuations in relevant exchange rates.

15 If the local currency had appreciated, the reverse would apply and the claimant would be better off under the former approach.

16 *Attorney General of the Republic of Ghana v. Texaco Overseas Tankships*, The Texaco Melbourne, cited in *McGregor on Damages* (18th edition, McGregor, Sweet & Maxwell, 2009), 16-045.

17 We have no legal training on these issues; our understanding of the English law on currency and damages is derived in general from *McGregor on Damages* (op. cit., footnote 15), Chapter 16, at 16-019.

Although this treatment may be appropriate for a claimant predominantly doing business in pounds sterling, it exposes claimants operating primarily in other currencies to fluctuations in the value of the pound, in the same way as in the example above. This benefited the claimant at the expense of the defendant when the value of the pound appreciated during the relevant period by more than the differential between the applicable interest rate in each currency, and vice versa. During the Bretton Woods era of pegged exchange rates,¹⁸ currency fluctuations, and hence the risks thereby imposed on parties to disputes, were very limited, apart from occasional devaluations. However, with the emergence of floating exchange rates from 1968, the associated risks grew.

The practice changed in two steps. The first step arose in 1974 when the Court of Appeal of England and Wales confirmed an award by commercial arbitrators expressed in a foreign currency, which had for some time been the practice among commercial arbitrators in appropriate circumstances.¹⁹ Then, in 1975, the House of Lords, citing the development of floating exchange rates, explicitly repudiated the principle that claims for damages must be expressed in sterling.²⁰ From that point forward, claims for breach of contract under English law could be expressed in foreign currency; if any conversion was needed for enforcement purposes, it would take place at the date the court authorised the claimant to enforce the judgment (the date of payment).²¹ This decision reduced the scope for foreign exchange rate movements to affect parties to a dispute inappropriately.

This then leaves the question, often hotly disputed in international arbitration today, of the currency in which to express an award. The English law approach, as summarised in *McGregor on Damages*, starts with an examination of the relevant contract; however, the mere fact that payments under the contract are to be made

18 The Bretton Woods system included a collective international currency exchange regime that was in place from the mid-1940s to the early 1970s.

19 *Jugoslavenska Oceanska Polvidba v. Castle Investment Co Ltd*, 1974.

20 *Miliangos v. George Frank Textiles*, 1975.

21 All as outlined in more detail in *McGregor on Damages* (op. cit. footnote 15), at 16-028.

in a particular currency does not necessarily imply that that is the appropriate currency for the award of damages.²² The correct treatment, per Lord Wilberforce, is that damages should be calculated:

*in the currency in which the loss was felt by the plaintiff or 'which most truly expresses his loss'. This is not limited to that in which it first and immediately arose. In ascertaining what this currency is, the court must ask what is the currency, payment in which will as nearly as possible compensate the plaintiff in accordance with the principle of restitution, and whether the parties must be taken reasonably to have had this in contemplation.*²³

Under this principle, for example, a loss suffered by a French charterer under a contract denominated in dollars, for delivery to Brazil of goods that were damaged as a result of a breach by the shipowner, was subject to an award in French francs, because the charterer had had to use French francs to buy the Brazilian cruzeiros with which to compensate the cargo receiver.²⁴

International courts and tribunals, as noted above, have consistently expressed compensation in freely convertible currencies. So, for example, in *Biloune v. Ghana*,²⁵ the claimants were compensated in relation to investments made in pounds sterling, Deutschmarks, US dollars and Ghanaian cedis (the latter not being freely convertible). The tribunal awarded compensation in the first three currencies but awarded the fourth amount in US dollars.²⁶

22 *McGregor on Damages* (op. cit. footnote 15), at 16-038.

23 Commenting on *Services Europe Atlantique Sud (SEAS) v. Stockholms Rederiaktiebolag SVEA*, often known as *The Folias*, as quoted in *McGregor on Damages* (op. cit. footnote 15), at 16-039.

24 *The Folias*, per *McGregor on Damages* (op. cit. footnote 15), at 16-037.

25 *Antoine Biloune and Marine Drive Complex Ltd. v. Ghana Investments Centre and the Government of Ghana*, Award on Damages and Costs, 30 July 1990.

26 Award on Damages and Costs of 30 June 1990, as quoted in Ripinsky and Williams, *Damages in International Investment Law*, op. cit. note 13, p. 395.

In selecting the appropriate convertible currency (or currencies) for an award, international law reached similar conclusions to English law at an earlier point in time but, perhaps not surprisingly, they are not as systematically applied. The tribunal in the *Lighthouses* arbitration between France and Greece stated in 1956:

*The injured party has the right to receive the equivalent at the date of the award of the loss suffered as the result of an illegal act and ought not to be prejudiced by the effects of a devaluation which took place between the date at which the wrongful act occurred and the determination of the amounts of compensation.*²⁷

Other institutions, including the United Nations Compensation Commission and the Iran–US Claims Tribunal, have adopted a similar approach.

Sergey Ripinsky and Kevin Williams note several mechanisms that have been used by international tribunals to implement this principle in cases in which the foreign exchange value of one of the possible currencies of the award had depreciated by more than any differential in the applicable interest rate. First, and as discussed above, the loss can be converted into the currency of the investor at the date of the breach. This was the approach taken by the tribunal in *Sempra Energy v. Argentina*,²⁸ after the Argentine peso fell against the US dollar to less than one-third of its value at the date of the breach. Second, and rather more unusually, the loss could be assessed in some third currency that has not depreciated – Ripinsky and Williams give the example of the 1956 *Lighthouses* arbitration between France and Greece, which related to events in the 1920s, since when the French franc had depreciated by 90 per cent and the Greek drachma by even more. This tribunal accepted the claimant's request to use the US dollar, which had been relatively stable in value during this period, as the money of account. Third, and even more unusually, some special adjustment could be made by the tribunal – for example, in *SPP v. Egypt*,²⁹ the tribunal adjusted the amount awarded in US dollars for the (relatively high) general dollar price inflation that had applied between the 1978 breach and the 1982 award, using the change in

²⁷ *id.*

²⁸ *Sempra Energy International v. Argentine Republic*, ICSID Case No. ARB/02/16, Award, 28 September 2007.

²⁹ *Southern Pacific Properties (Middle East) Limited v. Arab Republic of Egypt*, ICSID Case No. ARB/84/3, Award, 20 May 1992.

the US Consumer Price Index.³⁰ Finally, compensation may still be made in the depreciating currency if the associated award of interest is sufficient to offset the effect of foreign exchange depreciation.³¹

Valuer's approach to treatment of currency in damages awards

Absent specific instruction, and as with questions of taxation, the valuation expert will assess currency issues by reference to the principle of full compensation, by assessing the financial position of the claimant but for the breach, and comparing that to the financial position of the claimant in actuality. The effects of taxation on an award calculated in one currency by reference to a loss suffered in another, and associated currency differences, may also need to be considered to achieve full compensation.

To implement this principle, a valuation expert must form a view as to the likely use by the claimant of the cash flows lost due to the breach. It would seem that this involves grappling, from a valuation point of view, with the same issues as those addressed under English law when an arbitrator or judge considers 'which [currency] most truly expresses [the claimant's] loss'.³²

A valuation expert may be able, however, to bring financial evidence relevant to addressing this question of which currency most truly expresses the claimant's loss. Examination of a claimant's financial statements or other accounting information may allow a valuer to test assertions made by the claimant relating, for example, to the currency mix of a claimant's revenues, costs, assets and liabilities, to a company's foreign exchange hedging strategy and other relevant elements.

Moreover, if a loss relates to a lost stream of cash flows – as in the case of most lost profits assessments, some expropriations, and many cases in which losses are assessed as of a present date rather than as a value of a business or asset at a past date – then the timing of those lost cash flows may be doubly important. In the first place, this is because, as in any assessment of loss, the later in time a loss in a particular currency is felt, the less the value of that loss in that currency at the date of assessment. Second, however, because if for award calculation purposes each lost cash flow is translated into the second currency at the date it would have been incurred, then the date of each lost cash flow will determine the exchange

30 The manner of awarded interest in dollars in this matter being inadequate to make such compensation.

31 See Ripinsky and Williams, in *Damages in International Investment Law*, op. cit. note 13, Section 10.1.2, for further discussion of these points.

32 See footnote 23.

rate that is applicable. The interaction of the timing of the lost cash flows with movements in the relevant exchange rate may have a major effect on the overall value of the claim.

Finally, the international law examples cited above focus on methods to insulate claimants against situations in which depreciation in the currency of the respondent state would reduce the value of an award to the (inappropriate) detriment of the claimant. However, it can arise that the respondent state's currency appreciates rather than depreciates after the date of the breach. From a valuation expert perspective, the principle of full compensation would insulate claimants from any associated benefit – as in the case of currency depreciation, the loss would be translated into the award currency at the date it was felt. To do otherwise would be to give claimants a one-way bet on currency movements subsequent to the date of breach – a one-way bet with a potentially significant financial value that could, in principle, be quantified using options-pricing techniques.

Case study

Tax

In a breach of contract case, the claimant's lost profits were estimated by computing the profits the claimants would have earned absent the respondent's breach. The operating currency of the affected entity was the US dollar and the claimant's other activities are all denominated in the Singapore dollar, and we initially assume the lost profits would, but for the breaches, have translated each year from US dollars into Singapore dollars. The lost profits are quantified by discounting them to a date of assessment (1 January 2022) using the claimant's Singapore dollar weighted average cost of capital (WACC), which we assume to be 8 per cent.

Claimant's losses (S\$ millions)

Year	Lost profits (after tax)	Discount factor (S\$, 8%)	Discounted lost profits (S\$, after tax)
Key	A	B	A*B
2022	100	0.93	93
2023	120	0.86	103
2024	140	0.79	111
2025	160	0.74	118
2026	180	0.68	123
Total			547

Currency

The above lost cash flows are consistent with an assumption that the losses in US dollars would have been converted into the claimant’s currency, the Singapore dollar, at each year’s exchange rate and then discounted to the date of assessment at a discount rate denominated in Singapore dollars.³³ This is shown in the table below, which expands on the claimant’s losses table, above.

Claimant’s losses – translated to Singapore dollars year by year (S\$ millions)

Year	Lost profits (US\$, after tax)	S\$/US\$	Lost profits (S\$, after tax)	S\$ discount rate (8%)	Discounted lost profits (S\$, after tax)
Key	A	B	C=A*B	D	C*D
2022	74	1.35	100	0.93	93
2023	90	1.33	120	0.86	103
2024	103	1.36	140	0.79	111
2025	117	1.37	160	0.74	118
2026	130	1.38	180	0.68	123
Total as of 2022					547

Alternatively, the claimant might argue that the lost cash flows would have been kept in US dollars throughout the period of loss – perhaps reinvested in this or another venture of the claimant’s group. In such a situation, the lost profits would be calculated as a lump sum in 2022 money of US\$414 million by applying a US dollar-denominated discount rate, which we assume to be 7 per cent, and then exchanged into the claimant’s currency of Singapore dollars at the January 2022 exchange rate of S\$1.35 per US dollar, to give a loss of US\$559 million.

33 To derive the Singapore dollar-denominated WACC, we applied the international fisher effect by applying the relative inflation between Singapore and the United States to the US dollar-denominated WACC of 10 per cent ($9.44\% = [(1+10\%) * (1+1.48\%) / (1+2\%)] - 1$). The forecast inflation rates in Singapore and the United States in 2027 are 1.48 per cent and 2 per cent, respectively. Source: IMF World Economic Outlook Database, April 2022.

Claimant's losses – assessed in US dollars and translated to Singapore dollars at date of assessment (S\$ millions)

Year	Lost profits (US\$, after tax)	US\$ discount rate (7%)	Discounted lost profits (US\$, after tax)	Exchange rate (S\$/US\$)	Value in claimant currency (S\$)
Key	A	B	C=A*B	D	C*D
2022	74	0.93	69		
2023	90	0.87	79		
2024	103	0.82	84		
2025	117	0.76	89		
2026	130	0.71	93		
Total as of 2022			414	1.35	559

Which of these two approaches to currency is more appropriate is a question of fact and expert evidence as to the more realistic assumption regarding the use to which the claimant would have put the lost cash flows if it had received them. In the above example, the claim amount is higher in the second situation in which losses are assessed as a lump sum in US dollars as of 2022 and then translated into Singapore dollars. However, in general, either approach could lead to a higher claim, depending on the facts surrounding the case in question.

CHAPTER 21

Pre-Award Interest

James Dow¹

Pre-award interest arises in most cases when damages are awarded. Typically tribunals assess damages as of a date in the past, and interest is applied to this amount up to the date of the award. Because the entire arbitration process (from the date of damages to filing, through to an award) can take a long time to complete, and the rate of pre-judgment interest may be quite high, interest can make up a substantial proportion of total damages. For example, in case ARB/11/26² at the International Centre for the Settlement of International Disputes (ICSID), principal damages totalled US\$87.3 million and prejudgment interest totalled more than US\$85.5 million, close to 50 per cent of total damages (principal plus interest). In case ARB(AF)/99/1,³ principal damages totalled 9.5 million Mexican pesos and prejudgment interest totalled 7.5 million pesos – 44 per cent of the total.

Interest in financial markets

Interest is used in finance to bring amounts of money forward in time to find equivalent amounts of money at a specified future date. Interest rates may also be used for discounting, that is, to bring amounts of money backwards in time. Positive interest rates reflect the ‘time value of money’ – lenders require an inducement to lend money because it requires them to postpone their own consumption

1 James Dow is a professor of finance at London Business School. The author thanks Cosma Bianca and Ben Sacks from The Brattle Group for their assistance in compiling the data and providing comments for this chapter.

2 *Tenaris S.A. and Talta – Trading e Marketing Sociedade Unipessoal Lda. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/11/26.

3 *Marvin Roy Feldman Karpa v. United Mexican States*, ICSID Case No. ARB(AF)/99/1 (also referred to as *Marvin Feldman v. Mexico*).

or their business use of the money, while borrowers are willing to pay this because they have immediate consumption needs or because they can use the money immediately for their own business purposes. Together, these economic considerations as they apply to actual and potential lenders and borrowers (which include governments and their agencies) determine the ‘time value of money’.

Apart from the pure time value of money, there are a number of additional factors that may determine market interest rates. These include premiums in case the borrower defaults, premiums for liquidity or adjustments reflecting the tax treatment of the loan.

Interest rates are normally greater than zero. They change over time, just like any other market price; default and liquidity premiums change too. Since the financial crisis of 2008–2009, interest rates have been very low and some have even been negative. With the re-emergence of inflation in 2022, interest rates have risen again.

Pre-award interest

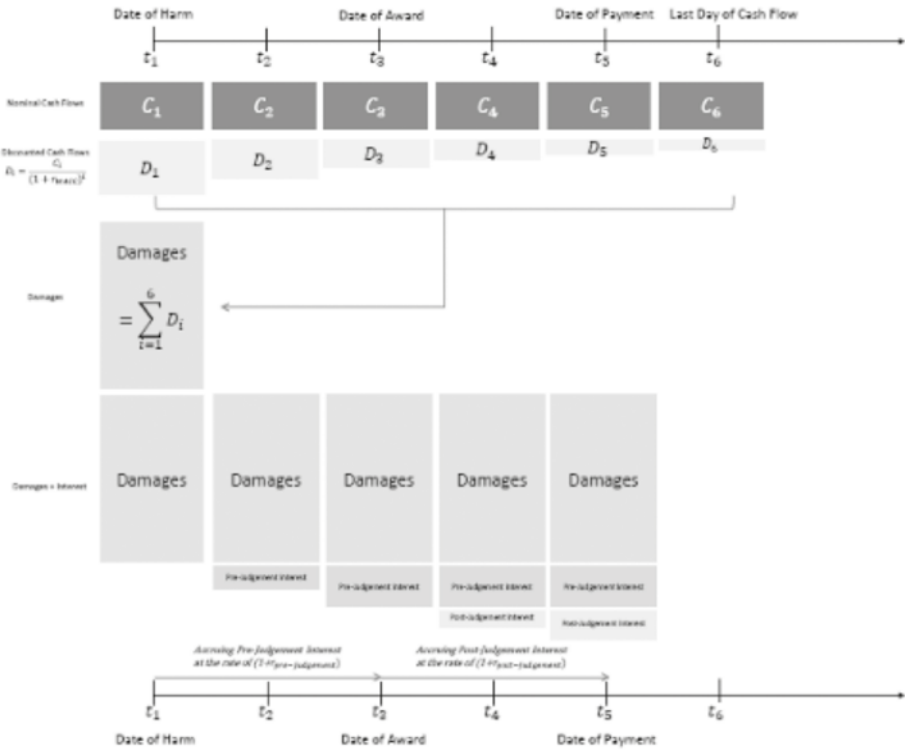
Interest rates are used to bring amounts of money backwards and forwards in time. Arbitration cases typically involve amounts of money at many different times, and these are brought forwards and backwards using different rates, such as the cost of capital and the pre-award interest rate (the differences between cost of capital and pre-award interest rate, and the reasons why they are different, are explained below).

Suppose a claimant owns or owned an asset that, the tribunal decides, is rendered less valuable by an act by the respondent (the ‘bad act’). We assess how much money the claimant would have expected to receive if the claimant had not carried out this act. Since the claimant did carry out the bad act, this is a hypothetical situation that is referred to as the ‘but for’ situation; in other words, the situation that would have been expected to prevail but for the respondent’s bad act. The amount of damages is the difference between the money the claimant actually received, and the money the claimant would have received in the but-for situation.

However, both in reality and in the but-for situation, these amounts of money occur at different dates, and we need to allow for this. Suppose the bad act occurred at date t_1 . The asset yields, or would have yielded, cash flows at dates $t_1, t_2, t_3, \dots, t_n$. The tribunal’s award takes place at date t , which could be before or after date n . Typically, the damages figure is assessed as at the date of the bad act by bringing the cash flows from the asset back to date t_1 (this is known as the ‘present value’ as at date t_1). The difference in asset value at date t_1 between the actual and but-for situations is damages as at that date. This amount

is then brought forward in time using the pre-award interest rate. Further interest (post-award interest) is then added until the payment is actually made, which could be a considerable time later.

Figure 1



The rate used to bring actual or expected (but-for) cash flows backwards in time is typically the cost of capital for the asset. This rate normally includes a risk premium reflecting the fact that the asset is a risky endeavour with uncertain cash flows. The rate used to bring the asset value forwards in time to the award date, however, is a different rate – often a riskless rate – as is discussed below.

Post-award interest

Tribunals often award post-award interest in addition to the amount specified in the award. Post-award interest is added until the award is actually paid. The starting point for post-award interest could be either the date of the award or a later date. For example, the tribunal might specify that the award should be paid by a date within a few months of the award (without the addition of post-award interest) but that any further delay would attract post-award interest from that date.

Post-award interest is often applied at the same rate as pre-award interest. This reflects the view that interest is just compensating for the time value of money. An alternative view is that post-award interest should be higher than pre-award interest to discourage late payment. If the respondent has to pay a significant default premium on its borrowing, any post-award interest rate that is lower than its cost of borrowing, such as the risk-free rate, can create an incentive to delay payment.

In the rest of this chapter, I refer mostly to pre-award interest, but most of the material applies equally to post-award interest.

Different interest rates that may be used for pre-award interest

A number of different interest rates might be mentioned in the context of pre-award interest; the following are the most common.

Contractual rates

The claimant and respondent might be bound by a contract, an alleged breach of which gave rise to the dispute. The contract might specify an interest rate to be used in the event of a late payment. Many arbitrations concern claimed breaches of bilateral investment treaties, which sometimes specify interest rates.

Benchmark rates (or reference rates)

Many financial contracts use interest rates that are expressed relative to a benchmark rate. Often the interest rate in the contract is not equal to the benchmark rate but is equal to the benchmark plus a spread. For example, the rate on a floating rate security or a swap could be €STR plus 50 basis points (a basis point is 0.01 of a percentage point, so 50 basis points is 0.5 per cent). The most common benchmark historically was LIBOR; this has now been replaced by a variety of benchmarks in different currencies: SOFR for the US dollar, €STR for the euro, SONIA for the British pound, SONAR for the Japanese yen, etc. US Prime is also used as a benchmark. Sometimes the benchmark rate is not an interest rate; for example, the benchmark could be inflation as measured by the increase in the consumer price index (CPI), and the contract might specify interest at inflation plus 1 per cent.

Interbank rates

These are rates at which banks borrow from and lend to each other. These loans can be of various maturities but the majority of interbank loans are overnight and are unsecured. There are various measures of interbank rates, which vary according to the currency of the loan, the maturity of the loan, the place where the banks

are based and the method of collecting the data (survey responses or actual transactions) – these include LIBOR, SONIA, SOFT, €STR and SARON. LIBOR, historically one of the most important of these rates, was discontinued at the end 2021 and LIBOR contracts are being replaced by contracts referring to other rates, such as SONIA and SOFR.

Not all banks can borrow at these rates, but in normal times the major banks can. The federal funds rate is different from the other measures of interbank lending rates in that the US Federal Reserve directly targets this rate, while the other measures are only indirectly influenced by central bank actions.

Risk-free rate

Loans to some governments are generally considered risk-free. For example, the US government is considered certain to repay its US dollar borrowing and the German government is considered certain to repay euro borrowing (note that the US government can, in any case, create more US currency to repay such loans, but the German government cannot create euros at will). Thus, the yields on securities issued by those governments are used as a measure of the risk-free interest rate. Finance textbooks often refer to ‘the’ risk-free rate but there are different rates for different currencies and maturities. As explained below, different currencies naturally have their own different rates. Further, government securities with different maturities have different yields, so the risk-free rate needs to specify which maturity is being referred to. Government securities with maturities of less than one year are known as treasury bills (T bills). Government securities with maturities of more than one year are known as government bonds or (in the United States) as treasury bonds or treasury notes.

Cost of debt of respondent

This is the cost at which the respondent could borrow. For example, if the respondent is a sovereign state, it is the yield on the bonds of that state. Typically, the state would borrow in a currency it does not issue, such as US dollar, so this would be higher than the risk-free rate. The cost of debt of the respondent is often used to determine pre-award interest.

Cost of capital

The cost of capital is often used in arbitrations, sometimes in connection with pre-award interest. This could refer to the cost of capital of the project at issue in the arbitration, or the cost of capital for the claimant more generally. Cost of capital means a rate that reflects risk and combines the cost of borrowing with a required return on equity. The most common notion of cost of capital is the

weighted average cost of capital (WACC). A company's WACC is a weighted average of its cost of debt and its cost of equity (assuming the company issues only debt and equity; if other financing, such as preferred stock, is used, this could be factored into the calculation). The weights correspond to the share of the amount of debt and the amount of equity in the total value of the company's assets. An adjustment is made for corporation tax, reflecting the deductibility of interest payments for corporation tax. For a company whose assets are all of similar risk, the cost of capital for the company as a whole is similar to the cost of capital for the project. If the project has a different risk from the company's other assets, the cost of capital for the project in principle requires adjustment, although this refinement is often considered impractical.

Bank deposit interest rates

These are rates offered by banks for deposits. They vary by maturity and currency. For example, if a depositor does not have the right to withdraw within a year, the rate is normally higher than for a deposit that can be withdrawn without notice.

Fixed and floating rates

Some loan contracts are at rates of interest that are fixed during the life of the loan, while others make provision for the interest rate to change. When a loan is at a floating rate, the contract specifies a reference interest rate and a spread relative to the reference. For example, US Treasury bonds are at fixed rates. In the United States, many residential mortgages are at fixed rates, while others are at floating rates tied to a reference rate, such as Prime. In other countries, mortgages are typically at floating rates but may be fixed for a period such as five years before reverting to floating rates.

Pre-award interest is often awarded at a risk-free rate based on T bills, or at an overnight interbank rate, or at such a rate plus a spread. Since these short-term yields change daily, this implies that pre-award interest also changes and is effectively a floating rate.

Real and nominal rates

Interest rates most commonly specify the interest payment in an amount of currency (US dollar, euro, etc.). These are called nominal interest rates. Somebody who lends money in this way can expect to receive a predictable amount of money, but does not know the extent to which inflation will erode the purchasing power of that money. Therefore, some loans specify interest payments that are indexed to a price index such as the CPI. For example, the US government has issued Treasury inflation protected securities. The return on such a loan, expressed in

units of currency, consists of the inflation rate plus a real return (strictly speaking, the mathematical relationship between nominal rates, inflation and real rates also includes a 'compounding' term, which is usually small and frequently ignored).

Unless otherwise specified, rates are normally understood as nominal rates.

The problem of inflation uncertainty for loans expressed in nominal terms is more severe when a loan contract is longer term. For a very short-term loan, such as a T bill, indexing the payment to the CPI would serve little purpose because inflation is unlikely to change much during the course of the loan. So short-term (nominal) rates effectively offer inflation protection anyway.

Real interest rates and real discount rates arise quite frequently in the context of arbitrations. For example, the dispute may concern long-term contracts that are specified in real terms. However, tribunals normally specify pre-award interest in nominal terms; it is never, or hardly ever, specified in real terms. One reason why this makes sense is that pre-award interest is often awarded at the T-bill rate, at another short-term rate, or at a short-term rate plus a spread, and for short-term rates there is no need for indexing.

Compound and simple interest

With any kind of loan contract, interest is specified as a percentage of the amount borrowed (the principal). With simple interest, the interest is a percentage of the original amount, whereas with compound interest, in each period the interest is added to the amount of the loan and then interest is calculated as a percentage of this new amount. For example, the balance on a loan of US\$100 at 10 per cent simple interest accumulates to US\$120 after two years with simple interest. Compounded annually, it accumulates to US\$121 after two years (after one year, principal plus interest totals 110, and the second year's interest is 10 per cent of that amount, i.e., 11).

Interest can be compounded at different intervals of time. Compound interest originated around four millennia ago in Babylon. Interest on silver loans was set at 20 per cent; loans were usually for durations of less than one year with no compounding. However, loans of several years' duration sometimes incurred compound interest once the accrued interest equalled the principal. At 20 per cent annual interest, this implies a compounding interval of five years. To repay a loan of 100 mina (an historical monetary unit) would have cost 180 mina after four years, 200 mina after five years and 240 mina after six years (because in the last year, the 20 per cent interest rate would have been applied to the new balance of 200 mina, whereas until then it would have been applied to the original balance). Nowadays, compounding intervals tend to be one year or less. For example, a loan at 10 per cent annual interest with quarterly compounding actually means

(although the compounding convention may vary) that every quarter, 2.5 per cent interest is added to the previous quarter's balance (since 2.5 per cent is one quarter of 10 per cent). Although the difference made by the compounding interval is smaller when comparing compounding intervals of less than one year, it is worth checking the compounding conventions when using data on interest rates. For consumer loans in the United States, the annual percentage rate does not reflect the true economic cost because it ignores the effect of compounding, whereas the annual percentage yield (APY) allows for compounding. In other countries, consumer legislation often requires similar disclosure but under a different name from APY.

At any point in time, different fixed income securities with the same credit quality (and any other relevant features, such as tax status) but different compounding intervals will trade at the same yield. The yield on a security is a measure of return that makes appropriate allowance for compounding frequency.

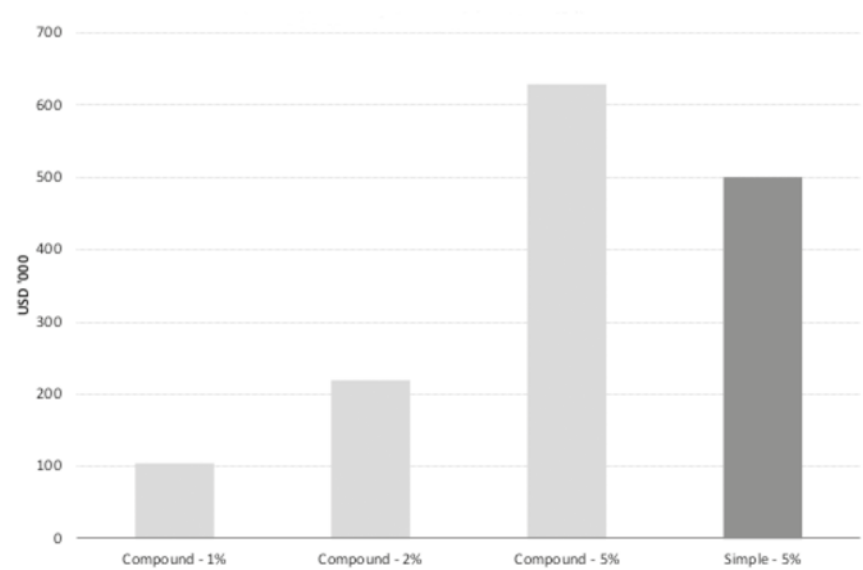
Tribunals sometimes award simple interest and sometimes award compound interest. The choice may be determined by legal considerations. For example, legal principles may require that a legal expropriation requires simple interest while an illegal expropriation requires compound interest. It is not the purpose of this chapter to offer any guidance on appropriate legal considerations.

However, regardless of these legal requirements, in most situations economists favour compound interest for pre-award interest. The reason is that yields (which are based on compounding) are the economic benchmark for market interest rates. Although financial contracts with simple interest do exist and are straightforward to value, the market values of these contracts are 'reverse-engineered' to make sure that they trade at market yields. Applying a market yield (which assumes compounding) without compounding would not make the claimant whole.

Illustrating use of different interest rates and compounding

Figure 2, below, illustrates the effect on total interest payments of using different interest rates, and compares compounding versus simple interest, for a period of 10 years. The differences are substantial. Over a longer period, they would be even more pronounced.

Figure 2: Total interest paid with different interest rates⁴



Interest rates in different currencies

Different currencies have different interest rates. It is important not to take an interest rate that refers to loans in one currency and apply it to amounts of money in another currency.

Arbitrations frequently concern international disputes. In a typical case, the claimant makes an investment in an asset in another country. Different parts of the damages calculation might involve the currency of the country where the investment is made, as well as the investor’s home currency or an internationally used currency, such as the US dollar. Issues arise concerning the interest rates or cost of capital to be used for amounts denominated in the different currencies. There is standard way to handle these issues, known as the principle of uncovered interest parity (UIP). UIP requires that the expected exchange rate at future dates depreciates or appreciates to offset the differential in interest rates. For example, if interest rates in US dollars are 1 per cent and in Swiss francs are 0.25 per cent, then the US dollar should be expected to depreciate against the Swiss franc at a rate of (approximately) 0.75 per cent annually. If UIP is applied, calculations carried out in either currency will reach the same result.

4 Notes: Interest expenses computed on a principal amount of US\$1 million and interest paid over 10 years.

However, although cross-currency considerations very often arise in damages calculations, they arise less often in that part of the calculation that relates to pre-award interest. Typically, damages at the time of the bad act are assessed in one currency, they will be paid in that currency and the prejudgment interest rate used to bring this amount up to the date of the award (or the date of payment) is derived from market interest rates on that currency. Cross-currency considerations can arise in some situations, however. For example, if a tribunal decides to use the respondent's borrowing cost for pre-award interest to be applied to a US-dollar damages figure, it needs to check this is an interest rate applicable to US-dollar borrowing or to convert it to US dollars using UIP.

Which interest rate is preferred on economic grounds?

There are two theories that are generally offered on economic grounds to determine an appropriate interest rate for pre-award interest.

One theory supports the use of the risk-free rate of interest. The argument is that once the damages sum has been determined to compensate the claimant at the date of the bad act, the purpose of adding interest is merely to bring that amount forwards in time. The claimant is not bearing any risk because the amount of damages, from then on, does not rise or fall in line with economic circumstances, unlike the return on risky assets; it is a fixed amount. By contrast, the stock price of an oil company or the value of an oil field are examples of risky assets whose returns depend on a host of economic factors, such as oil prices, economic growth, inflation, management skill or geological risk. For example, the economists Franklin Fisher and Craig Romaine argue:

In depriving the plaintiff of an asset worth Y at time 0, the defendant also relieved it of the risks associated with investment in that asset. The plaintiff is thus entitled to interest compensating it for the time value of money, but it is not also entitled to compensation for the risks it did not bear. Hence prejudgment interest should be awarded at the risk-free interest rate.⁵

The other economic theory of pre-award interest is the 'forced loan' theory. We take as a starting point that, if the respondent had paid the damage as at the date of the bad act, the claimant would have been made whole. Effectively, therefore, the claimant has not only been deprived of the use of money since the date of

⁵ Franklin M Fisher and R Craig Romaine; 'Janis Joplin's Yearbook and the Theory of Damages', *Journal of Accounting, Auditing & Finance*, Vol. 5, Nos. 1/2 (1990), p. 146.

the bad act but this money has been available to the respondent. It is as if the claimant has made a loan to the respondent. If the claimant had received the money then, and then lent it to the respondent, the claimant would be in exactly the same position they are in now. In terms of economic incentives, the forced loan theory ensures that the respondent does not have an incentive to expropriate assets merely as a cheap source of finance.

The difference between the risk-free rate theory and the forced-loan theory amounts to a different view of default risk. The risk-free rate theory takes the view that the respondent will pay the award. The reason why the respondent, at the time of the bad act, had to pay more than the risk-free rate for its borrowing is that lenders considered the respondent might default. Under this theory, there is no reason for the tribunal to build in a premium to the damages award to offset the possibility that the award might not be paid. Instead, the tribunal sets its award on the assumption that the award will be paid.

Some investment treaties refer to the use of a 'normal commercial rate', and some arbitral awards use this phrase, sometimes to justify the use of LIBOR, or LIBOR plus a spread (as noted above, LIBOR has now been discontinued, so future awards may use a LIBOR successor rate). However, all market rates could be described as 'commercial'; the difference between rates is that they relate to different risks. The commercial rate for a risk-free loan is not the same as the commercial rate for a risky loan.

What rates do tribunals actually use?

I have described the different interest rates that arise in arbitration cases and given the rationales for two possible choices for pre-award interest rates, namely the risk-free rate and the respondent's borrowing cost. But what do tribunals actually use for pre-award interest?

Since many awards are confidential, it is not possible to conduct a comprehensive study of all arbitral awards. However, some awards are published, such as those issued by ICSID, a unit of the World Bank, which conducts many important arbitrations.

I have studied all the cases listed on the ICSID website with published awards in English, French or Spanish (many other cases were settled or discontinued). Of the 248 decisions, there are 68 in which pre-judgment interest was awarded. In the remaining cases, the claimant did not prevail and no damages were awarded (71 cases), the tribunal ruled it had no jurisdiction (46 cases), or there is no award available on the ICSID website (63 cases).

Table 1

Interest			
Award year	Compound	Simple	Grand total
1988		1	1
1990		1	1
1992		1	1
1997		1	1
1999		1	1
2000	2	1	3
2002	1	1	2
2003	1	2	3
2005		1	1
2006	2		2
2007	4	2	6
2008		2	2
2009	1		1
2010	6	1	7
2011	1	1	2
2012	3	2	5
2013	3	2	5
2015	4	3	7
2016	2	4	6
2017	5	1	6
2018	1		1
2019		1	1
2020		3	3
Grand total	36	32	68

In most of the cases in which prejudgment interest was awarded (36 of the 68), compound pre-award interest is awarded, which is what economists would normally recommend. Compound interest has been used ever more frequently over time. In one case (ARB/07/29),⁶ it appears that the tribunal awarded simple

⁶ *SGS Société Générale de Surveillance S.A. v. The Republic of Paraguay*, ICSID Case No. ARB/07/29 – see Section VI: Damages.

interest because the claimant did not request compound interest. In some more recent cases, tribunals have cited economic reasons as opposed to legal reasons for preferring compound interest. For example, in ARB/05/18, the tribunal observed:

*Simple interest has the great advantage of simplicity; but it is often a simplicity combined with arbitrariness. When the question is, what amount has the Claimant lost by being wrongly denied payment of a sum on a certain date in the past, in circumstances where the Claimant could have invested an equivalent sum, or could only have borrowed an equivalent sum, on terms of compound interest, the award of compound interest is appropriate. The Tribunal takes the view that an award of compound interest is appropriate in this case.*⁷

In ARB/05/24, the tribunal stated that it:

*has little difficulty accepting that interest should be compounding. In modern practice, tribunals often compound interest, and the Claimant referenced a number of such awards. . . . In essence, compounding interest reflects simple economic sense.*⁸

In ARB/07/17, the tribunal noted that:

*there is no uniform case-law on this matter but [it] considers that compound interest is in the present case to be preferred in order to eliminate the consequences of the conduct which the Tribunal has found to give rise to an obligation to pay damages.*⁹

7 *Ioannis Kardassopoulos v. The Republic of Georgia*, ICSID Case No. ARB/05/18, at para. 664.

8 *Hrvatska Elektroprivreda d.d. v. Republic of Slovenia*, ICSID Case No. ARB/05/24, at paras. 555–56.

9 *Impregilo S.p.A. v. Argentine Republic*, ICSID Case No. ARB/07/17, at para. 382.

In other cases, reasons given for preferring simple interest include that ‘Ecuadorian law prohibits compound interest in the present case’ (ARB/04/19).¹⁰ In ARB(AF)/04/5, the tribunal gave a legal reason for preferring simple interest:

*However, since this is not an expropriation case, but rather concerns the appropriate compensation to be paid to Claimants for the injury caused as a result of the Respondent’s breach of the national treatment and performance requirements obligations under Chapter Eleven, the Tribunal’s view is that simple interest is appropriate in the present case.*¹¹

Table 2

Adder							
Base	1%	2%	4%	5%	9.11% (MRP)*	None	Grand total
1%						1	1
2%						1	1
3%						1	1
5%						4	4
6%						10	10
8%						2	2
9%						2	2
10%						2	2
Claimants’ cost of capital						1	1
Central Bank of West African States		1					1
Marginal Lending Facility (European Central Bank)						1	1
Average bank lending rate in country						1	1
Maximum overdraft rate: Tunisia Central Bank	1						1
Ecuador Central Bank rate						1	1
EURIBOT		3				1	4
LIBOR	2	10	5	1		3	21

¹⁰ *Duke Energy Electroquil Partners & Electroquil S.A. v. Republic of Ecuador*, ICSID Case No. ARB/04/19, at para. 457.

¹¹ *Archer Daniels Midland Company and Tate & Lyle Ingredients Americas, Inc. v. The United Mexican States*, ICSID Case No. ARB (AF)/04/5, at para. 298.

Adder							
Base	1%	2%	4%	5%	9.11% (MRP)*	None	Grand total
Mex Govt Bonds						1	1
US 6MO CDs						1	1
US Prime		1				1	2
US Treasury		2			1	6	9
WSJ Prime		1					1
Grand total	3	18	5	1	1	40	68

* MRP = market risk premium

Turning to the rates awarded, we can see from Table 2 that the interest rates fall into three categories. In 28 of the 68 above-mentioned cases, pre-award interest is a base rate (a market rate of some kind) plus an adder (or spread), such as LIBOR plus 1 per cent or US T bills plus 2 per cent. In 23 cases, pre-award interest was simply a number specified by the tribunal, such as 5, 6 or 9 per cent. In the remaining 17 cases, interest was a base rate (a market rate) without a spread.

Of the 45 cases with a base rate (with or without addition of a spread; i.e., 28 + 17 cases), nine used the US T bill rate, and 26 used an interbank lending rate (including EURIBOR and LIBOR). As noted above, interbank rates are normally close to T bill yields, and since the adders chosen by tribunals are bigger by comparison, for practical purposes the nine cases based on a T bill rate can be viewed as not too dissimilar to the cases with an interbank rate.

Some cases stand out for levels of pre-award interest that are sharply higher than a risk-free rate. In ARB (AF)/00/2,¹² the tribunal awarded pre-award interest of 6 per cent at a time (March 2003) when T bill yields were in the region of 1 per cent. In ARB/07/16,¹³ the tribunal awarded the risk-free rate plus an equity market risk premium of 9.11 per cent. By way of illustration, a 6 per cent pre-award interest rate will give total damages (initial damages plus pre-award interest) that are more than 50 per cent higher than a 1 per cent pre-award interest rate, if the award date is nine or more years later than the date of the bad act ($1.06^9/1.01^9=1.54$). If we compare a pre-award interest rate of 10.1 per cent (1 per cent + 9.1 per cent) to a 1 per cent interest rate, the same is true after five or more years ($1.101^5/1.01^5=1.54$). These calculations assume compounding.

12 *Técnicas Medioambientales Tecmed, S.A. v. The United Mexican States*, ICSID Case No. ARB (AF)/00/2 – Section G: Decision.

13 *Alpha Projektholding GmbH v. Ukraine*, ICSID Case No. ARB/07/16, at para. 514.

Thus, interest rates that are substantially higher than the risk-free rate will lead to damages that are heavily increased by the addition of pre-award interest, if several years have elapsed between the date of the harm and the date of the arbitral award.

Tribunals give diverse reasons for their choice of pre-award interest. In some cases, it appears that the claimants have provided a calculation in their claim that incorporates a particular pre-award interest rate, and respondents have not specifically challenged this calculation, so the tribunals had used the interest rate applied by the claimants. In other cases, tribunals have used risk-free rates or interbank rates as appropriate market benchmark rates. For example, the purpose of interest, as stated in ARB/05/24, is:

to 'compensate the injured party for not having had the use of the money between the date when it ought to have been paid and the date of the payment'. It is therefore appropriate that the rate of interest represents a reasonable and fair rate that approximates the return the injured party might have earned if it had had the use of its money for the full period. . . . The Tribunal observes that it is common in investment treaty cases to tie the interest rate to LIBOR – although in the present case, where the currency is euros, it is more appropriate to use EURIBOR. This represents an objective, market-orientated rate, well suited to ensuring that the consequences of the breach are indeed wiped out.¹⁴

The forced loan theory is explicitly referred to in several awards. For example, in ARB/07/23, the tribunal explained:

Claimant has argued for compound interest at a rate of 9.34% based on the rate that Respondent paid to private and public creditors in 2006 and on the notion of a coerced loan from Claimant to Respondent. Respondent has suggested a pre-award interest rate equivalent to six-month LIBOR plus two percentage points. The Tribunal disagrees with the coerced loan rationale of Claimant to arrive at the proposed rate of interest. . . . The Tribunal considers that the rate proposed by Respondent is a commercially reasonable rate.¹⁵

¹⁴ *Hrvatska Elektroprivreda d.d. v. Republic of Slovenia*, ICSID Case No. ARB/05/24, at paras. 547 and 553.

¹⁵ *Railroad Development Corporation v. Republic of Guatemala*, ICSID Case No. ARB/07/23, at paras. 278–79.

In ARB/11/26, it appears that the claimant's expert applied the forced loan approach, whereas the respondent's expert applied a 'country risk' approach leading to a quantitatively similar, but smaller rate, and the tribunal chose a rate that was close to both those proposed:

In examining the use of an appropriate 'borrowing rate', the Tribunal notes that Claimants (making reference to the language of the Portuguese Treaty) have argued that the interest rate should be equivalent: 'to the rate Venezuela would have had to pay to borrow money in April 2008 (9.75%)'. Taking a different approach, Respondent's expert, . . . discusses the use of such rates in other awards which are then supplemented by a factor covering political risk and other macroeconomic factors (Country Risk Premium). . . . Comparing this rate with the 9.75% borrowing rate for the government of Venezuela propounded by Claimants, the Tribunal concludes that 9% is a reasonable and fair rate for pre-award interest.¹⁶

Some awards refer to interest rates specified in treaties. In ARB/09/16, the tribunal held:

The relevant standard for purposes of compensation would be that provided in Article 5 of the BIT, 'namely the market value of the investment adjusted for interest calculated on the annual LIBOR basis' . . . The Tribunal finds it appropriate to use the LIBOR rate of interest as specified in Article 5.¹⁷

In ARB/10/13,¹⁸ the tribunal used similar reasoning.

Finally, tribunals appear to be aware of the issues concerning the appropriateness of different interest rates for different currencies. In cases where awards were made in Canadian dollars and Mexican pesos, among others, the tribunals have explicitly recognised the need for a rate applicable to the currency.

16 *Tenaris S.A. and Talta - Trading e Marketing Sociedade Unipessoal Lda. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/11/26, at paras. 586–87.

17 *Swisslion DOO Skopje v. The Former Yugoslav Republic of Macedonia*, ICSID Case No. ARB/09/16, at paras. 118 and 359.

18 *Mr. Hassan Awdi, Enterprise Business Consultants, Inc. and Alfa El Corporation v. Romania*, ICSID Case No. ARB/10/13.

CHAPTER 22

Costs

Joseph R Profaizer, Igor V Timofeyev and Adam J Weiss¹

Introduction

As international commercial transactions have become larger and more complex, international arbitrations arising out of those transactions have become correspondingly more intricate and expensive. Cost awards² now frequently exceed US\$1 million. In large-scale arbitrations between well-capitalised parties represented by top-tier international law firms, cost awards can exceed US\$10 million.³

Although leading arbitral institutions in recent years have focused on providing specific guidance to assist tribunals and parties in managing the cost of arbitrations,⁴ the trend of increasing costs has not abated. The 2015 Queen Mary University of London (QMUL) International Arbitration Survey found that stakeholders in international arbitration (e.g., party representatives and in-house

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- 1 Joseph R Profaizer and Igor V Timofeyev are partners and Adam J Weiss is of counsel at Paul Hastings LLP. The authors are grateful to Michael Fisher (associate), Jay L Tymkovich (former associate) and Brenda Freed (senior paralegal) for their valuable assistance in the research and preparation of this chapter. The authors also acknowledge the contribution of former partner Samuel W Cooper to the previous edition of this chapter. The information in this chapter was correct as at June 2021.
 - 2 For the purposes of efficiency and clarity, this chapter refers to 'cost' or 'costs' when collectively referring to (1) 'party costs' (e.g., legal and professional advisers' fees and expenses and the expenses relating to fact and expert witness evidence) and (2) 'arbitration costs' (e.g., the tribunal members' fees and expenses and related administrative fees charged by the governing arbitral institution). When referring to those items individually, this chapter refers to 'fees' or 'expenses'.
 - 3 Joseph R Profaizer, 'The Arbitration Process,' *Business Guide to Trade and Investment – Volume II – International Investment*, 119 (2018); Matthew Hodgson, 'Counting the Costs in Investment Treaty Arbitration' (24 March 2014).
 - 4 See, e.g., International Chamber of Commerce (ICC) Commission Report, 'Techniques for Controlling Time and Costs in Arbitration' (2d ed. 2018).

counsel) perceive ‘cost’ as ‘the worst characteristic of international arbitration’. The QMUL Survey in 2018 likewise concluded that ‘by a significant margin . . . cost continues to be seen as arbitration’s worst feature’.⁵

Despite the increasing importance of cost recovery in international arbitration, there is a surprising lack of uniformity as to the standards applied by tribunals when deciding issues of costs. Cost awards, including whether and to what extent certain categories of fees and expenses are recoverable, are ‘often arbitrary and unpredictable’.⁶ This lack of predictability engenders uncertainty, which can, in turn, curtail a party’s ability to make an informed, threshold decision as to whether it is in that party’s interest to invest in the arbitration process or to seek an early, and likely less favourable, settlement. Empirical evidence also reflects that the parties’ pre-dispute actions in negotiating and drafting relevant contractual provisions, as well as counsel’s strategic choices and conduct during the arbitration, will likely affect the ultimate allocation and recovery of costs.

This chapter considers these and other issues regarding the recovery of costs in international arbitration, including a brief overview of the effects of the covid-19 pandemic.

Sources and scope of arbitrators’ authority to determine costs

The parties’ arbitration agreement, or the applicable investor-state treaty, is the starting point in a tribunal’s analysis regarding cost allocation and recovery, as ‘party autonomy is paramount on all procedural matters, including cost control and cost determinations’.⁷ Virtually all developed legal regimes will give primary effect

5 Queen Mary School of International Arbitration, Survey, ‘The Evolution of International Arbitration’ (2018) at 5, 7.

6 Gary B Born, Chapter 23: ‘Form and Contents of International Arbitral Awards’ in *International Commercial Arbitration* (2d ed. 2014) at 3095 to 3096, quoting Professor J Gotanda, *Attorneys’ Fees Agonistes: The Implications of Inconsistency in the Awarding of Fees and Costs in International Arbitrations*, in M Fernández-Ballesteros and D Arias (eds), *Liber Amicorum for Bernardo Cremades* (2010) at 539; see also Steven P Finizio and Ross Galvin, ‘Allocation of Costs in International Arbitration: A Comparative Analysis of Approaches in International Commercial Arbitration and Investment Treaty Arbitration’ in Sherlin Tung, Fabricio Fortese, et al. (eds), *Finances in International Arbitration: Liber Amicorum* (2019) at 129 (‘ICSID tribunals have acknowledged this lack of consistency in the approach to cost allocation. For example, [one tribunal] noted that the practice of ICSID tribunals in awarding costs “is not entirely consistent”, with some ordering the parties to bear their own costs and others applying the “costs follow the event” approach.’).

7 Jeffrey M Waincymer, Part III: The Award, Chapter 15: ‘Costs in Arbitration’ in *Procedure and Evidence in International Arbitration* (2012) at 1206.

to the parties' express agreement with regard to cost allocation.⁸ Notwithstanding this precept, contracting parties often give little thought to cost issues when they are negotiating and drafting their arbitration agreements. Accordingly, arbitration agreements are frequently inadequate as to whether and how tribunals should allocate costs.⁹

In the absence of explicit guidance in the parties' arbitration agreement, arbitrators' power to award and allocate costs is governed by the procedural law of the arbitration.¹⁰ Unless the parties specify otherwise, this procedural law typically comprises the domestic, national law where the arbitration is taking place (also known as the *lex loci arbitri*), as well as any applicable agreed arbitration rules.¹¹

As explained below, within the framework of the parties' arbitration agreement, most jurisdictions' arbitration laws, and most established arbitration rules, provide arbitrators with broad discretion to award and allocate costs, subject to due process considerations.¹² As certain commentators have observed, however, in practice, 'arbitral tribunals rarely discuss the issue of the applicable law, and prefer to follow the general principles in awarding costs, unless a clear case on other applicable national norms is pleaded and substantiated'.¹³

8 One notable exception is the Hong Kong Arbitration Ordinance which, contrary to the fundamental tenet of party autonomy, provides that an arbitration agreement requiring either or both of the parties to 'pay their own costs in respect of arbitral proceedings arising under the agreement is void'. See Hong Kong Arbitration Ordinance, Section 74(8).

9 Waincymer, op. cit. at 1194.

10 Rachel Engle, 'Party Autonomy in International Arbitration: Where Uniformity Gives Way to Predictability', 15 *Transnat'l Law* 323, 330 (2002); Waincymer, op. cit. at 1194 ('It is generally accepted that determinations as to costs and fees are matters of procedure.');

Mohamed S Abdel Wahab, 'Costs in International Arbitration: Navigating Through the Devil's Sea' (2019) at 483.

11 Alan Scott Rau, 'Arbitration and National Courts: Conflict and Cooperation: Understanding (and Misunderstanding) "Primary Jurisdiction"', 21 *Am. Rev. Int'l Arb.* 47, 72 (2010) (The parties' choice is 'critical precisely because [it] presumptively determine[s] the body of law that will govern the arbitral procedure'.); see also Micha Bühler, 'Awarding Costs in International Commercial Arbitration: An Overview', *ASA Bulletin* 22, (2/2004) at 253; Born, op. cit. at 3012, 3086.

12 Born, op. cit. at 3069 to 3070; Abdel Wahab, op. cit. at 485.

13 Abdel Wahab, op. cit. at 484.

National arbitration legislation

Although most national arbitration statutes grant arbitrators broad authority to make an award of costs, these laws usually do not specify the substantive standards that govern the exercise of that authority.¹⁴

- *UNCITRAL Model Law*: Although the United Nations Commission on International Trade Law Model Law on International Commercial Arbitration is designed to provide a universal framework to ‘assist States in reforming and modernizing their laws on arbitral procedure’ and seeks to ‘cover[] all stages of the arbitral process’, it is silent on the topic of allocation of cost.¹⁵ Because of this lacuna, ‘a number of States that have adopted the Model Law have added provisions expressly granting tribunal jurisdiction over costs awards’.¹⁶
- *Federal Arbitration Act*: Like the UNCITRAL Model Law, the US Federal Arbitration Act (FAA) is silent on allocation of cost.¹⁷ For US-seated arbitrations, this gap is sometimes filled, either explicitly or implicitly, by resorting to the prevailing rule in US civil litigation (i.e., the American Rule), which requires each party to bear its own costs regardless of the ultimate outcome, unless specifically shifted by the parties’ agreement or a particular statute.¹⁸
- *English Arbitration Act*: In contrast to the UNCITRAL Model Law and the FAA, the 1996 English Arbitration Act (EAA) explicitly addresses both the arbitrators’ authority to award costs and the substantive cost-shifting standard that tribunals ought to apply.¹⁹ The EAA suggests, as a starting point, that arbitrators adopt the ‘costs should follow the event’ rule, under which the unsuccessful party pays the successful party’s costs.²⁰

14 For their part, bilateral investment treaties will rarely address the issue of the allocation of costs between or among the parties.

15 United Nations Commission on International Trade Law (UNCITRAL) Model Law on International Commercial Arbitration (1985), with amendments as adopted in 2006: Abstract; Part Two, para. 2, https://uncitral.un.org/en/texts/arbitration/modellaw/commercial_arbitration (last accessed 6 Oct 2022).

16 Waincymer, op. cit. at 1197.

17 Born, op. cit. at 3090.

18 Waincymer, op. cit. at 1201; Born, op. cit. at 3090. Some commentators have suggested, however, that the American Rule should be reserved exclusively for US domestic litigation and not be incorporated into an international arbitration proceeding solely because the arbitral seat is located in the United States. See Waincymer, op. cit. at 1201. This is an important and evolving issue for international arbitral tribunals seated in the United States.

19 Born, op. cit. at 3089.

20 id.; Finizio and Galvin, op. cit. at 115.

- *Other national legislation:* Although most other domestic arbitration statutes do not adopt the same degree of specificity as the EAA when it comes to allocating cost,²¹ the majority of national laws reflect a general presumption that arbitrators possess the authority to issue cost awards, so long as the parties' agreement does not specify to the contrary.²²

Arbitration rules

In addition to considering the applicable *lex arbitri* when determining costs, arbitral tribunals are also controlled by the applicable arbitral rules, whether institutional or ad hoc. 'While most institutional rules ultimately leave cost decisions to the discretion of the arbitrator, they vary among those that are wholly silent on the matter of costs, those that simply provide broad discretion, and those that provide guidance on the criteria for awarding costs.'²³ As discussed below, the leading ad hoc arbitral rules provide varying levels of guidance as to cost allocation.

- *UNCITRAL Rules:* Unlike the UNCITRAL Model Law, the UNCITRAL Arbitration Rules provide specific guidance to aid tribunals (whether ad hoc or institutional) in issuing cost awards. The UNCITRAL Rules provide that the 'costs of the arbitration shall in principle be borne by the unsuccessful party or parties'.²⁴ This standard comports with the prevailing 'loser pays' or 'cost follows the event' approach adopted by courts and international arbitral tribunals in most jurisdictions.

21 Germany is an exception, as it follows the English approach of expressly granting arbitrators the authority to allocate costs. See Bühler, op. cit. at 257; Born, op. cit. at 3090.

22 Born, op. cit. at 3089 to 3090. Examples include Switzerland, which provides that arbitrators are 'fully authorised to make awards of legal costs', and France, which adopts a similar implicit approach. See Finizio and Galvin, op. cit. at 120. China's and Hong Kong's national arbitration laws likewise contemplate that arbitral tribunals will fix and award the costs of arbitral proceedings. See China Arbitration Law, Article 54; Hong Kong Arbitration Ordinance, Section 74.

23 Waincymer, op. cit. at 1197.

24 UNCITRAL Rules, Article 42(1); Waincymer, op. cit. at 1208.

- *ICC Rules*: The new 2021 International Chamber of Commerce Rules of Arbitration, like the 2017 ICC Rules, provide broad discretion but vague guidance to tribunals to determine costs by ‘tak[ing] into account such circumstances as it considers relevant’.²⁵ Without specifying how costs should be apportioned, the ICC Rules provide that the costs of the arbitration ‘shall include the fees and expenses of the arbitrators . . . and the reasonable legal and other costs incurred by the parties for the arbitration’.²⁶
- *ICSID Arbitration Rules*: The International Centre for Settlement of Investment Disputes Convention Arbitration Rules authorise tribunals to allocate costs between the parties but do not delineate any specific criteria for that allocation.²⁷ As one ICSID tribunal has noted, there is a ‘considerable degree of discretion that ICSID tribunals enjoy under Article 61(2) of the Convention, which does not prescribe any particular approach, in making costs awards’.²⁸
- *ICDR Rules*: The American Arbitration Association’s International Centre for Dispute Resolution Rules also grant tribunals broad discretion to determine and allocate recoverable costs, but in deference to the American Rule, ‘do not include a presumption that the losing party should [necessarily] pay the costs of the successful party’.²⁹

25 International Chamber of Commerce Rules of Arbitration (ICC Rules), Article 38(5); see also Finizio and Galvin, op. cit. at 122.

26 ICC Rules, Article 38(1).

27 International Centre for Settlement of Investment Disputes Convention Arbitration Rules (ICSID Rules) ICSID Rule 28: Josefa Sicard-Mirabal and Yves Derains, Chapter 9: ‘Damages and Costs’ in *Introduction to Investor-State Arbitration* 213, 233 (2018).

28 *Guardian Fiduciary Trust Ltd. f/k/a Capital Conservator Savings & Loan Ltd. v. Former Yugoslav Republic of Macedonia*, ICSID Case No. ARB/12/31, Award, 22 September 2015, paras. 149–50.

29 Arif Hyder Ali, Jane Wessel, et al., Chapter 8: ‘Costs and Fees’ in *The International Arbitration Rulebook: A Guide to Arbitral Regimes* (2019) at 467.

- *HKAC Rules*: The Hong Kong International Arbitration Centre Rules enumerate six categories of fees and expenses comprising the ‘costs of the arbitration’.³⁰ Despite that specificity as to the categories of recoverable costs, the HKIAC Rules instruct tribunals only vaguely to ‘apportion all or part of the costs of the arbitration . . . between the parties if it determines that apportionment is reasonable, taking into account the circumstances of the case’.³¹

Parties’ arbitration agreement

As the arbitral process is a by-product of mutual consent, parties should consider altering the default parameters governing cost that are set forth in the applicable arbitration rules and the *lex arbitri*.³² Although parties often ignore this important principle in practice, they are well advised to consider and address cost and fee mitigation, allocation and recovery mechanisms, prophylactically, when drafting and negotiating their arbitration agreements.³³

Drafting considerations to address cost allocation

Especially in those instances in which the parties’ commercial relationship could engender an expensive legal dispute, parties should carefully consider including provisions addressing the allocation of costs to mitigate any ambiguity or silence in the agreed arbitration rules or applicable national arbitration law.³⁴ In the alternative, parties may decide to disclaim entirely any cost allocation framework and instead choose to bear their own fees and expenses. In any event, by defining the parameters and likelihood of recovering costs on the front end, parties will be able to make better-informed cost-benefit analyses regarding the merits of pursuing arbitration, if and when a dispute arises.³⁵ This purposeful ‘hope for the best, plan

30 Hong Kong International Arbitration Centre (HKIAC) Rules, Article 34.1.

31 HKIAC Rules, Article 34.3. In contrast, the Singapore International Arbitration Centre (SIAC) Rules enumerate three categories of fees and expenses comprising ‘costs of the arbitration’ but likewise broadly authorise tribunals to ‘determine in the award the apportionment of the costs of the arbitration among the parties’ and order that ‘all or a part of the legal or other costs of a party be paid by another party’. SIAC Rules, Articles 35 to 37.

32 Note: the following sections apply to contract-based commercial arbitrations as opposed to treaty-based investor-state arbitrations.

33 Adam J Weiss, Erin E Klisch and Joseph R Profaizer, ‘Techniques and Tradeoffs for Incorporating Cost- and Time-Saving Measures into International Arbitration Agreements’, *J. of Int’l Arb.* 34:2, paras. 66–72 (2017).

34 International Bar Association Guidelines for Drafting International Arbitration Clauses (2010), paras. 66–68.

35 *id.*

for the worst' approach will best reflect the parties' expectations regarding cost recovery (if any) and provide a specific framework for the tribunal's future cost award (if desired).

Assuming the parties do agree to authorise the tribunal to allocate costs, the parties should consider, *inter alia*, (1) the substantive standards under which the tribunal will allocate costs, (2) the categories of recoverable and non-recoverable costs, and (3) any minimum or maximum recovery amount.³⁶ To that end, the International Bar Association (IBA) has published guidelines and recommended clauses to account for the reality that 'it is rarely possible to predict how the arbitral tribunal will allocate these costs, if at all, at the end of the proceedings'.³⁷ If the parties do opt for a success-based approach, the IBA advises against using 'absolute language ("shall") in drafting such a clause, as the identification of the "winner" or the "prevailing party" may be difficult and the clause may needlessly constrain the arbitrators in their allocation of costs and fees'.³⁸

Drafting considerations to address saving of costs

In addition to increasing the predictability of a future costs award, negotiating specific language addressing cost allocation and recovery is also a useful strategy for parties to mitigate the overall costs of an arbitration.³⁹ Although parties may wish to incorporate an expansive fee-shifting provision to discourage future disputes, that approach may also have drawbacks. A particularly confident claimant or respondent may see the potential for cost-shifting as an incentive to avoid early settlement and treat the agreed cost recovery framework as a blank cheque. Moreover, as discussed below, one of the key criteria that tribunals often consider when deciding costs is the degree to which parties might create unneeded inefficiencies or abuse the arbitral process.⁴⁰

Because longer arbitration proceedings usually result in higher overall costs, parties that share a mutual concern regarding excess costs should seek mechanisms to reduce the overall duration of an arbitration when they are drafting the arbitration agreement. For example, parties should consider whether to (1) require that the final award be issued within a finite period after the arbitration is initiated or the tribunal is constituted, (2) agree to limit the length and number of submissions, (3) agree to limit or forego document disclosure, or (4) require that

³⁶ *id.*

³⁷ *ibid.*, at para. 66.

³⁸ *ibid.*, at para. 67.

³⁹ Weiss, Klisch and Profaizer, *op. cit.* at 262.

⁴⁰ *id.*

each tribunal member expressly confirm that he or she will have sufficient time to devote to the dispute to ensure its efficient resolution within a certain established amount of time.⁴¹

Cost allocation considerations in practice

International arbitration cost allocation standards

As discussed above, subject to the parties' agreement, arbitration rules and national arbitration laws typically give tribunals broad discretion to allocate and award the parties' costs.⁴² In practice, arbitral tribunals generally use this discretion to follow one of two generally accepted international standards governing cost allocation:⁴³ (1) the 'costs follow the event' or 'loser pays' rule, and (2) the American Rule.

Default rule: 'costs follow the event' or 'loser pays'

The costs-follow-the-event approach is almost universally recognised in both common and civil law jurisdictions and has become the prevailing approach in international arbitrations in recent years.⁴⁴ The rationale behind allocating costs to the successful party is that the party 'should not be out of pocket as a result of having to seek adjudication to enforce or vindicate its legal rights'.⁴⁵ The rule also has an economic rationale. By requiring the losing party to pay further costs in an unsuccessful legal action, the rule serves as a deterrent against meritless claims and defences.

Although some tribunals have allocated costs on a winner-take-all basis, more frequently tribunals adopt a more nuanced approach whereby the allocation is based on the relative successes and failures of the parties' claims, defences and damages.⁴⁶ Making that determination, however, can be challenging in complex cases with numerous, interrelated claims and defences involving both monetary and non-monetary considerations and a wide range of potential damages.⁴⁷

41 *ibid.*, at 263, 264.

42 Hyder Ali, Wessel et al., *op. cit.* at 459.

43 Abdel Wahab, *op. cit.* at 484.

44 See, e.g., 2016 Chartered Institute of Arbitrators (CIArb) Guidelines on Cost Awards, Preamble, para. 4; Bühler, *op. cit.* at 250; ICC Commission Report, 'Decisions on Costs in International Arbitration', *ICC Disp. Resol. Bull.*, Vol.2 (2015) (2015 ICC Report on Decisions on Costs), para. 13 and Appendix A.

45 2015 ICC Report on Decisions on Costs, para. 86 (citing *Harold v. Smith* (1860) 5 H. & N. 381).

46 Abdel Wahab, *op. cit.* at 488.

47 See, e.g., 2015 ICC Report on Decisions on Costs, para. 59; see also ICC Case No. 5029 (1991), quoted in *ICC Ct Bull.*, Vol.4 (1993), at 32.

For example, it is not uncommon for the winner to have succeeded on only a slim majority of the multiple issues in dispute or for the loser to have succeeded on most of the specific issues, with the exception of those that render it the net financial loser.⁴⁸ Thus, in practice, a tribunal's decision to adopt the costs-follow-the-event rule is only the starting point; how that rule is applied to reach the correct result in a particular case varies significantly depending on the calculus of claims, defences and damages.⁴⁹

American Rule

Although called the American Rule, the cost recovery approach requiring each party to bear its own legal fees and half of the procedural and administrative costs of an arbitration is not unique to US litigation; it is also applied in China, Japan, Indonesia and the Philippines.⁵⁰ The American Rule is generally justified as a way to lower aggrieved parties' barriers to justice; as a corollary, the rule

48 Mika Savola, 'Awarding Costs in International Commercial Arbitration' (2017) at 296. In its Report on Costs, the ICC offers three approaches arbitrators may take in assessing the relative success of the prevailing party: (1) assuming that if a claimant or respondent succeeded in its core or primary claim or outcome, then it is entitled to all its reasonable fees and expenses; (2) apportioning costs on a claim-by-claim or issue-by-issue basis according to relative success and failure; or (3) apportioning success against the amount of damages originally claimed or the value of the property in dispute. 2015 ICC Report on Decisions on Costs, para. 61.

49 Finizio and Galvin, op. cit. at 123 ('rather than applying a strict "costs follow the event" approach, most tribunals in international commercial arbitration use the principle as a starting point or as a guide when determining where the costs lie, and thereafter exercise their discretion to adjust or apportion the costs between the parties'); see, e.g., *Hassan Awdi, Enterprise Business Consultants, Inc. and Alfa El Corporation v. Romania*, ICSID Case No. ARB/10/13, Award of 2 March 2015, paras. 529–31 (the tribunal found that, given the complexity of the case, the application of the 'loser pays' principle was to some extent appropriate. It ordered the respondent to pay 25 per cent of the claimant's legal expenses); *Detroit International Bridge Company v. The Government of Canada*, PCA Case No. 2012-25, Award on Costs of 17 August 2015, paras. 52–53 (the tribunal considered the parties' relative success and found that, because the claimant was partially unsuccessful, it should bear two-thirds of the respondent's reasonable legal costs).

50 Bühler, op. cit. at 250.

incentivises parties to advance only the most meritorious claims and defences.⁵¹ Awards applying the American Rule are less common in international commercial arbitration but remain frequent in investor-state arbitrations.⁵²

Other relevant cost allocation factors

In addition to considering the parties' ultimate success, tribunals regularly invoke a number of other factors in rendering cost awards.⁵³ Most arbitration rules encourage tribunals to consider all 'relevant circumstances' before allocating costs between the parties.⁵⁴

Pre-arbitration conduct

Arbitral tribunals may also look to the parties' conduct that gave rise to the dispute, including whether the arbitration could have been avoided if one party had acted differently or whether the prevailing party shares responsibility for the escalation of the conflict or the root cause of the dispute.⁵⁵ For instance, one ICC tribunal, perturbed by the manner in which the arbitration arose, ruled against the prevailing party as to costs, finding that 'only the strength of the contract has caused [its] success'.⁵⁶ Another ICC tribunal refused to award costs to the prevailing respondent because it determined that the claimant's claim was 'far from being reckless' and partly arose out of confusion created by the respondent's conduct.⁵⁷ In another ICC arbitration, the tribunal concluded that because the

51 See Waincymer, op. cit. at 1217.

52 Abdel Wahab, op. cit. at 490; see also Finizio and Galvin, op. cit. at 126 ('the historical approach by arbitral tribunals in investment treaty arbitrations has been to take a 'pay your own way' approach.');

53 See also, e.g., *Joseph Houben v. The Republic of Burundi*, ICSID Case No. ARB/13/7, Award of 12 January 2016, para. 259 (applying the 'pay your own way' approach); *Quiborax S.A. and Non Metallic Minerals S.A. v. Plurinational State of Bolivia*, ICSID Case No. ARB/06/02, Award of 16 September 2015, paras. 624–25 (same).

54 See 2015 ICC Report on Decisions on Costs, Appendix A, listing the 10 factors most commonly considered by tribunals in the ICC awards reviewed by the Secretariat to the ICC Commission.

55 See Stockholm Chamber of Commerce Rules, Articles 43(5) and 44; ICC Rules, Articles 37.4 and 37.5; London Court of International Arbitration Rules, Article 28.4; HKIAC Rules, Article 34.2.

56 See 2015 ICC Report on Decisions on Costs, Appendix A, at 21 to 22, listing examples of ICC tribunal findings.

57 Bühler, op. cit. at 267–68 (quoting ICC Case No. 7761 (1995), (1997) 22 *Yearbook Commercial Arbitration*, 163).

58 *ibid.*, at 267, quoting ICC Case No. 6728 (1992), *ICC Court of Arbitration Bulletin (ICC Ct Bull)*, Vol. 4 (1993), at 47.

dispute arose out of the unclear terms of the parties' contract, each party should 'bear a share of the responsibility for this uncertainty and the resulting costs'.⁵⁸ If a tribunal finds that the prevailing claimant acted reasonably in pursuing its claim and was left with no choice but to initiate the arbitration, the claimant will usually be awarded its costs.⁵⁹

Conduct during arbitration

Arbitral tribunals routinely take into account the conduct of parties (and their counsel) during the proceedings and may compensate for dilatory, unreasonable, abusive or otherwise improper behaviour aimed at undermining or delaying the arbitration.⁶⁰ In a deliberate effort to curtail the rising cost of arbitration under the ICC Rules, beginning in 2012, the ICC Rules introduced a provision that instructs tribunals to consider when allocating costs 'the extent to which each party has conducted the arbitration in an expeditious and cost effective manner'.⁶¹ Shifting costs to dilatory or obstructive parties can be a useful tool to encourage efficient conduct, improve the overall economy of the arbitration, and reduce counsel's desire to 'over-lawyer' the proceedings.⁶² Events that may lead to unfavourable partial or final cost awards include:

- filing grossly exaggerated or spurious claims, defences or demands for damages;
- unreasonable procedural applications;
- unnecessarily lengthy applications or submissions;
- abusive document production requests or failure to comply with production orders; and
- other 'guerrilla tactics' that threaten to undermine the integrity of the arbitral process or the expeditious enforcement of the award.⁶³

In practice, however, arbitrators are frequently reluctant to sanction parties' improper conduct because of a phenomenon termed 'due process paranoia', whereby arbitrators are unwilling to penalise parties out of fear that the award

⁵⁸ *ibid.*, at 267, quoting ICC Case No. 8332 (1996, unpublished).

⁵⁹ 2015 ICC Report on Decisions on Costs, Appendix A, at 21 ('No alternative for Claimant but to bring this arbitration to enforce its rights.').

⁶⁰ See examples of ICC tribunal findings in Appendix A to the 2015 ICC Report on Decisions on Costs, pp. 23–24.

⁶¹ Ali and Wessel, et al., *op. cit.* at 467; ICC Rules, Article 38(5).

⁶² Weiss, Klisch and Profaizer, *op. cit.* at 269–71.

⁶³ 2015 ICC Report on Decisions on Costs, paras. 78–85.

may be challenged on due process grounds.⁶⁴ Instances of ‘due process paranoia’ include arbitrators recurrently extending deadlines, admitting new evidence at a late stage of the proceeding without a sufficient showing of need, and indulging meritless procedural requests under the pretence of procedural inequality.⁶⁵ Even arbitrators have identified this phenomenon as commonplace and problematic.⁶⁶

Despite this reluctance, tribunals will award costs if they find a party’s conduct to warrant it. The *Bernhard von Pezold v. Zimbabwe* ICSID arbitration is indicative of how party conduct can affect a tribunal’s decision on costs.⁶⁷ In that arbitration, the Republic of Zimbabwe presented convoluted and repetitive pleadings, included voluminous irrelevant material into the record, and raised objections to jurisdiction and admissibility at very late stages in the proceedings. Zimbabwe also included plainly inadmissible material in the hearing transcripts and its post-hearing briefs. In ordering Zimbabwe to reimburse the claimants for all their costs, the tribunal cited the egregious nature of Zimbabwe’s bad-faith conduct, which it determined ‘resulted in an unnecessary escalation of the costs of the proceedings’.⁶⁸

Issue-based allocation and other mitigating considerations

Arbitral tribunals also consider other factors to refine the application of the ‘loser pays’ principle when warranted by the entirety of the circumstances. For example, tribunals may analyse whether an ultimately unsuccessful party prevailed on preliminary issues or whether the claimant succeeded on liability, but lost on quantum.⁶⁹ Tribunals historically have been inclined to invoke a wide range of equitable considerations that may potentially mitigate the scope and effect of a cost-shifting award. For example, in tailoring an appropriate cost award, tribunals have cited (1) a party’s justifiable difficulty in providing sufficient evidence

⁶⁴ Weiss, Klisch and Profaizer, op. cit. at 270.

⁶⁵ id., citing *ConocoPhillips Petrozuata B.V. et al. v. Venezuela*, ICSID Case No. ARB/07/30.

⁶⁶ id., citing Queen Mary School of International Arbitration Survey, ‘Improvements and Innovations in International Arbitration’ (2015), at 2, 5, 10.

⁶⁷ *Bernhard von Pezold and others v. Republic of Zimbabwe*, ICSID Case No. ARB/10/15, Award, 28 July 2015.

⁶⁸ ibid., at para. 1008.

⁶⁹ See 2015 ICC Report on Decisions on Costs, at 23, listing examples of ICC tribunal findings; see also ICC Case No. 8786 (1997) in 13 *Swiss Arbitration Association Bulletin* (ASA Bulletin) 1 (1995), at 57 (security request dismissed by interim award); ICC Case No. 5901 (1992) in *ICC Ct Bull.*, Vol. 4 (1993), at 40 (the respondent was only partially successful on its ‘initial procedural defences’), ICC Case No. 6914 (1992) in *ICC Ct Bull.*, Vol. 4 (1993), at 48 (unfounded objection regarding *locus standi*).

of costs,⁷⁰ (2) the sheer complexity of a case and novelty of issues to be decided,⁷¹ and (3) general fairness principles that encourage leniency towards a losing party that is suffering economic hardship.⁷²

Calderbank settlement offers

Another relevant consideration for tribunals is whether and to what extent the parties engaged in *Calderbank* settlement negotiations. Derived from the Court of Appeals of England and Wales case, *Calderbank v. Calderbank*,⁷³ a *Calderbank* settlement offer is one marked ‘without prejudice save as to costs’ that is later admissible to the tribunal for the purpose of determining costs. If the prevailing party’s award of damages is less than the earlier, rejected settlement offer, then the losing party may be awarded its costs from the prevailing party from the time after the offer was made. The justification for shifting costs in this manner is that even though the prevailing party succeeded in the arbitration, had it accepted the ‘better’, earlier offer, then both parties’ costs incurred after that date would have been avoided.⁷⁴

The practical utility of *Calderbank* offers is that they encourage the parties to consider settlement more robustly, probably at the early stages of the dispute.⁷⁵ This is true regardless of whether one or both parties submit such a *Calderbank* offer. *Calderbank* offers also forces each party to consider carefully the economic risks that even if it ‘wins’ the arbitration and is awarded damages, it may have to pay the losing party’s costs for having rejected what turns out to have been a reasonable offer to settle in light of the actual damages in the case.

The *Calderbank* procedure is inapposite in certain cases, however, including when there are numerous non-monetary factors affecting final resolution of the dispute or when the parties are incapable of analysing their claims and defences adequately at an early stage of the dispute and, therefore, are not in a position to offer or consider a settlement offer.

70 Bühler, op. cit. at 267, citing ICC Case No. 6042 (1991), *ICC Ct Bull.*, Vol. 4 (1993), at 41.

71 2015 ICC Report on Decisions on Costs, Appendix A, at 36, citing *Romak SA v. The Republic of Uzbekistan*, PCA Case No. 2007-6, Award, 26 November 2009, Section 50.

72 Waincymer, op. cit. at 1329.

73 [1975] 3 All ER 333 (EWCA).

74 Weiss, Klisch and Profaizer, op. cit. at 266.

75 *ibid.*, at 267.

Determining recoverable costs

Standards for recovering costs

Although a party's actual costs are the starting point for that party's potential cost recovery, tribunals regularly impose parameters and limits to ensure that the costs awarded are (1) reasonable and proportionate in the circumstances and (2) specifically incurred for the arbitration.

Reasonable and proportionate

Although it is generally accepted that the touchstone for cost recovery is reasonableness, there is no generally accepted framework for determining whether or not costs are reasonable.⁷⁶ The ICC Report on Decisions on Costs in International Arbitration proposed four factors that tribunals could consider in adopting a common-sense approach to analyse 'whether the costs are reasonable and proportionate to the amount in dispute':

*(i) the reasonableness of the rates and number and level of fee-earners when evaluating whether the amount of work charged was reasonable; (ii) the reasonableness of the level of specialist knowledge and responsibility retained for the dispute, including the legal qualification of representatives, involvement of specialist teams or team members and level of seniority; (iii) the reasonableness of the amount of time spent, at various levels and rates, on the various phases of the arbitration; and (iv) any disparity between the costs incurred by the parties as a general indicator of reasonableness as opposed to a separate factor in itself.*⁷⁷

In practice, tribunals typically exercise restraint in reducing or rejecting costs as disproportionate and unreasonable.⁷⁸ There is an underlying presumption that parties incur arbitration costs without knowing, *ex ante*, whether those costs will

⁷⁶ *id.*

⁷⁷ 2015 ICC Report on Decisions on Costs, para. 65.

⁷⁸ See *Southern Pacific Properties (Middle East) Limited v. Arab Republic of Egypt*, ICSID Case No. ARB/84/3, Award of 20 May 1992, para. 207 ('there is little doubt that the legal costs incurred in obtaining the indemnification must be considered part and parcel of the compensation, in order to make whole the party who suffered the loss and had to litigate to obtain compensation').

be reimbursed. This fact, in itself, is 'a strong indication that the amount billed was considered reasonable by a reasonable man spending his own money, or the money of the corporation he serves'.⁷⁹

In a complex arbitration, a common, practical metric that tribunals employ to determine reasonableness is comparing the parties' costs.⁸⁰ If those costs are quantitatively similar, a tribunal will generally intervene only if the costs claimed by one side are manifestly excessive.⁸¹ Generally, claimants will spend more pursuing their claims than respondents, but there are extreme cases where the opposite is true. For example, in *Jan Oostergetel and Theodora Larentius v. Slovakia*,⁸² the tribunal ordered the claimants to pay US\$3,191,481 of the respondents' total costs of US\$16,330,000, whereas the claimants incurred a total of only US\$2,231,000. Likewise, in *Libananco v. Turkey*, the tribunal ordered the claimants to pay US\$15,602,500 of the respondent's total costs of US\$35,702,417.76, whereas the claimants incurred a total of only US\$24,382,000.⁸³

Although rare, tribunals will, on occasion, question and criticise a party's internal case management decisions in rendering a cost award. For example, in ICC Case No. 5726, although the prevailing party had engaged three law firms, the tribunal awarded legal costs as if the prevailing party had instructed only two individual lawyers.⁸⁴ Similarly, in ICC Case No. 5008, because the prevailing party's legal fees were four times those of the counterparty, the tribunal averaged the fees between the two parties when awarding costs to that prevailing party.⁸⁵

Incurred for arbitration

Invariably, tribunals require that only those costs directly incurred for or in connection with the proceeding will be recoverable.⁸⁶ Fees and expenses incurred prior to the initiation of the arbitration are generally not recoverable, even if those

79 Bühler, op. cit. at 271, quoting *Sylvania Technical Sys. Inc. v. Government of the Islamic Republic of Iran* (1985), 8 'Iran – United States Claims Tribunal Report' 329, at 333.

80 Bühler, op. cit. at 273, citing to ICC Cases No. 5008 (1992) and No. 5480 (1991).

81 id.

82 Profaizer, op. cit. at 119, citing *Jan Oostergetel and Theodora Larentius v. Slovakia*, UNCITRAL, Award (2012).

83 id., citing *Libananco v. Turkey*, ICSID Case No. ARB/06/8 (2013).

84 ICC Case No. 5726 (1992), *ICC Ct Bull.*, Vol. 4 (1993), p. 36.

85 ICC Case No. 5008 (1992), *ICC Ct Bull.*, Vol. 5 (1993), p. 31.

86 Profaizer, op. cit. at 119.

costs may involve work that is later used during the course of the proceedings.⁸⁷ Likewise, costs incurred following the arbitration or to enforce the tribunal's award are generally not recoverable (although they may be recoverable in enforcement proceedings before a domestic court). Costs for collateral harms resulting indirectly or consequentially from the arbitration are also generally not recoverable.⁸⁸

Categories of recoverable costs

As discussed above, although parties should consider and negotiate the specific categories of recoverable costs in their arbitration agreement, they rarely do.⁸⁹ Most major sets of arbitration rules now contemplate that, in principle, all costs a party incurs in prosecuting an arbitration are recoverable, including (1) party costs (e.g., legal and professional advisers' fees and expenses and the expenses relating to fact and expert witness evidence) and (2) arbitration costs (e.g., the tribunal members' fees and expenses and related administrative fees charged by the governing arbitral institution).⁹⁰

Costs of external counsel, advisers and witnesses

External counsels' legal fees are regularly the most substantial sums incurred by parties in international arbitrations. These legal fees will typically be recoverable so long as they are deemed reasonable and proportionate to the overall award. If the parties' claimed legal fees are quantitatively similar, that is typically strong

87 *id.* Hong Kong's arbitration legislation (the Hong Kong Arbitration Ordinance) is an exception that allows the recovery of those costs 'incurred in the preparation of the arbitral proceedings prior to the commencement of the arbitration'. Hong Kong Arbitration Ordinance, § 74(7)(b).

88 Bühler, *op. cit.* at 270.

89 Bühler, *op. cit.* at 269; 2015 ICC Report on Decision on Costs, para. 45 ('The parties' agreement on costs is the principal factor to take into consideration in any decision on costs.').

90 See UNCITRAL Arbitration Rules, Article 42(1) (2013) ('The costs of the arbitration shall in principle be borne by the unsuccessful party or parties.');

Article 52(2) in the China International Economic and Trade Arbitration Commission Rules ('The arbitral tribunal has the power to decide . . . that the losing party shall compensate the winning party for the expenses reasonably incurred by it in pursuing the case.');

ICC Rules, Article 8 ('The costs of the arbitration shall include . . . the reasonable legal and other costs incurred by the parties The final award shall . . . decide which of the parties shall bear [costs] or in what proportion.');

HKIAC Rules, Article 34.3 ('The arbitral tribunal may apportion all or part of the costs of the arbitration . . . between the parties if it determines that apportionment is reasonable, taking into account the circumstances of the case.');

2015 ICC Report on Decision on Costs, para. 2 and Appendix C.

evidence in favour of reasonableness.⁹¹ For this reason, parties may undertake a game theory strategy in their cost submissions. Because those submissions are made before the parties know the substantive outcome of the dispute, one party may intentionally ‘low-ball’ its claimed fees in the hopes of creating a disparity in the respective claimed amounts, thereby making an adversary’s fees appear unreasonable or disproportionate. This tactic has the obvious disadvantage, however, of effectively ensuring that the party will not recover the full amount of its incurred costs in the event that it were to prevail.

In analysing external counsels’ legal fees, tribunals will also consider other context-specific factors, including:

- the relative market billing rates of counsel;
- the number of hours billed by counsel relative to the complexity of the case;
- the number of attorneys engaged for the matter;
- counsel’s transparency regarding its own fees; and
- the size and complexity of the dispute.⁹²

Because parties have a fundamental right to choose their own counsel and dictate their own engagement, tribunals will rightfully engage in some deference to the parties’ choice of counsel.

Similar to the fees spent on legal representation itself, the costs for fact and expert witnesses (including ancillary costs such as transport and lodging) are generally recoverable, as they are considered reasonably necessary to the prosecution of the arbitration.⁹³ These costs, however, can also be determined to be unreasonable or disproportionate and, therefore, not subject to reimbursement if the tribunal concludes that the witness provided false evidence, or if the presentation of witness evidence amounts to an abuse of the arbitral process.⁹⁴

91 Abdel Wahab, *op. cit.* at 466.

92 *id.*; Crina Baltag, Chapter 1: ‘In-House Counsel and Recoverability of Costs in International Arbitration: Time for a Clear-Cut Position?’ in Sherlin Tung, Fabricio Fortese, et al. (eds), *Finances in International Arbitration: Liber Amicorum: Patricia Shaughnessy* (2012) § 1.02.

93 Paolo Michele Patocchi, ‘Deciding on the Costs of the Arbitration – Selected Topics,’ ASA Special Series No. 29 (2007), at 62.

94 2015 ICC Report on Decision on Costs, para. 16 and Appendix A.

Costs of in-house counsel

It is much more controversial whether the costs of in-house counsel and other party employees are recoverable. Traditionally, these costs were not recoverable because they were considered part of the ordinary costs of running a company and not unique to a particular dispute.⁹⁵ In recent years, however, the pendulum has swung. As the tribunal in ICC Case No. 6564⁹⁶ articulated:

*There is no justification to privilege a party in terms of costs for the sole reason that it retained outside rather than in-house counsel. . . . A party must be free in allocating the work between outside counsel and its own services. A party which decides to perform most of the preparatory work for the case by its own legal and technical departments should not be placed at a disadvantage compared to one which confers all work to outside counsel and experts.*⁹⁷

Although still subject to debate, it is now generally accepted that in-house counsel costs may be recoverable to the extent that they are capable of being substantiated and are justified.⁹⁸ In contrast to in-house counsel, it is well established that ‘the lay client’s time in instructing those who conduct the proceedings is not allowable’.⁹⁹

Contingency fees and third-party funding

Contingency fee or success fee arrangements pose particular issues for tribunals. The default rule is that the costs awarded against a losing party should not be increased based on the winning party’s choice of fee structure with its counsel.¹⁰⁰ Policy considerations may also militate against shifting the payment of success fee arrangements. If permitted, success fee arrangements can create a perverse

95 Savola, op. cit. at 287; ICC Case No. 6293 (199), *ICC Ct Bull* (1993).

96 Bühler, op. cit. at 274.

97 ICC Case 6564 (1993), *ICC Ct Bull*, Vol. 4 (1993), at 46.

98 See ICC Case No. 8786 (1997), 20 *ASA Bulletin* 1 (2002), p. 68, allowing costs for in-house counsel; see also Jason Fry, Simon Greenberg and Francesca Mazza, *The Secretariat’s Guide to ICC Arbitration*, ICC Publication No. 729E, at 3-1491; Philippe Cavalieros, ‘In-House counsel costs and other internal party costs in international commercial arbitration’, in *Journal of the London Court of International Arbitration* (2014) at 151 (‘Arbitral tribunals are increasingly recognizing such costs as legitimate and reimbursable. However, the issue is still heavily debated. Certain arbitral tribunals may point to the practical concern that it is often difficult accurately to substantiate these costs and provide evidence thereof. In contrast, outside counsel will usually provide parties with detailed invoices.’).

99 CI Arb, Guidelines for Arbitrators on Making Orders Relating to the Costs of the Arbitration (2003), para. 61.

100 2015 ICC Report on Decisions on Costs, para. 65.

incentive whereby parties to an arbitration would never have to pay for their own counsel: either the burden would be borne by the losing party (if the party with the contingency fee arrangement wins the arbitration) or the burden would be borne by counsel (if the party with the contingency fee arrangement loses the arbitration).

Tribunals generally treat third-party funding arrangements differently from contingency fee arrangements. Third-party funding arrangements may function like success fee arrangements in that the party's incurred costs will vary based on the party's success.¹⁰¹ Tribunals, however, are generally more receptive to shifting the costs owed under a third-party funded arrangement, because tribunals assume that the party has an obligation to reimburse the third-party funder's costs.¹⁰² Thus, it may be viewed as irrelevant that a third party advanced the costs of the arbitration when evaluating whether those advanced costs can be shifted to the losing party.¹⁰³

Costs due to ancillary judicial proceedings

Although the costs due to ancillary or parallel judicial proceedings are generally viewed as insufficiently connected to the arbitration to be recoverable as arbitration costs,¹⁰⁴ those costs can sometimes be awarded as damages, to the extent that a separate proceeding is the subject of a claim in the arbitration.¹⁰⁵ Tribunals will often be more willing to award the costs of prosecuting the judicial action as damages when both parties have claimed those costs reciprocally.¹⁰⁶ That being said, the prevailing preference among tribunals is for parties to seek the costs of parallel proceedings exclusively in that separate forum, so as to avoid issues of double recovery and jurisdictional overreaching.¹⁰⁷

101 Savola, op. cit. at 285.

102 id.

103 ICCA/Queen Mary University of Law Task Force on Third-Party Funding; see also 'Awarding of Costs and Third-Party Funding' in Jonas von Goeler, *Third-Party Funding in International Arbitration and its Impact on Procedure* (2016) at 386 ('Where costs provisions require costs to have been "incurred" or "directly incurred" by the party claiming them, these terms are broad enough to encompass costs that have been paid by a third party.')

104 Savola, op. cit. at 282.

105 id.

106 Abdel Wahab, op. cit. at 483.

107 *ibid.*, at 481.

Procedure for claiming costs awards

Cost submissions and evidentiary requirements

It is axiomatic that a tribunal may not award costs without first receiving a claim for costs from the requesting party, also known as a cost submission. These cost submissions – which typically comprise (1) a brief legal argument, (2) an accounting of the costs incurred, and (3) supporting evidence – are frequently complicated by several factors.¹⁰⁸

First, because the parties' cost submissions are typically submitted before the tribunal has rendered its substantive award and declared a final winner and loser, the parties' assessment of their relative success is necessarily both subjective and speculative. Thus, to cover all potential avenues of recovery, parties will frequently focus on the other party's conduct, alleging that the other side's behaviour was improper and created inefficiencies and delay.

Second, because tribunals rarely specify in advance what costs are recoverable and what corroborating evidence will be required to support that recovery, the parties are often left without clear or uniform guidance *ex ante* as to what the tribunal expects to evaluate. As a result, it is not uncommon for the parties to submit cost submissions that are entirely different in terms of their form, scope and detail.

Third, although the tribunal must generally have sufficient information to verify that the costs requested are legitimate and actually incurred, detailed supporting documents are usually not required given the undue burden that would place on the parties and their counsel.¹⁰⁹ Tribunals also do not typically require specific invoices for legal fees because they are likely to contain privileged and confidential information.¹¹⁰ Instead, tribunals generally expect itemised lists of legal fees and more general summaries of the work performed, often accompanied by a short affidavit from a party representative or counsel.¹¹¹ It is typically up

108 Michael McIlwrath and John Savage, Chapter Five: 'The Conduct of the Arbitration' in *International Arbitration and Mediation: A Practical Guide*, pp. 225–326 at 5-253.

109 Gustav Flecke-Giammarco, Chapter 13A: 'The Allocation of Costs by Arbitral Tribunals in International Commercial Arbitration' in Jorge A Huerta-Goldman, Antoine Romanetti et al. (eds), *WTO Litigation, Investment Arbitration, and Commercial Arbitration*, Global Trade Law Series, Vol. 43 at 402–03.

110 *id.*

111 McIlwrath and Savage, *op. cit.* at 5-253.

to the parties to decide how much information they want to disclose affirmatively, including identifying the individual members of the legal team and their hourly billing rates.¹¹²

Fourth, absent party agreement to the contrary, tribunals generally require parties to submit their cost submissions simultaneously.¹¹³ The advantage of this approach is that it prevents either party from falsifying or manipulating its requested legal fees and expenses in response to the other party's claimed fees and expenses. The disadvantage of simultaneous submissions is that it does not allow an automatic right to address any errors or omissions in the other party's submission, barring some exceptional circumstances.

Timing and contents of costs awards

A tribunal's mandate and authority terminate when it issues its final award and thereby becomes *functus officio*. Accordingly, all major arbitration rules expressly require that the tribunal's final award include a determination as to costs.¹¹⁴ The award must include the parties' cost claims, the scope of recoverable items and the amounts ultimately owed, as well as the tribunal's rationale for allocating and awarding costs, or else the cost award risks being unenforceable.¹¹⁵

The notable exception to this practice occurs where there are substantial preliminary issues (e.g., jurisdiction) or preliminary procedural applications, in which case a tribunal may render a partial cost award.¹¹⁶ Partial cost awards are generally reserved either for issues on which the parties spent a substantial

112 The Swiss rules require this by default. See Tobias Zuberbuehler, Chapter 3, Part II: 'Commentary on the Swiss Rules, Article 38 [Costs, I]' in Manuel Arroyo (ed), *Arbitration in Switzerland: The Practitioner's Guide* (Volume II, 2nd ed.), at 812.

113 See, e.g., Micha Bühler and Marco Stacher, Chapter 18, Part IV: 'Costs in International Arbitration' in Manuel Arroyo (ed), *Arbitration in Switzerland: The Practitioner's Guide* (Volume II, 2nd ed.), p. 2588 and n.142.

114 Bühler, op. cit. at 277; Savola, op. cit. at 308; Waincymer, op. cit. at 1237.

115 Bühler, op. cit. at 270 to 271.

116 2015 ICC Report on Decisions on Costs, paras. 27, 36. For arbitral rules, see, e.g., UNICTRAL Rules, Article 42(2) ('The arbitral tribunal shall in the final award, or, if it deems appropriate, in any other award, determine any amount that a party may have to pay to another party as a result of the decision on allocation of costs.') (emphasis added). See also ICC Rules, Article 28(3) (2015) (allowing the same, but limiting interim decisions on costs to those 'other than [costs] to be fixed by the Court'). It is also possible, but less common, for a tribunal to issue a partial award on liability and damages, then subsequently issue an award on costs.

amount of time or to penalise parties for unsuccessful interim applications.¹¹⁷ It is important for tribunals to render a partial cost award only if it is definitive and intended to be immediately enforceable, because partial cost awards are immediately enforceable once rendered.¹¹⁸

Cost considerations in the covid-19 era

Within the space of just a few months, the covid-19 pandemic dramatically – and perhaps permanently – altered the way in which international arbitration proceedings and hearings were conducted. Since the initial effects of the pandemic rippled across the international arbitration landscape in February and March 2020, much has already been written about its procedural and its substantive consequences. Some institutions, such as the ICC, have taken the initiative to publish detailed guidelines and recommendations to aid parties and tribunals in conducting covid-affected proceedings as efficiently and effectively as possible.¹¹⁹ Not surprisingly, these guidelines reflect a strong reliance on virtual communication platforms to allow cases to proceed on a partially or fully remote basis.¹²⁰ Most practitioners and arbitrators would agree that conducting an international arbitration hearing via Webex or Zoom is substantively less captivating than an in-person hearing and may pose technological and other logistical challenges. As the international arbitration community has grown accustomed to the new reality, however, it has become increasingly evident that remote proceedings are not only feasible but potentially advantageous in certain respects, especially costs, so long as care and fair treatment to all parties remain the lodestar of the process.

For example, many practitioners would agree that conducting a remote hearing can avoid the substantial sums that otherwise would be spent on the use of a physical venue and travel-related costs for the parties, their representatives and the tribunal members. Conducting a remote hearing, in which exhibits and documents are circulated and displayed electronically, can also avoid the considerable expense of printing multiple copies of a voluminous evidentiary record. The

117 Waincymer, *op. cit.* at 1259 to 1260. Additionally, tribunals are strongly advised to discuss procedure with the parties at the onset of the arbitration if they are going to make partial cost awards, as this is a departure from standard practice. 2015 ICC Report on Decisions on Costs, para. 32.

118 2015 ICC Report on Decisions on Costs, para. 38.

119 See 'ICC Guidance Note on Possible Measures Aimed at Mitigating the Effects of the COVID-19 Pandemic' (9 April 2020), <https://iccwbo.org/content/uploads/sites/3/2020/04/guidance-note-possible-measures-mitigating-effects-covid-19-english.pdf> (last accessed 6 Oct 2022).

120 *ibid.*, at paras. 8 and 16–27.

same principles hold true for other party-specific, pre-hearing expenses and fees, such as document collection visits, witness interviews and client meetings. All these necessary milestones, if organised and well prepared, may be good candidates for a virtual, rather than in-person, format, thereby leading to substantial cost savings.

Ironically, the necessity of adapting to covid-19's challenges may produce the needed response to the chorus of complaints regarding the rising costs of international arbitration.

Strategic cost-saving considerations for parties and tribunal

Party strategy	Tribunal strategy
Contract formation pre-arbitration	
• Choose optimal cost-allocation rules at contract formation • Consider all pre-arbitration steps that may promote early resolution of dispute • Avoid conduct that could be seen as abusive or unnecessary. If the tribunal determines that the arbitration could have been avoided, it may factor pre-arbitration conduct into its cost award	
Initial case management conference	
• Encourage <i>Calderbank</i> offers, where appropriate • Inform parties that unreasonable or dilatory conduct could result in an adverse cost award • Set clear timeline for arbitration milestones and award issuance • Consider all cost-saving considerations, such as limiting length and number of submissions	
Submissions and document exchange pre-hearing	
• Avoid conduct that could be seen as unreasonable, abusive, dilatory or otherwise improper • Avoid incurring what could be seen by tribunal as unreasonable or disproportionate legal fees for the dispute	• Sanction vexatious or unreasonable conduct by issuing interim cost awards if necessary
Hearing	
• Consider mechanisms for reducing or avoiding travel and venue costs, e.g., conducting the hearing virtually • Consider mechanisms for reducing legal fees and witness expenses, e.g., limiting duration of oral submissions and witness examinations	

CHAPTER 23

The Use of Econometric and Statistical Analysis in Damages

Jennifer Vanderhart, Steven Schwartz, Richard Brady
and Aminta Raffalovich¹

Introduction

Empirical analysis – using data to test hypotheses and understand relationships – is a critical part of economic research and has become increasingly important in disputes. There are numerous tools available to help to understand data, and yet many lawyers are reluctant to have their experts use all the powerful tools in their toolbox out of a concern that the analysis will be too complex, too confusing to present, or that it will appear to have been created out of thin air. Although those concerns may be reasonable in principle, in practice they are readily addressed.

To see why that is so, and before addressing the details of any data-driven analysis – particularly a statistical or econometric methodology like regression analysis – it is useful to take a step back and think about the underpinnings of an empirical study, which is data. A useful way to think about data is that it is information. ‘Data’ does not mean numbers alone but also refers to information – whether numerical or textual – as well as the context and source of that information. Thus, when thinking about statistical analysis, a fundamental question to be considered is whether or not a data-driven analysis – or, more specifically, any statistical analysis – is appropriate for the matter at hand. To that end, there are at least four questions to be addressed.

- What do I want to prove and can I use data to prove it?
- How do I use data properly to prove what I want to establish?

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- How can I be sure of what the data is telling me?
- How do I choose the right methodology to analyse the data I have?

If it is decided that data is necessary (or at least useful) in proving what needs to be established, then the information requirements for that analysis must be considered. In assessing whether a set of numbers are the ‘right’ numbers for a statistical study, one also needs to consider their ‘context’ and ‘source’.

As to context, although it is clear what a number is within a data set (e.g., sales volume, price, a person’s age or income), the meaning of those numbers requires context. To make clear what context is, imagine being confronted with a data set showing sales.

Table 1

14,361,211	12,017,002	-
15,074,191	12,316,616	-
15,166,207	13,040,210	10,611
16,891,916	13,896,607	91,431
17,110,001	14,771,432	283,771
17,916,142	15,210,312	356,291
17,432,116	16,007,519	517,991
15,817,210	16,743,910	843,062
15,612,901	17,212,310	1,120,312
15,156,210	17,943,519	1,753,077
15,001,710	18,337,263	2,910,816

Standing alone, those numbers that apparently reflect sales, are meaningless. Their meaning starts to emerge with an understanding of the context of the data. That is, sales of what product? What period is covered by the sales? What geographical area is covered? Sales to whom? How are they measured (i.e., units or in a currency (and which currency))? Are the sales numbers final or merely preliminary? Net or gross? Whether this data is useful, or even appropriate, for a statistical study cannot be answered without having a sense of the data’s context.

Equally important before venturing into the world of statistical study is a grasp of the source of the data: the entity or place or publication in which the data is found; who provided the data; and whether the basis by which to view them is reliable.

Fundamentally, for a data-driven analysis, whether it is based on a simple analysis of means and standard deviations or a more sophisticated and complex econometric study, having good answers to these questions is fundamental. If

nothing else, for an expert who is presenting the data or statistical analysis, surviving an admissibility challenge may often depend on establishing the reliability and appropriateness of the data, and these issues are fundamental to that process.

Platitudes aside, what does context add?

Table 2: Best Widgets Company – annual widget sales by region (units)

Year	North America	European Union	Rest of the world
2011	14,361,211	12,017,002	-
2012	15,074,191	12,316,616	-
2013	15,166,207	13,040,210	10,611
2014	16,891,916	13,896,607	91,431
2015	17,110,001	14,771,432	283,771
2016	17,916,142	15,210,312	356,291
2017	17,432,116	16,007,519	517,991
2018	15,817,210	16,743,910	843,062
2019	15,612,901	17,212,310	1,120,312
2020	15,156,210	17,943,519	1,753,077
2021	15,001,710	18,337,263	2,910,816

Simply by putting a time and geographical dimension on the data, and indicating the unit of measurement, the stories the data can tell become clearer. Whether the data alone is sufficient to answer the relevant questions is unclear, but simply by adding context to the numbers, the way in which the data might be useful is much more obvious. It may also be clear that to analyse the question at hand fully, more data is needed. Either way, context is critical.

The same is true for source. Not all data is created equal. One critical task for an analyst using statistical methods to address a complicated problem is to understand where the data comes from and to take reasonable steps to be sure the data is reliable. It is necessary to understand the source of the data, how it is created and collected, and to ensure that the data is capable of generating and supporting robust results.

As stated above, data is information but it is distinct from statistics. Statistics is a method for analysing that information. At a high level, there are descriptive statistics; for example, measures of central tendency (mean, median, mode) or measures of dispersion (variance and standard deviation). There are also more analytical statistics, such as correlation, measures of statistical significance, goodness of fit and regression analysis. The type of statistic needed determines what to

do with the available data and how to analyse it. It should be noted that the choice of, or need for, descriptive or analytical statistics is not an either/or choice. The question being asked and the available data determine what statistical analyses are supportable. It will often be the case that a question can best be answered with a wide range of statistical analyses. What must be emphasised, however, is that even simple descriptive statistics can be powerful tools for analysis and can support robust conclusions, even when analytical statistical methods are needed to answer more complex questions.

Overview of regression analysis

Regression analysis is a statistical technique that can be used to estimate the relationship between a dependent variable and one or more independent variables. The term ‘dependent variable’ simply means that the variable may depend on, respond to or be associated with the values of one or more other variables.² Similarly, an ‘independent variable’ is a one that may partially determine, influence or otherwise help to predict the value of the dependent variable.³

Economists use regression analysis to evaluate relationships between variables of interest in economic data or to predict future values of a variable of interest.⁴ It is in this context where regression analysis is most frequently used for damages purposes. For example, consider a multi-feature product such as a smartphone or microprocessor. A damages expert may be interested in the relationship between a patented feature and the price of an accused product. Such a relationship can be estimated using a type of regression called hedonic regression, discussed below. As another example, a damages expert may be interested in estimating the effects of a product’s sales on the sales of a competitive product. The damages expert could use time series regression to estimate the product’s sales for the periods of interest given historical data on the product’s sales prior to the sales of the competitive product.⁵ Both examples are discussed in more detail below.

2 Other commonly used names for dependent variable include response variable and outcome variable.

3 Other commonly used names for independent variable include predictor and explanatory variable.

4 The use of regression analysis, and statistical analysis more generally, for these purposes is referred to as econometric analysis.

5 In time series regression, historical values of the variable of interest (e.g., sales from the previous period) are often used as the independent variable, or variables.

There are many different types of regression analyses and estimation techniques that can be used, depending importantly on the question of interest (e.g., how an improved camera zoom capability affects the price of a smartphone). The most common type of regression used in econometric analysis is linear regression, which assumes there is a linear relationship between the dependent variable and the independent variable, or variables. Additionally, the most commonly used estimation technique for linear regression is referred to as ordinary least squares. With this estimation technique, the coefficients on the independent variables are set such that the resulting linear function provides the best 'fit' with the values of the dependent variables in the sample.⁶

It is important to note that the results obtained from a regression estimation are dependent on the data sample used. In other words, with a different sample of data, the analyst would expect to obtain different results. Thus, the analyst should not view the results of a regression estimation as providing an irrefutable answer to a question of interest: such is the nature of statistical inference. Fortunately, a number of tools are readily available that can help the analyst evaluate the regression results while accounting for the probabilistic nature of statistical analysis. Although a complete overview is beyond the scope of this chapter, a few important concepts that frequently arise when performing regression analysis are described below.

- *R*-squared: This metric is the proportion of variation in the dependent variable that is explained by the independent variables. The closer the observed values are to the predicted values, the better the regression fits the actual data. *R*-squared values range from zero to one, with higher values indicating a better fit.⁷ An alternative metric, known as adjusted *R*-squared, measures the same fraction of variation in the predicted value that is explained by the regression, adjusted for the number of variables used in the regression.⁸

6 When using the ordinary least squares (OLS) technique, the 'fit' is measured as the sum of squared residuals, where each residual value is defined by the difference between the value of the dependent variable for that observation and the regression model's predicted value for the dependent variable. OLS sets the coefficients in the regression function such that the sum of squared residuals is minimised.

7 James H Stock and Mark W Watson (2011), *Introduction to Econometrics* (3rd ed., Boston, Massachusetts: Addison-Wesley), at 193–95.

8 William H Greene (2012), *Econometric Analysis* (7th ed., Boston, MA: Pearson Education, Inc.), at 139–40.

- *Multicollinearity*: This issue arises when an independent variable can be predicted with a high degree of accuracy from one or more other independent variables. When a data sample suffers from multicollinearity, the resulting estimated coefficients on independent variables may be unreliable. In some sense, the group of independent variables suffering from multicollinearity contain redundant information in the sense of their respective effects on the dependent variable. As an example of multicollinearity, consider height measured in inches and height measured in centimetres. Attempting to include both as independent variables in a regression analysis would be problematic as they contain the same information, albeit in different units of measurement. In fact, it would not be possible to estimate such a regression since height in inches perfectly predicts height in centimetres and, thus, it would be impossible to identify the effect of either variable on the dependent variable. Such a case is known as perfect multicollinearity.
- *P-value*: This is a random variable that provides information on how likely a hypothesis about a coefficient of interest is to be true. Given a hypothesis (e.g., an improved camera zoom capability has no effect on the price of a smartphone), the p-value is equal to the probability of obtaining the observed test statistic value if the hypothesis were true. Thus, a low p-value provides evidence that the hypothesis is not true, as it would indicate that the likelihood of obtaining the result would be low if it were true. In statistical parlance, an analyst may 'reject the null hypothesis' if the p-value is less than some pre-specified threshold, with 0.10, 0.05 and 0.01 being the most commonly used.
- *Standard error*: The standard error of a statistic is equal to the standard deviation of the statistic's distribution (or an estimate of the standard deviation).⁹ For a regression analysis, the analyst will often be interested in the standard error of an estimated coefficient on a variable of interest, as it can provide insight into the precision of the estimated coefficient. Generally, the smaller the standard error, the more precise the estimate, in the sense that repeated estimation with different samples would be expected to generate lower variation than if the standard error were large. Dividing the estimated coefficient by the standard error results in the t-value or t-statistic for the estimated coefficient. A t-value provides another way by which hypothesis testing can be conducted, as a t-value has a corresponding p-value.

⁹ Note that the terminology is occasionally used in reference to the 'standard error of the regression', which, like *R*-squared, provides a measure of how well the model fits the data.

Examples of regressions

Predict a trend

A predictive model is a useful and reliable statistical tool because, unlike a model that estimates an outcome based on all the factors that cause that outcome (i.e., a causal model), it is not necessary to specify each and every factor that causes an outcome. All that is needed is a factor that can reliably predict an outcome.

By way of analogy, say you want to estimate the average temperature in a certain city in the month of July. There will be variation in the temperature during the days of the month but the best predictive factor will be a data set of past temperatures for that month. You do not need to know the barometric pressure, humidity, precipitation, cloud cover, and so on. You can predict, with reasonable certainty, the average temperature for a given month by knowing what the average temperature was for that month in past years.

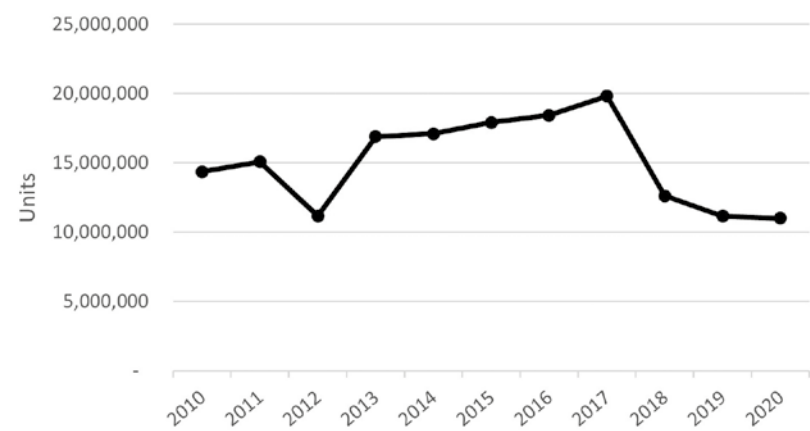
This type of regression analysis is referred to as a time series regression, in which a growth trend is estimated and data is projected forward based on that estimation. Time is the independent variable (x-variable) and this type of model assumes that the dependent variable (the y-variable) will vary based on the historical trend.

It is possible to account for discrete anomalies that affect the data through the use of indicator, or 'dummy', variables. These are categorical variables that take on a value of one for a single period, or for certain periods in which the same effect is expected to have occurred, and zero for all other periods. For instance, if one were analysing sales data and a company had a 10-year anniversary sale that led to higher than usual sales revenue, this effect could be accounted for with the use of a dummy variable, or variables. The dummy variable would take on a value of one for the duration of the sale and zero for all other times. Any revenue forecast would probably have to account for the increase in revenue during the sale that would not be repeated in the future, absent a comparable sale. In addition, dummy variables are often employed if data is quarterly or monthly, or if it varies by season to account for specific differences during those periods. A chocolatier, for instance, might use a dummy variable that is one for certain days around Valentine's Day when attempting to predict its sales trend.

A simple example can be given by using a version of the information from the sales of widgets by Best Widgets Company shown above in Table 2. Since 2010, Best Widgets Company has been selling a widget under its trademark WFA. In 2012, the company experienced a warehouse fire that reduced sales for that year, but it rebounded and had been experiencing steady growth since that time. In

2017, a competitor, Great Widgets Company, started selling similar widgets by infringing the WFA trademark. The sales trend for Best Widgets Company is shown in Figure 1, below.

Figure 1: Best Widgets – Widget sales in North America



The loss in sales experienced by Best Widgets can be estimated using a time series regression through 2017 with a dummy variable for 2012, since the fire was a one-off occurrence that is not expected to be repeated. Then sales between 2018 and 2020 can be predicted. There are many computer programs that can run a simple regression such as this, although more complicated analyses will require more sophisticated tools. The results of the regression are shown below in Table 3.

Table 3

. reg Units Period Dummy

Source	SS	df	MS	Number of obs	=	8
Model	5.1767e+13	2	2.5883e+13	F(2, 5)	=	351.10
Residual	3.6861e+11	5	7.3721e+10	Prob > F	=	0.0000
Total	5.2135e+13	7	7.4479e+12	R-squared	=	0.9929
				Adj R-squared	=	0.9901
				Root MSE	=	2.7e+05

Units	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Period	731573.4	43240.58	16.92	0.000	620420	842726.9
Dummy	-4665780	299579.5	-15.57	0.000	-5435873	-3895686
_cons	1.36e+07	228223.2	59.75	0.000	1.31e+07	1.42e+07

Some of the statistics in Table 3 that an expert would want to examine would be the coefficients on the dependent variables – in this case Period and Dummy. The coefficient on the Period variable is a positive 731,573.4, with a t-value of 16.92. The p-value (shown in the column with the header ‘ $P>|t|$ ’) is the probability that an analysis would result in a t-value as large as that calculated in the analysis in a collection of random data in which the variable of interest (e.g., Period) has no effect. With a p-value of 0.000, there is almost zero probability that these results happened by chance. Typically, an analyst will be looking for p-values of less than 0.05 or 0.10, indicating that the coefficients are significant at the 5 per cent or 10 per cent level. With p-values of 0.000, the coefficients on Period and Dummy are both statistically significant at more than even the 1 per cent level.

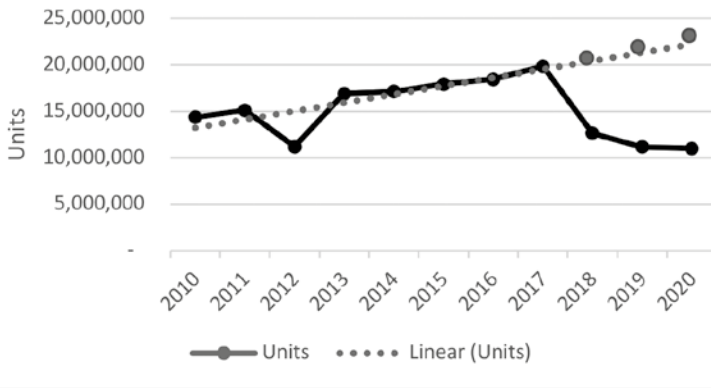
These coefficients are measures of units, and the coefficient of 731,573 on Period means that the regression predicts an increase of that many units per year. The coefficient on Dummy is a negative 4,665,780, indicating a decrease of approximately 4.7 million units from what would be expected from the regression results. This is the impact that is attributable to the warehouse fire. A dummy variable of this type will shift the results by a constant amount – if the dummy variable had been applied to more than one period it would measure one impact that would apply to all periods for which the dummy variable applied.

Other regression statistics that may be of interest address the overall significance and the goodness of fit of the model. The F-value or F-statistic (shown in the top right of the regression results, above) tests the joint statistical significance of coefficients in the regression, and it is used to determine the likelihood that a combination of coefficients is non-zero. The F-value is 351.10 and the $\text{Prob}>F = 0.000$, which is less than 0.05 and even less than 0.01, indicating that there is a statistically significant relationship between the independent and dependent variables. The F-test tests the hypothesis that a model with no independent variables (so that it only has an intercept) fits the data as well as the regression model with the independent variables. It is possible that none of the independent variables is statistically significant individually, but together they are jointly significant. The more independent variables that are included in a model, the more likely this result is to occur. The adjusted *R*-squared value, which is 0.9901 in the regression analysis shown in Table 3, indicates that the model is

likely to be a good fit.¹⁰ R -squared is always between 0 and 1, and the closer it is to 1, the more of the variability of the data around its mean has been explained by the model or, in other words, the better is the overall fit of the model.

This model predicts that, for the years from 2018 to 2020, unit sales by the Best Widgets Company would have been 20,221,427, 20,953,001 and 21,684,574, respectively. Actual and predicted sales are shown in Figure 2, below. Because actual sales in 2018, 2019 and 2020 were 12,612,901, 11,156,210 and 11,001,710, this indicates a difference of 7,608,526 units, 9,796,791 units and 10,682,864 units, respectively. In total, this means that the regression analysis predicts that Best Widgets Company would have sold an additional 28,088,181 units but for the actions of Great Widgets Company.

Figure 2: Actual and predicted widget sales



This is likely to be a less complex set of data than typically will be found in the real world. The growth trend in the regression model has been assumed to be linear – that is, the increase is assumed to be a fixed number of widgets per year. It is often the case that a percentage growth is more realistic; instead of assuming an increase of a fixed number of units per year, one would assume a percentage increase per year. One way this can be accomplished is by using a log transformation. There are various types of log transformations, but one common application involves ‘transforming’ the dependent variables by taking the natural log (log base 10, or $\ln$) of those amounts. When the regression is run using the transformed ‘log’ amounts

¹⁰ Adjusted R -squared accounts for the degrees of freedom. Including additional independent variables cannot reduce R -squared, but if their inclusion does not reduce the residual variance, then it can reduce the adjusted R -squared statistic. Adjusted R -squared is typically a better measure of fit than R -squared.

and the 'level' or standard amounts, the resulting coefficients have a different interpretation. Instead of interpreting the amount as a fixed number of additional units per one unit change in the independent variable (such as the 731,574 per year shown in the regression analysis in Table 3), the result is now a percentage change per one unit increase in the independent variable.¹¹

This regression analysis looked at the number of units that Best Widgets Company lost as a result of the infringing activity of Great Widgets Company. A regression analysis can be a helpful tool in determining damages but typically it will not be the entirety of a damages analysis. For instance, to calculate lost profits, which is typically the relevant measure of damages when looking at the plaintiff's or claimant's loss, the profit per widget would have to be determined. It is also possible that the infringing actions of Great Widgets Company caused there to be price erosion (another measure that may be informed by regression analysis). Also, if Best Widgets Company lost sales for reasons other than the infringing activity of Great Widgets Company, that would have to be taken into account in determining damages. A regression, then, can inform a damages analysis but must be accompanied by a reasoned economic model and other considerations may have to be taken into account to arrive at a final calculation of damages.

Explain a relationship

Regression analysis is also frequently used to explain a relationship between or within two or more variables. In this context, the dependent variable is the variable to be explained. The independent variables are those believed to produce changes in the dependent variable – in other words, they are the variables that explain the dependent variable (and are commonly referred to as 'explanatory variables' for that reason).

One useful type of explanatory regression analysis is hedonic regression, which is the use of a regression model to estimate the influence that various factors have on the price of a good. For example, the price of a house may be influenced by a number of factors, such as the age of the house, whether it has state-of-the-art features, the level of crime in the neighbourhood, whether it is located near a good school and the level of water and air pollution, among other things. By way of hedonic regression, the influence of each of these factors can be estimated in

¹¹ There are other statistical concepts that will typically have to be addressed when performing a regression analysis, but these are beyond the scope of this chapter.

isolation. Thus, hedonic regression can reveal the value of the factors or features that influence the price of a good even though those factors or features are not priced individually.

There are several statistical issues that frequently arise in hedonic regression analysis. One is that there may be an important explanatory variable that has been left out of the regression (referred to as an omitted variable). An omitted variable causes bias in the coefficients of the variables in the regression. In the above example relating to residential housing, leaving out house size as one of the independent variables would bias the coefficients of the other variables in the regression. This is because the regression model is effectively attributing the effect of house size to the variables included in the model.

Another statistical issue is that there may be multicollinearity in the independent variables. This means that two or more of the independent variables are correlated (i.e., there is a statistical relationship between them). Although multicollinearity does not reduce the power or reliability of the model as a whole, it leads to results in which individual variable coefficients are not reliable. For instance, including two measures of house size as independent variables in the residential housing regression – number of bedrooms and square metres – may introduce multicollinearity because the two variables are correlated: as number of bedrooms increases, so too does square metres. If number of bedrooms and square metres are highly correlated, the regression model cannot reliably determine the individual effect that either of those variables has independent of the other.

Hedonic regression analysis and explanatory regression analysis more generally can be useful tools for evaluating damages.¹² Disputes often involve questions of whether X caused or resulted in Y and, if so, how much Y changed because of X. These are the types of questions that explanatory regression analysis can answer. For example, in a dispute involving a particular characteristic of a product or service, the value associated with that particular characteristic could be determined using hedonic regression analysis.

Consider the following simple illustration. Company A sues Company B for using Company A's proprietary feature in its widget product and hires a damages expert to determine damages. There are three features of Company B's widget product: Feature1, Feature2 and ImportantFeature, which is Company A's

12 They are also useful tools for evaluating liability in some circumstances. For example, in a dispute alleging sex discrimination in salaries, an explanatory regression analysis could be used to evaluate whether sex explains differences in salaries, all else being equal.

proprietary feature. A hedonic regression analysis in which price is the dependent variable and the three features of Company B's widget product are the independent variables generates the results shown in Table 4, below.

Table 4

```
. reg Price Feature1 Feature2 ImportantFeature
```

Source	SS	df	MS	Number of obs	=	10
Model	115.759561	3	38.5865205	F(3, 6)	=	45.04
Residual	5.14043851	6	.856739752	Prob > F	=	0.0002
Total	120.9	9	13.4333333	R-squared	=	0.9575
				Adj R-squared	=	0.9362
				Root MSE	=	.9256

Price	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
Feature1	1.937422	.8401344	2.31	0.061	-.1183131	3.993157
Feature2	.3168894	.2805004	1.13	0.302	-.3694703	1.003249
ImportantFeature	.1644922	.0249554	6.59	0.001	.1034286	.2255558
_cons	-1.27012	.8807434	-1.44	0.199	-3.425221	.8849818

The coefficient on ImportantFeature is a positive 0.16, with a standard error of 0.02 and a t-value of 6.59. The coefficient signifies how much the dependent variable – price – changes given a one-unit change in ImportantFeature, holding the other variables constant. The results show that a one-unit increase in ImportantFeature is associated with a \$0.16 increase in price. The p-value (0.001) demonstrates that the coefficient is statistically significant at higher than the 5 per cent level (i.e., there is a less than 5 per cent probability that the results are due to chance).

Although this is a highly simplified illustration, it shows how regression techniques such as hedonic regression can be used to answer complex damages questions.

Conclusion

This chapter introduces econometric and statistical principles and methods and discusses how they can be used in the context of disputes. Whether and which type of method to use depends on the question being asked and the data available. Regression methods can be particularly powerful tools for determining damages in a wide variety of disputes.

Part IV

Industry-Specific Damages Issues

CHAPTER 24

Quantum in Oil and Gas and Mining Disputes

Darrell Chodorow, Florin Dorobantu and Fernando Bañez¹

Introduction

Natural resources development occurs in a highly globalised environment. As noted by the United Nations Conference on Trade and Development (UNCTAD) in its analysis of cross-border project finance transactions, '[m]ining is the most international industry, as more than half of all projects are sponsored by foreign companies, followed by oil and gas'.² For example, although the value of production from Canadian mines accounts for less than 4 per cent of global industry output,³ nearly half of the world's publicly traded mining companies are listed on Canadian exchanges.⁴ The global investment patterns for these industries create frequent international disputes, both investor-state and commercial, involving large damages claims.

Resource extraction projects are heavily intertwined with governments. Concessions often are acquired from governments, development requires permits issued by governments and state-owned companies often participate in projects. The potential for allegations of government interference is significant and many

1 Darrell Chodorow and Florin Dorobantu are principals and Fernando Bañez is an associate at The Brattle Group.

2 UNCTAD, *World Investment Report 2020 – International Production Beyond the Pandemic*, 16 June 2020, p. 19, https://unctad.org/en/Pages/DIAE/World%20Investment%20Report/World_Investment_Report.aspx (last accessed 7 September 2022).

3 International Council on Mining & Metals, *Role of Mining in National Economies*: 5th edition, 2020, p. 22, https://www.icmm.com/website/publications/pdfs/social-performance/2020/research_mci-5.pdf (last accessed 7 September 2022).

4 TMX Group Limited, <https://mining.tsx.com/> (last accessed 7 September 2022).

projects in this sector have been political flashpoints. The value of these projects can be very large, particularly after up-front investments to develop the project have been completed. Moreover, their value can increase suddenly and substantially when results from exploration activities or shifts in commodity prices are favourable.⁵ These circumstances create many opportunities for actual or perceived illegal actions by governments in the form of concession termination, state harassment, denial of permits, windfall taxes, royalty disputes, regulatory changes and even nationalisation. In some cases, states themselves seek counterclaim damages for claimant acts that are alleged to have harmed the value of the concession and the environment.⁶ The high potential for disputes is borne out in case statistics, with extractive sector cases accounting for about 15 per cent of known investment cases.⁷

Climate and environmental aspects are gaining a more important presence in international disputes in view of the focus on energy transition, climate law obligations and environment protection. For instance, in *Eco Oro Minerals Corp v. Republic of Colombia*, the tribunal found Colombia liable for depriving the mining company of its right to operate within an environmental preservation zone. However, the tribunal decided that Colombia's actions did not amount to an indirect expropriation because they were taken in good faith to protect the environment.⁸ Similarly, *Rockhopper Italia SpA et al. v. Italy* revolves around the state's environmental concerns and permits regarding an oil field near the coast,

5 World Investment Report 2022: International Tax Reforms And Sustainable Investment, Box I.1., p. 4, https://unctad.org/system/files/official-document/wir2022_en.pdf (last accessed 3 October 2022).

6 Venezuela alleged that the Rusoro's mining practices jeopardised the ability to meet production targets, causing a loss to the state, which was dismissed for lack of jurisdiction. *Rusoro Mining Ltd. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB(AF)/12/5, Award, ¶¶ 598–610 and 897, 22 August 2016 (*Rusoro*). Ecuador made a successful counterclaim against Perenco for environmental damages. 'Both sides win damages in Ecuador oil block dispute', *Global Arbitration Review*, 29 September 2019, <https://globalarbitrationreview.com/article/1208842/both-sides-win-damages-in-ecuador-oil-block-dispute> (last accessed 7 September 2022).

7 UNCTAD, *Investment Dispute Settlement Navigator*, data as at 31 December 2021, available at <https://investmentpolicy.unctad.org/investment-dispute-settlement> (last accessed 7 September 2022). The count excludes disputes involving downstream and support activities.

8 T Fisher and S Perry, 'Colombia liable in high-mountain mining dispute', *Global Arbitration Review*, 13 September 2021 referring to *Eco Oro Minerals Corp. v. Republic of Colombia*, ICSID Case No. ARB/16/41. The tribunal has not decided on quantum yet.

and its refusal to grant a production concession.⁹ The tribunal found Italy's actions amounted to an unlawful expropriation. This case adds to the debate about the Energy Charter Treaty (ECT), which is in the final states of its renewal process. The proposed update will align the ECT with the Paris Climate Accords and European Union environmental objectives.¹⁰ The proposed update of the ECT could have a significant effect on fossil fuel investments. For example, it will allow parties to phase out the protection it provides to existing investments after 10 years. It will also limit the definition of 'fair and equitable treatment' and 'indirect expropriation' standards, carving out measures taken for the protection of public policy objectives, such as environmental protection. The proposed update would make it more difficult for investors to pursue claims against states.

Commercial activity in resource extraction creates significant potential for cross-border disputes between private parties. Investments are large and construction is often outsourced to contractors. The sector is often the subject of cross-border transactions¹¹ and joint ventures are a common way for even the largest companies to share risks. Projects also frequently involve long-term sales contracts with customers that may come out of balance over time and lead to disputes or arbitrated resets. Thus, the resource sector sees numerous commercial disputes, including disputes about construction, shareholder agreements, share purchase agreements and commodity sales agreements (e.g., take-or-pay and gas price disputes). For example, the London Court of International Arbitration disclosed that 25 per cent of the institution's disputes were in the energy and resources sectors,¹² and International Chamber of Commerce data indicates that mining and energy accounted for 8 per cent and 10 per cent of its cases,

9 S Perry, 'UK oil company wins ECT award against Italy', *Global Arbitration Review*, 24 August 2022; S Perry, 'How Italy's ban on offshore drilling fell foul of the Energy Charter Treaty', *Global Arbitration Review*, 26 August 2022, referring to *Rockhopper Italia SpA, Rockhopper Mediterranean Ltd and Rockhopper Exploration Plc v. Italy*, ICSID Case No. ARB/17/14. The tribunal ordered Italy to pay €190 million plus interests.

10 T Fisher, 'Reactions roll in to ECT modernization', *Global Arbitration Review*, 29 June 2022. A draft of the 'agreement in principle' was published in September 2022. See N Lavranos, 'Comment: Will successful revision talks save the Energy Charter Treaty?', *Borderlex*, 19 September 2022.

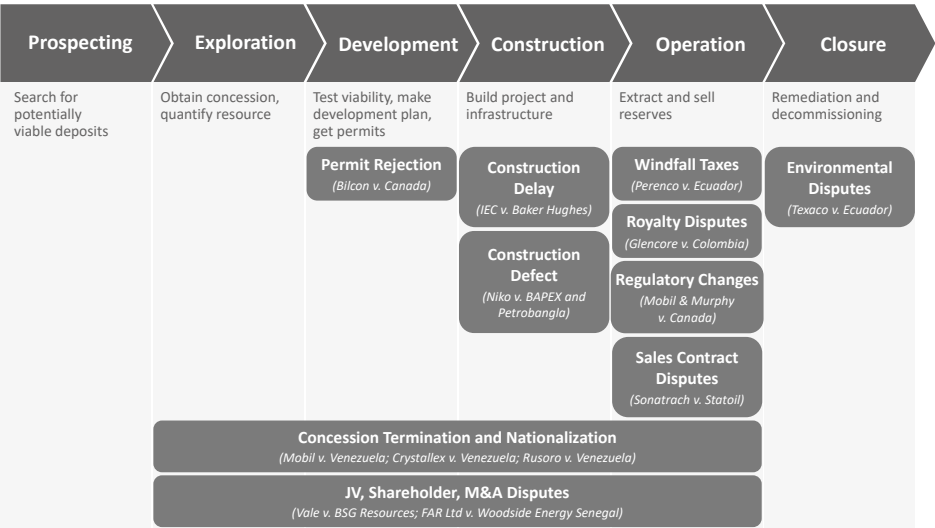
11 *World Investment Report 2020 – International Production Beyond the Pandemic*, 16 June 2020, p. 17.

12 London Court of International Arbitration (LCIA), *2021 Annual Casework Report*, p. 9, <https://www.lcia.org/lcia/reports.aspx> (last accessed 7 September 2022).

respectively.¹³ Recent curtailments by Gazprom of gas deliveries to Europe under long-term gas contracts based on *force majeure* claims are likely to give rise to future disputes.¹⁴

Figure 1, below, describes the typical life cycle of mining and oil and gas projects and some of the types of disputes that can arise. Companies begin prospecting to find candidate sites to explore. The exploration and development process follows, potentially marked by disputes about licences and permits. Once development is complete, construction begins, often giving rise to disputes between developers and construction contractors. During the operation phase, when producers are extracting and selling the reserves, disputes have often arisen about production taxes, royalty rates, changes in regulatory requirements and commodity sales contracts. Upon closure, potential disputes may arise about environmental remediation. At many stages of the process, assets may be subject to concession termination or nationalisation by governments, and commercial disputes may arise about joint venture and shareholder agreement and merger and acquisition transactions.

Figure 1: Disputes across extraction project life cycle



13 Independent Petroleum Association of America, *International Dispute Resolution*, 2011, p. 1, https://www.ipaa.org/wp-content/uploads/2016/12/IPAA_DisputeResolution2011.pdf (last accessed 7 September 2022).

14 F De Beaupuy and E Mazneva, 'Russia's Gazprom Halts Gas Supply to France's Engie Over Compensation Dispute', Bloomberg, 31 August 2022.

Many of these projects are especially large – one study identified 163 megaprojects (investment of more than US\$1 billion) in the upstream oil and gas sector with an average size of US\$6.6 billion.¹⁵ The amounts at stake in arbitrations are correspondingly large, having resulted in some of the largest awards on public record: eight of the 10 largest investment awards are in the extractive sector (Table 1, below), including the US\$50 billion *Yukos* award, the largest on record.¹⁶ Anecdotal evidence from commercial cases suggests similarly large amounts in play, such as the US\$1.2 billion award in *Vale v. BSG Resources*.¹⁷

Table 1: Ten largest investment awards

	Case	Amount (US\$ billions)	Industry
1	<i>Yukos Investors v. Russia</i> (three consolidated cases)	50.0	Oil and gas
2	<i>ConocoPhillips v. Venezuela</i>	8.4	Oil and gas
3	<i>Tethyan Copper v. Pakistan</i>	4.1	Mining
4	<i>Unión Fenosa v. Egypt</i>	2.0	Downstream oil and gas
5	<i>Occidental v. Ecuador (II)</i>	1.8	Oil and gas
6	<i>Mobil and others v. Venezuela</i>	1.6	Oil and gas
7	<i>Caim v. India</i>	1.2	Oil and gas
8	<i>Crystallex v. Venezuela</i>	1.2	Mining
9	<i>Oschadbank v. Russia</i>	1.1	Banking
10	<i>Rusoro Mining v. Venezuela</i>	1.0	Mining

Other than the largest cases, extractive sector disputes often involve larger amounts than other industries. Table 2, below, shows the median amounts claimed and obtained by the investor (including through settlement) by industry, excluding cases in which no damages were awarded. In oil and gas, both claims and awards are approximately 10 times as large as the median non-extractive cases, with half

15 Ernst & Young LLP, *Spotlight on oil and gas megaprojects*, 2014, p. 3, [https://www.ey.com/Publication/vwLUAssets/EY-spotlight-on-oil-and-gas-megaprojects/\\$FILE/EY-spotlight-on-oil-and-gas-megaprojects.pdf](https://www.ey.com/Publication/vwLUAssets/EY-spotlight-on-oil-and-gas-megaprojects/$FILE/EY-spotlight-on-oil-and-gas-megaprojects.pdf) (last accessed 7 September 2022).

16 *Investment Dispute Settlement Navigator*. The *Yukos* entry includes three arbitrations heard in parallel that resulted in a single award: *Hulley v. Russia*, *Yukos Universal v. Russia* and *Veteran Petroleum v. Russia*. Amounts exclude pre-award interest. The statistics exclude cases that reached settlement before an award was issued.

17 *Vale S.A. v. BSG Resources Limited*, LCIA Arbitration No. 142683, Award, ¶ 996, 4 April 2019. Amount excludes interest.

of the cases involving claims of more than US\$1 billion, and awards or settlements of more than US\$380 million. In mining, median claims are also often significantly larger than those sought by claimants in other industries, but the amounts obtained are similar because awards in many mining disputes on early-stage projects have been based on historical costs incurred by the claimant.¹⁸

Table 2: Median claims and awards

	Median claim (US\$ million)	Median award (US\$ million)
Oil and gas	1,000	380
Mining	472	19
Other industries	123	27

Important value drivers

Although there are many definitions of value, when used in the context of damages in international arbitration, value typically means fair market value (FMV). The FMV of a project is the price at which it would trade on the valuation date in an open market between willing and informed parties that do not act under any compulsion to trade.

Natural resource projects, like any productive assets, have value if they can generate future net cash flows with a positive present value. This value, therefore, is driven by factors that affect the magnitude, timing and riskiness of cash flows.

Unlike other business opportunities, natural resources are exhaustible, so total output depends on the size of the mineral or hydrocarbon deposit available for extraction. Deposit size cannot be known with certainty before extraction, so what matters for value are the estimates of size. In the extractive sector, these estimates are called resources and reserves. The terms mean different things in the oil and gas and mining industries but, generally, reserves are the portion of resources that can be extracted economically at current prices. The most frequently referenced definitions are published by the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) for mining and by the Society of Petroleum Engineers (SPE)

18 Average figures are substantially higher than those in non-extractive cases for both oil and gas and mining, being influenced by the large amounts listed in Table 1.

for oil and gas.¹⁹ Resources and reserves estimates are further classified based on geological uncertainty and confidence in commercial extractability. Figure 2, below, illustrates the CIM classification used in the mining industry.

Figure 2: Mining resources and reserves classification framework (CIM)²⁰

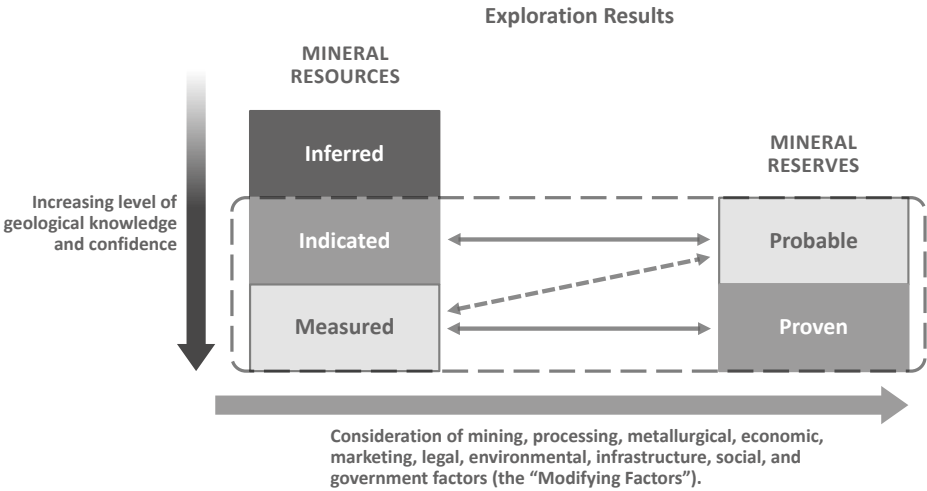
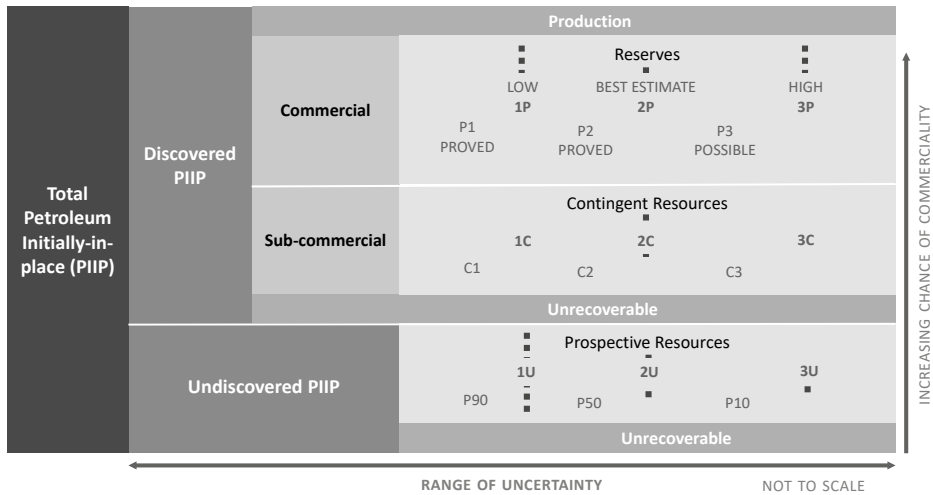


Figure 3, below, is the SPE's classification system for hydrocarbon deposits known as the Petroleum Resources Management System. Setting aside estimated unrecoverable amounts and prior production, the remaining deposit is considered to be the recoverable resource. It comprises reserves (proved, probable and possible) that are commercially recoverable, contingent resources that have a chance of being commercialised in the future, and prospective resources estimated to exist outside currently known accumulations with a chance of being commercialised.

19 Canadian Institute of Mining, Metallurgy and Petroleum Definition Standards on Mineral Resources and Reserves, adopted on 20 May 2014 (CIM Definition Standards); Petroleum Resources Management System (PRMS), revised June 2018. Definitions can vary across jurisdictions but they have much in common given the global nature of the sector.

20 'Figure 1, Relationship between Mineral Reserves and Mineral Resources' from the 'CIM Definition Standards – For Mineral Resources and Mineral Reserves'. Reproduced with the permission of the Canadian Institute of Mining, Metallurgy and Petroleum.

Figure 3: Oil and gas resources classification framework (SPE)²¹



The size of the deposit determines a project’s duration and capacity. There is a trade-off between duration and capacity – a larger-scale project extracts the resource faster and generates higher revenues in present value, but requires higher up-front capital expenditures. One of the reasons why owners conduct detailed feasibility studies is to identify the scale that yields the highest value given expected prices and costs. Projects that end up in arbitration tend to be large in scale, requiring substantial up-front investments, and may have long expected lives, measured in decades.

Price expectations influence value directly and are typically the most important factor causing volatility in project values. Commodity prices can change rapidly, making the valuation date important and often itself a matter of dispute. Increased prices have been a factor causing governments to impose new measures on producers that lead to disputes.²² For example, these effects have been especially large in expropriation cases, in which changing commodity prices during

21 ‘PRMS, Figure 1.1’ reproduced with the permission of the Society of Petroleum Engineers. In this figure: 1P = proved reserves, 2P = proved and probable reserves; 3P = proved, probable, and possible reserve; 1C to 3C refer to contingent resources estimated with varying degrees of certainty from high to low; and 1U to 3U refer to prospective resources, also estimated with varying degrees of certainty.

22 *Burlington Resources Inc. v. Republic of Ecuador*, ICSID Case No. ARB/08/5, Decision on Liability, ¶ 432, 14 December 2012.

the period between the expropriation date (itself sometimes motivated by high prices) and the hearing date cause large differences in damages between the *ex ante* and the *ex post* framework.²³

Extraction costs influence profitability and project value. They are determined by both project-specific and broader market factors. The project-specific factors include the quality of the deposit (e.g., ore grade, stripping ratio, amount of impurities and deposit depth), the method of extraction (e.g., open-pit versus underground in mining and conventional versus hydraulic fracturing in oil and gas), location (e.g., ease of access to key inputs such as water and power, transportation costs to market, weather disruptions and the effects on nearby communities or environmentally sensitive areas). The broader market factors include fuel costs, labour costs, equipment leasing rates and shipping costs.

Fiscal terms also affect profitability. In addition to corporate income tax, extractive projects often pay royalties to resource owners. Unlike income taxes, royalties are typically levied on the value of the product rather than the profits it produces. In many jurisdictions, the state owns all subsoil resources, making royalty rates a policy issue that generates political risk and can result in disputes.²⁴ State ownership gives rise to renewal risk when exploitation licences are expected to expire before resources are exhausted.

Country risk beyond fiscal terms is important. The value of otherwise similar projects can vary greatly depending on the stability of the political regime, the risk of expropriation, the strength of legal protections afforded to foreign entities, and the chances of civil war, terrorism and other forms of political violence. Some country risks arise from state acts prohibited by investment treaties and may be excluded from valuation for damages purposes in that context.²⁵

Social and environmental risk can be critical to project value. Extractive projects affect the environment and the livelihoods of nearby communities to an extent that depends greatly on location, project design and the owner's strategy of engaging with the community and civil society groups. Virtually all projects require environmental permits, and the process of acquiring permissions and licences is often lengthy and costly. The term 'social licence to operate' has come

23 In the *ex ante* approach, the expropriated asset is valued at the expropriation date and then that amount accrues pre-award interest until the award date. In the *ex post* approach, the expropriated asset is valued at the date of the award (or the hearing, for practical reasons).

24 See, e.g., *Glencore International A.G. and C.I. Prodeco S.A. v. Republic of Colombia*, ICSID Case No. ARB/16/6.

25 F Dorobantu et al, 'Country Risk and Damages in Investment Arbitration', 31(1) *ICSID Rev.* 219–31 (2016).

to embody a project's ability to obtain the assent and support of a variety of stakeholders, beyond compliance with the formal permitting process. Failure to obtain the social licence to operate can lead to increased costs, delay and even project failure.²⁶ Social licence risk has increasingly come to the attention of arbitration tribunals and has been central to recent and ongoing cases. For example, the tribunal in *Bear Creek Mining Corp v. Republic of Peru* found that 'there was little prospect for the Project to obtain the necessary social license to allow it to proceed to operation',²⁷ awarding as a result sunk costs as damages.²⁸

Valuation approaches

Valuation standards and guidelines

The three most common general approaches to valuation are known as income, market and cost. These approaches can be applied to energy and natural projects but their reliability depends on the information available. The amount of information is correlated to project stage, with earlier-stage exploration properties generally having less project-specific information than more advanced or producing assets.

Industry groups in countries with substantial extractive industries have developed valuation standards and guidelines. In Canada, for example, the CIM publishes the CIMVAL Code for the Valuation of Mineral Properties,²⁹ which imposes standards on valuation professionals and provides guidelines on methodology. The CIMVAL Code identifies which valuation approaches are generally considered appropriate for each project stage, shown in Table 3, below.³⁰ The same table is found in the Australasian VALMIN Code,³¹ while South Africa's SAMVAL Code provides more nuanced, but largely similar, recommendations and adds guidance for dormant and defunct properties.³² For the oil and

26 See, e.g., R Davis et al, 'Costs of Company-Community Conflict in the Extractive Sector', *Corporate Social Responsibility Initiative Report*, No. 66, 2014.

27 *Bear Creek Mining Corporation v. Republic of Peru*, ICSID Case No. ARB/14/21, Award, ¶ 600, 30 November 2017.

28 Social licence risk is also a key issue in the ongoing *Gabriel Resources v. Romania*, ICSID Case No. ARB/15/31, which has seen expert testimony on the issue. See Claimant's Reply and Counter-Memorial on Jurisdiction, 2 November 2018, pp. 18–19 and Respondent's Rejoinder, dated 24 May 2019, p. 9, available at <https://www.italaw.com/cases/4721>.

29 The CIMVAL Code for the Valuation of Mineral Properties, prepared by the Special Committee of the CIM on the Valuation of Mineral Properties (CIMVAL Code), 29 November 2019; an earlier version was published in 2003.

30 CIMVAL Code, ¶ 3.3.3.

31 VALMIN 2015, § 8.8. The VALMIN Code was first adopted in 1995.

32 SAMVAL 2018, § 4.4. The SAMVAL Code was first adopted in 2008.

gas industry, the Society of Petroleum Evaluation Engineers provides valuation guidance.³³ The industry guidelines identify valuation approaches that are generally appropriate but do not require that any specific method be applied. The decision as to which method or methods to apply in any particular case is left to the valuer.

Table 3: Valuation approaches for different types of properties (CIMVAL Code, VALMIN)

Valuation approach	Exploration properties	Mineral resource properties	Development properties	Production properties
Income	No	In some cases	Yes	Yes
Market	Yes	Yes	Yes	Yes
Cost	Yes	In some cases	No	No

We discuss the income and market approaches below. The cost approach relies on the economic principle that, under normal conditions, a buyer will pay no more for an asset than the cost to obtain an equivalent asset.³⁴ The historical cost incurred may bear little resemblance to the current value for natural resources projects. Exploration begins with the implementation of techniques to identify prospects that look promising for further exploration and development. Therefore, the results of these exploration activities can cause the FMV to be materially higher or lower than the project's historical cost, rendering the approach an unreliable means to make a claimant whole in most cases.³⁵

Income approach

The income approach estimates the future cash flows that an asset can generate, adjusts them for timing and risk from the perspective of the valuation date and then adds them together to calculate the asset's market value. By projecting directly the components that make up the asset's cash flows, including anticipated production, prices and capital and operating costs, the income approach can take into account an asset's unique characteristics.

³³ Society of Petroleum Evaluation Engineers, *Perspectives on the Fair Market Value of Oil and Gas Interests*, 2002.

³⁴ International Valuation Standards Council, *International Valuation Standards 2017*, at 42–43 (¶ 60.1) (2017).

³⁵ For a detailed discussion of the cost approach to valuation, see *Guide to Damages in International Arbitration*, 4th Edition (Global Arbitration Review).

The income approach is well suited to the valuation of natural resource projects.³⁶ The discounted cash flow (DCF) method was proposed in the majority of investment arbitrations with publicly available awards on damages, and was rejected by tribunals in favour of alternative valuation methods only in approximately one-third of those cases.³⁷

Two principal factors contribute to the suitability of the income approach to resource extraction projects. First, the outputs produced by most oil and gas and mining projects are commodities. They sell in well-developed and liquid markets, often global in scope, with relatively little uncertainty about the producer's ability to find buyers. Although commodity prices can be volatile, the existence of derivative markets – in which futures, forwards and options are traded – provides information that may allow the valuer to quantify price risk and develop objective, market-based price projections well into the future.³⁸ Futures and forward prices are the prices at which market participants today agree to exchange a unit of the commodity (e.g., a barrel of oil or an ounce of gold) at a known date in the future. They incorporate, therefore, the market participants' expectations about the average price level in the future and the risk premium necessary to eliminate that risk. Forecasts prepared by professional forecasters may add additional information but must be carefully understood and interpreted.³⁹

36 See, for example, *Crystallex v. Venezuela*, ICSID Case No. ARB(AF)/11/2 (*Crystallex*), Award, ¶¶ 877–85 and *Tethyan Copper Company Limited v. Islamic Republic of Pakistan*, ICSID Case No. ARB/12/1, Award, ¶¶ 309–35 (*Tethyan*). The income approach, and its most frequent implementation (the discounted cash flow (DCF) method), has also become standard in arbitrations involving other industries. See, for example, *Watkins Holdings S.à r.l. and others v. Kingdom of Spain*, ICSID Case No. ARB/15/44, ¶ 694, as one of the cases concerning claims arising out of a fundamental revision of the regulatory regime and reduction in the level of support to renewable energy in Spain.

37 Based on the authors' review of publicly available awards in cases listed in UNCTAD IDS. Not all the cases involved project valuation questions.

38 See, e.g., E Schwartz, et al., 'Short-Term Variations and Long-Term Dynamics in Commodity Prices', *Management Science* 46(7), 2000, pp. 893–911; D Laughton, et al., 'Reversion, Timing Options, and Long-Term Decision-Making', *Financial Management* 22(3), 1993. As project lives often exceed the horizon for which derivative contracts are listed, long-term projections can be developed using economic models of price evolution, calibrated using historical market prices.

39 For example, the US Energy Information Administration publishes long-term forecasts for crude oil prices in its *Annual Energy Outlook* (see <https://www.eia.gov/outlooks/aeo/> (last accessed 3 October 2022)) and the World Bank publishes forecasts across a range of commodities in its quarterly *Commodity Markets Outlook* (see <https://www.worldbank.org/en/research/commodity-markets> (last accessed 3 October 2022)). Many investment banks also publish commodity forecasts.

Second, large projects are undertaken only after the owners have conducted technical and economic assessments, such as feasibility and pre-feasibility studies and environmental impact assessments, which require detailed analyses of project viability. Once projects are in production, operators update production plans regularly to incorporate information developed during operations. These technical documents typically provide an objective basis to build projections of production and costs that incorporate the specific features of the asset being valued.

Valuing an asset by the income approach also requires directly quantifying the effects of risks on value. First, all risks should be factored into the cash flow, so that the projected net cash flows are expected values, in a statistical sense: they reflect what is anticipated to happen on average, considering the likelihood of both positive and negative outcomes.⁴⁰ Second, systematic risks require an additional adjustment to account for investors' aversion to market risk.⁴¹

In the traditional DCF method, the adjustment for systematic risk takes the form of a risk premium added to the risk-free rate: assets that are subject to more systematic risk carry a higher premium. The higher the risk premium (and, hence, the discount rate), the larger the downward adjustment to expected cash flows and the lower the asset value, all else remaining constant.

A more sophisticated market-based DCF method, known as the certainty-equivalent DCF, can better incorporate the impact of systematic risk using market signals, when those are available. Rather than collapsing the adjustment for systematic risk into a single number, each cash flow stream (prices, capital expenditures and operating costs) is risk-adjusted individually, using the information provided by futures or forward prices.⁴² By using futures prices for the value drivers sensitive to systematic risk,⁴³ in addition to accounting for all other risks in the same way as one would in the traditional DCF method, the resulting cash flows projections become certainty-equivalent cash flows. As the name suggests, these risk-adjusted cash flows are projections of what a market

40 R Brealey, S Myers and F Allen, *Principles of Corporate Finance*, 10th edition, pp. 223–27.

41 Systematic risks are those risks that cannot be eliminated by holding a diversified portfolio of investments because they affect all assets to some degree. See Brealey, Myers and Allen, *op. cit.* note 39, above, Chapter 10.

42 For a primer on commodity prices, see R Pyndick, 'The Dynamics of Commodity Spot and Futures Markets: A Primer', *The Energy Journal*, 2001, 22(3), p. 1–29.

43 The main source of market risk in a natural resource project is the price risk, which affects the revenue stream. Cost elements, however, can also incorporate systematic risk elements; e.g., in mining, fuel costs can be a substantial portion of costs. Fuel costs are correlated with crude oil prices, which have recently shown increasing correlation with overall markets, and hence increased systematic risk.

participant would be willing to accept at the valuation date in exchange for eliminating all risk. Having incorporated the effect of risk directly into the cash flows projections, the discount rate needs to reflect only the time value of money, for which the risk-free rate is appropriate. The *Tethyan* tribunal relied on this market-based DCF method to quantify damages from the expropriation of a copper-gold project at the feasibility study stage, noting its ability to reliably incorporate the effect of risk, its use and acceptance in the mining industry,⁴⁴ and its particular applicability to the circumstance of that case.⁴⁵

Natural resource projects often have additional value from their ability to act as ‘real options’. Real options arise from management’s ability to adjust operations as economic circumstances change; examples include investing in capacity expansion when the price outlook is unexpectedly favourable, and mothballing or even terminating a project early, before resources are exhausted, when price declines make current production either unprofitable or less profitable than preserving the resources for future extraction in a more favourable price environment. The importance of real options varies across projects but is generally higher when prices and costs are more volatile, making large deviations from expectations (and, therefore, the need for changing course) more likely. The value of real options can be particularly significant in the oil and gas and mining sectors, in which volatility is common. The certainty-equivalent DCF method is the standard tool for estimating the value that optionality may add to a project.

Market approach

The economic theory known as the ‘law of one price’ dictates that comparable assets should transact at similar values.⁴⁶ The market approach leverages this principle, estimating the FMV of the subject asset based on observed prices from market transactions of comparable assets. Market values can be observed from share prices of publicly traded companies (traded comparables), which can be

44 The certainty-equivalent DCF method, labelled the ‘real options’ method when combined with the ‘real options’ element described below, is listed as a primary method in the CIMVAL Code (¶ 3.3.4). See also CIMVAL Letter in response to International Valuation Standards Council Re: Valuations in Extractive Industries – Discussion Paper, 22 October 2012.

45 *Tethyan*, Award, ¶ 360, 12 July 2019.

46 If comparable assets did not trade at similar prices, market participants would be able to generate a profit through arbitraging the price differential, which would cause the difference to disappear or become minimal.

used to derive a company's market value, or prices paid for comparable assets in transactions (comparable sales). Reliable use of the market method is preconditioned on identifying close comparables with observable market values, often a difficult task.

Valuation multiples from comparable assets

The most common application of the market method uses valuation multiples from comparable assets. Complex assets often have no perfect comparable because of size differences in profits or resource bases. To control for size, observed values are translated into multiples of financial measures (e.g., EBITDA multiples)⁴⁷ or deposit size (e.g., US\$/barrel of oil). These multiples are applied to the relevant quantity (e.g., EBITDA or barrels) for the subject company, as illustrated below. Pre-production assets are generally valued using multiples of deposit size, while operating assets can be valued using earnings or cash flow multiples.

Figure 4, below, illustrates the method used to value an oil property. The observed US\$1,000 FMV of the comparable asset is converted into a valuation multiple of US\$40 per barrel of reserves. That multiple is then applied to the reserve base of the subject asset to derive its FMV. Because the subject asset is valued based on its size relative to the comparable asset, the multiples method is sometimes called relative valuation.

Figure 4: Illustration of comparables method for oil reserves

Comparable asset			Subject asset	
FMV (\$)	Barrels of reserves	\$ per barrel	Barrels of reserves	Implied FMV
\$1,000	÷ 25	= \$40		
		↓		
		\$40	× 100	= \$4,000

The appeal of multiples is its apparent simplicity. DCF valuations require one to develop explicit assumptions driving an asset's cash flows. Relative valuation bypasses these explicit assumptions, instead relying on multiples derived from commonly available market data. The ease of implementation can be deceptive, because the use of a valuation multiple carries many strong, implicit assumptions that can undermine the method's reliability.

⁴⁷ EBITDA (earnings before interest, taxes, depreciation and amortisation) is a proxy for operating cash flow.

FMV reflects market expectations about key aspects affecting the value of the asset. In the illustration above, the \$1,000 observed value for the comparable asset would be a function of a variety of expectations about future project performance, such as those in Figure 5, below. Applying the \$40 per barrel multiple in Figure 4, above, assumes that the subject asset is comparable in all these dimensions. Therefore, multiples analysis requires experts and tribunals carefully to assess comparability and the adjustments that attempt to account for differences.

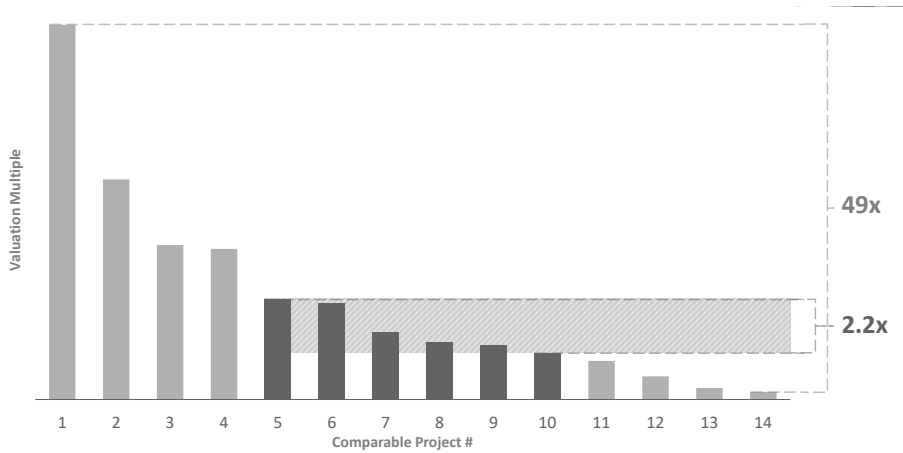
Figure 5: Illustrative dimensions of comparability for extraction projects

Revenue expectations	Extraction costs	Resource characteristics
Pricing environment	Capex requirements	Permitting risk
Cost to reach markets	Operating costs	Geological uncertainty
Quality premium/discount	Royalty obligations	Expansion potential



COUNTRY RISK

Figure 6, below, presents a multiples analysis from an expert in a case on which the authors worked. The analysis identified 14 different projects deemed comparable. The resulting multiples covered a wide range, with the highest being 49 times larger than the lowest. The expert dropped the four highest and lowest multiples (light grey), leaving six multiples (black), with a more moderate implied valuation range. However, even within this narrowed set, the variation remains wide – the bottom of the range implies a value of US\$100 million and the upper end is a value of US\$220 million. More importantly, the multiples raise questions about comparability. Are these assets even comparable to each other, much less the subject asset? Why is it assumed that the subject of the valuation is like the middle range of the observed multiples, not the high? Or the low? Although this is a somewhat extreme case, wide multiples ranges are not uncommon and may suggest concerns about the comparability that must be evaluated to ensure a reliable outcome.

Figure 6: Observed multiples from transactions deemed comparable

Truly comparable assets can be difficult to identify. VALMIN explains that '[w]hilst widely used [comparables] are often flawed because companies are not truly comparable as risks and opportunities can be very different between compared projects/companies'.⁴⁸ Sometimes there are no good comparables. Even when reasonably comparable assets exist, it may be necessary to make adjustments to the multiple to account for differences. The reasonableness of these adjustments should be addressed in each case, and it is important that they do not mute the valuation signal that makes the market method useful.

In practice, multiples analysis has rarely been accepted by arbitral tribunals in mining disputes. Of 15 mining disputes that found on behalf of the claimant and for which awards are public, claimants in only six cases argued for the use of comparables.⁴⁹ The only investment arbitration we are aware of in which a tribunal adopted comparables as a primary valuation method is *Crystallex*, in which the tribunal accepted the claimant's traded comparables analysis. The values of a set of publicly traded gold mining companies were converted into multiples of enterprise

⁴⁸ VALMIN Committee, *VALMIN response to the [International Valuation Standards Council] IVSC Discussion Paper*, 11 July 2012, p. 2, <https://www.ivsc.org/files/file/download/id/333> (last accessed 7 September 2022).

⁴⁹ *Copper Mesa Mining Corporation v. Republic of Ecuador*, PCA No. 2012-2; *Crystallex, Gold Reserve Inc. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB(AF)/09/1 (*Gold Reserve*); *Khan Resources Inc. et al. v. Gov't of Mongolia & MonAtom LLC*, PCA Case No. 2011-09 (*Khan Resources*); *Rusoro*; and *South American Silver Limited v. Bolivia*, PCA Case No. 2013-15 (*South American Silver*).

value per ounce of gold-equivalent reserves.⁵⁰ Although the tribunal recognised the existence of differences between Crystallex and the comparables, it found the differences were not large enough to prevent the use of the method.⁵¹ The claimant also presented multiples for comparable sales transactions. The tribunal concluded that ‘in theory such method could yield reasonable results and would thus be an appropriate valuation method to value an investment in an international arbitration . . . [but] the Tribunal cannot consider it in this particular case’.⁵² The tribunal found that differences would require adjustments that ‘are too plentiful to render this method of reliable value and that the assessment of damages reached through such calculations is too speculative to be taken into account’.⁵³

The *Gold Reserve* tribunal relied primarily on a DCF analysis, because it was ‘not convinced that the comparables offered are sufficiently similar to enable them to be used in a weighted valuation calculation’.⁵⁴ However, the tribunal relied on comparables to find that the DCF submitted by the claimant’s expert was reasonable.⁵⁵ The other four tribunals disregarded the comparables methods because of a lack of comparability.⁵⁶

Use of comparables is less common in upstream oil and gas disputes than in mining disputes. In *Occidental v. Ecuador*, the respondent argued for the use of comparables. The tribunal disregarded comparables and suggested that, more generally, in the upstream oil and gas industry, the uniqueness of each project makes the comparable sales method unreliable:

*[T]he Tribunal agrees with the Claimants that “each oil and gas property presents a unique set of value parameters”. Therefore, the Tribunal concludes that it can derive no assistance from an analysis of the seven transactions which the Respondent has submitted as comparable sales.*⁵⁷

50 *Crystallex*, Award, ¶ 902. Many gold projects produce other metals, such as copper. To adjust for mix differences, some analysts convert reserves of secondary metals into their value equivalent in terms of ounces of gold, or ‘gold-equivalent reserves’.

51 *Crystallex*, Award, ¶ 902.

52 *ibid.*, at ¶ 907.

53 *ibid.*, at ¶ 909.

54 *Gold Reserve*, Award, at ¶ 831.

55 *ibid.*, at ¶ 832.

56 *Copper Mesa*, Award, ¶ 7.24; *Khan Resources*, Award, ¶¶ 398–99; *Rusoro*, Award, ¶ 782; *South American Silver*, Award, ¶ 843.

57 *Occidental Petroleum Corp. & Occidental Expl. And Prod. Co. v. Republic of Ecuador*, ICSID Case No. ARB/06/11, Award, ¶ 787, 5 October 2002.

None of these tribunals disputed the validity of using valuation multiples; in fact, many explicitly recognised their legitimacy. The primary concern was the lack of reliable comparables.

P/NAV: A mining industry valuation method

The P/NAV multiple is a hybrid of the income and market methods sometimes used by mining equity analysts to value projects under development. ‘P’ is price, as measured by the market capitalisation of a publicly traded company and ‘NAV’ reflects the company’s net asset value, equal to the value of its assets minus its liabilities. The P/NAV ratio, therefore, reflects the market value of equity in a company relative to its NAV as calculated using a DCF model.

Analysts publish P/NAV multiples for mining companies, particularly those mining gold. In calculating these multiples, analysts will often populate their DCF analysis with generic rather than company-specific assumptions. For example, analysts may use a standard discount rate for all companies (often 5 per cent real); ignore country, social or environmental risk; assume a constant future gold price rather than rely on a forecast of expected gold prices; and make a particular assumption about how to account for the quality of resources and reserves.⁵⁸ Although this approach can be useful for facilitating comparisons across assets, the resulting NAV can differ from the company’s market capitalisation, creating a P/NAV ratio different from 1.0x.

To estimate the value of the subject project, its NAV is multiplied by the P/NAV ratio from comparable projects using the same approach illustrated for valuation multiples above. The P/NAV method has been applied by claimants in *Crystallex* and *Gabriel Resources*.⁵⁹ We are not aware of any tribunal that has made an award based on it.⁶⁰

58 See, e.g., BofA Merrill Lynch, *Global Gold & Precious Metals*, 9 April 2013, <https://www.merrilledge.com/publish/content/application/pdf/gwmol/GlobalGoldandPreciousMetals.pdf> (last accessed 7 September 2022), pp. 93–94; Ernst & Young LLP, *Golden Queen Mining Co. Ltd. Formal Valuation and Fairness Opinion*, 1 April 2019, p. 18, https://www.sec.gov/Archives/edgar/data/1025362/000127956919000874/tv518695_ex99-1.htm (last accessed 7 September 2022).

59 *Gabriel Resources Ltd et al v. Romania*, ICSID Case No. ARB/15/31, Claimants’ Memorial, 30 June 2017, ¶¶ 922–93, <https://www.italaw.com/sites/default/files/case-documents/italaw9821.pdf> (last accessed 3 October 2022).

60 The *Crystallex* tribunal rejected the P/NAV method as implemented, but stated that: ‘the Tribunal considers that conceptually it would have no difficulties in accepting it as a method per se’. See *Crystallex*, Award, ¶ 896.

As with other valuation multiples, P/NAV multiples reflect the effects of risks (e.g., geological, permitting, technology, country and price) of the comparable projects. The method assumes that the risks of the project being valued are similar. Comparable assets, therefore, must be selected with careful attention to risk. Using P/NAV multiples from projects with different risk profiles will generate unreliable results. If the information is available to assess the comparability of risk, a DCF analysis may often be feasible and a better choice, given that the P/NAV method already requires sufficient information to generate cash flows projections and the DCF can better capture the unique aspects of a project.

Direct market evidence of asset's value

In some cases, it is possible that an observed market value is available for the subject asset itself. It may be publicly traded or have been valued in a prior transaction. These values may provide objective information about its FMV and damages.

Share prices often represent an objective measure of market value. They can be used to estimate a company's market capitalisation and enterprise value. The resulting valuation may be a reliable basis for estimating damages when the investment at issue is a large component of the claimant's business, share prices reflect relevant and available information, there is no significant information not disclosed publicly, and it is possible to isolate the effects of alleged violations that give rise to the claims.

Tribunals have recognised the validity of information provided by a claimant's own share prices. In *Khan Resources v. Mongolia*, the tribunal found this method to be more reliable than DCF and comparables:

*The market capitalization approach advocated by the Respondents on its face has much attraction. The Tribunal accepts that Khan Canada ultimately held the investment that is the subject of this dispute and that it was essentially a 'single-project' company. The market capitalisation of Khan Canada should, therefore, reflect the market's (i.e., a willing buyer's) view of the value of the company and its interest in the Dornod Project . . . Absent countervailing factors, this should be the simplest and most accurate reflection of the value of the Claimants' interest in the Dornod Project and is preferable to the approximations and estimations provided by the DCF and market comparables methodologies.*⁶¹

61 *Khan Resources*, Award on the Merits, ¶¶ 400–01 (citations omitted), 2 March 2015. The tribunal in *Crystallex* reached a similar conclusion; *Crystallex*, Award, ¶ 890.

Prior transactions in the subject asset may also provide evidence of an asset's FMV. The tribunal in *Bilcon v. Canada*, a dispute about the proposed Whites Point aggregates quarry, relied on evidence from past transactions of the project itself:

*In establishing the value of the opportunity lost by the Investors in the present case . . . the Tribunal has the benefit of being able to refer to certain past transactions made in relation to the Whites Point Project site, which allow it to establish an implied value range of the investment opportunity presented by the Whites Point Project, as it was seen by economic operators at different points in time.*⁶²

The reliability of this evidence will depend, in part, on the extent to which changes after the transaction date can be reflected in the FMV at the valuation date. During the interim period, for example, value could be affected by changes in market conditions or the project's status, such as the receipt of permits, resolution of geological uncertainty and progress in construction. In *Bilcon*, there were no material changes to project status; therefore, the tribunal relied on prices from prior transactions and adjusted for trends in industry asset values over time.⁶³

Failing to account for important changes to the asset's status or the market environment will generate an unreliable outcome. In *Tethyan*, the respondent's expert proposed to adjust the claimant's 2006 acquisition price to the valuation date in 2011. This involved accounting for changes in market conditions and country risk during the interim period.⁶⁴ The tribunal found this method reasonable in concept, stating that the 'approach to value the project based on a past transaction involving the very same project might generally appear plausible'.⁶⁵ However, the tribunal rejected the method, because it failed to account for the fact that 'considerable changes affecting the value of the project occurred' between 2006 and 2011, such as the favourable outcomes from the claimant's significant development efforts.⁶⁶

⁶² *Bilcon of Delaware et al v. Government of Canada*, PCA Case No. 2009-04, Award on Damages, ¶ 289 (citations omitted), 10 January 2019 (*Bilcon*).

⁶³ *Bilcon*, Award on Damages, ¶¶ 295, 297, 298 and 302. The tribunal recognised the need to adjust an offered purchase price downwards because it was conditional on receipt of permits that had not been granted by the valuation date.

⁶⁴ *Tethyan*, Award, ¶ 1695. Specifically, the adjustments were for changes in metals prices, global mining costs, the cost of capital for metals mining, and Pakistan's country risk.

⁶⁵ *Tethyan*, Award, ¶ 1725.

⁶⁶ *ibid.*, at ¶¶ 1726–39.

Conclusion

The natural resource extraction sector is characterised by large projects, often of strategic importance to the parties involved, that can give rise to substantial claims. Although the overall valuation approaches on which experts rely are the usual income, market and cost approaches, their reliable application to extractive projects requires an understanding of the industry-specific factors that drive each project's cash flow potential, the associated risks and opportunities, and the existence of well-developed commodity markets that can provide market-based inputs into damages analyses that are not always available in other industries.

The most appropriate valuation method or combination of methods for any particular case will naturally depend on the specifics of the project involved. Nevertheless, considering the nature of the assets involved and the information typically available, our experience and review of arbitral awards suggests that the income approach is frequently relied on by experts and tribunals because it can often best capture the unique aspects of the investment at issue in many of these cases. The market approach is sometimes useful but its applicability may be limited by the lack of similarity across projects. The cost approach has been employed by tribunals in some instances but its economic relevance is limited when damages are based on the FMV standard because the FMV of extractive projects is insufficiently correlated with spending on exploration and development.

CHAPTER 25

Damages in Gas and Electricity Arbitrations

**Wynne Jones, Christoph Riechmann, Matthew Roberts
and Stefan Lochner¹**

Introduction

The nature of damage in the electricity and gas sectors can be quite disparate depending on the part of the value chain in which the dispute has arisen. Damage can relate to competitive parts of the value chain, such as generation or supply. It can also relate to regulated activities such as transmission, distribution or support for generation from renewable energy sources. It would be too wide-ranging to try to cover the full breadth of these in electricity and gas disputes so we focus in this chapter on the estimation of damage relating to competitive parts of the value chain.

As with many, if not all, other sectors, damage in electricity and gas supply most commonly arises through breach of contract. If a party has entered into a contractual obligation to supply electricity or gas that it does not fulfil, the buyer under the contractual arrangement may incur damage. Similarly, the seller may incur damage under a contractual arrangement if the buyer refuses to fulfil its obligation to accept delivery and pay the agreed price. Reasons for the non-fulfilment may be manifold, ranging from a 'simple' unwillingness (for example, owing to commercial reasons) to technical issues (for example, resulting from delays in constructing a power plant that was supposed to generate electricity to be sold under a contract).

1 Wynne Jones and Christoph Riechmann are directors and Matthew Roberts and Stefan Lochner are associate directors at Frontier Economics Ltd.

Damage may also arise as a result of expropriation of an asset by government or state authority, for example, the unreasonable withdrawal of a power plant's operating licence.

Breaches of competition law may also give rise to damage. A party may have held a dominant position in the relevant market (either as a single firm or jointly with other market players), which allowed it to impose conditions that it would not have been able to impose had it been subject to the constraints of effective competition. An abuse of a dominant position may take the form of unfair prices or trading conditions that causes damage to the counterparty. Although these types of claims are most commonly dealt with through national courts, they have also arisen in arbitration (but are not the focus of this chapter).

The specific nature of the electricity and gas sectors creates a high propensity for disputes to arise and significant complexity in estimating the damage. In particular, the sectors are characterised by the following:

- *Long-duration contracts*: The generation of electricity and the production and delivery of gas both typically require the construction of long-lived dedicated infrastructure (for example, a power plant or long-distance gas pipeline). Given the large up-front and sunk investments, investors will often seek to secure their investments with long-term (sales) contracts, which can lead to similar long-term contracts further down the value chain. Long-duration contracts mean that any persistent breach of contract obligations may create significant damage. Similarly, long asset lives mean that expropriation of an asset or the underperformance of an asset may create significant damage. Long-lived assets and long-duration contracts also potentially increase the complexity of estimating damage, if it means the value of gas or electricity must be projected many years into the future.
- *Limited ability to store electricity (and gas)*:² This leads to the value of electricity potentially varying substantially over time, further complicating the estimation of damage. Electricity is difficult and expensive to store. Even with the limited storage technologies that exist (for example, pumped storage and batteries), the supply of electricity from all sources (including storage) needs to be balanced second by second with the demand for electricity. Since the demand for electricity varies over time, the value of electricity also varies

2 Although gas can physically be stored in greater quantities, there are capacity limitations on how much can be stored and made available in different time frames. Unlike other commodities, such as coal, storing gas also requires dedicated infrastructure, which is costly to build and significantly limits for how long it makes economic sense to store gas.

significantly over time. This variation in demand also means that contractual arrangements for electricity (or gas) delivery often include some specificity or the time profile of volumes or the flexibility that either party may exercise as to the volume to be delivered during a particular period. These special arrangements in supply contracts need to be taken into account when calculating damage.

So, how does one go about estimating damage, assuming some breach of contract or expropriation has occurred?

The broad framework for estimating damage in the electricity and gas sectors is the same as for other sectors. Damage equals the difference in value between the factual and ‘but for’ cases. Within this framework, damage estimation typically entails at least four steps, which we use as the structure for the remainder of this chapter:

- establishing the factual case;
- establishing the ‘but for’, or counterfactual, case;
- determining the correct perspective for the damage estimation (*ex ante* or *ex post*); and
- valuing the damages.

Computing the present value of these damages to arrive at the amount to be compensated is typically the fifth and final step (which we do not cover in this chapter as the discounting issues involved are not specific to gas and electricity).

The factual case

As in any damage estimation, the starting point is to establish the factual case. This is not always as simple as looking at actual developments following the breach.

Generally, it is necessary to exclude from the damage calculation the effects that are unrelated to the breach. Depending on the situation, it may also be appropriate to exclude effects that could have been avoided if the harmed party had taken appropriate and reasonable mitigating measures. In the case of a long-term contract, with damage extending into the future, the factual case may also need to be projected into the future.

How the factual case is established in practice depends on the perspective for the damage estimation (i.e., *ex post* or *ex ante* – see below).

The counterfactual case

The ‘but for’ or counterfactual is the situation in which the parties would have found themselves if it were not for the breach of contract or expropriation.

Sometimes the counterfactual can be relatively straightforward to establish. In the case of non-delivery under a contract, the counterfactual may be that a pre-specified volume of deliveries would have taken place during a pre-specified period at a pre-specified price. In the case of an unfair contractual term, such as an excessive price, the counterfactual may simply be the ‘fair’ price, with everything else being constant.

In most cases, establishing the counterfactual may be more complex. For instance, what would have been the volume and timing of deliveries in a contract if the buyer or seller had optionality over delivery volumes? If an electricity generation asset had been available six months earlier but for a delay in construction, how would this have affected market prices and, therefore, the value of electricity sold on the market? How would those changes to market prices have affected the value of other assets in the harmed party’s portfolio?

Suppose a gas trading and retail supply company purchased the bulk of its gas needs through a single long-term contract. The seller terminates the contract in breach of its obligations and the supplier markedly reduces the scale of its retail operations. Aside from the disputed contract, the counterfactual could be a larger company with, for example, higher staff and accommodation costs, greater credit requirements and more retail customers.

Some of these complexities are more likely to arise in less competitive markets or if the asset in question is sufficiently large to affect market prices. With a competitive market, a new player’s entry (or lack of entry) would be expected to have an immaterial effect on the market price. Similarly, the delayed delivery of a small generation asset (relative to the size of the market) is likely to have an immaterial effect on the price.

Ex post versus ex ante perspective

There are two conceptual approaches to estimating the loss of value caused by an infringement or breach: the use of *ex ante* information and the use of *ex post* information.

- The *ex ante* approach uses only information available essentially at or prior to the breach to estimate the value destroyed by the breach.³
- The *ex post* approach uses information that becomes available after the breach – thus, the latest available information – to estimate the value destroyed by the breach. This approach can be applied with respect to both past damage and future damage.

A combination of the two conceptual approaches may also be used; for example, *ex post* information could be used to estimate damage from the time of breach until the present, and *ex ante* information could be used to value the damage that is expected to arise in the future. The legal framework will dictate which approach should be used or whether there is any option to use either.

Given the nature of electricity and gas markets, with prices that vary over time, taking an *ex ante* view or an *ex post* view can result in materially different damage estimates. The option to choose after the fact between the two approaches, so as to arrive at the highest or lowest valuation of damage, is a valuable option that neither party to a dispute would have had at the time of the breach.

Ex ante view

With an *ex ante* perspective, the basic principle is that the damage should be the change in value caused by the breach or infringement, typically measured at the time of that breach or infringement. When an asset is expropriated, the measure of damage is the fair market value of the asset at that time (or, strictly, before knowledge of the breach).

3 This is a simplified view that ignores some practical considerations; for example, negligence by maintenance contractors may constitute a breach of their legal duty. However, the negligence may not be observable, and hence affect behaviour or cause damage, until later. Even then, consider an example where such negligence at a power plant leads to a fire that disables the plant. Although the cause of the fire may have been prior negligence, the extent of damage or the amount of time needed before the plant can reopen may not be assessable until some time after the fire. Arguably, the best interpretation of an *ex ante* approach in such circumstances is to value the loss as soon as it becomes identifiable and can be managed by the harmed party.

The application of the *ex ante* perspective typically requires the breach to be traceable to a specific point in time – this may either be the point of the breach or the point in time at which the damaged party became aware of the breach or underperformance.

Electricity and gas are traded, and in most markets the majority of electricity and gas is contracted for, well in advance of delivery. If companies can value electricity and gas well enough to buy and sell in forward contracts, it would normally be possible to value electricity and gas for the purposes of a damage calculation in an *ex ante* format. For example, when a power purchase contract is breached by the seller, creating an open position for the buyer (who had already resold the electricity they expect to receive), the buyer would close that open position through forward trades when it becomes aware of the breach. So all, or a large part of, the damage of future non-delivery under the breached contract may already become obvious at that point in time through the additional hedging costs incurred.

In some cases, there may be no option but to use *ex ante* information. Future damage cannot be analysed *ex post* without waiting until it is no longer in the future, and so, in some circumstances, the *ex ante* view revealing the lost value at the time of the breach (or award) may be the only practical approach. Some electricity and gas contracts have termination clauses that work in this way, with provisions for compensating the parties based on the (future) value lost as a result of termination (since it would be impractical to wait until the contract would have reached its full term – potentially many years later – to calculate termination payments *ex post*).

Ex post perspective

Depending on the case and legal framework, some damage may be more amenable to *ex post* calculation. For example, a continuous infringement, such as excessive prices, may only be detected retrospectively, so damage may be best estimated *ex post* as the difference between the actual excessive price and the counterfactual of what would have been a fair price. Assuming the abusive behaviour, once detected, does not extend into the future, an *ex ante* approach may not be required.

Similarly, non-performance under a contract may continue for a lengthy period, but the duration of non-performance may not be known at the time it first occurs. In this case, it might be more practical to compare *ex post* the counterfactual of what should have happened with what actually did happen, albeit *ex ante* approaches may still be available.⁴

The use of *ex post* information does not always provide an unambiguous answer that removes all uncertainty associated with the damage calculation. For example, when there is a traded market for gas and electricity, should 'actual' prices be derived from prices for contracts for delivery the next day, delivery the next month or delivery the next year? What time profile of deliveries should be applied following the breach if the contract provided for optionality over delivery volumes?

Additional complexities associated with calculating damages

In simple terms, the damage incurred as a consequence of a breach of contract, expropriation or competition infringement is the difference in value between the factual and the counterfactual cases (using either *ex ante* or *ex post* – or a combination of *ex ante* and *ex post* – valuation).

The simplest approach to calculating damages, theoretically, is to observe the effect of the breach on the change in market value of the harmed firm (if this is possible). However, even when possible, this is not straightforward, since the value of the firm may have begun to change prior to the breach if expectations of the breach emerged in the preceding days, weeks or months. In addition, unrelated events may have affected the market value of the company contemporaneously with the information about the breach becoming known. Adjusting the change in market value of the firm to exclude the effect of wider changes to a market or utilities more generally may help.

In some sectors, it is possible to observe around the time of a breach the value of transactions for similar assets and to use those values to estimate the effect of the breach on value. In electricity and gas, assets tend to be unique in the sense

4 For example, even in circumstances in which the parties face uncertainty about the likely duration of the damaging effects of a breach, the damaged party may nevertheless have formed some expectations on the likely duration. As in the example cited earlier, this could, for example, have been reflected in forward hedging to close the open position created by the breach (an expected resumption of deliveries under the contract implies a reduced period with an open position following the breach). It is also possible that new information is revealed over time about the expected duration of damaging effects, in which case it may still be possible to base an *ex ante* valuation on updated breach-related information as and when it becomes available.

that there is no precise replica of a gas field or power station, and a trading or retail supply company has its own set of contracts and customers. This may make it difficult to find sufficiently comparable transactions.

To calculate damage, one would most likely need to revert to an alternative approach: estimating the change in value over time owing to the breach. To simplify the discussion, we describe this approach in terms of the early termination of a long-running contract to deliver gas or electricity to the wholesale market. However, many of the same principles can be applied to other situations, such as delayed power station commissioning, expropriation or excessive pricing.

The value of the contract at termination is the difference between the expected present values of two future streams: (1) the anticipated market value of the electricity or gas that would have been delivered under the contract and (2) the amounts expected to be payable under the contract. If the contract had endured, the buyer could have expected to earn this difference as a profit; the loss in expected profit following termination constitutes the damage. In cases like this, the market value of the commodity delivered would typically be estimated *ex ante*, at termination based on expected prices. However, an *ex post* perspective might also be taken, depending on the legal framework. To the extent that termination caused a material change to other costs (e.g., additional procurement costs to replace the power or avoided fuel costs in not generating), these should be taken into account. In practice, this may lead to a number of challenges.

First, consider the counterfactual. As the value of gas and electricity can vary substantially over time, it is necessary to understand the time profile of when the electricity or gas under the contract would have been delivered. It is then necessary to establish the price that would have been paid to receive those deliveries, the payments for the deliveries and when the payments would have been made under the contract. This information can normally be derived and, if necessary, projected into the future, based on the contractual terms.

Next, consider the factual setting. It is necessary to estimate the market price for gas or electricity that was not delivered and needs to be replaced to close an open sales position. Again, this analysis would need to use the same profile of

deliveries as for the counterfactual⁵ and would need to consider what the market value (buy price) of the deliveries would have been and when payments for the replacement gas or electricity would be made. Other terms in the contract, such as delivery options and delivery location, should also be valued relative to standard market products.

The appropriate ‘factual’ case may not be what is observed to have actually happened for two reasons. First, the wronged party typically would be expected to mitigate damage reasonably (e.g., by closing an open position as described above in forward markets instead of relying on spot markets – for simplicity, here we assume that closing the open position would have been *ex ante* the best option for mitigating damage or consistent with the damaged parties’ pre-existing trading strategy). If the damaged party failed to do so, there may be a difference between the appropriate ‘factual’ and the observed actual. Second, in the case of a long-term contract, the factual case must be projected into the future, meaning that it cannot be observed.

Estimating the market price for replacement gas or electricity in practice is also more complex than implied here. Delivery contracts have specific profiles or terms that may deviate from standard traded products for which market prices are observable. A comparator analysis draws on the market prices of similar traded products, if available. If not available, the way in which the market works may be sufficiently well understood that the market can be simulated to estimate market prices, and hence estimate damage. We focus on the comparator approach first and later return briefly to the modelling approach.

Comparator approach

The more common approach used when estimating damage in the electricity and gas sectors is some form of comparator approach.

Often, ‘perfect’ comparators, which could be used directly to provide a market price for replacement gas or electricity, do not exist because contracts with the precise specifications of the long-term contract in question are not traded regularly. Even when traded, the price at which they are traded is often not observable

⁵ In some cases, this may be more complex if the market price itself might have been affected by the contract termination. If the injured party has to replace the gas or electricity owing to the need to meet contractual commitments to others, it is the buy price of replacing the commodity in the post breach market that is relevant. However, if the breach simply caused the injured party to sell less, it is the sell price in the hypothetical market without breach that is relevant. Determining which position applies requires examination of the contract position of the injured party.

by the parties to the dispute. Therefore, the closest possible, but still imperfect, comparators are normally used, adjusting for differences between the terms of the contract in question and those of comparator products.

To make appropriate adjustments, it helps to consider the essential characteristics of electricity or gas contracts. A contract for the delivery of electricity or gas to the wholesale market would typically entail the following components:⁶

- *Delivery of the commodity*: This is just the delivery of electricity or gas, usually the essence of a supply agreement, and can be thought of as the delivery of a uniform volume during each hour or day of a given period (e.g., a calendar year) of a standard traded product.
- *Shape*: Typically, a commodity contract provides for a volume that, although fixed in advance, may vary by delivery period; for example, more gas is delivered in winter than in summer and more electricity is delivered during the day than at night. A contract that provides for greater volumes to be delivered when the market-wide demand for the commodity is higher is typically more valuable than a contract with a uniform delivery profile.
- *Flexibility*: Until some point in time prior to delivery, the contract may provide the buyer or seller with the option to nominate the delivery volume within certain limits. For example, the buyer in a gas supply contract may be able to take gas within a year, opting for any volume between minimum and maximum annual contract quantities. This type of flexibility is valuable to the party with the option and may reduce value for the other party.
- *Location*: Delivery of electricity or gas under the contract may take place at a specific network location. This would need to be compared with the delivery location of the comparator product and, if they differed, an adjustment made for the cost of transportation.
- *Payment terms*: The terms of payment under the contract and under the comparator product may constitute a value to one or other of the parties. For example, if payment for delivery in one month is due in the middle of the next, the seller is providing the invoice amount as working capital to the buyer for an average period of one month.
- *Other terms*: The contract and comparator products may include other terms that need to be valued, such as the quality of gas delivered (although complex price terms may do this automatically), credit support and exposure to *force majeure*.

⁶ It is also possible that two or more of the individual components interact in such a way that their combined value differs from the sum of their individual values.

Valuing many components of a contract can be complex. However, the task can be made easier in two ways. First, since we are using a comparator approach, we are only interested in the differences between the terms of the contract and the terms of the comparator product.⁷ Second, the vast bulk of the value is likely to sit with only a few of the components. If the less critical components cannot be valued, it may not have a material effect on the overall damage estimate.

We discuss potential methods of valuing each of the components below. The approaches used to value each component in electricity and gas markets are similar, in principle, to those used when determining the value or price of a contract in the first place, or during price reviews of long-term energy contracts.

Commodity

The value of commodity electricity or gas at the wholesale level may best be reflected by the price at which it is traded. Exchanges, brokers and price-reporting firms make available market prices for standard contract products; for example, a calendar year product for gas or electricity that entails the delivery of a fixed volume of gas or electricity for every hour or day of a specified year, a quarterly product that entails the delivery of a fixed volume for every hour or day of a specified quarter. With the *ex ante* approach, the market price available at or before the breach is relevant for contracts for delivery in the period contemporaneous with delivery under the disputed contract. If the market price is not available in the relevant jurisdiction, one could potentially use market prices for other jurisdictions or at other points in the value chain within the same jurisdiction (e.g., regulated wholesale prices, published import prices or even final retail prices, with appropriate adjustments to reflect the expected difference between retail and wholesale prices).⁸

Gas and electricity are regionally traded commodities (and in the case of gas, globally traded to some extent). This means market prices for other jurisdictions could provide useful information about the price in the relevant jurisdiction. An adjustment for transportation cost differentials may be required (see below).

⁷ Note, a term that differs may require consideration of terms in common if it is to be valued.

⁸ Electricity has inputs to production that are other commodities. Market prices for these other commodities that are underlying drivers of the price of electricity in the relevant jurisdiction may also provide useful information. For example, market prices for gas, coal and carbon dioxide permits (in jurisdictions where these apply) may provide useful information in estimating future electricity prices.

If the market price in the relevant jurisdiction is not available for products for delivery sufficiently far into the future, it may be necessary to look to the market price in alternative jurisdictions for products for delivery further into the future.

Shape

Delivering gas or electricity according to a specific profile, as opposed to a standardised product, may mean the gas or electricity delivered by the contract under dispute has greater or lesser value than the market price for the closest standard traded product.

For gas and electricity, shape could be valued by temporal differences in the market price for shorter duration products; for example, the price of gas in winter versus the price of gas in summer, or the price of electricity during the day versus the price of electricity during the night. These shorter-duration products are normally traded only a relatively short period into the future. For this reason, information about temporal prices for historic delivery periods, or delivery periods only a short time into the future, may be required to overlay onto the price for future delivery of the commodity electricity or gas (with any adjustments for how inter-temporal price shape may change from one year to the next).

In addition, for gas, shape can be provided by gas storage facilities. If relevant to a given case, and assuming no shortage of storage, the cost of gas storage (e.g., as obtained from published storage tariffs) could be used to value shape or set limits on the value of shape.

Flexibility

An option for a buyer or seller to vary the shape of deliveries can be valued in several ways. In the case of gas, some of the option value may be reflected in tariffs for using storage facilities, since storage facilities would usually offer optionality over the timing and quantity of injections and withdrawals. Otherwise, flexibility in the case of gas may be valued approximately, using standard option valuation techniques when markets are sufficiently liquid. Options in both gas and electricity can be valued through market simulation.

If applying an approach using *ex post* information on market prices, ideally one would consider how, in practice, the option could have been used, given the time constraints on its exercise. Assuming the perfect exercise of an option based on *ex post* information when that information would not have been available when the option had to be exercised may provide some guidance on its value, but may overstate the full value to the buyer (or its cost to the seller).

Transport costs

The value of transport services included in a contract could potentially be based on published transport tariffs, taking into account the effect of, for example, network congestion, and import and export levies. Transport costs might be incurred or avoided relative to the delivery point of the product to which the observed market price relates. For gas, this could be between the source of gas and the observed market, and between the source of gas and the point of delivery of interest. For electricity or gas, it could be the transportation cost incurred or avoided in moving from one jurisdiction to another.

Payment terms

Payment terms in the contract under dispute can be valued relative to the payment terms of the product to which the observed market price relates. This may mean a saving or an increase in costs. The timing and quantum of advance and ‘wash-up’ payments may also need to be taken into account.

Simulation

In the absence of appropriate comparator market prices with which to value the gas or electricity delivered under the contract in dispute, a market simulation model can be used. There are many approaches to simulating market outcomes. Without market prices, the most common approach would be to develop what is often called a fundamental model of the market and then simulate the interaction of supply and demand and the price-setting process.

Considering the power sector, this approach, simplified, might be based on the following.

Power stations can be thought of as being stacked from the lowest to the highest short-run marginal cost. Power stations with lower marginal costs run in preference to those with higher marginal costs. The available generation is compared with demand in the hour. For that hour, the point at which the demand curve intersects with the supply curve, derived from the plant stack of available generation in the hour, determines the market price for the hour, and which power stations produce electricity and which do not. The (hourly) market price is set by the power station that is the most expensive still required to meet demand – the market price may be set equal to the marginal cost of the marginal power station or some function of the marginal cost. This simulation can be repeated for every hour of the year, or for a sample of representative hours, with varying demand, varying generation availability and varying short-run marginal costs (reflecting, for example, changing gas and coal prices). In the long run, power stations will

close and, particularly if demand is increasing, new power stations will be built. Simulation models can simulate new entry and exit decisions, such that, as prices rise and it becomes profitable to enter, new entry occurs.

Needless to say, these types of models – although conceptually simple – are complex and require many inputs. The complexity will increase with the presence of interconnected markets, imperfect markets with large players, and markets whereby policy decisions have an important influence on outcomes.

Conclusion

Estimating damage relating to supply in the electricity and gas sectors has many similarities to estimating damage elsewhere. However, the characteristics of electricity and gas mean the estimation may be more challenging owing to the often long duration of contracts and the potentially large changes in value over time.

A number of techniques are available that would typically allow damage to be estimated using an *ex ante*, *ex post* or hybrid approach, as legally appropriate. Although the estimation is often complex, approaches can be applied to simplify the task, including using comparator analysis and focusing on those aspects that are most material to the overall damage estimate.

CHAPTER 26

Damages in Construction Arbitrations

Conrad Bromley and Terry Hawkins¹

Introduction

Damages in construction disputes can arise from many different project-specific circumstances, with the type of damage suffered and the method of quantification dependent on, among other things, the discrete facts of the case, the governing law, the form of contract and the available evidence.

However, the prevalence of certain events and circumstances in international construction projects, such as changes to the work, project delay, instructions to expedite performance (acceleration), the effects of reduced productivity (disruption) or the consequence of termination is likely to cause both contractors and employers to incur additional costs and thus give rise to several common heads of claim for construction damages.

Although these claims may sometimes be assessed cumulatively with reference to the total cost method, for example, it is widely accepted that, where possible, the damage should be quantified discretely with a causal nexus between the event and the damage established.

The purpose of this chapter is to provide the reader with an overview of the types of damages common to international construction arbitration and the methods of quantification that may be adopted by the parties to the arbitration. This chapter does not address the concept of indirect or consequential loss, which contractors may also experience as a result of these or similar events.

¹ Conrad Bromley and Terry Hawkins are managing directors at Secretariat.

Global claims

Although the specific quantification methods may vary, a global claim – as the name suggests – exists when a contractor asserts that its global or total loss was the result of an employer-responsible event, or events, or other causes without attributing that loss to each discrete event or cause. In base terms, a contractor may seek to deduct its tender sum from its total actual cost and claim the difference.

Liability issues aside, this method has often been criticised for failing to account for tender errors and underbids that may have reduced the contractor's tender, as well as cost overruns caused by the contractor that may have inflated the actual cost, the effect of which results in an overstated total cost claim.

A more accurate alternative is the modified total cost approach. This approach is still predicated on a 'top-down' assessment in which the starting point is the full and total cost incurred, but the approach is modified to exclude items of cost that can be identified and attributed to contractor-caused events, such as contractor inefficiencies and variations.

Although the modified total cost approach has been accepted by some courts and tribunals, it is unlikely to be persuasive unless the contractor can demonstrate that the causes are so intertwined or pervasive that they are unable to be separated and discretely quantified.

Additionally, the contractor must demonstrate that its tender was both realistic and reasonable, that its actual costs were reasonably incurred and that it was not responsible for the overspend.

Delay costs

Delay-related costs are the damages or compensation awarded to an injured party in the event of a delay on a construction project. All construction projects will be governed by some form of contract that will invariably provide a time frame for completion of the project. When completion of the project is delayed, both principal parties to the contract suffer.

A critical factor in the calculation of damages is the assignment of liability for the delays suffered. In the event of contractor-caused delay, most standard form construction contracts contain provisions for liquidated damages as the exclusive damages remedy to the employer. Liquidated damages are a genuine pre-estimate of the loss that is likely to be suffered if the project is delayed. Liquidated damages are typically capped at a percentage of the contract price, commonly 10 per cent.

In some Middle East jurisdictions, the law may also permit a tribunal to award general damages to an employer in addition to the liquidated damages prescribed by the contract. For example, contracts with public bodies in Dubai in the United Arab Emirates (such as the Roads and Transports Authority, or the Dubai Health

Authority) are subject to the supervening laws of Dubai. Law 12 of 2020, which governs the procurement of goods and services by public bodies, provides that if the damage suffered as the result of a breach are greater than the limit under the contract, the court can award general damages over and above, and in addition to, the liquidated damages prescribed in the contract.

An award of general damages is more commonly made in favour of the contractor. The award is then predicated on a finding by the tribunal of an employer-caused critical delay. In these circumstances, a contractor will be entitled to a compensable extension of time award. The temporal finding will provide the framework for the calculation of damages (i.e., it is necessary to first calculate the period of compensable delay before the corresponding compensation can be calculated).

Not all extension of time awards will result in an award of damages. It is not uncommon that both principal parties will share responsibility for the delay (in part or in whole). In these circumstances a tribunal may award an extension of time without damages (i.e., a non-compensable award).

Although the contractor will not be compensated for the prolonged period of work, it will not suffer a greater loss by the levy of liquidated damages. Similarly, the employer will not receive the benefit of damages for the delay for which it was responsible.

In the circumstances of an employer-caused critical delay, the damages assessment represents the financial accompaniment to the extension of time. Colloquially referred to as a 'prolongation claim', it is the damages awarded to the contractor for its prolonged engagement in the performance of the work. The calculation of delay-related damages in construction follow the ordinary common law principles of damages: to provide compensation to place the injured party back in the position it would have been in but for the matter relied on. However, an injured party is not entitled to unfettered damages in compensation.

The calculation of the compensation to be awarded is subject to the following considerations:

- Is the cost claimable under the contract or governing law (or both)?
- Over what period is the cost compensable?
- Is the cost claimed reasonable?
- Has the cost been incurred, or does a bona fide cost liability exist?
- Has the cost been recorded in the correct period?

In the practical application of this principle, a compensatory award will entitle the contractor to recover its actual time-related costs demonstrably incurred during the period of compensable delay that flow from the breach and are reasonable in

the circumstances. For a contractor to have a reasonable chance of succeeding in a claim for delay-related damages, the damages assessment should follow these general principles and guidelines:

- It should be based on actual time-related costs incurred during the period of critical compensable delay.
- It should be supported by source accounting data extracted from independently audited accounts.
- It should consider only time-related, indirect resources that are attributable to the matter relied on, excluding any costs that would have been incurred in any event.
- It should exclude all direct costs of carrying out the work.
- It should be assessed at the time the delay affects the project.

Typically, a claim for delay-related damages in a construction contract would include the following broad categories of time-related costs:

- running costs of the site set-up, including: rental of office and mess facilities; power and water; land rental; security services; and any other costs incurred to maintain the contractor's site set-up;
- staff costs pertaining to those who typically perform a supervisory or management function of the works;
- plant or machinery that is hired to perform a site-wide function (excluding plant hired in the direct performance of the work, which would be recovered via the contract rates and prices); and
- insurances, bonds, bank guarantees, and any financial instruments prolonged as a result of the delay.

The above categories of costs are not intended to be exhaustive. They provide only a sample of the categories of time-related costs that may be considered by contractors and employers when assessing the costs associated with a claim for delay. A crucial factor in the calculation of delay-related damages is to distinguish actual costs from any tender or contract allowance.

A contractor's actual time-related costs will have no intrinsic relationship to the contract price; the aim of a damages award is to neutralise the harm suffered and return the contractor to the position in which it would otherwise have been. If the calculation of that award was constrained by the contract price (i.e., referable to what is commonly termed the 'preliminaries' element of a contract price), the award may be inadequate compensation for the harm suffered.

Disruption costs

Keating on Construction Contracts provides that: ‘Disruption occurs where there is a disturbance of the contractor’s regular and economic progress and/or delay to a non-critical activity even though, on occasion, there is no or only a small ultimate delay in completion.’²

Similarly, the Society of Construction Law (SCL) Delay and Disruption Protocol provides the following definition: ‘Disruption (as distinct from delay) is a disturbance, hindrance or interruption to a Contractor’s normal working methods, resulting in lower efficiency.’³

Disruption is thus any change, or changes, in circumstances, sequence or working methods that prevents the contractor from achieving the level of output that it had anticipated.

The damage manifests itself as reduced productivity of a project resource, which results in the application of more resources than planned, at a greater cost.

Productivity is the rate of output per unit of input. In construction, output may be the achievement of an element of work, such as a cubic metre (m³) of concrete poured, a tonne of steel work erected or a metre of cable pulled, and the input is the effort (often expressed in hours of labour or plant) required to achieve the output.

To the extent that it can be established that the employer was responsible for a change to the conditions that negatively affected its productivity, there are several methods available to the contractor for quantifying its disruption damages. These methods can be broken down into two broad categories: cost-based and productivity-based.

Cost-based methods take the form of a global or total costs claim, as discussed earlier (i.e., the contractor asserts that all additional costs incurred beyond its plan were as a result of the employer-caused disruption).

As explained above, cost-based methods implicitly rely on the accuracy of the contractor’s original tender and the presumption that all matters giving rise to the loss of productivity are the responsibility of the employer.

Productivity-based methods are generally preferred and can be further subdivided into three categories:

- project-specific methods (namely, the measured mile analysis);
- industry studies; and
- project comparison studies.

2 *Keating on Construction Contracts* (11th ed. 2021), Paragraph 8-065.

3 Society of Construction Law (SCL), Delay and Disruption Protocol (2nd edition, 2017).

A productivity-based method, such as the measured mile approach, is preferred but its use is dependent on the availability of accurate and detailed resource and production records. In the absence of these records, a contractor may turn to comparative studies or total cost assessments.

A measured mile analysis is a comparison between the rate of productivity achieved on the project during an unaffected (or benchmark) period of work and the rate of productivity during a disrupted period. The difference between the two rates of productivity represents the effect of the change, which is usually reflected in hours per unit of output.

For example, a contractor was required to pour 1,500 cubic metres of concrete and was able to complete two-thirds of the work in unaffected conditions. However, the balance of the work was encumbered by employer-imposed access issues and restricted working hours, which disrupted its performance. An analysis of the rates of productivity identified that the contractor placed 0.87 cubic metres of concrete per hour during the benchmark period, which reduced to 0.5 cubic metres per hour during the disrupted period.

Concrete foundation work	Benchmark period	Disrupted period
Output: Quantity of concrete poured (m ³)	1,000	500
Concrete labour hours (hours)	1,150	1,000
Rate of productivity (m ³ /hr)	0.87	0.50

The difference in productivity achieved between the benchmark and disrupted periods represents the loss of productivity suffered. In this example, the contractor suffered a 42.5 per cent loss of productivity. Thus, ‘but for’ the changes imposed by the employer, the contractor could have reasonably expected to complete the 500 cubic metres of concrete in 575 hours (500m³/0.87m³/hr) and, as such, suffered a loss of productivity of 425 hours.

	Productivity rate	Amount
Output: Quantity of concrete poured (m ³)		500
Concrete labour hours (hours): Disrupted period	0.50	1,000
Concrete labour hours (hours): Benchmark period	0.87	575
Lost labour hours		425

The chief advantage of the measured mile approach is that it avoids any argument about the accuracy of the contractor's tender because the productivity comparison is based on the actual productivity achieved. However, a measured mile assessment is not without its challenges:

- *Available data*: the measured mile analysis requires accurate and complete resource and production records. If these records do not exist, a contractor may be forced to rely on an alternative method, such as industry studies and comparisons.
- *Lack of suitable benchmark*: it may be difficult to identify a suitable baseline (i.e., a period of unaffected progress). In these circumstances, it is often preferable to find a period of minimal disruption. Alternatively, a contractor may consider the use of tender productivity or rates from analogous projects as a benchmark but would need first to establish that the rates applied are comparable, realistic and achievable.
- *Learning curve losses*: reliance on the naturally lower productivity typically achieved during the early phases of the activities, as labour resources become accustomed to the method of working, may skew the benchmark.
- *Competing causes of disruption*: care must be taken to account for the causes of disruption that are not attributable to the employer.
- *The unaffected period*: the benchmark period must fairly represent the unaffected rate of productivity achieved by the contractor. Reliance on a brief or truncated period of work, during which the contractor achieved exceptional productivity, may artificially inflate the contractor's loss.
- *Comparability of work*: it is vital to ensure that the work carried out during the baseline and affected periods are of the same type and nature, performed under the same circumstances. For example, a comparison between the productivity achieved from pouring a ground-floor concrete slab with that achieved from pouring a cast in-situ flight of stairs would be of limited analytical value.

Industry studies provide the starkest instance of relying on an external source of data to demonstrate that a loss of productivity has been suffered and that an award of damages is appropriate. One such example of an industry study is that developed by the Mechanical Contractors Association of America, Inc (MCAA).

The MCAA developed a list of loss of productivity factors⁴ to attempt to quantify the singular and collective effects of events commonly causing reduced productivity among mechanical contractors in the United States. First published in 1971, it is often relied on as an industry study and is used widely by claimants in the construction sector. The MCAA study provides 16 factors that can be used to evaluate the effect of an event on a contractor's productivity, including:

- trade stacking: between 10 per cent and 30 per cent, depending on the severity of the impact;
- dilution of supervision: between 10 per cent and 25 per cent, depending on the severity of the impact; and
- seasonal and weather changes: between 10 per cent and 30 per cent, depending on the severity of the impact.

The 16 factors in the MCAA study, including the three stated above, are generally accepted by industry practitioners as factors that have a negative effect on productivity in construction projects. The stacking of trades, where multiple competing trades are working simultaneously within a defined area of the site, will generally cause reduced productivity. Notwithstanding this, the percentages assigned by the MCAA to each of the factors lack provenance and are unlikely to be representative of the actual effect of any given disruptive event. A contractor seeking to rely on the MCAA factors must demonstrate that the work subject to its claim for loss of productivity damages is directly comparable to the MCAA work, and that there exists no better information on which to base an assessment of the loss suffered. These are typically difficult burdens to discharge. However, the MCAA factors remain a popular method for the assessment of loss of productivity owing to the simplicity of the application and the often-favourable analysis produced for the contractor.

Project comparison studies are generally accepted to provide a more robust basis to demonstrate loss of productivity when compared with industry studies. In simple terms, the project comparison method compares similar unaffected activities on different projects. For example, if a contractor was able to pour 100 cubic metres of concrete in a single day on Project A, but on Project B was able to pour only 80 cubic metres of concrete in a day, this may be indicative of a loss of productivity of 25 per cent. For such a comparison to be sustainable, it is vital that the two activities – the concrete pour on Project A and the concrete pour

⁴ 'Change Orders, Productivity, Overtime – A Primer for the Construction Industry' was first produced in 1971 by the Mechanical Contractors Association of America, Inc.

on Project B – are comparable. To the extent that the conditions differ significantly between the two projects, any comparison of productivity will be of limited value. For example, the 100 cubic metres achieved on Project A may have been at grade-level slab on an unobstructed site whereas on Project B, the 80 cubic metres may have been poured to a fifth-floor slab in a congested city centre location. Little can be drawn from a comparison of work carried out under such different circumstances.

In summary, productivity-based methods are preferable to both industry studies and project-comparison studies because they do not rely on any external sources or factors to demonstrate loss of productivity. Project-based methods use project-specific data from contemporaneous project records to demonstrate the loss of productivity suffered and the concomitant loss of productivity damages. Project-based methods of analysis include earned value analysis, system dynamics modelling and, more commonly, the measured mile analysis.

Head office overheads

Head office overheads are a recognised category of contractor cost relating to the running of its business and include costs of central services, office rents, head office staff, payroll, human resources and depreciation, among other things. The cost of a contractor's head office is recovered through the project revenues generated by the contractor.

Although these costs can be quantified from a contractor's financial statements and management accounts, they are rarely attributed to the specific projects and contracts and, therefore, are often allocated as a factor of project revenue.

When a contractor is unable to generate a contribution towards its head office overheads, it is often said that the head office overheads are unabsorbed. Claims for unabsorbed head office overhead costs arise when a contractor is unable to defray its head office costs because of a loss or diminution in revenue on the project caused by a delay or suspension event for which the employer is responsible.

Because head office overhead costs are typically not allocated to projects, the approach to quantification is not as straightforward as with other delay-related costs, such as the assessment of on-site running costs. Consequently, contractors typically rely on formula-driven assessments to quantify their losses.

There are several formulae that are often referred to that have gained judicial support, including Hudson,⁵ Eichleay⁶ and Emden.⁷ Although the formulae may vary, they mostly seek to identify the head office cost that was to be absorbed by the project during the planned or actual project period, which is multiplied by the period of employer-caused delay.

Distinct from the Emden and Eichleay formulae, the Hudson formula proposed the application of a head office overhead percentage derived from the contractor's tender as opposed to being based on accounting records. When using this formula, the contractor will often face the argument that the tender percentage bears no relationship to the actual head office cost of the business. This would require the contractor to demonstrate the reasonableness of the tender percentage to justify its use when quantifying its unabsorbed head office overheads.

However, more recently, the approach of using a head office overhead percentage derived from the contractor's tender has softened. In the 13th edition of *Hudson's Building and Engineering Contracts*, it was suggested that the 'head office overheads and profit percentage applied to the Hudson formula were originally those deducible from the Contractor's tender. A more modern assumption is to use the head office and profit contribution deducible from the Contractor's annual accounts, sometimes referred to as "a fair annual average"'.⁸ This trend has continued in the latest edition of *Hudson*.⁹ Should the originally suggested tender percentage for head office overheads be substituted with a fair annual average derived from the annual accounts, then a contractor's quantification using either the Hudson or Emden formulae would be the same.¹⁰ It is also noteworthy that the modified Eichleay formula, in which the head office overhead is allocated to the original contract period instead of the actual contract period, is also tantamount to Emden.

5 See Ian Duncan Wallace, *Hudson's Building and Engineering Contracts* (10th ed., Sweet & Maxwell, 1970), p. 599.

6 See *Eichleay Corporation*, ASBCA No. 5183, 60-2 BCA (CCH), Paragraph 2688 (1960).

7 See *Alfred McAlpine Homes North Ltd v. Property & Land Contractors Ltd*, 76 BLR 59 (1995), which considered, inter alia, the application of the Emden formula.

8 R Clay and N Dennys, *Hudson's Building and Engineering Contracts* (13th ed., Sweet & Maxwell, 2015). p. 801, footnote 480.

9 R Clay and N Dennys, *Hudson's Building and Engineering Contracts* (14th ed., Sweet & Maxwell, 2020), Paragraph 6-071 and footnote 494.

10 R Champion, 'The Hudson formula: Death by Footnote?', *Society of Construction Law* (2021), p. 6.

Some practitioners have suggested that an alternative approach is simply to apply an uplift factor to the quantified prolongation costs. Although this approach benefits from its simplicity, it has been rejected by a number of courts and tribunals for being speculative, on the ground that the ratio of one set of costs to another may not be commensurate¹¹ (i.e., the prolongation costs may bear little or no relation to the allocation of head office overheads to the project).

Head office overhead claims have been the subject of extensive review by courts and tribunals. Although a formula may provide a reasonable basis for quantifying the loss, to establish the loss as a matter of fact, the contractor may be required to:

- establish that it suffered substantial delay for which it was not responsible;
- show that a loss has been suffered and that the head office overhead cost was not absorbed through the performance of additional work (e.g., variation orders); and
- demonstrate that it turned down revenue-generating opportunities that it had a good chance of securing that would have positively contributed to the absorption of head office overheads.

Alternative situations may give rise to claims for dedicated, additional or thickened head office overheads.

Dedicated head office overheads are those resources that can be ascribed to a specific project. These overhead costs would more naturally sit within the contractor's prolongation claim and may include the cost of personnel who, despite not being on site, were dedicated to the project. It should be possible for a contractor to substantiate these costs with time sheets and other contemporaneous records.

A contractor may claim additional head office overhead costs during a period of extended performance arising from the instruction of additional work. However, the use of a formula may be considered as an inappropriate means of quantifying the loss if the contractor is generating additional project revenue through the completion of additional work that would contribute to its head office overhead costs during the period of extended performance. Therefore, the application of an uplift factor would more accurately quantify the damage.¹²

The concept of thickened head office overheads was considered in a 2018 judgment by the High Court of England and Wales. In this case, the judge gave an example in which an accountant who was part of the head office resource and

11 *Fluor Ltd v. Shanghai Zhenhua Heavy Industry Co, Ltd* [2018] EWHC 490 (TCC).

12 *C.B.C. Enterprises, Inc., Plaintiff-Appellant v. The United States*, 978 F.2d 669 (Fed. Cir. 1992).

was not project responsible was consumed by the breach of contract that arose on a specific contract, necessitating the employment of a further accountant to deal with the balance of his work. The judge considered that this would be a direct consequence of the breach and would be a recoverable head of damages.¹³

Termination costs

Termination-related damages can be wide-ranging and include the contractor's losses for repatriating staff or ending contracts early. Conversely, following the dismissal of a contractor, the employer may enter into a replacement contract and seek to recover the residual cost of completing the remaining scope of work (the employer's cost to complete damages).

Simply put, the employer's cost to complete damages is the difference between the value of the dismissed contractor's outstanding work and the amount paid to the replacement contractor to perform the same. However, in international construction arbitration, the quantification is rarely so straightforward. It is not uncommon for the employer to engage its replacement contractor on different terms and require it to perform additional or enhanced work, preventing a like-for-like comparison between the contractors' prices.

The argument then turns to one of quantification and, in particular, whether a 'bottom-up' or 'top-down' approach should prevail. In a top-down approach, the actual cost of the replacement contractor is the starting point for the employer's damages calculation, which is adjusted to remove amounts that do not pertain to the residual scope of work. However, if this approach is to prevail, it is incumbent on the employer to ensure that the amount claimed is attributable to the dismissal and that it does not contain items of cost that are not.

The starting point for a bottom-up analysis is the itemised residual scope. This would ideally be assessed with reference to the replacement contractor's rates and prices. In the absence of detailed rates and prices, an assessment based on rates and prices from the terminated contract or analogous rates from other projects may be appropriate, assuming a reasonable adjustment to those rates has been made to account for, among other things, project conditions, price rises and learning curves.

13 *Fluor Ltd v. Shanghai Zhenhua Heavy Industry Co, Ltd* [2018] EWHC 490 (TCC).

Conclusion

Construction disputes are regularly heard before international arbitral tribunals and although the types of damages claimed and the approach to quantification will often differ, damages associated with delay and disruption, head office overhead costs and termination losses are common, and the path to quantification well-trodden. In this regard, construction damages quantified discretely with a causal nexus between the event and the damage are likely to be more persuasive than cumulative assessments.

The approach to quantifying a party's loss will depend on the facts of the case, but a fundamental tenet in the quantification of construction disputes is the necessity for contemporaneous records and substantiation to prove the damages.

CHAPTER 27

Damages in Life Sciences Arbitrations

Gregory K Bell, Andrew Tepperman and Justin K Ho¹

Introduction

At a conceptual level, many of the methodologies discussed elsewhere in this guide apply equally to arbitrated disputes in the life sciences sector. The goal of the damages inquiry in this sector is the standard one: to restore the claimant to the financial position it would have achieved had the improper conduct not occurred. Standard approaches are used to attain this goal, namely determining the claimant's 'but for' profits at each point in time during the damages period and subtracting from these the claimant's actual profits (if any). The differences between these amounts are then brought forward (in the case of past damages) or discounted back (in the case of future damages) to the relevant date, using appropriate interest and discount rates. As we articulate in this chapter, however, there are some complexities to damages calculations in the life sciences industries that are worthy of further discussion.

The chapter is organised as follows. The first section provides a brief overview of salient characteristics of the life sciences sector, with a focus on the biopharmaceutical industry. We then outline some of the main types of disputes that are heard in life sciences arbitrations. Following this, we discuss some of the aspects of common analyses specific to life sciences that are used to determine damages in these types of disputes.

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Industry overview

Many of the companies in the life sciences industries are multinationals, operating on a global scale with respect to the discovery, production, marketing and sale of products promoted for human health. These products are generally grouped as diagnostics, medical devices and pharmaceuticals. Our discussion focuses on prescription pharmaceuticals and the biopharmaceutical industry; many of the insights, however, are equally applicable with respect to damages issues involving diagnostics or medical devices.

Research and development

The value chain for the biopharmaceutical industry is composed of three principal functions: research and development (R&D), manufacturing, and sales and marketing. A principal characteristic of the industry is the long-term, high-cost, high-risk endeavour that is R&D. It is suggested that it takes more than seven years for a new drug to be discovered and brought to market, that only one in 10,000 substances that begins the development journey emerges as a marketed pharmaceutical and that only one in five marketed pharmaceuticals earns enough to cover the hundreds of millions of dollars that tend to be associated with the R&D costs of new pharmaceuticals.² The R&D function tends to extend from the basic and applied laboratory research relating to identifying a potential pharmaceutical compound, to pre-clinical testing and development work, through to clinical trials in human beings.

Before product approval, the last step in the development process involves an extensive and exhaustive summary of the development work and results, which is packaged as submission dossiers for regulatory approval to market the product in different countries. Regulatory approval leads to indications and usage instructions on country-specific product labels.³ Additionally, there may be negotiations on price and regarding reimbursement by the country's public health system or private insurers. Launch of the product, however, does not necessarily mean the end of R&D focused on the product. There may be continuing efforts to explore new indications, address significant side effects and develop new formulations.

2 Hay et al., 'Clinical development success rates for investigational drugs', *Nature Biotechnology*, 32:1, 2014, pp. 40–51; DiMasi and Grabowski, 'The Cost of Biopharmaceutical R&D: Is Biotech Different?' in *Managerial and Decision Economics*, 25 (2007), pp. 469–79; Vernon et al., 'Drug Development Costs When Financial Risk Is Measured Using the Fama-French Three-Factor Model', *Health Economics*, 19:8 (2010), pp. 1002–05.

3 Note that indication approval and associated usage instructions for one country need not imply a similar approval in other countries.

R&D is the primary value driver of the pharmaceutical industry. Products are the scarce resource and thus it is the intellectual property developed through the R&D process that captures the residual profits generated by sales. Manufacturing capacity and sales representatives may be contracted, and thus only need to be rewarded with normal profit margins; any margin that remains accrues to the intellectual property that led to the product in the first place.

Manufacturing

In broad terms, two types of manufacturing processes characterise the production of pharmaceuticals. Most pharmaceuticals are pills or tablets, taken orally and generally dispensed at a retail pharmacy. For these products, manufacturing tends to be relatively well understood: there is primary manufacturing of the active pharmaceutical ingredient and then secondary manufacturing to formulate and package the tablets. In contrast, most of today's high-priced pharmaceuticals are biologics. These tend to be injected or infused and may be administered by a medical professional. The production processes for biologics tend to be less standard and significantly more expensive.

Marketing

Once priced and approved for marketing in a country, the pharmaceutical is ready to be launched. The launch of a pharmaceutical tends to be an expensive process, initially focused on raising awareness of the product, generating trials and finally habituating use by prescribing physicians.⁴ As a result, it is not unusual for marketing costs to represent a high percentage of sales, and may even exceed sales within the first year or two of a product's launch.

The principal marketing tactic is the use of sales representatives who visit prescribing physicians to educate them about the product; this activity is known as 'detailing' the product. For detailing to be effective, it is critical that the sales representatives visit the right types of physicians and deliver the right message regarding appropriate use of the product with the right patients at the right time.⁵ As a result, effort is spent on segmenting the physicians and patients and testing the messages so as to determine the best use of the detailing activity. It is important to note that sales representatives typically promote more than one

⁴ This is the awareness, trial, usage (ATU) model of sales.

⁵ Appropriate physician targeting is usually of principal importance; for example, it is not likely that there will be much value in detailing an Alzheimer's dementia product to a cardiologist.

product. Often, they will be responsible for promoting three products on a detail; the product in first position tends to dominate the time with the physician; the product in second position tends to be used as a reminder for the physician; and the product in third position often warrants only a sample drop.

From a marketing and branding perspective, one tends to consider two types of pharmaceutical products: those for acute care and those for chronic care. Acute care products, such as antibiotics, are typically taken for only a short time to address or cure a condition. Chronic care products, such as blood pressure medications, are to be taken for much longer, often for the remainder of a patient's life. As a result, utilisation of chronic care products may be less volatile than that of acute care products.

Life cycle

Over time, pharmaceutical products tend to move through a life cycle. Initially, sales are low as significant marketing effort is expended to build awareness and generate trial for the product. Sales tend to climb during the growth phase of the life cycle as opinion-leading physicians promote use of the product and prescribing becomes habituated among targeted physicians. During maturity, sales grow more slowly and marketing efforts tend to be reduced; sometimes detailing for the product becomes no more than a delivery of product samples. Decline may come about for a variety of reasons. The product may be eclipsed by a new generation of therapeutics, or patent protection may expire and the product becomes subject to generic or biosimilar competition. In decline, there may be no marketing or promotional support for the product; to the extent that there is continued product use, it tends to be as a result of ingrained prescribing habits of physicians and brand loyalty from patients for chronic care products.

Once a patent or other form of market exclusivity expires, generic products (or biosimilars for biologics) may be marketed. As generics and biosimilars are essentially copies of original branded products, they do not require such large, risky investments in R&D, but they still require regulatory approval.⁶ Generic products comprise the same chemical entity but are sold without the benefit of the original brand name. They do not need clinical trials to prove safety and efficacy, but need only show that they are bio-equivalent to the related branded product. Generics are seen as interchangeable for the related brand and tend to compete to be the version of the product dispensed at the pharmacy. As a result, they may not be marketed directly to physicians; instead, generics may rely on the awareness and

⁶ Regulatory issues regarding generics and biosimilars tend to be country-specific.

habituated prescribing practices that the brand built over time. In slight contrast, biosimilars (because of the more complex nature of biologics) are not exactly the same chemical entity as the related branded product. As a consequence, they rely on limited clinical trials to show safety and efficacy that is sufficiently similar to the branded product. Biosimilars may not be approved as interchangeable with the original branded product; as a result, they may be branded themselves and marketed to physicians. Because of these differences, biosimilars are not expected to offer as large a price discount and may account for a smaller share of sales than may be the case for generic products.

Data

The biopharmaceutical industry is replete with data regarding product sales and associated marketing efforts. Sales may be tracked weekly and it is often possible to discern shares of unit sales among competing products. Publicly available unit price data are considerably less accurate. Most pharmaceuticals have list prices that tend to vary by country, but the net price that a pharmaceutical manufacturer ultimately may realise is typically not reported to the data companies. There also tends to be a fair amount of data regarding marketing efforts; there are audits that measure detailing activity, sampling, journal advertising and medical education. As a result, companies are often able to measure themselves against their competitors with respect to unit sales and associated marketing efforts. In contrast, there is little publicly available data regarding R&D and manufacturing costs, other than what may be reported at an aggregate level in a company's financial disclosures.

Collaborations and disputes

Collaborations in the pharmaceutical industry enable companies to seek partners with complementary sets of expertise in different phases of drug development, commercialisation and geography. As such, collaborations and related contractual arrangements pervade the pharmaceutical value chain. As examples, in R&D, companies license intellectual property to others to continue development and commercialisation, or companies may enter co-development agreements and jointly agree to pursue development and commercialisation. Companies may also outsource various aspects of the R&D function, contracting with others to perform certain types of analyses or to manage their clinical trials.

In manufacturing, companies may contract with others to develop and scale up the manufacturing process, or they may outsource all or part of the manufacturing process.

In marketing, there are co-marketing and co-promotion agreements. In a co-marketing agreement, another company markets the same product under a different brand, recording its own sales; in co-promotion relationships, two companies agree to market the product jointly but only one records the sales. In other circumstances, companies may grant to others the right to commercialise the product in a certain geography or for a certain indication. In addition, companies may contract for sales representatives.

All these types of collaborations and contractual relationships may give rise to disputes, including those involving early or otherwise inappropriate termination of agreements. Typically, damages from these disputes tend to involve lost profits as a result of unrealised or delayed opportunities.

Commercially reasonable efforts

Many of the disputes that plague collaborations and related contractual arrangements tend to involve the execution of commercially reasonable efforts (CRE) or some variant thereof.⁷ Whether it is a co-development, co-marketing, co-promotion or other type of collaboration or related contractual engagement, contracting is limited in its ability to define and articulate performance requirements for all types of situations. To be successful, the parties need to be able to respond appropriately to the environment. In this respect, there is no substitute for the sound exercise of professional judgement regarding strategic choices in the development and commercialisation of pharmaceuticals. Thus, these collaborations and types of contractual engagements tend to impose an obligation for the performance of commercially reasonable efforts, often defined as efforts that may be reasonably expected given the drug's potential, stage of development and other market circumstances, including competitor activity. CRE thus encompass a range of appropriate strategic alternatives. Typically, there is no one right answer with respect to what constitutes CRE; if there were, the parties could have contracted for the performance of those specific services. In these types of disputes, an arbitral tribunal typically must determine whether the CRE obligation was met and, if not, the efforts that would be considered commercially reasonable and the damages that result.

⁷ For example, Sucampo and Takeda entered arbitration in 2010 as a result of Sucampo's allegations that Takeda's lack of sufficient marketing of Amitiza had led to poor sales (Siddiqui, Z, 'Sucampo seeks Takeda talks after losing legal battle', *Reuters*, 6 July 2012).

Intellectual property

Parties in the biopharmaceutical industry frequently enter into contracts involving access to intellectual property rights. In some cases, parties may choose to resolve intellectual property infringement and damages disputes via arbitration, rather than through the more conventional national court system.

Arbitrated damages inquiries involving intellectual property tend to be categorised into those involving the royalty base (the volume of sales deemed to incur royalty obligations) and the royalty rate payable per unit. With respect to the royalty base, for example, parties to a licensing agreement may dispute the inclusion of sales in certain geographies or for certain indications (approved uses) of the biopharmaceutical product at issue. Disputes may also extend to the future products and developments that are covered by the agreement and the limitations that are placed on the companies pursuing follow-on products or research.⁸

Various circumstances can arise that require tribunals to make a determination of the applicable royalty rate. For example, a contract may specify a framework for determining royalty rates assuming that certain conditions hold. The most-favoured nation clause is common in licensing agreements, and may allow the licensee to obtain a lower royalty rate in light of royalty rates charged by the licensor to other parties.

Investment treaty claims

Investment treaties provide a framework to allow for fair and equitable treatment of private investment by investors in host states. Pharmaceutical companies make significant investments in the development of their products, including manufacturing and research facilities. As such, companies may argue that these assets should be considered ‘investments’ under international treaties and given due rights. As an example, regulatory decisions have a significant effect on the timing

8 For example, Genentech and Biogen Idec entered arbitration beginning in 2006 to resolve a dispute on what follow-on products to their successful Rituxan product Genentech could pursue independently (‘Biogen Idec Announces Conclusion of Arbitration with Genentech’, Biogen Press Release, 16 June 2009).

and extent of a pharmaceutical product launch. Investment treaty claims provide a framework for foreign companies to challenge state regulatory decisions and adjudicate disputes in arbitration.⁹

Damages considerations

As noted in the Introduction, damages analysis in the biopharmaceutical industry proceeds by comparing how well off a claimant would have been but for the improper conduct. Typically, a partial characterisation – or at least a description – of this ‘but for’ world is an outcome of the theory of liability in the case; for this reason, it is critical that liability and damages theories are mutually consistent. For example, in a dispute concerning contractual performance or CRE, a particular liability theory may lead to the conclusion that activities undertaken by the respondent were insufficient. Key questions for damages include what would constitute a ‘sufficient’ level of activities, and how the changed level of activity would translate to sales and profits.

Damages relating to lost sales

To assess damages as a result of lost sales, it is necessary to identify the improper conduct, then determine the type of conduct that would be considered appropriate, and finally consider the consequent effects on incremental sales, costs and profits.¹⁰ These situations often arise with respect to contract breaches, including a failure to execute commercially reasonable efforts, and regulatory conduct under investment treaty disputes.

First: assessing conduct

CRE provisions are intended to be a low-cost, contractually efficient mechanism ensuring that the party undertaking the obligation takes appropriate action given the contemporaneous circumstances. The party’s efforts are expected to be in line with what similarly situated businesses would normally do, relative to

9 For example, Apotex initiated an arbitration under the North American Free Trade Agreement (NAFTA) against the United States seeking damages due to an import ban by the US Food and Drug Administration from 2009 to 2011 (‘NAFTA Tribunal Dismisses Apotex Claims,’ US Department of State, Office of the Spokesperson, 27 August 2014). As another example, in 2009, Servier initiated claims against Poland resulting from Poland’s decisions not to renew marketing authorisations for certain Servier products (*Les Laboratoires Servier, SAA, Biofarama, SAS, Arts et Techniques du Progres SAS v. Republic of Poland*, United Nations Commission on International Trade Law, Final Award, 14 February 2012.).

10 An exception would be a circumstance in which the expert is instructed to assume a particular level of effort as a direct consequence of the liability theory.

the commercial gains that could be expected from successful efforts. For these reasons, determining the level of effort that would be consistent with meeting the CRE obligation is not an exact science. As might be expected, efforts are likely to be different for a large and rapidly growing marketplace that is highly competitive than for one that is small and served by few sellers. For any pharmaceutical product, therefore, it is recognised that efforts would need to be adjusted appropriately as the magnitude of the opportunity is revealed and the life cycle of the product progresses. From a business perspective, the standard requires efforts to be large enough that they are consistent with business practices in the circumstances, but not too large in light of the perceived profit opportunity available.

Consider the example of a co-development agreement. The party responsible for developing and launching the product will have had certain expenditures relating to clinical trials, the securing of regulatory approval or launch preparation. Where liability hinges on an allegation that certain indications (approved uses) for the drug were either not pursued, or were pursued with insufficient urgency, published data on the timing of clinical development for comparable drugs in the same or similar geographies may be used to estimate how development should have proceeded. If the allegation is that the partner has made insufficient launch preparations, a useful benchmark for the level of effort may be the commercialisation plan agreed by the parties (subject to adjustment for any subsequent unanticipated changes in the market environment) or data regarding the actual marketing and promotion efforts surrounding the launches of potentially competing products or other appropriate analogues.

With respect to manufacturing, efforts in terms of production planning and investment in manufacturing capacity can be considered in relation to standard industry practices. Investments in highly specific manufacturing capacity may be perceived as unduly risky until there is a strong basis to conclude that regulatory approval is reasonably likely. Similarly, the competitive environment into which a product is expected to launch affects manufacturing capacity decisions. If the drug is 'first in class', demand is likely to increase as experience with the product and commercialisation efforts take root, allowing for a surge in manufacturing capacity synchronised with (or leading) product uptake. For products expected to launch in therapeutic areas with similar products already available, demand will often be more established and easier to forecast, reducing the risk attendant to significant capacity investments at launch.

Regarding marketing, a properly executed promotional strategy should result in a share of voice (SOV) (based on sales representatives' meetings with doctors and other promotion initiatives) that leads to prescribing behaviour. SOV places the detailing effort in the context of other competitors in the marketplace who

would be presumed to be executing CRE on behalf of their products. Other metrics that may prove useful in evaluating promotional performance might include survey results on the extent to which the approved message was delivered, measures of intent to prescribe as reported by doctors in surveys, and the prominence accorded to the drug within the set of products promoted by the company's sales force.

The appropriate level of effort should be attuned to the product opportunity, the stage in the life cycle and the competitiveness of the marketplace. In a large and growing market, other things being equal, it may be commercially reasonable to deploy a larger promotional effort to better exploit the opportunity. A product at an earlier stage in its life cycle will require more substantial promotional efforts to generate awareness and secure trial than a more established product. And with more competing products, it may be desirable to pursue a higher SOV to generate awareness, secure trial and build share for the product. Data regarding efforts put forth on behalf of other products or analogues may provide indicators of CRE, after adjusting for market potential, stage of life cycle and competitiveness of the marketplace.

Second: determining the effect on unit sales

Given 'but for' conditions, the next question is how these conditions would translate to marketplace outcomes, particularly with respect to incremental sales and incremental profits. Some may attempt to base but-for sales on the parties' initial forecasts and sales plans; this approach, however, is unlikely to have anticipated and accounted for factors that may have been beyond the control or influence of the parties, including competitor behaviour, changes in treatment paradigms and shifts in disease incidence. Rather, the mechanism that links efforts, revenues and costs should be explicitly characterised, if possible.

Consider a co-development agreement. It may be alleged that failure to exert CRE led to a decision not to pursue development of certain indications for the drug in question, with the result that marketing for these indications may be delayed. To be a plausible source of damages, CRE would imply an obligation to pursue regulatory approval for these indications; otherwise, it would not be apparent that any alleged delay in the launch of these indications would generate damages. Should this condition be satisfied, the damages model should provide a link between the lack of CRE and the alleged delay in indication approval, including the likelihood and timing of approval and the associated costs.

Regarding marketing collaborations, the mechanism linking efforts to sales and costs might be modelled as deriving from SOV for the product. The key empirical relationship here relates to the standard concept in pharmaceutical marketing

(and the marketing of most other products) that the level of promotional effort influences the share of market (SOM) that a seller could capture. Given the role of awareness and trial in the prescribing of pharmaceuticals, the stock of accumulated promotional effort on behalf of a product may have a bearing on the influence of the flow of SOV. Other things being equal, the longer a product has been effectively promoted on the market, the less significant is current promotion relative to the cumulative experience that physicians have received.

The relationship between SOV and SOM may be determined based on market data, and supported by reference to the relevant academic and professional literature. Based on these data, it may be possible to construct a model of the effects that the accumulated stock of past detailing effort and the flow of current detailing effort would have on SOM. The modelling here would not have to incorporate the full analytical complexity that appears in the academic literature; typically, it would be sufficient for the model to capture the factors driving sales (i.e., past and current promotional efforts) in an analytically tractable manner. It is then a matter of determining how SOV would have differed had CRE been pursued, what would have been the costs of that additional effort, and how (and when) SOM would have reacted.

Third: calculating incremental profits

Incremental revenues

Once the incremental volume of lost unit sales has been determined, the lost incremental revenues need to be calculated. For relatively small increments of unit sales, the average net price that was realised at the time is likely to be an appropriate approximation of the net revenue per unit that would have been realised. To the extent that there is an expectation of a relatively large volume of lost unit sales, it may be appropriate to consider any consequent anticipated effects on net price. The economics of the pharmaceutical industry, however – in which a physician determines the product to be used, a third party pays a significant share of the price of the product and the patient directly benefits from consumption of the product – tends to lead to circumstances in which incremental changes in product volume may not imply material changes in product price.

Incremental manufacturing costs

Incremental unit sales imply incremental costs associated with manufacturing and marketing. There are two principal issues associated with the incremental costs of manufacturing pharmaceuticals. The first concerns fixed costs and variances (elements of the cost accounting system that the claimant may be using). As with other manufactured products, pharmaceuticals are typically assigned a standard

cost of production; these standard costs tend to be updated annually.¹¹ Standard costs, however, typically include an allocation of fixed and sunk costs (such as facility rent or depreciation, respectively) that would not be incurred if more units of the product were produced. As such, it may be important to determine the incremental costs of manufacturing the product (such as raw materials) and not assess and undervalue damages based on the average costs of manufacturing the product. Further, it may be important to assess the costs incurred at the time, in case the standards were set such that material variances from the standard costs (such as an unanticipated increase in the cost of raw materials) were actually incurred.

The second issue regarding manufacturing cost estimates in assessing damages resulting from lost unit sales of pharmaceutical products concerns transfer pricing. Because of the global nature of the pharmaceutical industry and the value of the intellectual property represented by the R&D that leads to the discovery of a pharmaceutical product, many multinational pharmaceutical companies use transfer pricing agreements among their subsidiaries. Typically, these agreements are designed to ensure that those subsidiaries involved in manufacturing receive a reasonable return on their manufacturing efforts and those involved with marketing receive a reasonable return on their marketing efforts. As noted above, the remainder of the profits tends to accrue to the owners of the product-based intellectual property that led to the ability to generate the profits for the subsidiaries in the first place. As a result, the transfer pricing ‘cost’ that may be associated with importing a product for sale in a country would include not only an allocation of fixed and sunk manufacturing costs but also an allocation for the return on intellectual property that led to the discovery of the product. Thus, to the extent that a damages assessment is based on the transfer pricing cost of the product, damages would be undervalued.¹²

Incremental marketing costs

The principal incremental costs associated with marketing additional unit sales tend to be the cost of the additional samples (if any) that would have been distributed, plus the cost of any additional incentive compensation for the sales representatives as a result of greater sales. In addition, it may be appropriate to consider the opportunity costs of the sales representatives. For example, as a result

11 Bulk active pharmaceutical ingredients are likely to cost the same globally, but secondary manufacturing costs could differ based on the product presentations that are approved for sale in a particular country.

12 The extent to which damages incurred by the global corporate entity (as opposed to the national subsidiary) are at issue in the litigation is typically a legal question.

of lost sales, the efforts of sales representatives may have been assigned to other products; but for the lost sales, however, that time may have been allocated to the product at issue and thus would be considered an incremental cost relating to the lost sales. Note that some marketing costs, such as brand management, are fixed and typically invariant to lost unit sales. As a result, these types of costs typically would not be considered as part of a lost profits calculation owing to lost unit sales, unless the lost opportunity represented all sales of the product such that, but for the allegedly inappropriate activity, a brand manager would have been required.

Damages in intellectual property disputes

Disputes about royalties payable under licensing contracts can take various forms. It is not the goal of this chapter to review the approaches that may be taken for each possible situation. Instead, we make some general observations that are applicable across a range of disputes.

First, actual market transactions for the same, or comparable, intellectual property are likely to yield the most reliable information on the value of a particular intellectual property asset and how that value would be shared between a licensor and a licensee. Nonetheless, it is rarely appropriate to simply apply observed royalty rates – either the levels from other specific licensing agreements or averages across numerous agreements – without adjustments compensating for the particular circumstances at issue. For example, a licensor with an oncology product may have licensed intellectual property for research in other therapeutic areas; these agreements would not necessarily inform the terms of a licence for oncology that might lead to the development of a competing product. Second, it is important to keep in mind that intellectual property assets are unique. For this reason, ‘rules of thumb’, such as the once-common ‘25 per cent rule’, are not generally reliable guides to the royalty rates that should apply in a given situation.

The damages expert may be expected to offer an opinion on a royalty rate or other licensing terms that are consistent with what would have been agreed by the parties had they conducted a good faith negotiation as willing licensor and licensee. A methodology that is commonly used is analogous to the ‘hypothetical negotiation’ framework employed in court litigation in the United States. In this context, experts typically make reference to the *Georgia-Pacific* factors.¹³ Although arbitrated disputes may not be bound to adopt the same approach, it is worth

13 *Georgia-Pacific Corp v. United States Plywood Corp*, 318 F. Supp. 1116, at 1121 (S.D.N.Y. 1970).

noting that the *Georgia-Pacific* factors cover the issues of concern: the value of the intellectual property; how that value would have been split between the licensor and the licensee; and the key sources of bargaining power.

Damages and sales forecasts

There are a number of circumstances that may arise in which a damages analysis calls for the use of estimated sales levels for a biopharmaceutical product when no actual data on sales are available. For example, a contract may be prematurely terminated, requiring the damages expert to estimate the level of sales that would have occurred had it continued. Another example might be in an investor-state treaty arbitration in which regulatory authorisation is either improperly revoked or has failed to be granted.

It may be asserted that sales are adequately set out in the business plans and projections. Whether this is appropriate is likely to depend on the rationale for development of the projections, the assumptions used and the extent to which the projections appropriately incorporate actual market events. For example, the forecast may have been based on certain assumptions regarding the product, competitors and the marketplace that did not come to pass. Similarly, the forecast may not have anticipated events that did occur and that were independent of the allegedly inappropriate activity that is otherwise at issue.

For these reasons, it may be preferable to prepare a projection of 'but for' sales based on standard approaches used in the biopharmaceutical industry. A 'bottom-up' forecast of sales in the product category may be prepared using past data on population, disease incidence and treatment rates, and projections for each of these values that may be available from independent third parties. Once category sales have been projected, the but-for share of sales for the product can be applied. This may be determined using market research results relating to anticipated prescribing behaviour of physicians.

CHAPTER 28

M&A and Shareholder Arbitration

Kai F Schumacher, Michael Wabnitz and Greig Taylor¹

We have seen merger and acquisition (M&A) and shareholder arbitrations becoming more litigious in recent years, though for different reasons. With regard to M&A disputes, the intensified personal liabilities of board members and managers to investigate all business matters potentially relevant to their business have left many market participants with no choice but to analyse transactions for million-dollar purchase price recoveries. Concerning shareholder disputes, it is foremost because of increased transparency and the self-awareness of shareholders to enforce their rights and maximise their economic position.

From a damages perspective, M&A and shareholder arbitrations are only partially comparable. Damages in M&A arbitrations involve accounting, forensic or corporate finance aspects, sometimes in addition to valuation issues. In contrast, damages in shareholder disputes most often deal with the correct valuation of a specific business. From a damages point of view, methodical valuation matters dominate the controversy.

Therefore, M&A and shareholder arbitrations are discussed separately.

M&A disputes

Usually, neither sellers nor buyers intend for a conflict relating to M&A transactions. Nevertheless, conflicts are more common than generally thought because of the high purchase prices involved and the economic impact associated with these one-off transactions, and the dramatic evolution of the economics of a deal in a volatile and disrupted marketplace. Moreover, these disputes can be of

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critical economic importance for the parties involved. The authors have witnessed purchase price adjustments of more than 50 per cent, worth billions of euros, during their practical activity.

Post-contractual M&A disputes often cannot be prevented. There is an abundance of issues that may lead to a dispute in the course of a transaction: an incorrect purchase price adjustment, a dispute concerning the calculation of an earn-out or a breach of representations and warranties are all familiar to most M&A experts. However, cases such as breaches of exclusivity, directors' and officers' liabilities, an 'unlawfully flattering' business plan or the non-disclosure of decision-relevant information are more likely to be themes to which some may not have been exposed. Particularly prevalent during a time of economic distress, the authors have witnessed an increase in claims for failures to close a transaction, typically through the enforcement of a material adverse change clause.

To structure the most frequent types of M&A disputes, a clustering by time of occurrence (before and after signing or closing) and by potential issues is provided below. Generally, M&A disputes can be structured as follows:

- pre-signing issues that require either forensic investigations, accounting analysis or hypothetical valuations (or any combination thereof);
- issues that are attributable to the period between signing and closing the transaction, which deal with investigative or valuation questions; and
- post-closing related issues that are related to valuation and accounting.

SIGNING		CLOSING	
• Breach of representations and warranties • Hidden material information • Breached exclusivity or letter of intent	• Hidden material information • Failure to close the transaction • Material adverse change	• Purchase price adjustments • Earn-out dispute • Management misconduct • Solicitation of customers or employees	
Investigation, accounting or 'hypothetical' business valuation issues	Investigation and valuation issues	Accounting and valuation issues	

The expertise of the quantum expert analysing the facts underlying the dispute and determining the damages might differ for each issue. A flawed purchase price adjustment or the violation of a balance sheet warranty can be identified relatively easily and documented on the basis of closing accounts, financial data, financial statements and due diligence documents. In cases of suspected balance

sheet manipulation, fraud or an ‘unlawful sugar-coated’ business plan, however, the evidence is much harder to find. In this category of damages, most often forensic email reviews and interviews of key personnel are required in addition to the regular data analysis. For example, the email from an accountant to a colleague or the thoughtless statement of an operating manager have been the sought-after evidence for purchase price reductions worth millions of euros.

The success of a claimant in any arbitration not only depends on whether the claimant is able to expose and prove the facts justifying the claim, but also how the often interdependent claims are dealt with. In contrast to most other areas of arbitration, M&A disputes often involve several claims that might be financially interdependent. For example, an incorrect balance sheet guarantee might also affect the purchase price adjustment claimed, the earn-out adjustment and the allegation that not all relevant information was disclosed. The interdependencies between the claims should be carefully analysed, so as not to award the same effect twice or more.

The fact that not all price-relevant information was provided during the due diligence phase is especially sensitive. It could lead to a situation in which the buyer claims to have been wilfully – thus intentionally – deceived by the seller. In many jurisdictions, such a claim enables the buyer to lever out contractually agreed liability limitations of the purchase agreement.

Proof of damages in practice

The fundamental objective of every damage assessment is to restore the injured party, that is to say, put them in the position they would have been in without the injuring event. However, this relatively simple principle of damage determination must be adjusted depending on the jurisdiction and the underlying purchase agreement. And these adjustments may be relatively complicated in practice.

M&A damage quantification – often misunderstood

If an M&A-related dispute has occurred, there is not only the need for evidence, but there is also the question of how to quantify the compensation. If, for example, a provision was omitted in the balance sheet, even some experienced litigators still believe that the damage represents ‘only’ the shortfall in the account balance – leading to a euro-for-euro indemnity. For example, if a provision was omitted amounting to €1 million, it is quite often seen in practice that claimants claim exactly the same amount as damages. However, in some jurisdictions, some provisions might not even have a full future cash flow effect because of prudence principles. Moreover, the provision might be influenced by interest rate effects, tax effects, interdependent damages and (overlooked) mitigations. These effects can

quickly accumulate to deviations of plus or minus 40 per cent or more, compared with the simplified euro-for-euro approach. Thus, not only when confronted with valuation-related issues, but also with contested accounting errors and high-impact breaches of balance sheet representations and warranties, it is advisable to opt for a more precise approach to quantify damages.

The most commonly used form of the damage assessment is the ‘differential method’, applying the widespread ‘but for’ theory in damage calculation. It represents the actual situation (including the damage) compared with the counterfactual (without damage). The difference in value between the two financial situations represents the damage.

For larger disputed amounts, it is advisable for buyers and sellers to verify whether the damage should be calculated applying the ‘differential method’. If confronted with larger indemnifications that affect more than one year, the but-for analysis is most often the preferable approach because of its increased accuracy. For indemnifications that are either smaller in size or are limited to one (accounting or tax) period, an adjusted euro-for-euro approach could be advisable. This adjusted approach looks for additional financial implications that are considered in isolation, without the need for the differential method.

Financial statements might not be 100 per cent accurate

In M&A arbitrations, it is often asserted by the respondent that the underlying financial statements are audited and, therefore, the amounts stated in these financial statements must be correct. This is a common misunderstanding. Financial statements are generally deemed to provide the stakeholder (e.g., investor or creditor) with a ‘true and fair’ view or a faithful presentation of the relevant financial situation of a company. Financial statements are described as showing a ‘true and fair view’ when they are free from material misstatements and faithfully represent the financial performance and position of an entity. However, the interpretation of what constitutes a material misstatement of a single balance sheet item in an M&A arbitration might be different from an auditor’s entity perspective.

For practical reasons, auditors have to rely on a risk-based auditing approach that applies statistical sampling. Audits are neither designed nor are they intended to scrutinise each position of the set of financial statements every year. Consequently, auditors have defined thresholds, for example, with regard to total assets and revenues. Up to these thresholds, misstatements in the financial statements are not considered ‘material’. This assumes already that other mistakes have not even been identified. However, for a one-time M&A dispute, the thresholds

of the controversial parties might be different from those of an audit. This supports our conclusion that a euro-for-euro compensation should be treated with even more caution if based solely on the information in financial statements.

Fortune and misfortune of purchase price adjustment mechanisms

Corporate transactions are frequently associated with very material purchase price payments. Therefore, it is understandable that both buyers and sellers often agree to adjust the purchase price on the date of economic transfer given the actual financial situation. This is done by means of contractually agreed purchase price adjustment mechanisms. In theory, purchase price adjustment mechanisms should include several interdependent key financial parameters such as net debt, net working capital, investments, capital expenditures and off-balance sheet items to cover significant price-related aspects up to the economic transfer date. In practice, the parties frequently agree on a simplified purchase price adjustment mechanism for the sake of a reduction in complexity. This simplified purchase price adjustment might be limited, for example, to the net financial debt and selected items of the working capital. This simplification comes at a price: it allows the shrewd seller as well as the price-conscious buyer to influence the purchase price payable and to open a discussion for a price adjustment, depending on the party that prepares the transaction accounts.

No financial statement is free of subjective assessments by the party who prepared the financial statement. Allegedly 'aggressive' valuation assumptions or asserted still tolerable inaccuracies accepted by auditors might give rise to subsequent purchase price claims. With full access to all information about the transaction object as well as with updated knowledge since the last financial statement was prepared, many buyers come to different conclusions on the value of the acquired target than at the time of the signing of the purchase agreement. However, even sellers can use simplified purchase price adjustment mechanisms to their advantage (e.g., when they use accounting discretion in the preparation of the transaction financial statements).

When a 'locked box' is not really locked

In general, the economic transfer of an M&A target takes place with the closing. However, given that the closing occurs weeks or months after the financials have been analysed and after the purchase price has been agreed, an adjustment of the purchase price is often incorporated in the purchase agreement. This adjustment of the purchase price should reflect the economic changes that have occurred

between the last reference date underlying the purchase price basis and the closing. Unfortunately, these purchase price adjustments are a frequent source for disputes.

The 'locked box mechanism' (a price mechanism that is meant to avoid purchase price adjustment disputes) is regularly used in a sellers' market. Given the scarcity of attractive M&A targets, the sellers aim to reduce their risk of price adjustment disputes with the locked box mechanism. With this mechanism, the economic transfer of ownership takes place at a point in time in the past: most often, the date of the last audited financial statements is chosen for practical reasons. Given that the past financials rarely change, in theory, the locked box mechanism should erase all purchase price adjustment disputes.

However, what is intended not to be adjustable, and thus to avoid conflicts, will often be diluted for other sub-goals. Generally, 'no leakage' clauses and other adjustments might dilute the locked box mechanism allegedly preventing cash outflows until the actual transfer date. Consequently, transactions might be labelled as 'locked box' but still be disputable. Adjustments to the locked box mechanism are often an invitation for a contestation.

Purchase price multipliers – when damages soar

Purchase price multiples have a special status in M&A disputes. If, for example, the damage relates to the normalised earnings before interest and taxes (EBIT) or earnings before interest, taxes, depreciation and amortisation (EBITDA), which would be the basis for the purchase price derived by a EBIT/EBITDA multiplier, then the question arises whether the damage is to be compensated only once or several times (equal to the EBIT/EBITDA multiplier). This is an interesting question, and not only from a financial perspective. A remarkable leverage effect for the buyer can be noted if the data is able to support the reimbursement of damages based on a multiplier. Even relatively minor EBIT/EBITDA adjustments might suddenly be followed by large compensations. Therefore, each identified potential adjustment needs to be analysed and assessed as to whether it affects the long-term profitability of the business, and thus should be included in a multiplier analysis. Alternatively, it may comprise a one-off effect (e.g., for only one specific period). Although an ongoing reduction in profitability or lowered growth assessment usually affects a multiplier calculation, a unique failure of a balance sheet treatment might most often not. In general, it can be concluded that a recurring financial impact (e.g., recurring customers that were lost but have still been included in the business plan) might be claimed several times, whereas one-time effects, such as a neglected non-recurring provision, should be claimed only once.

Shareholder disputes

There are a number of different types of cases in which evidence of the valuation of shares is disputed; for example, the termination of shareholder agreements, compulsory ‘squeeze-outs’ of minority shareholders, going private transactions, takeover bids by insiders, related party transactions and corporate restructurings in which shareholders have dissent right, often end in contentious proceedings about the correct valuation of a certain company or a certain stake in this company. Often, shareholders are compensated with reference to market value or fair (market) value. What may sound like a straightforward task turns out to be highly controversial in practice.

Differences most often stem from three areas. First, the meanings of ‘market value’, ‘fair value’ and ‘price paid’ are often confused with each other. Second, there are several different valuation approaches that might or might not come to similar values. Third, adjustments of the values derived by a certain methodology might be needed to reflect the individual circumstances of each specific case.

Market value versus fair value versus price paid

There often seems to be confusion regarding the term ‘market value’.² Unfortunately, it is used quite inconsistently within the appraisal profession, as well as in academic books. Therefore, it is not surprising that this confusion spills over to shareholder arbitrations.

In general, a market value reflects the economic concept of an equilibrium price in a perfect market. It ignores influences on prices resulting from imperfect knowledge, unusual circumstances or the specific situations of the buyer or seller. According to the International Valuation Standards (IVS), which form a foundation of international valuation best practice, ‘market value’ is defined as ‘the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm’s-length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion’.³ The market value of an asset will reflect its

2 International Financial Reporting Standards, for example, generally define ‘market value’ as ‘fair value’. The International Private Equity and Venture Capital Association (IPEV) uses the term ‘fair value’ in a way that is essentially equivalent to ‘market value’. IPEV Guidelines, December 2018, Section 1. The definitions of ‘market value’ and ‘fair market value’ are often very similar, and can generally be considered to correspond to each other for the purposes of this discussion.

3 International Valuation Standards, IVS Framework, 2017, para. 30.1.

highest and best use.⁴ Market value requires any advantages or disadvantages that would not be available to, or incurred by, market participants generally to be disregarded.

In contrast, a fair value reflects ‘the estimated price for the transfer of an asset or liability between identified knowledgeable and willing parties that reflects the respective interests of those parties’.⁵ The IVS has retitled ‘fair value’ as ‘equitable value’ in this context to avoid confusion with other definitions of fair value, as well as the confusion alluded to above between ‘fair value’ and ‘market value’, as well as ‘fair market value’. ‘Fair value’ is a broader concept than ‘market value’. In many cases the value that is fair between two parties will equate to that obtainable in the market⁶ but there can be cases in which the assessment of fair value requires adjustments from the market value and vice versa. For example, the price that is fair for two shareholders in a non-quoted business may mean that the price is fair between them, but it could be different from the price that might be obtainable in the market.⁷ Fair value also necessitates taking into account items that have to be disregarded in the assessment of market value, such as synergies not available to all market participants.

Finally, the price actually paid might be different from the market value and the fair value because of negotiation skills, time pressure and liquidity needs, among other things. It is for good reasons that there is a famous quote from the star investor Warren Buffett that reads: ‘Price is what you pay; value is what you get.’⁸

Thus, to increase transparency, arbitrators and experts need to analyse and determine the basis for the potential compensation, and if and how it has to be adjusted to represent the correct valuation perspective.

Valuation approaches

There are a number of methods that can be used to derive the value of a business or asset. Different valuation methods often generate slightly differing results. Thus, the matter of the valuation method is an important decision for the quantification of damages in shareholder arbitrations. Arbitrators might be confronted with differing results stemming from different valuation methods. Then, they

4 *ibid.*, at para. 30.4.

5 *ibid.*, at para. 50.1.

6 *ibid.*, at para. 50.3.

7 *ibid.*, at para. 50.4.

8 Wiley: Warren Buffett Quotes (without dates), <http://eu.wiley.com/WileyCDA/Section/id-817935.html> (last accessed 13 September 2022).

must decide which method they prefer. If the range of the values derived by different methods is wide, it is important to consider what weight or importance to attribute to each method.

The possible methods can be categorised into three overall approaches:

- market approach (e.g., active publicly traded stock, recent transactions of the company in focus and recent observable transactions in substantially similar companies);
- income approach (e.g., discounted cash flow (DCF) method); and
- cost approach (e.g., net asset values and reproduction values).

Each of these overall valuation approaches includes different detailed methods of application. The goal in selecting a specific valuation method for a damages assessment is to find the most appropriate method under the particular circumstances of a specific case. This also depends on the information available, the profitability of the company and other specifics of the case at hand.

For the quantification of damages in shareholder disputes, there might be established nuances in the valuation profession. For example, for squeeze-outs in Germany, the courts have shown a tendency towards the higher of the market approach (i.e., the share price) and income approaches (using the DCF or earnings value method). In other areas of business valuations, the preferable method in most cases is seen as the market approach.⁹ For example, transaction prices on active markets are considered as reflecting the market value. However, in the event that no transaction price or no prices of similar assets or liabilities are available – which is quite often the case because of the unique nature and individual specifics of the business or asset – the income approach is often the appropriate method. Finally, if even the income approach might not be applicable (e.g., for continuously non-profitable entities), the cost approach should usually be considered.

Hereafter we discuss the peculiarities of the three valuation approaches in more detail.

⁹ The IPEV, for example, has issued more detailed guidelines, which set out recommendations intended to represent current best practice on the valuation of private equity and venture capital investments. Although the IPEV is not related to disputes or shareholder arbitrations, it provides a guideline from an industry that relies on the buying and selling of enterprises and, consequently, their appropriate valuation. According to the IPEV Guidelines, the valuer should be biased towards market-based measures of risk and return to derive fair values – see IPEV Guidelines, December 2018, Sections 1 and 2.

Market approach

The IVS state:

The market approach provides an indication of value by comparing the asset with identical or comparable (that is similar) assets for which price information is available.

...

When comparable market information does not relate to the exact or substantially the same asset, the valuer must perform a comparative analysis of qualitative and quantitative similarities and differences between the comparable assets and the subject asset. It will often be necessary to make adjustments based on this comparative analysis. Those adjustments must be reasonable and valuers must document the reasons for the adjustments and how they were quantified.¹⁰

The IVS perfectly summarise the basic concept of the market approach. Moreover, they indicate to the expert that further adjustments might be needed.

Income approaches such as the DCF method

The DCF method is the valuation method most commonly used to evaluate international investments¹¹ and is frequently applied in business valuations.¹² Income-based valuation approaches, such as the DCF method, have also become increasingly popular for the quantification of damages in international arbitrations.¹³

There are various methods of using DCFs in valuation. All DCF methods involve calculating the value of future cash flows at a certain reference date – this is known as ‘present value’. Present values are derived by discounting the cash flows to a reference date allowing for a specified discount rate. Discount rates used to derive the compensation reflect, especially (1) the time value of money associated with the cash flow of a future period, and (2) the riskiness of the cash flows to be discounted.

¹⁰ International Valuation Standards, IVS Framework, 2017, paras. 20.1 and 20.5.

¹¹ Tom Keck, Eric Levensgood and Al Longfield: ‘Discounted Cash Flow analysis in an international setting: A survey of issues in modeling the cost of capital’, *Journal of Applied Corporate Finance* (Autumn 1998, Vol. 11.3), p. 82.

¹² The discounted cash flow method represents the so-called income approach: ‘The income approach is frequently applied in the valuation of businesses and business interests’, International Valuation Standards, IVS Framework, 2017, para. 60.1.

¹³ PricewaterhouseCoopers: ‘2015 – International Arbitration damages research’, p. 3, <https://www.pwc.com/sg/en/publications/assets/international-arbitration-damages-research-2015.pdf> (last accessed 13 September 2022).

The undisputed advantage of the DCF method is its flexibility not only for shareholder disputes but also for many other valuation settings. In cases of privately held companies, exotic structures or debt instruments, it is often the preferred option for quantum experts. Despite its inherent subjectivity,¹⁴ the DCF model might be the only reasonable solution for many arbitrations when market-based techniques are inappropriate or not available.

Cost approaches such as net asset value

This methodology involves deriving the value of a business by reference to the value of its net assets on the current cost to purchase or replace an asset. The cost approach is an important tool for determining the fair value of a property or asset, particularly if reliable data relating to sales of a comparable asset is not available and when the asset does not directly produce an income stream. Furthermore, the cost approach is more applicable when the asset could be exchanged or substituted for another asset. On the other side, this valuation methodology is not appropriate if the company is realising an adequate return on its assets and its value derives predominantly from its income streams.

Adjustments to values derived by certain valuation approaches

When using a variety of valuation methodologies, it is important to consider that the values derived from differing methods may need to be adjusted to enable comparability. Some valuation methodologies enable a direct valuation as they are directly related to the company to be valued (e.g., price of recent transactions in shares in the company). Others allow for specific factors in their calculation to be adjusted (e.g., DCF and earnings of underlying business), whereas others assume that the subject of the valuation is identical to a group of comparable companies. Adjustments may be required to reflect the possibility that this group, although comprising the most comparable companies available, still remains incomparable in key respects.

14 IPEV Guidelines, December 2018, para. 3.7, p. 30.

Hereafter, we highlight the most popular adjustment concepts that are usually disputed in shareholder arbitrations, such as the illiquidity discount and the control premium:

When using an income approach it may also be necessary to make adjustments to the valuation to reflect matters that are not captured in either the cash flow forecasts or the discount rate adopted. Examples may include adjustments for the marketability of the interest being valued or whether the interest being valued is a controlling or non-controlling interest in the business.¹⁵

In general, the effects of a discount or a premium should ideally be included in the estimation of future cash flows. However, there might be situations in which the cash flows stemming from these discounts or premiums can hardly be adjusted because of a lack of information. Then, serving as a proxy, a discount or premium is often applied as a percentage multiple to the final estimate of the equity value. Moreover, there can sometimes be the necessity to make use of both, applying sequentially a premium (e.g., for control) but to also consider a discount (e.g., for illiquidity).

Illiquidity discount

When valuing an asset that will be bought and sold via a private sale, it is common to consider the extent to which the investment is liquid¹⁶ or marketable. Market liquidity risk relates to the inability of trading at a fair price with immediacy.¹⁷ Liquidity in a market ensures that an asset can be sold rapidly, with minimum transaction costs and at a competitive price.¹⁸ Consequently, liquidity risk is theoretically applicable to most equity investments not listed on an organised exchange or traded in an active over-the-counter market.

15 International Valuation Standards Council: IVS Framework, 2017, para. 60.9.

16 The concepts of liquidity and illiquidity refer to the degree of ease and certainty with which assets can be converted into cash.

17 European Central Bank: Liquidity (Risk Concepts) – Definitions and Interactions (Working Paper Series, No. 1008, February 2009), p. 18, <https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1008.pdf> (last accessed 13 September 2022).

18 *ibid.*, at p. 14 f.

If an asset is not liquid, it is appropriate to consider to what extent its value needs to be adjusted.¹⁹ In business valuation, this aspect is referred to as ‘illiquidity discount’ or sometimes as ‘marketability discount’ or ‘fungibility discount’:

*Both the theory and the empirical evidence suggest that illiquidity matters and that investors attach a lower price to assets that are more illiquid than to otherwise similar assets that are liquid.*²⁰

Marketability discount studies exist for both minority and majority interests. For minority interests, restricted marketability can usually be observed through two different lines of studies: restricted stock and initial public offering (IPO). While restricted stock studies compare the prices of listed companies that have been paid in private placements with that of stock market prices, IPO-based studies compare the value of minority shares of companies with that paid in an IPO. However, it should be noted that selection bias and other biases inherent in these studies need to be considered before applying an illiquidity discount.

Illiquidity discounts for majority interests can be observed from studies that compare the transaction multiples for majority stakes for private and public listed companies and the respective discounts considering systematic differences between the different groups of companies and different company sizes.

The marketability discount is applied whether or not the equity interest is a controlling or non-controlling interest. However, individual characteristics of the legislation that might influence the specific valuation principles are to be considered as well. For example, illiquidity and marketability discounts are not considered in German court cases.

19 Shannon P Pratt and Alina V Niculita: *Valuing a Business: The Analysis and Appraisal of Closely Held Companies* (Fifth edition, McGraw-Hill, 2007), pp. 416–57.

20 Aswath Damodaran, ‘Marketability and Value: Measuring the Illiquidity Discount’, Stern School of Business, July 2005, p. 34, <https://pages.stern.nyu.edu/~adamodar/pdfiles/papers/liquidity.pdf> (last accessed 13 September 2022).

Control premiums and discounts for lack of control

These are applied to reflect differences between the unadjusted value underlying a certain valuation method and the subject asset with regard to the ability to make decisions.²¹ As an example, share prices of public companies usually reflect minority stakes and, therefore, shareholders generally lack control, having no ability to make decisions relating to the operations of the company. As such, when a value is derived from non-controlling shares but it is intended to reflect the controlling rights of a shareholder, a control premium may be appropriate. The value of controlling a firm lies in being able to run it better than the current decisive shareholders and to increase its own cash flows. Hence, Professor Aswath Damodaran of New York University's Stern Business School has concluded that: 'Consequently, the value of control will be greater for poorly managed firms than well run ones.'²²

First, it needs to be analysed whether the business plan assumptions (explicitly or implicitly) on which the valuation is based already include the premise of having control over a business. In such cases, further consideration of a control premium might be misleading. Similarly, a discount for lack of control would be appropriate if the disputed valuation relates to a minority issue and the minority shareholder would not be able to participate equally on the value of the future cash flows as reflected in the initial business plan.

Controversies arise as to how the control premiums, in particular the discount for a lack of control, are quantified in practice. Theoretically, they are calculated based on the cash flows attributable to control. However, in practice, control premium studies are often applied that compare the observed prices paid for controlling interests in publicly traded securities with the publicly traded price before such a transaction is announced. Examples can be found in studies, such as one by FactSet Mergerstat.²³ However, control premium studies have to be assessed critically. They may overstate or understate the effects resulting from

21 For example, anything less than 100 per cent of the shares leaves room for attacks by minority shareholders, more than 50 per cent is usually required for certain corporate actions and more than 25 per cent usually represents a blocking minority (e.g., 'Sperrminorität' according to the German Stock Corporation Act).

22 See Aswath Damodaran, 'The Value of Control: Implications for Control Premia, Minority Discounts and Voting Share Differentials', June 2005, p. 2, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=837405 (last accessed 13 September 2022).

23 The FactSet Mergerstat/BVR Control Premium Study is an online searchable database that generates empirical support for the quantification of control premiums – see www.factset.com/data/company_data/mergerscps (last accessed 13 September 2022).

synergies, competitive pricing or other individual specifics. Therefore, each transaction may have specific factors that affect its pricing, which means it needs to be examined critically before any conclusion is drawn.

Summary

As has been shown, the specific questions that arbitrators typically face in M&A arbitrations and shareholder arbitrations are diverging. M&A arbitrations often tend to incorporate several claims that might not be only valuation-related but also driven by accounting and investigative issues in dispute. One of the major difficulties is not to double-count the frequently interrelated claims. In contrast, shareholder arbitrations usually deal with very technical valuation questions, such as the appropriate valuation method and its correct adjustment to the specific case.

It can be assumed that the trend to exercise and enforce rights of purchase agreements, as well as shareholder rights, will increase further in the future. Because of the immense economic importance that accompanies many of these arbitrations, this consequence is more than understandable and should come as no surprise.

CHAPTER 29

Damages in Intellectual Property Arbitrations

Trevor Cook¹

Introduction

The party autonomy that is an especial feature of arbitration provides the parties and the tribunal with the freedom to determine the approach to be adopted to the issue of damages² in an intellectual property dispute. This contrasts with the general approach in litigation, in which the court must apply the law applicable to the contract in issue and the law or laws that apply to the various intellectual property rights in issue. The flexibility afforded to parties in arbitration provides an opportunity in international intellectual property disputes by allowing the parties in a submission agreement or in an arbitration clause to tailor the approach to be adopted by the tribunal in assessing damages by, for example, providing for a single applicable law for the assessment in place of many, providing an option to recover the defendant's profits as an alternative to the damage suffered by the right holder, or providing that punitive damages not be awarded. However, it also provides a challenge in those very types of intellectual property disputes that are particularly suited to arbitration – the multi-jurisdictional infringement disputes in which, on the face of matters, and absent guidance in the submission agreement, damages fall to be determined by reference to the different applicable laws that apply to intellectual property in different countries, an approach that risks unnecessarily complicating the assessment of damages.

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2 'Damages' in this chapter is meant to include any type of financial award received by the right holder, other than that of legal costs, and so would include not only damage as suffered by the right holder but also the profits secured by the infringer, where the law applicable to such assessment provides for their disgorgement.

These issues of applicable law are not a problem with a dispute that relates only to intellectual property in one country – the natural approach in such a case is to apply the law of that country, although there is nothing to stop the parties from taking the unlikely course of specifying another law. Similarly, disputes that arise under an arbitration clause in an intellectual property licence or other agreement, even when the territory of the licence includes many countries, present less of a challenge from this perspective than multi-jurisdictional infringement disputes that are the subject of a submission agreement, as the applicable law under which damages are most naturally assessed in the former case will generally be the proper law of the agreement itself.

There is a need for parties and tribunals in international arbitrations to be better informed about the variety of approaches to damages in intellectual property disputes adopted by different jurisdictions. This allows the identification of areas of similarity and of difference, and so will allow parties to tailor the most suitable approach to the assessment of damages, especially if a tribunal faces a situation that does not compel one single approach. Given the vast amount of scholarship and case law that already exists on the US approach to the issue of damages for the infringement of intellectual property rights, this chapter seeks in a small way to redress the balance by outlining, at a general level, the different approaches to the assessment of damages at an international level and under some of the legal systems in Europe.³ The chapter concludes with observations about certain approaches to the assessment of damages that are adopted in some jurisdictions but which, when applied in the context of an arbitral award, may give rise to issues of enforceability under the Convention on the Recognition and Enforcement of Foreign Arbitral Awards (the New York Convention).

Although this chapter focuses on matters of substantive law, it should be noted that different jurisdictions will also adopt different procedural approaches to the assessment of damages and that an arbitral tribunal is not constrained in the same way as a court would be as to which procedural approach it adopts. Arbitral tribunals have broad discretion on issues such as discovery and expert evidence, which, if not properly managed, can add significant delay and expense in connection with the assessment of damages. In addition, one can identify two other significant procedural issues specific to the assessment of damages.

3 For a thorough comparative treatment of damages for patent infringement see Thomas F Cotter, 'Comparative Patent Remedies: A Legal and Economic Analysis' (Oxford University Press 2013), which is supplemented by entries on the Comparative Patent Remedies blog at <http://comparativepatentremedies.blogspot.com/>.

One is the scope these assessments offer for bifurcation, by which a tribunal⁴ can determine damages in a separate stage of proceedings that are only initiated after there has been a determination as to liability. A bifurcation avoids the risk of wasting costs on extensive discovery and elaborate expert accounting evidence directed to quantum; if there is no liability, this exercise can be avoided. Although in litigation bifurcation can result in a delayed recovery should an initial finding of no liability be reversed on appeal, as most arbitration clauses or submission agreements do not provide for an appeal route, this should not be an issue.⁵

A related procedural issue can arise when the applicable law, as discussed below, permits the right holder to choose between an assessment of the damage that it has suffered as a result of the infringement and the benefit that the infringer has secured as a result of it. Both involve some measure of discovery on the part of the infringer, but whereas the former also involves discovery on the part of the right holder, the latter does not. Accordingly, the courts in some jurisdictions require that the right holder elect which approach it wants to adopt once liability has been established; however, because the right holder will have insufficient information on which to base that election, courts in some jurisdictions can order a limited amount of financial discovery before the right holder does so to enable it to make a more informed choice.⁶

4 Some national courts also take this approach. Both English and German courts bifurcate patent infringement disputes as between liability and quantum. The draft rules of procedure of the EU Unified Patent Court also envisage that assessing the amount of damages awarded to the successful party may be the subject of separate proceedings.

5 Indeed, in those jurisdictions that bifurcate the two, it is not uncommon for the parties, once liability is established, and either because what really mattered commercially was an injunction, or recognising the costs involved with a determination as to quantum, to settle this by negotiation, resulting in a relative dearth of reported case law on such determinations.

6 See *Island Records v. Tring International* [1995] FSR 560 (English High Court).

The TRIPS Agreement

An internationally recognised set of minimum standards in intellectual property, applying to most countries of the world, is provided by the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) of 1994, Article 45 of which addresses the issue of damages:

Article 45 – Damages

- 1. The judicial authorities shall have the authority to order the infringer to pay the right holder damages adequate to compensate for the injury the right holder has suffered because of an infringement of that person's intellectual property right by an infringer who knowingly, or with reasonable grounds to know, engaged in infringing activity.*
- 2. The judicial authorities shall also have the authority to order the infringer to pay the right holder expenses, which may include appropriate attorney's fees. In appropriate cases, Members may authorize the judicial authorities to order recovery of profits and/or payment of pre-established damages even where the infringer did not knowingly, or with reasonable grounds to know, engage in infringing activity.*

Thus, TRIPS requires that compensatory damages be available under the applicable laws of member nations of the World Trade Organization, and envisages that these are to be the primary financial remedy, but that innocence on the part of the infringer is a permitted defence to such an award, although in practice few legal systems show much sympathy to innocent infringers.

It also envisages that as an alternative to compensatory damages, the courts may order the recovery of the infringer's profits or payment of pre-established damages, even when there is innocent infringement. One assumes that these two approaches are intended, when they are both available, to be alternatives in any one case. However, TRIPS does not mandate either of them, and just as the remedy of an 'account of profits', as it is referred to in English law, is not available

in all countries,⁷ neither is the award of pre-established damages, such as ‘statutory’ damages, a form of financial relief that is more commonly encountered with copyright infringement.⁸

European approaches to assessing damages

Although national jurisdictions in Europe have widely differing approaches to, and traditions of, assessing monetary compensation for intellectual property infringement,⁹ a basis for harmonisation now exists and has started to emerge within the European Union by virtue of Article 13 of Directive 2004/48/EC on the enforcement of intellectual property rights,¹⁰ and the interpretations placed on this, by national courts in Europe and the Court of Justice of the European Union.

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- 7 Although US law in general also allows, as an alternative to the recovery of compensatory damages, recovery on an unjust enrichment basis in cases of infringement of intellectual property rights, it precludes this for infringement of utility patents (but not design patents, i.e., registered designs from a European perspective) by virtue of legislation in 1946 and 1952, the effect of which was confirmed by the US Supreme Court in *Aro Mfg Co v. Convertible Top Replacement Co*, 377 US 476, 507. This has been criticised – see, for example, C L Roberts, ‘The Case for Restitution and Unjust Enrichment Remedies in Patent Law’, ([2010] *Lewis & Clerk Law Review*, Vol. 14:12, pp. 101–32). For an authoritative review of the approach of US courts to the issue of compensatory damages in patent cases, see W C Rooklidge, M K Gooding, P S Johnson and N Krall, ‘Compensatory Damages Issues in Patent Infringement Cases – A Pocket Guide for Federal District Court Judges’ (Federal Judicial Center, 2nd edition, 2017).
 - 8 P Samuelson, P Hill and T Wheatland, ‘Statutory Damages: A Rarity in Copyright Laws Internationally, But For How Long?’ ([2013] 60 *J Copyright Soc’y USA*) (observing that although the United States provides for statutory damages for copyright infringement, Australia, France, Germany, the Netherlands and the United Kingdom do not, although the UK Intellectual Property Office in October 2020, when consulting as to the possible introduction of such a regime, noted that Canada, Israel, Malaysia and Singapore did).
 - 9 See, for example, Table 1 at p. 667 of S J H Graham and N Van Zeebroeck, ‘Comparing Patent Litigation Across Europe: A First Look’ ([2014] 17 *Stan Tech L Rev* 655). It should be noted that such variability, to a degree, is also a consequence of the different approaches that such jurisdictions take to the issue of discovery.
 - 10 Directive 2004/48/EC of 29 April 2004 on the enforcement of intellectual property rights (OJ L195 2.6.2004 p.16) (replacing by way of corrigendum the version published in OJ L 157 30 April 2004) and Statement by the Commission concerning Article 2 of Directive 2004/48/EC (OJ L94 13 April 2005 p. 37). Article 68 of the Agreement on a Unified Patent Court (OJ C 175, 20 June 2013 p. 1) is in similar terms.

Article 13 provides:

1. Member States shall ensure that the competent judicial authorities, on application of the injured party, order the infringer who knowingly, or with reasonable grounds to know, engaged in an infringing activity, to pay the right holder damages appropriate to the actual prejudice suffered by him/her as a result of the infringement.

When the judicial authorities set the damages:

(a) they shall take into account all appropriate aspects, such as the negative economic consequences, including lost profits, which the injured party has suffered, any unfair profits made by the infringer and, in appropriate cases, elements other than economic factors, such as the moral prejudice caused to the right holder by the infringement; or

(b) as an alternative to (a), they may, in appropriate cases, set the damages as a lump sum on the basis of elements such as at least the amount of royalties or fees which would have been due if the infringer had requested authorisation to use the intellectual property right in question.

2. Where the infringer did not knowingly, or with reasonable grounds know, engage in infringing activity, Member States may lay down that the judicial authorities may order the recovery of profits or the payment of damages, which may be pre-established.

This provision, representing a legislative compromise and couched largely in permissive, rather than prescriptive, terminology, cannot be said to be entirely clear as to the relationship between these various bases of assessment. In particular, as discussed below, presenting ‘unfair profits made by the infringer’ as a type of damage suffered by the right holder is a potential source of confusion as to whether the ‘unfair profits’ should be calculated wholly without reference to the actual damage so suffered. Unfortunately, the corresponding Recital 26 does little to assist except to make it clear, as it does in its final sentence, that the Article provides no mandate for damages (in the general sense), however assessed, to be punitive:

With a view to compensating for the prejudice suffered as a result of an infringement committed by an infringer who engaged in an activity in the knowledge, or with reasonable grounds for knowing, that it would give rise to such an infringement, the amount of damages awarded to the right holder should take account of all appropriate aspects, such as loss of earnings incurred by the right holder, or unfair profits made by the infringer and, where appropriate, any moral prejudice caused to the right holder. As an alternative, for example where it would be difficult to determine the amount of the actual prejudice suffered, the amount of the damages might be derived from elements

such as the royalties or fees which would have been due if the infringer had requested authorisation to use the intellectual property right in question. The aim is not to introduce an obligation to provide for punitive damages but to allow for compensation based on an objective criterion while taking account of the expenses incurred by the right holder, such as the costs of identification and research.

Thus Article 13(1) establishes the following four bases for assessing damages when the infringer knew, or ought to have known, that it was infringing: (1) ‘at least the amount of royalties or fees which would have been due if the infringer had requested authorisation to use the intellectual property right in question’; (2) ‘the negative economic consequences, including lost profits, which the injured party has suffered’; (3) ‘any unfair profits made by the infringer’; and (4) ‘in appropriate cases, elements other than economic factors, such as the moral prejudice caused to the right holder by the infringement’.¹¹

The first three of these four bases of assessment are met in most legal systems in one context or another and are each discussed further below.

‘At least the amount of royalties or fees which would have been due if the infringer had requested authorisation to use the intellectual property right in question’

If the right holder does not itself exploit an intellectual property right at all, or does not exploit it other than by licensing, there is no logical basis on which it can claim a loss of manufacturing or other profits from exploitation of the intellectual property and so, unless it can claim an account of the infringer’s profits or pre-established damages, it is limited to recovering royalties.¹² Even a right holder that does use intellectual property to protect its own sales may not

11 In Case C-99/15 *Christian Liffers/Producciones Mandarina SL et Gestevisión Telecinco SA* (EU Court of Justice, 17 March 2016), a copyright case, the Court held that claiming the amount of royalties or fees that would have been due if the infringer had requested authorisation to use the intellectual property right in question did not preclude the right holder from also claiming compensation for ‘moral prejudice’, a concept that appears to be popular in Spain, where it is also applied to patent cases.

12 This is why it is common in much infringement litigation for a right holder to join as a co-plaintiff an exclusive licensee that does exploit the right in issue.

be able to show that, but for the infringement, it would have captured all the infringer's sales, leaving it to recover royalties only on those that it could not have captured. Although unpaid royalties can be seen as a form of lost profit under Article 13(1)(a) for an entity that licenses out its patents, royalties are expressly treated as an alternative, under Article 13(1)(b).

Much has been written and many courts have opined on how to determine an appropriate royalty rate in any given case.¹³ In Europe, the primary approach of the English and German courts has been to use the rates set out in comparable licences, to the extent that these exist and can meaningfully be compared, as a starting point for a determination. The German courts have adopted the more generous approach, often applying an uplift of up to 100 per cent on a case-by-case basis to the royalty rate found in comparable licences to reflect the fact that most actual negotiations of royalty rates, unlike those notional negotiations envisaged by the courts after a finding of liability, concern rights that have not yet been held to be either valid or infringed by the activity in question. An 'infringer surcharge' should be distinguished, however, from a specific 'infringer supplement' applied as a flat rate in every case, which would probably constitute a penalty.¹⁴ English courts also recognise as an alternative, when there is no satisfactory comparable

13 The US approach established in *Georgia-Pacific Corp v. United States Plywood Corp*, 318 F. Supp. 1116, 1119 to 1120 (S.D.N.Y. 1970), modified and aff'd, 446 F.2d 295 (2d Cir. 1971) is well known internationally. However, it has been observed that the 'principal legal framework for determining a reasonable royalty – the Georgia-Pacific list of fifteen factors, including a hypothetical negotiation test – has been widely criticized as ambiguous, unworkable, inherently contradictory, and circular' in S Graham, P Menell, C Shapiro and T Simcoe, 'Final Report of the Berkeley Center for Law & Technology Patent Damages Workshop', 15 August 2016 (*Texas Intellectual Property Law Journal*, available at <http://ssrn.com/abstract=2823658> (last accessed 28 Sep 2022)).

14 See Case C-367/15 *Stowarzyszenie 'Oławska Telewizja Kablowa' v. Stowarzyszenie Filmowców Polskich* (European Court of Justice, 25 January 2017), a copyright case, holding that Article 13 of Directive 2004/48/EC did not preclude 'national legislation, such as that at issue in the main proceedings, under which the holder of an intellectual property right that has been infringed may demand from the person who has infringed that right either compensation for the damage that he has suffered, taking account of all the appropriate aspects of the particular case, or, without him having to prove the actual loss, payment of a sum corresponding to twice the appropriate fee which would have been due if permission had been given for the work concerned to be used.'

licence, the 'profits available' approach, involving an assessment of the profits that would be available to the licensee from the infringement, absent a licence, and apportioning them between the licensor and the licensee.¹⁵

'The negative economic consequences, including lost profits, which the injured party has suffered'

A convenient and, it is suggested, uncontroversial set of principles for assessing the lost profits suffered by a right holder that exploit an intellectual property right that has been found to have been infringed were set out in *Ultraframe (UK) Ltd v. Eurocell Building Products Ltd*,¹⁶ a decision of the English Patents Court:

- i) Damages are compensatory. The general rule is that the measure of damages is to be, as far as possible, that sum of money that will put the claimant in the same position as he would have been in if he had not sustained the wrong.*
- ii) The claimant can recover loss which was (a) foreseeable, (b) caused by the wrong, and (c) not excluded from recovery by public or social policy. It is not enough that the loss would not have occurred but for the tort. The tort must be, as a matter of common sense, a cause of the loss.*

15 See, for example, *Ultraframe (UK) Ltd v. Eurocell Building Products Ltd* [2006] EWHC 1344 (English Patents Court) at [47], point (viii), quoted below. As the licensee bears the greater risk, such apportionment should favour it, which has led to what has been called the '25 per cent rule' to describe the licensor's share of the available profits – see R Goldscheider, J Jarosz and C Mulhern, 'Use of the 25 per cent Rule in Valuing IP' ([2002] *Les Nouvelles*, p. 123), testing its factual underpinnings by reference to actual royalty rate data. See also KPMG, 'Profitability and Royalty Rates Across Industries: Some Preliminary Evidence' [2012], which concludes that reported royalty rates 'tend to fall between 25% of gross margins and 25% of operating margins'. In US litigation, the use of the '25 per cent rule of thumb' was criticised in *Uniloc USA Inc and Uniloc Singapore Private Ltd v. Microsoft Corp* (Federal Circuit, 4 January 2011) as 'a fundamentally flawed tool' because it did not differentiate between different industries, technologies or parties, but rather assumed the same profit split regardless of the size of the patent portfolio in question, or the value of the patented technology; but see C Binder and A Nestler, 'Valuation of Intangibles and Trademarks – A Rehabilitation of the Profit-Split Method After Uniloc' ([2015] *Les Nouvelles*, p. 203).

16 *Ultraframe (UK) Ltd v. Eurocell Building Products Ltd* [2006] EWHC 1344 at [47] (English Patents Court).

- iii) The burden of proof rests on the claimant. Damages are to be assessed liberally. But the object is to compensate the claimant and not to punish the defendant.*
- iv) It is irrelevant that the defendant could have competed lawfully.*
- v) Where a claimant has exploited his patent by manufacture and sale he can claim (a) lost profit on sales by the defendant that he would have made otherwise; (b) lost profit on his own sales to the extent that he was forced by the infringement to reduce his own price; and (c) a reasonable royalty on sales by the defendant which he would not have made.*
- vi) As to lost sales, the court should form a general view as to what proportion of the defendant's sales the claimant would have made.*
- vii) The assessment of damages for lost profits should take into account the fact that the lost sales are of 'extra production' and that only certain specific extra costs (marginal costs) have been incurred in making the additional sales. Nevertheless, in practice costs go up and so it may be appropriate to temper the approach somewhat in making the assessment.*
- viii) The reasonable royalty is to be assessed as the royalty that a willing licensor and a willing licensee would have agreed. Where there are truly comparable licences in the relevant field these are the most useful guidance for the court as to the reasonable royalty. Another approach is the profits available approach. This involves an assessment of the profits that would be available to the licensee, absent a licence, and apportioning them between the licensor and the licensee.*
- ix) Where damages are difficult to assess with precision, the court should make the best estimate it can, having regard to all the circumstances of the case and dealing with the matter broadly, with common sense and fairness.*

The application of principles (i) and (ii), above, has allowed a patentee to recover damages that exceed its turnover in the articles that actually infringe, by taking account of foreseeable consequences, such as loss of sales of spare parts and of servicing contracts, even after patent expiry.¹⁷ Principle (vi) is especially applicable

17 *Gerber v. Lectra* [1995] RPC 383 (English Patents Court); [1997] RPC 443 (English Court of Appeal).

in the not uncommon situation of a market in which there are competitors other than the infringer, when an assessment of the patentee's sales prospects absent the infringement has to be made.¹⁸

'Unfair profits made by the infringer'

As already observed, the obscure drafting of Article 13 of the enforcement Directive invites the question of what relationship, if any, exists between the lost profits that the injured party has suffered and the 'unfair profits' made by the infringer. Thus, although 'negative economic consequences, including lost profits which the injured party has suffered' are clearly a type of 'damages appropriate to the actual prejudice suffered by [the right holder] as a result of the infringement', it is less easy to see how, as a matter of logic, 'unfair profits made by the infringer' can properly be so characterised.

Article 13(1)(a) appears to treat both lost profits and unfair profits in the same way, while saying nothing about the relationship between them. Are they alternatives, or should they both be taken into account, and if so which one predominates? To conflate the two concepts, as does Article 13(1)(a), and to characterise a remedy for unjust enrichment as another type of damage suffered by the right holder, rather than as a separate and alternative basis for securing recompense from the infringer, is a recipe for confusion, as has indeed proved to be the

18 As in *Fabio Perini v. LPC* [2012] EWHC 911 (English Patents Court). Here the patentee had a 70 per cent market share that was coming under attack, and its loss of profit was assessed on the basis that it had a 65 per cent chance of selling a machine at €3.824 billion to practise the patented process, plus a 65 per cent chance of receiving income for ancillaries and after sales, and a 25 per cent chance of selling a more speculative machine at €2.157 billion, plus a 65 per cent chance of after sales.

case in practice.¹⁹ Thus, in its 2010 review of the national implementation of the enforcement Directive,²⁰ the European Commission commented in the Report that accompanied the Staff Working Paper:

*The main aim of awarding damages is to place the right holders in the same situation as they would have been in, in the absence of the infringement. Nowadays, however, infringers' profits (unjust enrichment) often appear to be substantially higher than the actual damage incurred by the right holder. In such cases, it could be considered whether the courts should have the power to grant damages commensurate with the infringer's unjust enrichment, even if they exceed the actual damage incurred by the right holder.*²¹

In its Staff Working Document, the Commission recognised that the recovery of profits unlawfully made by an infringer was a new concept in many EU Member States and that, in this respect, Article 13 was being implemented in a variety of different ways, some of which effectively capped such an assessment at the level of damage suffered by the right holder, which would render any assessment of the profits made by the infringer pointless. However, even without involving the Court of Justice, national courts of different EU Member States have moved towards accepting that these two bases for assessment should be regarded as alternatives, with neither having any bearing on the other.

This approach has been adopted by the English and German courts (which have long been able to provide for recovery on this basis) in assessing the profits to be recovered from those who infringe trademarks by selling repackaged goods parallel imported from elsewhere in the European Union without complying precisely with the somewhat technical requirements for so doing as established

19 For a fuller discussion of this issue see T Cook, 'Making sense of Article 13 of the Enforcement Directive: Monetary compensation for the infringement of intellectual property rights' in P Torremans (ed), *Research Handbook on Cross-border Enforcement of Intellectual Property* (Edward Elgar, 2014) and P Johnson, "'Damages" in European law and the traditional accounts of profit' in *Queen Mary Journal of Intellectual Property*, Vol. 3 No. 4, pp. 296–306.

20 Commission Report COM (2010) 779 final, 22 December 2010 and Commission Staff Working Document SEC (2010) 1589 final, 22 December 2010.

21 Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 'Application of Directive 2004/48/EC of the European Parliament and the Council of 29 April 2004 on the enforcement of intellectual property rights', SEC(2010) 1589 final, at [3.5], available at <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0779:FIN:EN:PDF> (last accessed 28 Sep 2022).

by the Court of Justice.²² The Court of Appeal of England and Wales,²³ reversing the judge at first instance but consistent with a decision of the German Federal Supreme Court in a similar case,²⁴ held that the damage caused to the trademark proprietor by the infringement had no bearing on a recovery based on determining the infringer's profits. In France, a decision of the Paris Court of Appeal in 1963 having excluded the possibility of claiming the profits of a patent infringer,²⁵ the law was changed expressly to permit it as a result of the enforcement Directive.²⁶ However, there was controversy initially as to quite how the profits made by the patentee should be determined, and whether or not the loss actually suffered by the patentee was of any relevance in making the assessment. Subsequent cases, however, have shown the French courts, when assessing the level of financial recovery on the basis of the profits of the infringer, doing so without any reference to the actual loss suffered by the patentee.²⁷

As recovering the infringer's profits becomes a more popular approach, the courts are starting to clarify some of the issues that it raises, such as how to apportion profits in patent cases when the infringing process is part of a larger one,²⁸ or

22 As established in Case C-348/08 *Boehringer Ingelheim KG and anr v. Swingward Ltd* (European Court of Justice, 26 April 2007).

23 *Hollister Incorporated v. Medik Ostomy Supplies* [2011] EWPCC 40, [2012] EWCA 1419. In so holding, the English Court of Appeal, while observing that the scope of Article 13(1) of the enforcement Directive was 'not entirely clear' observed: '[T]he Community legislature may well have used the term "damages" in a broad sense to include both reimbursement of the right holder's lost profits and the return of profits made by the infringer, and that Member States must, through their judicial authorities, provide a right holder with a remedy against a defendant who has knowingly, or with reasonable grounds to know, engaged in an infringing activity, which remedy is appropriate to the prejudice suffered by the right holder and takes account of all relevant circumstances such as the profits the right holder has lost and the profits the infringer has made. Certainly I do not understand Article 13 to preclude the award of an account of the profits made by the infringer in such a case. Nor do I understand it to require a court undertaking an account of the profits made by the infringer to adjust that account by reference to the profits lost by the right holder.'

24 Case IZR 87/07 *Zoladex* (Bundesgerichtshof, 29 July 2009).

25 Paris, 4th chamber, 22 February 1963, Ann. P.I 1963, p. 377; TGI Seine, 3rd chamber, February 1964, JCP Ed. G, 1965, 14334.

26 Article L615-7 of the French Intellectual Property Code as amended by Act No 2007-1544 of 29 October 2007.

27 Colmar Court of Appeal, 1st civil chamber, 20 September 2011, Docket No. 10/02039, Jurisdata No. 2011-029869; PIBD 2012, No. 953, III, 6; Propr. industr., 2012, comm 11; Paris Court of Appeal 5th Division, 1st chamber, 7 November 2012 (*Quest Technologies v. SARL Distrisud*).

28 *Celanese International Corp v. BP Chemicals Ltd* [1999] RPC 203 (English Patents Court).

the infringing goods do not correspond to the inventive concept underlying the patent that has been held to be infringed,²⁹ and the extent to which the infringer's overheads may be deducted.³⁰

Constraints on enforcement of certain types of award as penalties

As discussed above, one important advantage of arbitrating international intellectual property disputes is that the parties can specify in their arbitration agreement a particular approach to the calculation of damages. Whatever approach the arbitral tribunal takes to the assessment of damages, it should be mindful of the issue of enforceability under Article V(2)(b) of the New York Convention, under which enforcement of an arbitral award can be refused if the recognition or enforcement of the award would be contrary to the public policy of the country in which enforcement is sought. There is thus a concern that the enforcement of an award that can be characterised as a penalty, for example, because it has been enhanced on grounds of 'wilful' infringement, may not be enforced in a country that does not allow for penal awards of damages, even if the award is in accordance with the applicable law as chosen by the parties. Although this concern is real and should be addressed, one should perhaps not overstate it as, in practice, certain jurisdictions that have a 'rule' against penalties have not necessarily been prepared, at least in relation to contractual penalties, to characterise it as a rule that is so fundamental as to constitute 'public policy' for the purposes of Article V(2)(b) of the New York Convention.³¹

29 *Design & Display Limited v. 000 Abbott & Anr* [2014] EWHC 2924 (IPEC), [2016] EWCA Civ 95 (English Court of Appeal).

30 *Hollister Incorporated v. Medik Ostomy Supplies* [2011] EWPC 40, [2012] EWCA 1419 (English Court of Appeal); *Design & Display Limited v. 000 Abbott & Anr* [2014] EWHC 2924 (IPEC), [2016] EWCA Civ 95 (English Court of Appeal), in both of which the English Court of Appeal extensively cited *Dart Industries Inc v. Decor Corp Pty Ltd* [1994] FSR 567 (High Court of Australia).

31 *Amaltal Corporation Ltd v. Maruha (NZ) Corporation Ltd* (New Zealand Court of Appeal, 11 March 2004), applied in *Pencil Hill Limited v. US Citta di Palermo S.p.A.* (English High Court, 19 January 2016).

CHAPTER 30

Damages Relating to Environmental, Social and Governance Issues

Colin Johnson, Jana Lefranc and Joseph Kirby¹

Environmental, social and governance (ESG) is a topic of increasing relevance and importance in the assessment of damages in international arbitration. These three issues together represent an organisation's commitment to sustainability and corporate responsibility. This chapter considers the impact of these issues on damages, particularly the impacts on valuation from an investor's point of view, as what investors are willing to pay for a business determines its value and there is increasing evidence that ESG focus by companies affects corporate value and investment returns.²

So far the largest focus, given climate change concerns, is on E for environmental. This chapter therefore pays particular attention to the impact of environmental issues on damages. Specifically, this chapter explains some of the issues that arise relating to ESG when calculating damages.

As the chief financial officer of Ontario Teachers, one of the world's largest pension funds, has explained: 'Climate change and business valuations are inextricably linked. When determining the value of a business, one must consider all the risks and opportunities, of which climate change is one.'³

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2 See, e.g., 'The impact of ESG and corporate culture on company performance', Cornell University, BusinessFeed (24 August 2021), available at <https://business.cornell.edu/hub/2021/08/24/impact-esg-corporate-culture-company-performance/>.

3 Accounting for Sustainability (A4S), 'Essential Guide to Valuations and Climate Change', Section 1: Introduction, p. 5, available at <https://www.accountingforsustainability.org/en/knowledge-hub/guides/valuations.html> (last accessed 5 October 2022).

We give an overview, below, of the relevance of ESG issues in a damages context and then discuss how ESG-related considerations may be reflected in the assessment of a damages award. First we explain how, in principle, the assessment of damages may incorporate relevant ESG issues, then we discuss the issue of the level of ESG-related disclosure that might be relied on in practice. Finally we discuss practical ways to consider ESG issues in line with the Accounting for Sustainability framework, which is described further below.

Relevance of ESG issues to damages

ESG issues, particularly environmental ones currently, can be germane to the assessment of damages in two primary ways. The first is a direct claim where the basis of the damage is itself related to ESG, while the second relates to claims in which ESG-related factors are relevant to the assessment of damages even though the issue in dispute is not directly related to ESG considerations.

Examples of the first category (i.e., cases in which the loss arises from breaches of environment-related matters) would be seeking compensation from a company that breached its environmental obligations either under national legislation or under a contract.

One of the highest-profile cases in this area, relevant to arbitration because it shows the overall direction of travel on climate-related claims, is the German litigation case *Lliuya v. RWE*,⁴ a German lawsuit filed in 2015. A Peruvian farmer is seeking damages from the German energy firm, RWE, to contribute towards enhanced measures of protection against potential flooding from a glacier melt-fed lake in Peru. The extra protection is necessary because of increased levels of melting, said to be the result of rising temperatures and other aspects of climate change. Despite the low amount claimed of €17,000, the consequences of the case are potentially enormous if the court finds RWE liable. At the time of writing, the case is expected to move forward again in the near future.

Another example of potential matters in which damages directly relate to ESG are claims against companies for misestimating, misstating or hiding environmental risks and issues facing companies, causing a loss of value for shareholders and possibly others relying on the misleading information, such as final customers.

The second way environmental issues are germane is in relation to claims that do not directly involve environment-related issues as the basis for the claim, but where, nevertheless, environment-related considerations may be material to the assessment of damages. For example, in an investor-state dispute relating to the

4 Case No. 2 O 285/15, Essen Regional Court.

expropriation of coal assets, the expropriation of those assets itself may not have been the consequence of any environment-related considerations but, nevertheless, those issues may be relevant to the valuation of the asset in question and, therefore, relevant to damages.

This chapter focuses primarily on this second category of damages claims and discusses the possible means by which valuation and damages experts may reflect ESG-related considerations in their assessment of damages.

How ESG-related issues may be reflected in damages assessments

Damages assessments often involve a valuation – be it of a distinct business entity, or of a cash flow stream of one specific project that is part of a broader business. A number of valuation methods can be applied and each can be categorised as within an income approach, a market approach, or a cost-based (or asset-based) approach.⁵ The following paragraphs discuss how ESG-related considerations might be reflected under each of the three valuation approaches.

Regardless of the approach that is applied, valuation is essentially a forward-looking exercise that should reflect future expected cash flows and risk as at the date of valuation. ESG-related risks and opportunities can affect the level and riskiness of the future cash flows of a business in a number of ways and, hence, can affect its valuation. The challenge in reflecting these ESG-related risks and opportunities in corporate valuations has historically been threefold: (1) a lack of information about the effects; (2) a lack of consistency in how information is presented; and (3) a lack of consistency in how such information is used for valuation impacts. However, there is a drive to improve in each of these, as discussed further below: ESG-related disclosure generally requiring further information about ESG impacts; the use of ESG ratings, which will improve consistency in how information is presented; and the Accounting for Sustainability framework as one approach to improve consistency in use for valuation.

Income approach

Under the income approach, future cash flows are explicitly forecast for a certain period or assumed to grow at some rate of growth into the future. These cash flows are discounted at a rate that reflects the return investors require to compensate them for the time value of money and for the risks attached to those future

⁵ An overview of these approaches is set out in the chapter titled 'The Applicable Valuation Approach'.

cash flows. Thus, the income approach (regardless of the specific method that is employed) consists of two broad components: cash flows and discount rate. Each of these may explicitly reflect certain ESG-related considerations.

First, cash flow forecasts may explicitly reflect expectations regarding a number of ESG-related value drivers. For example, demand may be affected by customer perceptions of the degree to which an organisation is perceived to comply with its ESG-related obligations, and businesses that are well regarded in this respect may be able to achieve premium pricing for their products. The cost side of the business may also be affected through increased costs of compliance with future regulations or in terms of expected changes in the price of certain inputs, such as fuels and energy. In practice, the development of requirements for climate-related financial disclosure will also facilitate the forecasting of these effects on cash flow.

Second, to the extent that the business faces ESG-related risks, these may also be reflected in the discount rate – particularly if those factors cannot be readily reflected in the cash flow forecasts. For example, for coal-fired power plants or coal mines, there may be specific risks that can be included in the cash flow or, if not, the discount rate may need to be adjusted to reflect increased risk perceived by investors in such assets. At the time of writing, there is no consensus within the valuation community as to whether or how such additional risks should be reflected in the assessment of the discount rate – for example, whether a capital asset pricing model approach should be modified to reflect an environmental risk premium and, if so, how such a premium should be estimated. However, there is strong empirical evidence that investors do in fact require additional returns for investing in certain assets owing to changes in the perceived level of risk of those assets. For example, research by the Oxford Institute for Energy Studies shows that institutional investors required an average hurdle rate of return of between 10 per cent and 11 per cent to invest in wind or solar assets, between 15 per cent and 21 per cent to invest in oil assets and 40 per cent to invest in coal assets.⁶

Market approach

Under the market approach, rather than explicitly forecasting cash flows and calculating their net present value, transactions in comparable companies (be they transactions for shares in listed companies or shares in unlisted companies, or

⁶ Oxford Institute for Energy Studies, 'Energy Transition, Uncertainty, and the Implications of Change in the Risk Preferences of Fossil Fuels Investors' (January 2019), available at <https://www.oxfordenergy.org/publications/energy-transition-uncertainty-implications-change-risk-preferences-fossil-fuels-investors/> (last accessed 27 September 2022).

even prior transactions relating to the asset being valued) are used as a valuation benchmark. These prices are often scaled by reference to some metric (e.g., some measure of profit) to provide a relative value benchmark, referred to as a valuation 'multiple'. To ensure that this approach appropriately reflects the ESG value drivers of the business being valued, the selections of comparators and of the appropriate valuation multiple are often important.

When selecting comparators it is important to consider the extent to which their value is affected by ESG-related factors and to compare that with the asset being valued. It may be relevant to consider factors such as geography and applicable regulation, product mix, level of emissions, and so on. As is the case with the application of the market approach more broadly, there may be no perfectly comparable company with respect to exposure to specific ESG-related value drivers but, in combination with other market data and the judgement and reasoning of the valuer, the multiples of such companies may, nevertheless, provide a useful reference point in the valuation.

With respect to the selection of the multiple, it is important to consider how ESG considerations are likely to affect the future cash flow prospects of the business (and, hence, the valuation). A commonly used multiple is EV/EBITDA. To evaluate whether this is appropriate for companies with significant ESG-related value drivers, we need to consider whether and how those value drivers are likely to be reflected in the chosen metric – in this case, EBITDA. For example, if the company being valued is likely to face a higher or lower level of taxation than the average for the industry in which it operates as the result of government ESG-related incentives, then (all else being equal) each dollar of EBITDA earned by the company being valued will equate to a different level of free cash flow than for the average company within that industry. In this case, using the industry EBITDA multiple may overstate or understate the relative value of the company being valued.

Cost approach

Finally, when applying the cost (or asset-based) approach, a company is valued by reference to the value of its constituent assets and liabilities – sometimes its historical cost less depreciation or amortisation. In applying this approach to the valuation of a company heavily influenced by ESG considerations, it is important to consider whether the constituent asset values reflect expectations relating to their ESG-related value drivers as at the date of valuation. For example, the constituent assets of a coal mine that were purchased at a time when far greater use of coal was expected may not be reliable indicators of their value as these expectations are liable to change.

ESG-related disclosure

Task Force for Climate-Related Financial Disclosures

As stated above, one of the biggest challenges to fully incorporating ESG issues into a valuation is a lack of consistent information. However, there is an increasing focus on requiring disclosure, led by the Task Force for Climate-Related Financial Disclosures (TCFD). This aim of this project, formed in 2015 by the Financial Stability Board,⁷ is to improve and increase reporting of climate-related financial information. The TCFD first reported in 2017 and set out a set of voluntary disclosures, many of which are now becoming mandatory in different jurisdictions. For example, from April 2022, the TCFD reporting recommendations are mandatory in the United Kingdom for any company with 500 or more employees and a turnover of more than £500 million.⁸ The TCFD recommendations consist of four primary elements:⁹

- governance: an organisation's governance around climate-related risks and opportunities;
- strategy: the actual and potential effects of climate-related risks and opportunities on an organisation;
- risk management: the process used to address climate-related risks; and
- metrics and targets: the metrics and targets used to assess and manage climate-related risks.

In its latest report, in 2021, the TCFD noted that there are now official disclosure requirements for the European Union, the United Kingdom, Switzerland, New Zealand and Hong Kong, with 12 governments and dozens of central banks, supervisors and regulators formally having expressed support for the TCFD recommendations. More than 2,600 organisations have now endorsed them, an

7 The Financial Stability Board is an international body hosted and funded by the Bank for International Settlements that monitors and makes recommendations about the global financial system.

8 Department for Business, Energy and Industrial Strategy, 'Consultation response: Mandatory climate-related financial disclosures by publicly quoted companies, large private companies, and LLPs', October 2021, page 8, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1029354/tcf-d-consultation-government-response.pdf (last accessed 5 October 2022).

9 Task Force for Climate-Related Financial Disclosures (TCFD), Final Report, 'Recommendations of the Task Force on Climate-related Financial Disclosures' (June 2017), Figure 2 (page v) available at <https://assets.bbhub.io/company/sites/60/2020/10/FINAL-2017-TCFD-Report-11052018.pdf> (last accessed 27 September 2022).

increase of more than 70 per cent since the previous year.¹⁰ Overall, the TCFD noted that supporters now account for US\$25 trillion of market capitalisation coverage (almost double the previous year) and US\$194 trillion of financial company assets.¹¹ As the increased support for the TCFD reporting requirements demonstrates, whether through voluntary action or government action, some of the information required to evaluate climate risks is now becoming far more available, the first step to taking such risks fully into account in valuation.

ESG ratings

The second point noted above was a lack of consistency in how information is provided. This will be remedied, at least in part, by the ESG ratings now being issued by credit rating issuers. All three of the best-known credit rating agencies – Moody's, Standard & Poor Ratings and Fitch Ratings – have developed a detailed methodology in recent years for assessing ESG risks. Their credit ratings are well known, forward-looking opinions about the ability and willingness of debt issuers, such as corporations or governments, to meet their financial obligations on time and in full. They therefore provide a common and transparent language for investors and other market participants, corporations and governments, and are one of many inputs investors can consider as part of their decision-making processes.

The ability of a company to borrow money from the capital markets and the cost of borrowing are directly affected by its credit rating. A higher credit rating indicates a lower the risk for investors that the company would not meet its financial obligations, meaning that, all else being equal, the issuer will be able to borrow at lower interest rates. The credit rating, therefore, is linked to the interest expense incurred by the company, being a cash outflow, and thus the weighted average cost of capital of the company.

The ESG profile scores now provided by the agencies stand aside from the overall credit rating of a company though. ESG compliance does not necessarily correlate with creditworthiness and vice versa. The effects of ESG risks on credit ratings of companies, in fact, is rather low (according to Fitch Ratings Agency, the effect is less than 3 per cent).¹² Further, the current and future influence of ESG credit factors on creditworthiness can differ by industry, geography and entity.

10 TCFD, '2021 Status Report', October 2021, page 1, available at <https://www.fsb.org/wp-content/uploads/P141021-1.pdf> (last accessed 5 October 2022).

11 *ibid.*, page 2.

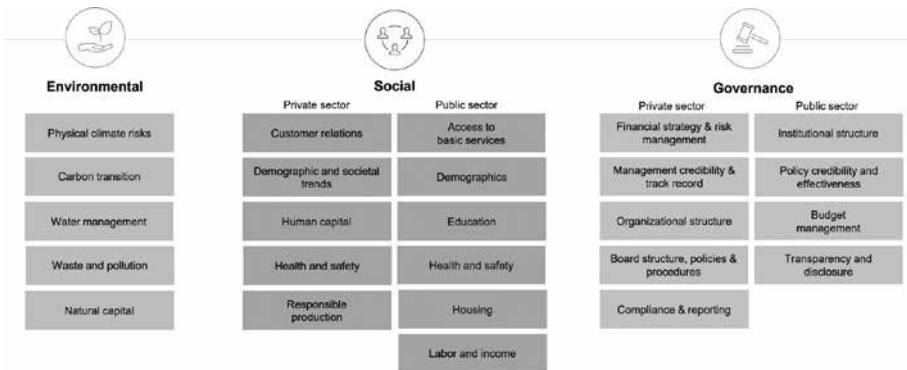
12 Fitch Ratings, 'Introducing ESG Relevance Scores for Corporates Marking the Intersection of Credit Risk and ESG Risks' (7 January 2019).

This is because a similar exposure to an ESG risk may be perceived differently by customers, employees or policy makers depending on their own socio-political background and, thus, may have different credit implications.

To give a practical example, an investor from a country with a low interest in environmental matters might consider that investing in a local company operating a production plant known for polluting local water resources to be less problematic than an investor from the United States would. The less environmentally conscious investor, therefore, might be willing to invest in the company, meaning that the water polluting events have less of an effect on that company's ability to borrow from capital markets than if its financing had been dependent on United States investors. These are some of the reasons, perhaps, that the ESG scores issued by credit rating agencies stand aside from the overall credit rating of a company and why ESG scores across different industries and geographies are not fully comparable.

What the ESG profile scores do achieve, though, is to improve the situation around disclosure and reporting of ESG matters in a more consistent and independent way, and they add to transparency in the investment decision-making process. To give an example of this, we consider Moody's approach:

- *Step one:* Moody's identifies an ESG score per sector based on how a specific sector is impacted by ESG credit relevant risks. The credit relevant risks that feed into this step are summarised in the figure, below.¹³



- *Step two:* Moody's then creates heat maps, which provide relative ranking of various sectors along the E and S classification of risks, particularly in respect of carbon transition, physical climate risks, water management, waste and pollution and natural capital. According to their ranking made in 2022,

13 Source: Moody's Investors Service.

the sectors with very high environmental risks were chemicals, coal mining and coal terminals, mining of metals, and several sectors within the oil and gas sector. The sectors with the highest social risks were coal mining and coal terminals, and tobacco and asset-backed securities, in the tobacco industry.¹⁴

- *Step three:* Moody's then assesses company specific information for each of the ESG credit relevant risks and sets up an issuer profile score for each category of risk for that company. Moody's will thus give the company a score for each of the E, S and G risks, ranging from one to five – one indicating a positive effect (i.e., there are material credit benefits) and five indicating a very highly negative effect. These issuer profile scores are then combined, backed with the sector scores, to assess the final credit impact score (CIS), which also ranges from one to five.

The CIS illustrates the credit impact of an issuer's ESG profile (as illustrated by its E, S and G profile scores) on its credit rating. These CIS scoring levels indicate the extent, if any, to which the credit rating of an issuer is different from what it would have been in the absence of exposure to the risks associated with the issuer's ESG characteristics. The ratings range from CIS-1, Positive, where ESG attributes are considered as having a positive material influence on the rating, to CIS-3, Moderately Negative, to CIS-5, Very Highly Negative in terms of the effect on the credit rating.

There is then the question of how to take into account the ESG ratings in the valuation of non-publicly traded companies for which ratings are not available. For example, should the discount rate be adjusted to reflect the ESG ratings of comparable companies when using the discounted cash flow method? Should the EBITDA (i.e., enterprise value to earnings before interest, taxation, depreciation and amortisation) multiple be weighted to reflect the ESG ratings of the comparable companies used to calculate the multiple under the market approach? Although the intuitive answer is 'yes', the practicality of having all necessary information to do so currently limits the feasibility of such an exercise, and although

14 Moody's Investors Service, Presentation to CFA Society France: 'ESG Methodology and Scores' (May 2022).

there are positive indications on linkage between good ESG ratings and higher valuations by firms such as McKinsey,¹⁵ it is still not something that can readily be directly converted into a quantifiable valuation impact.

Moody's itself mentions that assessing the credit impact of ESG consideration is challenging as it must often be inferred or estimated from multiple sources based on reporting that, as mentioned previously, is not yet standardised and consistent. The assessment inevitably involves a qualitative judgement.¹⁶

Finally, there is a further point to note regarding ratings. Fitch Ratings also uses a scale of one to five when classifying ESG risks and their effects on a company's credit rating. Nevertheless, the categories have different meanings. In Fitch Ratings, '1' stands for ESG risks that are irrelevant to the entity rating and irrelevant to the sector. Only ESG factors '4' and '5' are relevant to a company's credit rating.¹⁷ S&P Global Ratings classifies companies, in respect of ESG credit risk, on a scale from 0 to 100.¹⁸ The methodologies are therefore not unified. As a result, for a valuation practitioner, trying to establish a sample of comparable companies, represents a further challenge.

Taking all the above into account, the best approach to ESG ratings may be not to seek to directly convert an ESG rating into a valuation impact but to break down the rating into its component parts and use those as inputs into the evaluation framework set out below to help determine the likelihood and potential effects of specific risks.

15 McKinsey & Company, 'Diversity wins: How inclusion matters' (May 2020), p. 11, available at <https://www.mckinsey.com/~media/mckinsey/featured%20insights/diversity%20and%20inclusion/diversity%20wins%20how%20inclusion%20matters/diversity-wins-how-inclusion-matters-vf.pdf> (last accessed 5 October 2022). According to this McKinsey & Company study, in 2019 companies with an ethnically diverse employee base were 36 per cent more likely to financially outperform companies operating in the same industry than companies with a non-diverse employee base. Companies with a gender diverse employee structure are 25 per cent more likely to outperform industry peers with a non-diverse structure.

16 Moody's Investors Service, General Principles for Assessing Environmental, Social and Governance Risks Methodology, 19 October 2021, available to subscribers at http://www.moody.com/researchdocumentcontentpage.aspx?docid=PBC_1288235.

17 Fitch Ratings, 'Introducing ESG Relevance Scores for Financial Institutions' (February 2019), available at <https://www.fitchratings.com/research/non-bank-financial-institutions/introducing-esg-relevance-scores-for-financial-institutions-25-02-2019> (last accessed 27 September 2022).

18 S&P Global Ratings, ESG Evaluation brochure (2021), available at https://www.spglobal.com/_assets/documents/ratings/esg/esg_evaluation_brochure_digital.pdf (last accessed 5 October 2022).

Framework for incorporating ESG impacts in valuation

The final key problem in greater incorporation of ESG considerations into valuation after tackling the level and consistency of disclosure is the lack of a common approach to how to use information that is disclosed. The challenge in relation to the TCFD work (and, to some extent, ESG ratings) is that, although these require greater review and disclosure of ESG-related risks and opportunities, there is no clear consensus as to whether they result in a sufficiently comparable set of information across companies, sectors and geographies that can be reflected in corporate valuations, or how that information should be reflected. Therefore, other bodies are now seeking to develop standards that go further than the TCFD to increase comparability and use of ESG information. In particular, two such efforts are worth noting:

- The International Sustainability Standards Board (ISSB) was set up by the International Financial Reporting Standards Foundation in November 2021 with the objective of delivering a comprehensive global baseline of sustainability-related disclosure standards for investors and other capital market participants. At the time of writing, the ISSB has provided exposure drafts (which is part of its process prior to issuing a new standard) and received comments on those, and is due to issue standards for both climate-related disclosures and sustainability-related information.¹⁹ The ISSB's objective is to provide more 'consistent, complete, comparable and verifiable information including consistent metrics and standardised qualitative disclosures, to help assess how climate-related matters and the associated risks and opportunities affect', among other things, enterprise value.²⁰
- More directly, Accounting for Sustainability, in coordination with a very strong set of investors (including Omers, CDPQ, Ontario Teachers, NZ Superfund and others involved), set out an Essential Guide to Valuations and Climate

19 International Financial Reporting Standards (IFRS), 'Exposure Draft: [Draft] IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information', March 2022, available at <https://www.ifrs.org/content/dam/ifrs/project/general-sustainability-related-disclosures/exposure-draft-ifrs-s1-general-requirements-for-disclosure-of-sustainability-related-financial-information.pdf> (last accessed 5 October 2022).

20 IFRS, Staff paper (September 2022), Background to the 2022 Exposure Draft, available at <https://www.ifrs.org/content/dam/ifrs/meetings/2022/september/issb/ap4a-climate-related-disclosures-summary-of-comments.pdf> (last accessed 27 September 2022).

Change in 2021.²¹ This guide, discussed in more detail below, seeks to address a lack of consistency on how information is disclosed and to be used for valuation purposes and to facilitate a consistent approach.

Both these frameworks, and others, continue to be developed, as does the rating guidance. The Accounting for Sustainability guide is exactly that at this stage – guidance. However, there is a clear direction of travel, as there has been with the TCFD disclosures, towards greater disclosure, greater standardisation and greater quantification of risks, all of which will help to ensure greater use in valuations, as certain of the newer guidelines, in the same way as the TCFD initial guidelines, become mandatory over time. The Accounting for Sustainability guidance sets out five key steps in relation to ESG for valuation:

- identification of the company's key value drivers;
- assessment of the sources of climate change risks and opportunities;
- filtering for the assessed sources of climate change risks and opportunities for those that should be evaluated more closely for incorporation into the valuation;
- integration, where appropriate, of the risks and opportunities into the valuation models; and
- triangulation of the risks or opportunities (or both) and their related effects on the subject entity versus its peers, as well as reviewing the assessed effects over time as more information becomes available.

We discuss the guidance on each, below, as a potential framework to consider ESG issues within a valuation.

Identification of company's key value drivers

The key areas to consider are as follows:

- What are the core activities and what are they expected to be?
- What is the cost structure and what are the major production inputs?
- What is the operating environment in terms of competition and regulation?

21 A4S CFO Leadership Network, 'Essential Guide to Valuations and Climate Change', available at <https://www.accountingforsustainability.org/content/dam/a4s/corporate/home/KnowledgeHub/Guide-pdf/The%20A4S%20Essential%20Guide%20to%20Valuations%20and%20Climate%20Change.pdf.downloadasset.pdf> (last accessed 5 October 2022).

- Where does the business operate (including where its raw materials or inputs are from)?
- Who are its customers?

Assessment of sources of climate change risks and opportunities

This considers the different types of risks and opportunities that can affect a company, as well as mitigation for the same, and relates those to the company's key value drivers. Climate change risks and opportunities can be considered through a variety of lenses, seeking to capture all the different facets of the effects of climate change. These include:

- physical risks and opportunities (such as flood, wind and storm, temperature, water availability) – whether directly a risk to the company or indirectly via customers or the supply chain;
- marketplace changes – what products consumers want, effects on prices, acceptance of products and reputation caused by environmental and social issues;
- legal and policy changes – litigation, increased regulatory oversight, limitations and prohibitions, and charges such as carbon pricing;
- technology and substitution – non-fossil fuel energy, virtual meetings rather than travel, electric vehicles rather than oil driven; and
- capital and financing – although arguably a result of the points above, borrowing rates and perceived risk (and, therefore, cost of capital) for equity investors can be affected significantly by perceptions as to the ESG performance, risks and opportunities for a business.

The factual information about key issues to apply to all these lenses can come from corporate reporting, analyst reports, rating agencies, external data providers, sector specific reporting, asset level data and, possibly, discussions with management.

Filtering for more significant and more likely risks and opportunities

There will often be a large number of risks and opportunities if all facets of a business are considered. The Accounting for Sustainability framework characterises the likelihood and materiality of the expected impact on a scale from low to very high. What should be distinguished here are risks (e.g., flooding) that may occur and costs that are more certain (e.g., already agreed costs of increased flood defences), as the two can be treated differently in a valuation. Considerable judgement is needed on what mitigation is possible for risks (e.g., by moving operations, having multiple facilities in different locations, or having different lines of business not all dependent on the same work factors).

Integration into valuation of identified risks and opportunities

When using a discounted cash flow (DCF), where to reflect the identified risks or opportunities (i.e., as cash flow or discount rate adjustments) largely depends on whether the effects on cash flows can be quantified reliably. If using a market-based approach, it will be important to ensure the comparability of the companies used as comparators to the subject company. For example, describing companies as power companies will not be sufficient if one is coal-fired and the other is purely renewable, as they will face different risk and, therefore, value characteristics. Similarly, two oil and gas companies may not be comparable if one is taking active steps to address climate change risks but the other is ignoring them.

Triangulation to market, including iteration if necessary

Finally, whichever valuation approach is the main one used (usually DCF or market), the valuer can compare both methods and consider for both whether the market has appropriately integrated climate risks, before arriving at a concluded value. This is particularly the case where climate-related impacts are seen as high, as under the above-stated first three steps.

Conclusions on ESG impacts on assessment of damages

Although ESG-related issues may themselves be the basis for damages, there is a broader set of claims in which ESG-related issues will be relevant for the assessment of damages, even where the damages themselves are not directly derived from ESG-related issues. Regardless of the valuation approach applied, where ESG-related risks and opportunities can be expected to have a material effect on cash flows generated by the asset being valued, then that should be appropriately reflected in the damages assessment.

In practice, the ability of the valuer to do so depends, in part, on the quality and volume of information available. We note increased disclosure requirements, such as the TCFD recommendations, and increased reporting of ESG ratings are particularly relevant in this regard.

The Accounting for Sustainability five-step framework for assessing ESG impacts – identify, assess, filter, integrate, triangulate – does provide a helpful potential structure, although there remain significant challenges in taking account of ESG risks, not least that investors are not yet adjusting valuations in a consistent manner for these issues. In a damages context, it is important to understand how the extent and manner in which ESG issues are taken into account in corporate valuations continue to develop.

APPENDIX 1

About the Authors

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Jose Alzate is a senior director at FTI Consulting. Jose has more than seven years of experience in providing financial and economic advice to clients, often in the context of a dispute. He advises on economic and financial matters, including the assessment of value and lost profits.

Jose has prepared reports for submission to the High Court of England and Wales, among others, and in arbitrations under the rules of the ICC, ICSID, AAA, LCIA, SCC and UNCITRAL. He has been appointed as an expert witness and given oral evidence before an arbitral tribunal in an ICC arbitration.

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Dr Stuart Amor is a senior managing director at FTI Consulting. Stuart acts as a testifying expert witness, focussing mainly on oil and gas matters. He has been engaged as an expert witness in more than 20 disputes and given oral testimony in arbitral hearings on many occasions. Prior to joining FTI Consulting in 2016, Stuart spent more than 20 years as an investment analyst and global head of research at various investment banks, where he valued companies and advised investors and corporates on valuation issues.

Stuart has extensive capital raising experience. He was the sole lead analyst on Lukoil's US\$340 million mandatory convertible bond placing – essentially Lukoil's initial public offering (IPO). He was also Credit Suisse's analyst on Gazprom's IPO. While he was the global head of equity research at ING, Stuart

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Karthik Balisagar is a senior managing director at FTI Consulting. He has 17 years' experience in valuation and transaction consulting. He specialises in valuation issues in the context of international arbitration and litigation. During the past decade, Karthik has advised banks, private equity firms, institutional investors and corporates in both contentious and non-contentious valuation matters. He is a member of the International Valuation Standards Council Europe Board, where he assists in setting and harmonising international valuation standards across jurisdictions.

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Fernando Bañez is an associate at The Brattle Group with experience in arbitration, regulatory and finance projects. He has co-authored expert reports for arbitrations in ICSID and has experience in advising on matters before UNCITRAL, ICC, LCIA, SCC, the Spanish High National Court and the High Court of Justice, Business and Property Courts of England and Wales.

He has worked on valuation, pricing and regulatory matters for a wide range of industries, such as gas and oil projects, power plants and renewable energies, district heating, banking and transport. He has experience in performing complicated financial modelling and providing advice on regulatory issues. He holds a PhD in engineering from Comillas Pontifical University (ICAI). His work has appeared in scientific journals, including *Applied Energy* and *Energy*.

Tim Battrick

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Tim Battrick is a managing director at FTI Consulting. He specialises in valuation issues arising in disputes, including the quantification of lost profits and the valuation of shares, businesses and other assets. He has been appointed as an expert witness in both arbitration and litigation matters, and has testified before the High Court of England and Wales. He also provides valuation advice to buyers and sellers of shareholdings, to stakeholders in financial restructurings and to companies requiring valuations for financial reporting. Tim holds an MA in mathematics from the University of Cambridge and is a member of the Institute of Chartered Accountants in England and Wales.

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Gregory Bell leads CRA's global life sciences practice. As an expert witness, he frequently testifies on damages in intellectual property, finance and antitrust litigation in courts and arbitration proceedings in North America, Europe, Asia and Australia. Dr Bell's business consulting engagements focus on the economics of business strategy, working with firms to develop sustainable competitive advantages in specific product markets. He has led and consulted on numerous projects concerning game theory and competitive strategy, global launch strategy, product pricing and positioning, capital budgeting and real options, and cost-benefit analyses. Dr Bell is a chartered accountant in Canada and earned his MBA and PhD in business economics from Harvard University.

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Susan Blower is a partner at BDO LLP and has more than 20 years' experience as a forensic accountant. She has extensive experience in the context of valuation and quantification of damages for the UK courts, international arbitration and expert determinations.

Susan has worked on a large variety of disputes, including shareholder disputes, expert determinations, sale and purchase disputes, breach of warranty claims, intellectual property, matrimonial disputes and investment treaty claims.

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Richard Brady, PhD, is a vice president at Intensity with expertise in micro-economics and financial analysis. Dr Brady has extensive experience in high-stakes litigation matters involving the life sciences, biotechnology, consumer technology, pharmaceuticals, software, telecommunications and tobacco industries. Dr Brady has taken the lead on Intensity's matters at the International Trade Commission and in several high-profile cases in US district courts, including the *Juno Therapeutics v. Kite Pharma* matter from the pre-litigation phase through to trial completion, and was instrumental in helping secure a full damages award for Juno Therapeutics. According to Intellectual Asset Management (IAM), Dr Brady 'has a remarkable ability to digest and synthesize complicated records' and 'is a driving force in developing damages theories [and] in preparing the lengthy and detailed expert reports necessary for complex cases'. IAM added that Dr Brady's 'skill, intelligence, work ethic and tenacity make him indispensable'. Dr Brady is sought to apply his expertise on economic issues pertaining to intellectual property disputes, financial matters, contract disputes, and antitrust and competition.

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His experience has been gained across a variety of sectors and has included projects in the United Kingdom, Europe, the Middle East, Africa and Australasia. He is also an occasional arbitrator, having been appointed by the DIFC-LCIA (now DIAC) as a tribunal member, as well more than 30 appointments as a sole arbitrator by ABTA (The Travel Association) in non-construction matters.

Conrad holds an LLM in construction law and arbitration, a BSc (Hons) degree in quantity surveying, a postgraduate diploma in law and a diploma in international arbitration. He is a fellow of the Chartered Institute of Arbitrators, a member of the Royal Institution of Chartered Surveyors (RICS), a member of the Chartered Institute of Building, a practising member of the Academy of Experts, an RICS-accredited expert witness and an RICS-accredited evaluative mediator.

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Petra teaches, publishes and consults in the areas of domestic and international human rights, public and private comparative law, and private international law, with an emphasis on international commercial contracts. She has particular expertise in law reform and has led the Commonwealth Secretariat Study into international commercial arbitration and judicial diversity in small Commonwealth states.

She is New Zealand's CLOUT (Case Law on UNCITRAL Texts) correspondent for the Convention on Contracts for the International Sale of Goods and the United Nations Convention on the Use of Electronic Communications in International Contracts, a correspondent for UNIDROIT and a member of the Academic Council of the Institute for Transnational Arbitration.

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In addition to numerous articles and book chapters, Mr Cook has authored the following books: *A User's Guide to Patents* (Butterworths 2002; Tottel 2007; Bloomsbury 2011, 2016, 2019); *Pharmaceuticals Biotechnology and the Law* (Macmillan 1991; LexisNexis Butterworths 2009, 2016, 2023); *EU Intellectual Property Law* (Oxford 2010); *The Protection of Regulatory Data in the Pharmaceutical and Other Sectors* (Sweet & Maxwell 2000); and *A European Perspective as to the Extent to Which Experimental Use, and Certain Other, Defences to Patent Infringement, Apply to Differing Types of Research* (Intellectual Property Institute 2006). He is a co-author of *Practical Intellectual Property Precedents* (Sweet & Maxwell 1998 to date) and *International Intellectual Property Arbitration* (Kluwer 2010). He is one of the general editors of *The Modern Law of Patents* (LexisNexis Butterworths 2005, 2009, 2014, 2018, 2022) and is editor of *Sterling on World Copyright Law* (Sweet & Maxwell 2015, 2018, 2022) and of *Trade Secret Protection – A Global Guide* (Globe Law & Business 2016, 2022).

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James Dow is a professor of finance at London Business School. He has previously taught at the European University Institute and the University of Pennsylvania. His main research interests are in the economics of financial markets, specifically the role of leverage and intermediation in bubbles, and the role of arbitrage capital in financial fire sales. He has published in leading research journals and has extensive consulting experience in valuation, cost of capital, corporate governance and corporate finance. He is an academic adviser at The Brattle Group.

James Dow has acted as quantum expert on a number of cases, including arbitrations brought by former Yukos shareholders alleging violation of the Energy Charter Treaty. The award (online) gave large damages while agreeing with substantial portions of his analysis (the award was subsequently set aside on grounds of jurisdiction). Related cases include a claimed breach of the Spain–Russia bilateral investment treatment (BIT) and a claim by RosInvestCo under the UK–Soviet Union BIT (award online). He has also worked on cases concerning minority stakes valuation in energy and hotel businesses, taxes imposed by Ecuador (ICSID ARB/08/6), a privatised oil company (Romp petrol, ICSID ARB/06/3), an intellectual property dispute, a joint venture involving a major advertising company and capital cost measurement in long-term gas supply.

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His expertise in commercial and investment disputes includes valuation and lost profits involving breach of contract, treaty breaches, expropriation and temporary injunction, among others. Dr Duarte-Silva's experience also includes several years in equity research covering European and Latin American companies.

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Toni's areas of expertise include all aspects of compliance and tax accounting, including the preparation of the tax provision to be recognised in the statutory accounts and agreement with the company's auditor, the preparation and submission of corporation tax computations and returns, quantification and recognition of tax assets and forecasting group tax positions to maximise tax opportunities, as well as UK corporate tax restructuring and planning.

Toni acted as tax compliance expert in *Altus Group v. Baker Tilly Limited*.

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Roula is recognised as a leading expert witness by Who's Who Legal in the Thought Leaders Global Elite list, in arbitration, for the quantum of damages and in forensic accounting. She is a fellow of the Institute of Chartered Accountants in England and Wales (ICAEW).

Roula has testified in both English and French and has worked on matters before the High Court of England and Wales, Family Division, the Patents Court, the French Commercial Court and the Singapore International Commercial Court, and in mediation. Her vast international arbitration experience spans numerous forums, including LCIA, ICC, SCC, HKIAC, PCA, CRCICA, SCAI, NIA and ICSID, and under the UNCITRAL rules.

Roula has supported clients across a diverse range of sectors, including telecommunications, professional services, utilities, energy, industrial, pharmaceuticals, chemicals and transport.

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Terry Hawkins is a managing director at Secretariat based in London. He is a construction quantum expert and is regularly appointed in international arbitration proceedings. He has given oral evidence and has been cross-examined before arbitral tribunals on several occasions.

Terry has considerable construction and litigation experience having assisted clients on a wide variety of construction and engineering projects in the energy, infrastructure, real estate and oil and gas sectors in the United Kingdom, Europe, South America, the Middle East, Africa and Asia.

Terry has prepared quantum analyses for both public and private sector clients and has been instructed to provide independent expert opinion in respect of matters relating to cost overruns and loss and expense. His primary areas of concentration are in the valuation of construction claims, including the measurement and valuation of works, valuation of termination claims and the quantification of prolongation and disruption costs.

Terry has a bachelor's degree in commercial management and quantity surveying and an LLM in construction law and arbitration. He is a fellow of the Royal Institution of Chartered Surveyors, a fellow of the Chartered Institute of Arbitrators and a member of the Academy of Experts.

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He has prepared expert testimony on a wide range of economic and finance issues, including assessment and quantification of damages (including loss of profits, consequential losses and loss of business opportunities), valuations of business at different stages of development, valuation of assets in the context of political intervention, contract disputes and disputes involving regulation of concessions and large infrastructure assets. His work in both commercial and investor-state disputes encompasses a wide range of industries, including energy, oil and gas, telecommunications, manufacturing, utilities, shipping services, air travel, transport infrastructure and real estate.

Dr Hern has appeared as an expert witness before a number of panels, arbitrators and tribunals, including ICSID, PCA, ICC, high courts and competition regulators. He has also acted as the independent expert/arbitrator in two appeals by regulated companies against the national regulatory authorities in Belize and Honduras.

Dr Hern has taught economics and finance courses at Bristol University and Bath University and is a regular speaker at conferences in the United Kingdom and abroad. Dr Hern is listed in *Who's Who Legal* as a leading expert witness in arbitration. He is also listed in Who's Who Legal's directory for quantum experts.

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In addition to disputes work, Ms Janeckova specialises in regulatory economics, with a particular focus on financial aspects of utility regulation, including cost of capital estimation as well as financial and risk modelling. She advises clients on finance issues across all regulated utility sectors in the context of price control reviews, due diligence assignments, policy design and regulatory appeals.

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HKA

Colin Johnson is a partner with HKA in London. He specialises in the assessment of damages and complex valuation issues in litigation and international arbitration contexts as well as in relation to certain financial issues. He has many years of experience in relation to large projects, particularly in the energy sector, and in matters involving breaches of contract, investment treaty claims, transaction-related disputes, and shareholder and joint venture disputes. He has provided valuation, finance, accounting or damages assessment services in more than 50 disputes worth more than US\$70 billion in total, and has testified more than 20 times.

Colin is recognised as a leading expert witness by Who's Who Legal for arbitration, commercial litigation, energy, construction-quantum delay and technical, financial advisory and valuation-quantum of damages, and brings his extensive transactional, financial, investor and corporate expertise into his work as an expert. Colin has testified on matters including before ICSID, ICC, LCIA, LMAA, UNCITRAL, English, Scottish and Spanish courts.

Colin has supported clients across a diverse range of sectors, including oil and gas, power, mining, telecommunications, professional services, tourism, petrochemical and agricultural cases.

Wynne Jones

Frontier Economics Ltd

Wynne Jones is a director in the energy practice at Frontier. Wynne has more than 35 years of economics consultancy experience, working predominantly in the energy sector. He focuses on competition, commercial and regulation issues. He has wide international experience, having worked in more than 30 countries worldwide. Wynne has been involved in the development of European energy policy from the first studies on reform in the United Kingdom in the early 1980s and has led several studies for the European Commission on the development of the internal energy market.

Wynne frequently advises clients with dispute and arbitration case support, both in Europe and globally. He is an experienced expert witness and has appeared before arbitration tribunals (including those of the International Court of Justice, UNCITRAL, ICC, ICSID, SCC and VIAC), courts and regulatory bodies.

Charles Jonscher

CET Group of Companies

Charles Jonscher has more than 30 years of experience in advising on valuations and an extensive track record in international arbitration support. He brings best commercial practice and state-of-the art theory to all aspects of financial analysis, valuation work and damages quantification.

He and his CET colleagues are commissioned by major US and European law firms to provide expert reports in complex commercial arbitrations and court disputes. Their assignments have spanned many sectors, including technology and infrastructure industries. They are supported by a team of quantitative analysts.

In his earlier academic career, Dr Jonscher was with the economics faculty at Harvard University before moving to Massachusetts Institute of Technology, where he specialised in management and finance. He obtained his PhD in economics from Harvard and his undergraduate degree from Cambridge University. He is now based in London and is president of the CET group of companies.

Joseph Kirby

HKA

Joseph Kirby is a chartered financial analyst with more than a decade of experience in the assessment of commercial damages. He has been appointed as an expert and assisted the named expert on more than 20 occasions.

Joseph has prepared expert reports on matters before the High Court of England and Wales, Family Division, the High Court of Trinidad and Tobago, and the LCIA, ICC and DIS arbitration forums. He has assisted on disputes with

values in excess of US\$1 billion and has supported clients across a diverse range of sectors, including energy, oil and gas, professional services, financial services, industrial, pharmaceuticals, chemicals and transport.

Joseph specialises in the assessment of damages and contentious valuation issues in litigation, international arbitration and expert determinations. His expert work relates to matters involving breaches of contract, shareholder disputes, breach of warranty, unfair prejudice, transaction-related disputes and intellectual property infringements.

Joseph's background also includes the provision of valuation services in relation to merger and acquisition transactions, employee compensation schemes and financial reporting. He is also experienced regarding commercial and corporate reporting valuations.

Joseph holds a master's degree in economics and is a member of the Chartered Institute of Financial Analysts.

Jana Lefranc

HKA

Jana Lefranc is a CFA Institute charter holder with more than 18 years of professional experience. She has led teams supporting the named expert on more than 30 occasions, including matters in which the amount in dispute exceeded US\$10 billion, and has provided oral testimony in the Czech national courts.

She has advised large corporations as well as states on disputes brought before the ICSID, ICC and LCIA, under UNCITRAL, ICC and VIAC rules, relating to commercial matters and on numerous bilateral investment treaty disputes.

Jana specialises in the assessment of damages and complex valuation issues in litigation and international arbitration contexts. She is experienced in matters involving investment treaty claims, breaches of contract and transaction-related disputes.

In recent years, Jana has led teams on several electricity disputes concerning changes to the regulatory regime introduced by governments across Central Eastern Europe. These cases concerned both traditional electricity production, distribution and sale as well as renewable energy. She has also managed cross-border teams on several gas disputes concerning both building and operating a distribution network, in countries such as Kyrgyzstan and Egypt. She has also worked on a large oil field case in Venezuela and several mining cases in Africa.

Stefan Lochner

Frontier Economics Ltd

Dr Stefan Lochner is an associate director in Frontier's competition and energy practices. He is based in Cologne, Germany. He holds a PhD in economics from the University of Cologne (Germany), where he has worked as economic consultant since 2006. He advises a wide range of international clients on various aspects of competition and industrial economics, often in a litigation or arbitration context. Most recently, he has worked on estimating damages from contractual and competition law infringements in different European jurisdictions in a wide range of sectors, including natural gas, steel, automotive parts and air transport services. Stefan regularly provides expert witness services in civil and arbitration courts.

Gervase MacGregor

BDO LLP

Gervase MacGregor is a member of BDO LLP's leadership team and is a partner in the forensic services department at BDO. He has a bachelor's degree in geology from the University of Liverpool and a master's degree from HEC in Paris.

He is a chartered accountant and a certified fraud examiner. He joined BDO in 1982, qualified in 1986, was made a partner at BDO in 1991 and became head of the London-based litigation support and forensic accounting department in 1994.

His first forensic investigation, in 1985, was into a contested takeover by a client of his firm, Caparo Plc. His work on accounting irregularities gave rise to the *Caparo* case on auditors' liability. Since then, he has undertaken a great many investigations and acted as expert in disputes on a large number of occasions.

He has particular expertise in valuation and damages disputes, and share purchase agreement disputes in the natural resources sector.

He has given evidence in the High Court of England and Wales, in international arbitrations and before select committees of the UK Parliament.

Thomas Maassen
FTI Consulting LLP

Thomas Maassen is a director at FTI Consulting. Thomas has more than six years of experience in supporting expert witnesses. He specialises in valuation and damages assessments in both litigation and international arbitration.

Thomas has worked on more than 30 disputes across a range of sectors, including oil and gas and power. He has prepared expert reports for submission in disputes before the courts of England and Wales, Germany and other jurisdictions, as well as in ad hoc and institutional arbitrations, including those under the ICC, ICSID, HKIAC, SIAC and UNCITRAL rules. Thomas is an associate chartered accountant and holds an MSc in economics from the London School of Economics and an MA in philosophy, politics and economics from Oxford University.

M Alexis Maniatis
The Brattle Group

Alexis Maniatis has more than 30 years of experience in advising clients, providing consulting expertise and expert witness testimony, leading client teams and supporting other experts on matters relating to a variety of industries across the globe. He is skilled in analysing valuation and damages issues in expropriations, contract disputes, competition-related litigation, asset and merger transactions, and regulatory proceedings. He has addressed numerous matters, including the development of expected cash flows, discount rates, control premia, country risk adjustments, prejudgment interest and interpretation of acquisition transactions and publicly traded company values. A respected leader in the firm, Mr Maniatis has previously served several terms as the firm's president and one term as chairman of the board, directed Brattle's Washington and London offices and led the litigation practice. He is consistently recognised as a Global Elite Thought Leader in *Who's Who Legal's* Arbitration Expert Witness and Quantum of Damages lists, among other accolades.

Craig Miles

King & Spalding LLP

Craig Miles is a partner in King & Spalding's international arbitration group, based in Houston and Miami.

His practice focuses on representing foreign investors in disputes with host governments, primarily before the International Centre for Settlement of Investment Disputes (ICSID), and private parties in commercial disputes before the International Chamber of Commerce, the American Arbitration Association, and other domestic and international arbitral institutions. Mr Miles has first-chaired or second-chaired dozens of arbitral hearings involving disputes throughout North and South America, Europe, Asia, Africa and the Middle East, with particularly strong experience in bilateral investment treaty (BIT) disputes in the mining, infrastructure, and oil and gas sectors and in Latin America. Among his recent cases are some of the largest ICSID or BIT awards and settlements ever obtained by foreign investors, against the likes of the governments of Argentina, Bolivia, Ecuador, Egypt, Romania and Venezuela.

Mr Miles regularly appears in peer-reviewed rankings such as *Chambers*, *Who's Who Legal*, *Best Lawyers in America* and *Latin Lawyer*, and in 2011 was named in *Global Arbitration Review's* '45 Under 45' list of the leading international arbitration practitioners worldwide under the age of 45. Mr Miles frequently speaks and publishes on international arbitration issues, occasionally in Spanish, in which he is proficient, and in French.

Reza Mohtashami KC

Three Crowns LLP

Reza Mohtashami KC is a partner at Three Crowns LLP based in London. Reza has represented clients as counsel and advocate in more than 90 arbitrations conducted under a variety of arbitration rules in many different jurisdictions. Reza has particular expertise in disputes arising in emerging markets with a focus on the telecommunications, energy and infrastructure sectors. Prior to Three Crowns, he worked in the arbitration practice of a leading international arbitration firm, where he established and led the firm's global arbitration practice in the Middle East.

Reza is a vice chair of the IBA Arbitration Committee, a trustee of the Bahrain Chamber of Dispute Resolution, a trustee of the DIFC-LCIA Arbitration Centre, a member of the LCIA Court, and editorial board member of the ICC Dispute Resolution Bulletin and Global Arbitration Review. Reza is a qualified English solicitor-advocate and was appointed King's Counsel in recognition of his advocacy skills in 2018.

He is recognised as a Thought Leader in arbitration by Who's Who Legal, and in *Chambers and Partners*, he is described as 'very capable, intelligent and hard-working' and the 'real deal'. He speaks English, French and Farsi.

Gabrielle Nater-Bass Homburger

Gabrielle Nater-Bass is a partner in the litigation and arbitration team at Homburger in Zurich. She is a highly experienced party counsel, arbitrator (presiding, sole, party-appointed) and legal expert in international commercial arbitration proceedings, ad hoc and institutional, across a wide range of industries. She also regularly represents clients in investment treaty arbitrations and complex cross-border litigations. Gabrielle Nater-Bass is listed on the panel of arbitrators of the International Chamber of Commerce National Committee (Switzerland), the Hong Kong International Arbitration Centre and the Singapore International Arbitration Centre (SIAC). She serves as vice president of the London Court of International Arbitration (a member since 2020) and is a board member of both the Swiss Arbitration Centre and the Swiss Arbitration Association. She was president of the Arbitration Court of the Swiss Chambers' Arbitration Institution from 2016 to 2020. Moreover, Gabrielle Nater-Bass co-chairs the ICCA-ASIL Task Force on Damages in International Arbitration (formed by the International Council for Commercial Arbitration and the American Society of International Law) and is a member of the SIAC Users' Council, the Advisory Board of Arbitral Women (former vice president) and the steering committee of the Equal Representation in Arbitration Pledge.

Gabrielle Nater-Bass was recognised by Global Arbitration Review as one of its magazine's 'all female top 30' women in arbitration and received the Client Choice Awards 2020 and 2021 in the category Arbitration & ADR (Switzerland). She publishes regularly in the field of international commercial arbitration.

James Nicholson

FTI Consulting

James Nicholson has more than 25 years' experience as a consultant on matters of finance, strategy and economics. Since 2005, his work has primarily involved issues of the identification and valuation of lost profits, and the valuation of businesses, financial assets including shareholdings, and other assets, and of wasted costs.

He has testified more than 45 times before commercial and investment treaty arbitration tribunals and national courts. James is a member of the Executive Committee of the Foundation for International Arbitration Advocacy, from 2014 to 2021 was president of the Standing Committee of the International Chamber of Commerce's (ICC) International Centre for ADR, and has been cited on a point of valuation by the Swiss Federal Supreme Court.

James is a CFA charter holder, and holds a master's degree in public policy from the Harvard Kennedy School, where he was a Fulbright Scholar. James was awarded first-class honours in his BA from Oxford University in philosophy, politics and economics.

Since 2015, James has been identified by Who's Who Legal as one of the 'Most Highly Regarded Individuals' and 'Global Elite Thought Leaders' in Europe and latterly Asia in its annual listings of the leading expert witnesses. In *Arbitration 2022 – Expert Witnesses*, Who's Who Legal quotes clients as saying: 'James has impressive writing skills – his reports are easy to follow, on point and very-well written'; 'He displays great attention to detail and the ability to digest vast dockets and organise them in a tribunal-friendly manner'; and 'His performance on the stand is exceptional'.

Fabricio Nuñez

The Brattle Group

Fabricio X Nuñez is a principal in Brattle's Washington, DC, office. He has corporate and consulting experience in finance, valuation, securities and trading. He has prepared expert testimony on valuation matters before ICSID and the ICC and has advised clients in international arbitration proceedings. Dr Nunez has applied multiple techniques to value assets and companies in Latin America and around the world in a variety of sectors, including financial institutions, energy, mining and natural resources, telecommunications, paper and packaging products, and hospitality and leisure services. His experience also includes consulting on market manipulation and insider trading matters.

Prior to joining Brattle, he was a senior economist in the global capital markets group of a large multinational company, where he advised on issues relating to asset liability management, and interest rate, commodity and currency hedging.

He also developed trading strategies across money markets, fixed income, currency and commodity markets. He has a PhD in applied economics from the University of Minnesota.

Elizabeth Oger-Gross

White & Case LLP

Elizabeth Oger-Gross is a partner of White & Case's international arbitration group and is based in the Paris office. Elizabeth advises clients in complex commercial disputes, with broad experience across a number of sectors and a focus on the construction and energy industries. She also has significant experience in investment disputes. She is common law-qualified and civil law-qualified and acts in both English and French language arbitrations. She has handled ad hoc arbitrations and arbitrations under most major institutional rules. She also has substantial experience in cross-border litigation, particularly involving the United States and France.

Louis Osman

Accuracy

Louis Osman is a manager in Accuracy's London office, having joined the firm in August 2019. Louis has more than 10 years' experience in the financial services industry and has assisted the testifying expert on a number of litigation and arbitration cases, performing damages assessments and contentious valuations as well as drafting expert witness reports for submission to arbitral tribunals, including ICC, ICSID and UNCITRAL.

He has also worked on a variety of other engagements, including on transactions, financial due diligence assignments, financial crime investigations and other non-contentious advisory projects. Louis has experience across a variety of sectors, including mining, energy, automotive, waste management, retail and consumer, and leisure and tourism.

Louis is a member of the ICAEW and qualified as an associate chartered accountant in 2015. He holds a first-class honours degree in international management from the University of Warwick. Louis speaks fluent English and French and has intermediate knowledge of Spanish.

Stefanie Pfisterer

Homburger

Stefanie Pfisterer is a partner in the litigation and arbitration team at Homburger in Zurich. She has been involved in more than 50 arbitration proceedings, acting as counsel or arbitrator. She is particularly experienced in disputes arising, inter alia, out of merger and acquisition transactions, joint ventures and shareholder agreements, international sales contracts, and agency and distribution. Stefanie Pfisterer also represents clients in complex state court litigations in a broad range of matters.

Stefanie Pfisterer has been recognised in *The Legal 500* as a Next Generation Partner in the field of arbitration, where she is described as a true expert in international arbitration. She has also been recognised in *Who's Who Legal* as a 'Future Leader' in arbitration (Europe – Partners). She is described as follows: 'highly intelligent and analytical', 'brilliant and brainy' and she 'responds quickly to situations in arbitration proceedings' (2022 edition).

Stefanie Pfisterer is a member of the Arbitration Court of the Swiss Arbitration Centre, the International Chamber of Commerce Commission of Arbitration and ADR, and a lecturer at the University of St Gallen. She is the author of a number of publications in the field of dispute resolution, including commentaries on the Swiss Private International Law Act, the Swiss Code of Civil Procedure and the Swiss Rules.

Ilinca Popescu

The Brattle Group

Ilinca Popescu is a senior associate with more than 10 years' experience in litigation and finance projects. She has worked on valuations across a wide range of industries, such as gas and oil projects, renewable energies, district heating, banking and public transport. Her past projects involved extensive financial modelling and advice on regulatory issues. Ilinca assists with teaching the finance master's at London Business School. Ilinca has a master's degree in finance from Toulouse School of Economics.

Joseph R Profaizer

Paul Hastings LLP

Joseph R Profaizer is a partner in the Washington, DC, office of Paul Hastings LLP. He is the chair of the firm's international arbitration practice, a former vice chair of its Washington, DC, office, and an adjunct professor of international arbitration and litigation at Georgetown University.

He has been recognised repeatedly by *Chambers Global*, *Chambers USA*, *Global Arbitration Review*, *Who's Who Legal: Arbitration* and *The Legal 500* (United States) as a leading attorney in international arbitration. He is a US-qualified attorney and English-qualified solicitor, and has practised in both the United States and England. Mr Profaizer has served as counsel in threatened or actual litigation or arbitration in more than 50 countries, and in more than 70 arbitrations under the rules of the ICC, AAA/ICDR, LCIA, SIAC, HKIAC, ICSID, CIETAC, CEPANI, JAMS, UNCITRAL, among others. He is the author and co-author of numerous articles on international arbitration and a frequent speaker on international arbitration and international legal issues.

He is a graduate of the University of Texas at Austin, the University of Texas School of Law and the London School of Economics. He is a former law clerk to the Hon George P Kazen at the US District Court for the Southern District of Texas.

Aminta Raffalovich

Intensity, LLC

Aminta Raffalovich, JD, MS, is a vice president at Intensity specialising in the economics of technology and innovation. She applies her expertise in several areas, including intellectual property, antitrust and competition, finance, contract disputes and business tort litigation. In these areas, Ms Raffalovich provides expert analysis and economic consulting on issues including lost profits, reasonable royalties, unjust enrichment, commercial success, licensing, economic harm, valuation, economic domestic industry considerations, market definition, vertical restraints, harm to competition, consumer welfare and prejudgment interest.

Ms Raffalovich has expertise and experience in a range of industries. Her work spans the life sciences (including pharmaceuticals, medical devices and diagnostics), electronics (including consumer electronics, semiconductors, computers and telecommunications), e-commerce, entertainment, payments and healthcare, among others.

Ms Raffalovich earned her JD from the University of San Diego School of Law and is a member of the State Bar of California. Prior to law school, Ms Raffalovich graduated *cum laude* from the University of California, Berkeley, with a degree in environmental economics and policy. She later earned a master's in economics from California State Polytechnic University, Pomona, where she also served as an instructor in macroeconomics and econometrics courses.

Edmond Richards

Accuracy

Edmond Richards is a director in Accuracy's forensics, litigation and arbitration practice and is based in London. He has 12 years' experience in the assessment of damages arising from treaty and contract breaches and valuing shareholdings in contentious contexts.

Edmond has been appointed as an expert witness in arbitrations under ICSID, LCIA, ICC and SCAI rules. He recently testified in an arbitration where the value at stake was US\$500 million.

Edmond has also given expert financial advice in transactions, investigations and non-contentious valuations, as well as performing preliminary claim assessments for corporates, their legal advisers and third-party funders.

Edmond has a broad range of sector experience, including metals and mining, utilities, manufacturing, TMT, automotive, airline, consumer goods and hospitality.

Edmond is a qualified accountant and a member of the Institute of Chartered Accountants in England and Wales. He holds a first-class honours degree in physics from Imperial College London. He is a native English speaker, with intermediate knowledge of French and Spanish.

Christoph Riechmann

Frontier Economics Ltd

Dr Christoph Riechmann directs Frontier Economics' Berlin and Cologne offices. He acts as expert in dispute, regulatory and competition proceedings in the electricity and gas industries, and occasionally in other infrastructure sectors. His geographical focus is on the European Union and he regularly works in both English and German. He holds a doctorate degree from Cologne University, an MSc in economics from Glasgow University and a degree in business economics (Dipl.-Ökonom) from Justus-Liebig-University, Giessen.

Matthew Roberts

Frontier Economics Ltd

Matthew Roberts is an associate director in Frontier's energy practice and has 15 years of experience. Matthew works for clients across Europe, including utilities, investors, regulators and government bodies. He has provided due diligence advice to investors in regulated networks, including transactions in the United Kingdom, Northern Ireland, Finland, Belgium and elsewhere, advising on how economic regulation drives value and risk. Matthew also provides expert witness services in dispute proceedings, advising on both merits and damages quantification in investor-state and commercial disputes, as well as price control appeals. Matthew was a testifying expert in the 2021 UK energy network appeals to the Competition and Markets Authority.

Ciara Ros

Vinson & Elkins RLLP

Ciara Ros is a senior associate in the London office of Vinson & Elkins and a member of the complex commercial litigation practice group. She is ranked in the *The Legal 500 UK* (2022) as a key lawyer in international arbitration. Ciara's focus is on energy disputes, construction disputes and international commercial arbitration. She has also advised clients on project finance, and mergers and acquisitions within the oil and gas sector. Ciara spent six months in the V&E Houston office as part of her training contract, and worked in the Dubai office for three years after qualification. Ciara serves as the Young ITA Communications Chair (2021–2023). She is admitted to practise as a solicitor in England and Wales.

Adriana San Román

Wöss & Partners

Adriana San Román is a founding partner of Wöss & Partners, a damages expert and arbitration counsel. She has vast experience as expert in damages arbitrations and litigations; she is an attorney at law (with honours) and financial analyst, holding an MA in finance and investment from the University of Exeter, United Kingdom. She is also a member of the ICCA-ASIL Task Force on Damages in International Arbitration and has worked for several years in corporate banking and financial engineering. She frequently holds and lectures advanced seminars on damages in international arbitration organised with leading arbitration institutions.

Kai F Schumacher

AlixPartners

Kai Schumacher uses the power of facts and financial analysis to quantify damages in international arbitrations and litigations, to perform forensic investigations and to evaluate assets and businesses. Having led more than 150 engagements with values of up to €170 billion and involving entities from 53 countries, he has successfully advised clients for more than two decades and about more than 40 contentious and non-contentious M&A purchase agreements. Kai has been identified by *Who's Who Legal: Commercial Arbitration* since 2015 as one of the 'Most Highly Regarded Individuals' or 'Global Elite Thought Leaders' in Europe in its listings of the leading expert witnesses active in international arbitration. Kai has testified more than 30 times before commercial and investment treaty tribunals. He holds an MBA from Paris' HEC School of Management, a CPA and a CFA charter.

Steven Schwartz

Intensity, LLC

Steven Schwartz is a managing director at Intensity, LLC. With extensive experience in economic consulting, he has been retained as an economic expert in numerous litigation and non-litigation matters and has provided testimony before the US International Trade Commission and the US Tax Court, federal and state courts. Dr Schwartz has more than 35 years of economic consulting experience and has applied his expertise in high-stakes disputes relating to commercial success, irreparable harm, lost profits, reasonable royalties, economic domestic industry considerations and unjust enrichment. His areas of expertise include antitrust and competition, intellectual property damages and valuation, damages assessment in complex commercial disputes, class certification and securities and finance litigation. Dr Schwartz's consulting background spans many industries, such as hospitality, consumer goods, electronics, gaming and pharmaceuticals, among others. He has also consulted in a variety of business, valuation and strategic planning issues.

Michael Smith

BDO LLP

Michael Smith is a director in the forensic services department at BDO. He is a chartered accountant with more than 14 years of accountancy experience and has specialised in forensic accounting since 2011. Prior to joining BDO, Michael worked in the forensic accounting department at a Big Four accountancy firm. Before specialising in forensic accounting, Michael gained three years

of audit experience within the oil and gas industry at a Big Four accountancy firm. Michael has worked on a wide variety of cases, including international arbitrations, contractual disputes, loss of profit claims (including business interruption claims), financial investigations and fraud, bribery and corruption investigations. Michael also has extensive experience in post-deal merger and acquisition disputes, including breach of warranty claims, completion accounts disputes, earn-out disputes and expert determinations.

Jack Stirzaker

The Brattle Group

Jack Stirzaker is a principal at Brattle and heads the London office. Jack has experience in both regulation and litigation projects, particularly in the energy industry. Jack has over 12 years' consulting experience, and has testified and provided support for numerous arbitration and high court cases, performing valuations of projects across a broad range of different industries. Jack has a master's degree in natural sciences from Cambridge University, and assists with teaching the finance master's at London Business School.

Greig Taylor

AlixPartners

Greig Taylor is an experienced financial and accounting expert witness with more than 20 years of experience in resolving disputes involving accounting, valuation and damages. His experience includes breach-of-contract and loss-of-profits claims, expropriations, minority-shareholder and joint-venture disputes, and claims arising following acquisitions and sales of businesses. Greig has testified in numerous domestic and international arbitrations under various institutions, such as AAA, ICC, AAA-ICDR, ICSID, SIAC and JCAA, as well as in ad hoc proceedings under UNCITRAL rules and free trade agreements. Greig has also provided litigation consulting involving forensic accounting and financial investigations under various accounting and legal protocols. Greig has been listed in *Who's Who Legal: Commercial Arbitration* since 2014 as a leading expert witness, and as a Thought Leader for Arbitration and Global Elite Thought Leader for 2019 and 2020. Greig has also been recognised in *Who's Who Legal: Economic Consulting – Quantum of Damages* since 2016.

Andrew Tepperman

Charles River Associates

Andrew Tepperman is a vice president in CRA's life sciences practice, based in Toronto, Canada. He specialises in providing economic and damages analyses for clients involved in arbitration and litigation proceedings. Dr Tepperman has assessed damages in a wide range of disputes, including intellectual property, breach of contract and antitrust matters. He has also performed economic analyses of liability issues in arbitration proceedings, including assessment of commercially reasonable efforts, and antitrust litigation matters, including analyses of market definition and market power. His work has encompassed a variety of industries, including pharmaceuticals, biologics, diagnostics, medical devices, telecommunications, and computer hardware and software. He has provided expert testimony in Canadian and US court proceedings. He holds a PhD degree in economics from the University of Toronto.

Anthony Theau-Laurent

Accuracy

Anthony Theau-Laurent is a partner in Accuracy's London office and co-heads the firm's global arbitration practice. He specialises in the assessment of complex damages and has given evidence in numerous disputes across a variety of forums, situations and sectors, with claims ranging from five million US dollars to several billion US dollars.

Anthony has been appointed as expert witness in commercial and investment treaty arbitrations before the Permanent Court of Arbitration in The Hague, ICSID, UNCITRAL, LCIA, ICC, SCAI, SCC, DIFC and other forums. He has been instructed in disputes arising from various situations, including breaches of commercial contracts and shareholder agreements, mergers and acquisitions, expropriations, market evictions, construction delays and fraud. His experience covers matters across a broad range of sectors, including mining, energy and utilities, concessions, manufacturing, automotive, distribution, retail, media and entertainment, software, civil engineering and construction.

Anthony also regularly advises investors and organisations in strategic situations, such as mergers and acquisitions or the improvement of financial performance, and leads financial investigations in relation to allegations of fraud, bribery and corruption. Anthony holds a master of sciences degree from HEC School of Management in Paris and is able to testify in English as well as in French.

Igor V Timofeyev

Paul Hastings LLP

Igor V Timofeyev is a partner in the Washington, DC, office of Paul Hastings LLP. His practice focuses on appellate and international litigation, as well as international arbitration.

Mr Timofeyev has represented corporations and foreign governments in investor-state arbitration, ad hoc international commercial arbitration, World Trade Organization disputes and a variety of appellate, trial and regulatory proceedings. He has also advised clients on issues involving investment treaties, free trade agreements, sanctions and visa policy. Mr Timofeyev previously served as Director of Immigration Policy and Special Advisor for Refugee and Asylum Affairs at the US Department of Homeland Security, and as associate legal officer to the President of the International Criminal Tribunal for the Former Yugoslavia.

Mr Timofeyev is a former clerk to Justice Anthony M Kennedy of the US Supreme Court and Judge Alex Kozinski of the US Court of Appeals for the Ninth Circuit. He is a graduate of Yale Law School, Oxford University and Williams College.

John A Trenor

Wilmer Cutler Pickering Hale and Dorr LLP

John A Trenor is a partner at Wilmer Cutler Pickering Hale and Dorr LLP in the firm's international arbitration practice group. Mr Trenor has represented companies, states, state-owned entities, international organisations and individuals in a wide variety of disputes in the aviation, defence, financial services, oil and gas, pharmaceuticals, technology, telecommunications and other industries. He has advised clients regarding commercial, investor-state and state-to-state arbitrations seated in common law and civil law jurisdictions worldwide, subject to a wide variety of governing laws, under virtually all the major institutional, as well as ad hoc rules, including ICC, LCIA, AAA, SCC, VIAC, ICSID, UNCITRAL and others. He has extensive experience in matters regarding public and private international law, including such areas as investment protection, state responsibility, reparations, territorial sovereignty, sovereign immunity, the law of treaties, the law of the sea, conflict of laws and extraterritoriality.

Jennifer Vanderhart

Intensity, LLC

Jennifer Vanderhart is a managing director at Intensity, LLC. Dr Vanderhart earned her PhD in economics from Texas A&M University. She received her BA at Trinity University, majoring in economics and Spanish, and she is fluent in Spanish.

Dr Vanderhart is based in Washington, DC, and provides a range of services, including litigation support services and economic consulting. She has more than 20 years' experience in the quantification of economic damages, including claims arising from patent, copyright or trademark infringement, trade secret misappropriation, contract disputes, employment discrimination and claims of expropriation by foreign governments. Her specialities include applied econometrics, intellectual property, international arbitration, antitrust, breach of contract and commercial damages. Dr Vanderhart's clients include companies in a wide range of industries and retail sectors, including computer hardware and software, retail merchandising, durable goods manufacturing, mining, tobacco and financial services. She has experience of testifying in federal and state courts and in domestic and international arbitration proceedings.

Before joining Intensity, Dr Vanderhart was a principal of Analytics Research Group. She has published on the subjects of valuation, damages and intellectual property, and frequently speaks on these topics at conferences and lectures. She is a member of the ICCA-ASIL Task Force on Damages.

Michael Wabnitz

AlixPartners

Michael Wabnitz has more than 20 years of experience and advises corporations, boards and investors in the areas of M&A transactions, valuations, CFO services as well as arbitration and litigation matters. Previous roles include managing director of Duff & Phelps and partner at KPMG. Michael holds a master's degree in business administration and passed both the German chartered accountant and the German chartered tax adviser exams.

Adam J Weiss

Paul Hastings LLP

Adam J Weiss is a senior associate in the Washington, DC, office of Paul Hastings LLP. His practice focuses on international arbitration and complex commercial litigation. Mr Weiss has successfully represented clients in a variety of contexts and industries, including complex breach of contract disputes, trade credit insurance coverage disputes, project construction disputes, media and entertainment disputes, intellectual property disputes and appellate litigation matters. Mr Weiss has handled international arbitration matters under the major international arbitration rules (ICC, AAA/ICDR, HKIAC, UNCITRAL, SIAC, CEPANI and CIETAC) in a number of jurisdictions around the world, including the United States, the United Kingdom, Belgium, the Philippines, Indonesia, China, Singapore and Hong Kong. Mr Weiss has also represented clients in domestic litigation matters before US state and federal courts. Mr Weiss's practice also includes counselling clients on US law and regulatory matters, including transportation and logistics, customs compliance and maritime issues. He is a graduate of Tulane University Law School (Order of the Coif) and Duke University.

David Weiss

King & Spalding LLP

David Weiss is a partner in King & Spalding's international arbitration group.

Mr Weiss concentrates on investor-state arbitration and international commercial disputes. Mr Weiss has significant experience in investment disputes, energy disputes and disputes in Latin America. He has participated in proceedings before the International Centre for Settlement of Investment Disputes, the International Chamber of Commerce and the Permanent Court of Arbitration in The Hague.

Mr Weiss was named in *Who's Who Legal: Arbitration – Future Leaders* in 2017, 2018, 2019 and 2021.

Mr Weiss graduated from the University of Texas School of Law, with honours, where he was a member of the *Texas International Law Journal* and the International Arbitration Moot Court Team. Mr Weiss spent one semester of law school at the University of São Paulo Law Faculty in Brazil. Before law school, Mr Weiss graduated, with Phi Beta Kappa honours, from the University of Richmond with majors in diplomacy and political science. He spent one semester of his undergraduate studies at the Torcuato Di Tella University in Buenos Aires, Argentina.

Louise Woods

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Index

AAA Arbitration Rules

authority to award damages, 44

Accounting-based valuation approach

adjustments arising from

accounting conventions

depreciation, 344–45

intangible assets, 346–47

inventory, 345–46

non-balance sheet items, 343–44

adjustments for changes between

reporting and valuation dates

country risk, 342

growth and competitive

conditions, 342–43

resolution of project-specific
risks, 342

resolution of systematic risk, 341

time value of money and risk

during construction, 341

background, 334–35

book values, 338–40

debt, 347–48

fair market value, 340

fundamental principles, 335–36

guide for selection and implementation

of approach, 352

introduction, 333

meaning, 336–37

proposed framework, 350–51

regulated industries, 348–50

use in arbitration, 337

Accounting basics

accruals, 205

audit reports, 204–05

balance sheet, 204

consistency, 206

contingent liabilities, 206

depreciation, 205

double-entry bookkeeping, 203–04

estimates, 206

financial statements, 204–05

flexibility, 206

impairment, 206

International Financial Reporting

Standards, 205

introduction, 203

profit and loss account, 204

related-party transactions, 206

revenue, 205

Accruals

accounting basics, 205

Advisers

costs, 417–18

American rule

costs, 410–11

Ancillary judicial proceedings

costs, 420

Anticipatory breach

Convention on the International Sale
of Goods, 87

Applicable law

compensatory damages, 9–11

international commercial arbitration

power to award non-compensatory
damages, 42

Assessment of damages

see also Country risk; Industry-specific damages; Valuation methods

accounting basics

accruals, 205

audit reports, 204–05

balance sheet, 204

consistency, 206

contingent liabilities, 206

depreciation, 205–06

double-entry bookkeeping, 203–04

estimates, 206

financial statements, 204–05

flexibility, 206

impairment, 206

International Financial Reporting Standards, 205–06

introduction, 203

profit and loss account, 204

related-party transactions, 206

revenue, 205

basic principles

‘but for’ scenarios, 208–09

compensation for loss

of opportunity, 210–11

conclusion, 215

currencies, 212–13

data management, 213–15

date for quantification

of damages, 211

hindsight, 210

interest, 213

lack of trading history, 209

liquidated companies, 209

loss of profit, 207–09

management time, 210

models, 213–14

overhead costs, 208

overhead recovery rates, 210

regression analysis, 214–5

sampling, 214

seasonal adjustment, 215

statistics, 214–15

sunk costs, 210

tax, 212

valuation approaches, 211–12

breach of contract

causation, 218

conclusions, 225

date of assessment, 219–21

flowchart, 225

foreseeability, 218–19

hindsight, 219–21

implementing loss

calculation, 222–23

introduction, 216–18

mitigation, 221–22

period of loss, 221–22

reliance damages, 224–25

uncertainty in financial

information, 223–24

wasted costs, 224–25

‘but for’ scenarios, 208–09

currency

discounted cash flow, 265–66

importance of currency, 375–76

interest rates, 392–93

introduction, 212–13, 366

legal approach, 376–80

valuer’s approach, 380–81

taxation

calculating damages, 367

calculating tax impact, 374

diversity in national approaches

to tax, 369–70

foreign profits, 369

French perspective, 373–74

full compensation principle, 367

importance of tax matters, 367–68

introduction, 366

loss of assets, 369

lost profits, 369

pre-tax and post-tax valuations, 371

tax analysis, issues raised

by, 368–71

tax rates, 212

UK perspective, 371–72

US perspective, 373–74

weighted average cost of capital

basic principles, 290–91

beta, 294–95, 300

conclusions, 297–98

debt risk premium, 293–94, 299

- debt-equity ratio, 295–96, 300
- equity risk premium, 294, 299
- estimating, 291–301
- introduction, 289
- risk-free rate, 293, 299
- tax rate, 296–97, 300–01
- worked example, 299–301
- Assets**
 - cash flow, components of, 271
- Assumptions**
 - expert's report, 188–89
- Audit reports**
 - accounting basics, 204–05
- Austria**
 - compensatory damages
 - mitigation, 19
 - contractual limitations
 - on damages, 108
- Avoidance of contract**
 - Convention on the International Sale of Goods
 - damages in substitution transactions, 79
 - damages without substitution transactions, 87
 - generally, 100
- Balance sheet**
 - accounting basics, 204
 - discounted cash flow, 259–63
- Bank deposits**
 - interest rates, 389
- Beta**
 - weighted average cost of capital, 294–95, 300
- Bifurcation**
 - procedural issues, 147–51
- Book value**
 - accounting-based valuation approach, 338–40
- Breach of competition law**
 - gas and electricity arbitrations, 464
- Breach of contract**
 - causation, 218
 - conclusions, 225
 - Convention on the International Sale of Goods, 15
 - date of assessment, 219–21
 - flowchart, 225
 - foreseeability, 218–19
 - gas and electricity arbitrations, 463
 - hindsight, 219–21
 - implementing loss calculation, 222–23
 - introduction, 216–18
 - mitigation, 221–22
 - period of loss, 221–22
 - reliance damages, 224–25
 - uncertainty in financial information, 223–24
 - wasted costs, 224–25
- Burden of proof**
 - compensatory damages, 11–12
 - Convention on the International Sale of Goods
 - damages in substitution transactions, 82
 - damages without substitution transactions, 88
 - general principles, 77–78
 - mitigation damages, 90
- 'But for'**
 - discounted cash flow, 242–43
 - full compensation principle
 - means to achieve full compensation, as, 136–37
 - proving causality, 137
 - proving loss, 137
 - quantification, 138
 - gas and electricity arbitrations, 466
 - general principles, 208–09
- Calderbank settlement offers**
 - costs, 414
- Capital expenditures**
 - discounted cash flow, 260–61
- Case management**
 - procedural issues, 160–61
- Cash flow statements**
 - discounted cash flow, 263–66
- Cash flows**
 - components of, 271
 - forecasted cash flows, 279–80
 - growth of
 - generally, 280
 - growth of market, 281
 - investment, 281–82

- size of company, 281
 - working capital requirements, 283
 - Causation**
 - breach of contract, 218
 - compensatory damages, 24
 - Convention on the International Sale of Goods, 70
 - reduction of damages, 118–20
 - Child labour**
 - Convention on the International Sale of Goods, 76
 - Chile**
 - moral damages, 40
 - Clause pénale**
 - liquidated damages, 36–37
 - Coefficient of variation (R^2)**
 - econometric and statistical analysis, 429
 - Collaboration**
 - life sciences arbitrations
 - commercially reasonable efforts, 495
 - generally, 494–95
 - intellectual property, 496
 - investment treaty claims, 496
 - Commercially reasonable efforts**
 - life sciences arbitrations
 - assessing conduct, 497–99
 - generally, 497
 - Commodities**
 - gas and electricity arbitrations, 472, 473–74
 - Comparables**
 - conclusions, 332
 - country risk, 361
 - examples of using
 - comparator-based valuations
 - hypothetical US-regulated electric utility, 325–27
 - telecommunications company in small developing island country, 327–29
 - gas and electricity arbitrations
 - bundled services, 472
 - commodity, 472, 473–74
 - difficulties in using, 471–72
 - flexibility, 472, 474
 - payment terms, 472, 475
 - shape, 472, 474
 - transport costs, 475
 - introduction, 317–18
 - potential extensions applicable in damages estimation
 - assets with unique characteristics based on historical transaction prices, 329–30
 - valuing different segments of company's activities, 330–31
 - valuation method
 - apply comparables-based multiples to asset being valued, 323–24
 - calculate appropriate valuation multiples for comparable assets, 322–23
 - key steps, 319–24
 - obtain comparable assets with observable market prices, 320–22
 - review results and cross-check with alternative valuation methods, 324
 - understand asset being value, 319–20
- Compensation**
 - see also* Full compensation principle
 - meaning under Convention on the International Sale of Goods, 60
- Compensatory damages**
 - applicable law, 9–11
 - assessing amount of damages
 - certainty of damages, 24–25
 - general approach, 21–22
 - methods, 23–24
 - recoverable losses, categories of, 22–23
 - basic rule, 7
 - conclusion, 25
 - Convention on the International Sale of Goods, 15
 - entitlement to
 - establishing, 13–16
 - foreseeability, 16–18
 - introduction, 13
 - mitigation, 18–21
 - flowchart, 26
 - introduction, 7–9

- meaning, 7
- proof
 - assessing proof, 11
 - burden of proof, 11–12
 - standard of proof, 12–13
- relevant issues for determining awards, 27–29
- Compound interest**
 - see* Interest
- Concessions**
 - oil and gas and mining arbitrations, 441–42
- Conduct**
 - costs, 411–13
- Conferencing**
 - expert's report, 196–97
- Consequential damages**
 - discounted cash flow method, 247
 - recoverable loss, 23
- Consequential loss**
 - Convention on the International Sale of Goods, 64–66
- Consistency**
 - accounting basics, 206
- Construction arbitrations**
 - conclusions, 489
 - delay costs, 478–80
 - disruption costs, 481–85
 - global claims, 478
 - head office overheads, 485–88
 - introduction, 477
 - termination costs, 488
- Contingency fees**
 - costs, 419–20
- Contingent liabilities**
 - accounting basics, 206
- Contractual limitations on damages**
 - agreement and incorporation of terms, 102–03, 115–16
 - burden of proof, 105
 - checklist, 115–16
 - conclusions, 114–15
 - consequences of, 106, 116
 - forms of
 - exclusion of types of damage, 110–12
 - limitation clauses, 109
 - liquidated damages, 107–08
 - modifications of standard conditions, 112–13
 - penalty clauses, 107–08
 - third-party liability, 113–14
 - interpretation of terms, 103–04
 - introduction, 101–02
 - limits on, 105–06
- Contributory negligence**
 - 'but for', 137
 - generally, 19
 - reduction of damages, 124–25
- Convention on the International Sale of Goods (CISG)**
 - application of, 57–58
 - avoidance of contract, 100
 - compensatory damages, 15
 - conclusion, 100
 - current price
 - location of goods, 85
 - nature of, 84
 - time of determination, 85
 - damages, general principles on (Article 74)
 - burden of proof, 77–78
 - causation, 70
 - child labour, 76
 - compensation, 60
 - costs, 73–74
 - disgorgement of profits, 72–73
 - entitlement to, 58–59
 - foreseeability, 71
 - human rights, 76
 - hypothetical on heads of damages, 61
 - introduction, 59–60
 - limitation on, 71–72
 - limitation period, 78
 - liquidated damages, 74–75
 - loss of volume, 76
 - losses, 60–70
 - penalty clauses, 74–75
 - standard of proof, 77–78
 - third-party claims, 75
 - damages in substitution transactions (Article 75)
 - avoidance of contract, 79

- burden of proof, 82
- calculating damages, 81
- foreseeability, 82
- further damages, 81–82
- generally, 78–79
- reasonable time and manner, 80–81
- substitute transactions, 79–80
- damages without substitution
- transactions (Article 76)
 - absence of substitution
 - transaction, 86
 - anticipatory breach, 87
 - avoidance of contract, 83
 - burden of proof, 88
 - contractual price, 85–86
 - current price, 83–85
 - foreseeability, 87
 - further loss, 87
 - generally, 83
- full compensation principle, 135
- hardship, 97–99
- interest (Article 78)
 - accrual period, 91
 - exemptions, 94–99
 - generally, 90
 - obligation to pay, 94
 - rate of interest, 92–93
 - simple versus compound interest, 94
- introduction, 55–56
- limitation on damages
 - material loss, 71–72
 - monetary relief, 71
 - punitive damages, 72
- loss
 - calculation of, 68
 - consequential loss, 64–66
 - currency, 70
 - direct loss, 62–63
 - generally, 60–61
 - incidental loss, 63–64
 - legal costs, 65
 - lost profits, 66–68
 - place, 70
 - reputation, 66
 - time, 70
 - mitigation damages (Article 77)
 - burden of proof, 90
 - generally, 88
 - lost volume sales, 89
 - obligation to mitigate, 88–89
 - price reduction, 100
 - specific performance, 100
- Cost-based approach**
 - country risk, 361–62
 - environmental, social and governance issues, 537
 - shareholder arbitrations, 514
- Cost of capital**
 - interest rates, 388–89
- Cost of debt**
 - interest rates, 388
- Cost projections**
 - discounted cash flow, 256–58
- Costs**
 - categories of recoverable costs
 - advisers, 417–18
 - ancillary judicial proceedings, 420
 - contingency fees, 419–20
 - external counsel, 417–18
 - in-house counsel, 419
 - third-party funding, 419–20
 - witnesses, 417–18
 - Convention on the International Sale of Goods, 73–74
 - cost allocation considerations
 - American Rule, 410–11
 - Calderbank* settlement offers, 414
 - conduct during arbitration, 412–13
 - ‘costs follow the event’, 409–10
 - default rule, 409–10
 - generally, 409
 - issue-based allocation, 413–14
 - ‘loser pays’, 409–10
 - mitigation, 413–14
 - pre-arbitration conduct, 411
 - covid-19, 423–24
 - determining recoverable costs
 - categories of recoverable costs, 417–20
 - standard for recovering costs, 415–17
 - introduction, 401–02

- parties' arbitration agreement
 - drafting considerations to address cost allocation, 407–08
 - drafting considerations to address saving of costs, 408–09
 - generally, 407
 - procedure for claiming costs awards
 - contents of awards, 422–23
 - costs submissions, 421–22
 - evidentiary requirements, 421–22
 - generally, 160–61
 - timing of awards, 422–23
 - source and scope
 - of arbitrators' authority
 - arbitration rules, 405–07
 - generally, 402–03
 - national arbitration legislation, 404–05
 - parties' arbitration agreement, 407–09
 - standard for recovering costs
 - incurred for arbitration, 416–17
 - reasonable and proportionate, 415–16
 - strategic considerations, 424
- Counsel**
- costs
 - external counsel, 417–18
 - in-house counsel, 419
- Country risk**
- accounting-based valuation approach, 342
 - comparables method, 361
 - conclusions, 365
 - cost-based method, 361–62
 - discounted cash flow method
 - generally, 354–56
 - Ibbotson/Morningstar's Country Risk Rating Model, 360
 - other measures and applications, 359–61
 - qualitative measures of country risk, 360–61
 - relative volatility, 358–59
 - sovereign default risk, 356–58
 - International Country Risk Guide, 353
 - introduction, 353–54
 - market capitalisation method, 361
 - multiples based on past transactions, 361
 - oil and gas and mining arbitrations, 449
 - reduction of damages, 129
 - relevant risks to damages calculations
 - exposure, 362–63
 - generally, 362
 - risks evaluation just prior to valuation date, 364–65
- Covid-19**
- costs, 423–24
- Currency**
- basic principles, 212–13
 - Convention on the International Sale of Goods, 70
 - discounted cash flow, 265–66
 - importance of currency, 375–76
 - interest rates, 392–93
 - introduction, 366
 - legal approach, 376–80
 - valuer's approach, 380–81
- Damnum emergens***
- recoverable losses, 20
- Data availability**
- life sciences arbitrations, 494
- Data management**
- assessment of damages, 213–15
- Date of valuation**
- see *Valuation date*
- Days payables outstanding**
- discounted cash flow method, 261
- Days sales of inventory**
- discounted cash flow method, 261
- Days sales outstanding**
- discounted cash flow method, 261
- Debt**
- accounting-based valuation approach, 347–48
- Debt-equity ratio**
- weighted average cost of capital, 295–96, 300
- Debt-like items**
- discounted cash flow method, 263

Debt risk premium

weighted average cost
of capital, 293–94, 299

Delays

construction arbitration
damages, 478–80

Depreciation

accounting-based valuation
approach, 344–45
accounting basics, 205–06

Differential hypothesis

see ‘But for’

Direct loss

Convention on the International Sale
of Goods, 62–63

Disclosure

environmental, social and
governance issues
ESG ratings, 539–42
Task Force for Climate-Related
Financial Disclosures, 538–39

Discount rates

discounted cash flow method, 266–68
discounted cash flow models, 272

Discounted cash flow method

see also Discounted cash flow models

application of method
but-for method, 242–43
direct assessment, 247
ex ante valuation, 244–47
ex post valuation, 244–47
indirect assessment, 247
introduction, 241–42
loss in business value, 243–44
lost profits, 243–44
models, use of, 247–48

assumptions

balance sheet, 259–63
capital expenditures, 260–61
cash flow statement, 263–66
corporate income taxes, 259
cost projections, 256–66
currencies, 265–66
discount rates, 266–68
exchange rates, 265–66
financials, 251–66
income statement, 251–59

inflation, 266

introduction, 248–49

net debt, 262

net working capital, 261–62

projected financing, 262

revenue projections, 252–55

special items, 262–63

tax step-up, 268–69

terminal growth rate, 264–65

terminal value, 264–65

valuation date, 249–50

valuation object, 249

valuation or loss period, 250

country risk and generally, 354–56

Ibbotson/Morningstar’s Country

Risk Rating Model, 360

other measures and

applications, 359–61

qualitative measures of country

risk, 360–61

relative volatility, 358–59

sovereign default risk, 356–58

documentation supporting results
of methodology, 269

enterprise valuation, 241

equity valuation, 240

generally, 211, 239–40

reduction of damages

bar against speculative

damages, 120–23

sensitivities in method

as damages-reduction

strategy, 128–32

shareholder arbitrations, 513–14

Discounted cash flow models

basis of

components of future cash

flows, 271

DCF approach, 273

discount rate, 272

introduction, 271

Certainty-Equivalent DCF approach

challenges of

implementing, 307–11

example, 316

income approaches, 303–05

lack of use of, 312–14

- summary, 304
- theoretical appeal of, 305–07
- conclusion, 287–88
- construction of
 - design, 275–78
 - introduction, 273
 - quality control, 279
 - spreadsheets, 274–75
 - testing, 279
- design
 - clarity, 278
 - consistency, 277
 - documentation, 278
 - generally, 275
 - structure, 276–77
- forecast cash flows, 279
- growth of cash flows
 - generally, 280–81
 - growth of market, 281
 - investment, 281–82
 - size of company, 281
 - working capital requirements, 283
- introduction, 270
- ‘modern’ DCF method
 - income approaches, 303–05
 - introduction, 302
- terminal value, 283–84
- tribunal, role of, 284–87
- Discounts**
 - shareholder arbitrations
 - illiquidity discount, 515–16
 - lack of control discount, 517–18
 - weighted average cost of capital
 - basic principles, 290–91
 - conclusions, 297–98
 - discounted cash flow
 - method, 240–41
 - estimating, 291–97
 - introduction, 289
- Disorgement of profits**
 - Convention on the International Sale of Goods, 72–73
- Disruption costs**
 - construction arbitration, 481–85
- Document production**
 - procedure, 157–60
- Double-entry bookkeeping**
 - accounting basics, 203–04
- Double recovery**
 - reduction of damages, 127–28
- Duress**
 - full reparation principle, 141
- Earnings before interest and taxes (EBIT)**
 - discounted cash flow method, 252
 - market or comparables approach, 325–26
 - merger and acquisition arbitrations, 509
- Earnings before interest, taxes, depreciation and amortisation (EBITDA)**
 - discounted cash flow method, 252
 - market or comparables approach, 230–31, 324–26
 - merger and acquisition arbitrations, 509
 - oil and gas and mining arbitrations, 455
- Econometric and statistical analysis and tools**
 - conclusion, 437
 - context, 427
 - data, meaning of, 425
 - F-value, 433
 - hedonic regression, 428, 435–37
 - introduction, 425–28
 - measures of central tendency, 427
 - measures of dispersion, 427
 - examples of regression
 - explain a relationship, 435–37
 - predict a trend, 431–34
 - regression analysis
 - examples of regressions, 431–37
 - meaning, 428
 - multicollinearity, 430
 - P-value, 430
 - R-squared, 429
 - standard error, 430
 - types of, 429
 - use of, 428
 - time series regression, 428, 431–33

Egypt

moral damages, 40

Enforceability of awards

New York Convention, 37, 532

Environmental risk

oil and gas and mining
arbitrations, 449–50

Environmental, social and

governance issues

conclusions, 546

disclosure

ESG ratings, 539–42

Task Force for Climate-Related

Financial Disclosures, 538–39

framework for incorporating ESG

impacts in valuations

assessment of sources, 545

Essential Guide to Valuations and
Climate Change, 543–44

filtering risks and

opportunities, 545

generally, 543

identification of company's key
value drivers, 544–45

integration of identified risks and
opportunities, 546

International Sustainability

Standards Board, 543

triangulation to market, 546

introduction, 533–34

reflection of in damages assessments

cost approach, 537

generally, 535

income approach, 535–6

market approach, 536–37

relevance to damages, 534–35

Equity risk premium

weighted average cost

of capital, 294, 299

Estimates

accounting basics, 206

European law

intellectual property arbitrations

knowing infringement, 525

negative economic

consequences, 527–29

recovery of royalties, 525–27

right to damages, 523–25

unexploited rights, 525–27

unfair profits, 529–32

non-compensatory damages

punitive damages, 39

***Ex ante* valuations**

discounted cash flow, 244–47

gas and electricity arbitrations, 467–68

***Ex post* valuations**

discounted cash flow, 244–47

gas and electricity arbitrations, 467,
468–69

Excess of jurisdiction

non-compensatory damages, scrutiny

of awards of, 45–48

Exchange rates

discounted cash flow, 265–66

Expectation damages

recoverable losses, 22

Expert witnesses

see also Witnesses

conclusions, 173, 199

conferencing, 196–97

damages models

control panels on

spreadsheets, 185–86

joint models, 187

preparation of, 181–85

determining when to use

expert, 175–76

differing opinions

accuracy and robustness

of data, 190

assumptions, 188–89

causes for, 178

key differences, 189

duties and obligations

competence, 164

independence, 164–66

transparency, 166–67

engaging right expert, 176–77

hearings, 172–73

independence, 176

introduction, 174

joint expert meetings, 172

joint reports, 172, 195

list of agreed/disagreed points, 195

- party-appointed experts, 162–63
 - pre-hearing meetings, 193–94
 - presentations by expert, 195–96
 - quantum experts
 - introduction, 152
 - risk of party-appointed experts, 154–55
 - role of, 153
 - tribunal engagement with, 155–57
 - reports
 - assumptions, 168–69
 - considerations for rebuttal report, 171–72
 - considering evidence from other reports, 169–70
 - financial models supporting reports, 170–71
 - joint reports, 172, 195
 - opinions, 170
 - presentation of issues in memorials, 179–81
 - structure of damages report, 168
 - role of
 - introduction, 162
 - involvement throughout process, 163–64
 - taking on expert damages assignment, 167–68
 - sensitivity analysis, 191–93
 - tribunal-appointed experts, 162–63, 197–99
 - understanding expert analysis
 - expert conferencing, 196–97
 - expert presentations, 195–96
 - generally, 191
 - joint reports, 195
 - list of agreed/disagreed points, 195
 - pre-hearing meetings, 193–94
 - sensitivity analysis, 191–93
 - tribunal-appointed experts, 197–99
 - witness conferencing, 196–97
 - working with, 177–79
- Exposure**
- country risk and generally, 362–63
- Extraction costs**
- oil and gas and mining arbitrations, 449
- Fair market value**
- accounting-based valuation approach, 338–40
 - full reparation principle, 139–42
 - oil and gas and mining arbitrations, 446
 - shareholder arbitrations, 510–11
- Financial markets**
- pre-award interest, 384–85
- Financial statements**
- accounting basics, 204–05
- Finland**
- compensatory damages mitigation, 19
- Flexibility**
- accounting basics, 206
- Forecasted cash flows**
- see* Cash flows
- Foreign profits**
- taxation issues, 369
- Foreseeability**
- compensatory damages, 16–18
 - Convention on the International Sale of Goods
 - damages in substitution transactions, 82
 - damages without substitution transactions, 87
 - general principles, 71
- Foreseeability**
- reduction of damages, 123–24
- France**
- compensatory damages
 - assessing amount, 20
 - recoverable losses, 21
 - requirements underlying principles and limits, 24–25
 - full compensation principle, 135
 - intellectual property arbitrations, 531
 - non-compensatory damages
 - enforcement of awards, 47
 - exception to rule, 34
 - general principle, 32
 - moral damages, 40
 - punitive damages, 46
 - restitutionary damages, 38

- reduction in damages
 - foreseeability, 123–24
 - taxation issues, 373–74

Full compensation principle

- ‘but for’
 - means to achieve full compensation, as, 136–37
 - proving causality, 137
 - proving loss, 137
 - quantification, 138

- introduction, 134

- origins, 134–36

Full reparation principle

- conclusions, 144

- duress, 141

- Factory at Chorzów* case, 139–44

- fair market value, 139–44

- hypothetical normal course

- of events, 141

- introduction, 134

- key principle, 139

- origins, 134–36

- threats, 141

- valuation date, 142

- value of undertaking, 140

Future cash flows

- see* Cash flows

Gas and electricity arbitrations

- see also* Oil and gas and

- mining arbitrations

- breach of competition law, 464

- breach of contract, 463

- broad framework for estimating damage, 465

- calculating damage, 469–71

- characteristics of industry, 463

- comparators

- bundled services, 472

- commodity, 472, 473–74

- difficulties in using, 471–72

- flexibility, 472, 474

- payment terms, 472, 475

- shape, 472, 474

- transport costs, 475

- conclusions, 476

- establishing ‘but for’ case, 466

- establishing factual case, 465

- estimating change in value over time, 470–71

- ex ante* valuations, 467–68

- ex post* valuations, 467, 468–69

- introduction, 463–65

- long-duration contracts, 464

- nature of damage, 463

- simulation, 475–76

- storage limitations, 464–65

- sunk investment costs, 464

- up-front investment costs, 464

Germany

- compensatory damages, 22

- contractual limitations on damages

- limits on, 105

- penalty clauses, 108

- standard contract terms, 103

- full compensation principle, 135

- full reparation principle, 140

Global claims

- construction arbitration, 478

Head office overheads

- construction arbitration, 485–88

Hindsight

- basic principles, 210

- breach of contract, 219–21

Hong Kong International

Arbitration Centre

- confidentiality, 158

- costs, 407

Human rights

- Convention on the International Sale of Goods, 76

Hypothetical normal course of events

- full reparation principle, 140

Ibbotson/Morningstar’s Country Risk

Rating Model

- adjusting valuations for country risk, 360

ICDR-AAA International

Arbitration Rules

- authority to award damages, 44

- costs, 406

Impairment

- accounting basics, 206

Incidental loss

Convention on the International Sale of Goods, 63–64

Income-based approach

see also Discounted cash flow method
applicable approach, 228–30
environmental, social and governance issues, 535–36
generally, 211
oil and gas and mining arbitrations, 451–54
shareholder arbitrations, 513–14

Income statements

discounted cash flow, 251–59

Incremental costs

life sciences arbitrations
incremental manufacturing costs, 500–01
incremental marketing costs, 501–02

Incremental revenues

life sciences arbitrations, 500

Industry-specific damages

see also under individual industries

construction arbitrations

conclusions, 489
delay costs, 478–80
disruption costs, 481–85
global claims, 478
head office overheads, 485–88
introduction, 477
termination costs, 488

gas and electricity arbitrations

breach of competition law, 464
breach of contract, 464
broad framework for estimating damage, 465
calculating damage, 469–71
characteristics of industry, 464
comparators, 471–75
conclusions, 476
establishing ‘but for’ case, 466
establishing factual case, 465
estimating change in value over time, 470–71
ex ante valuations, 467–68
ex post valuations, 467, 468–69

introduction, 463–65

long-duration contracts, 464

nature of damage, 463–64

simulation, 475–76

storage limitations, 464–65

sunk investment costs, 464

up-front investment costs, 464

intellectual property arbitrations

enforceability of awards, 532

European approaches to assessing damages, 523–32

introduction, 519–21

TRIPS Agreement, 522–23

life sciences arbitrations

collaborations and disputes, 494–95

damages and sales forecasts, 503

damages for lost sales, 497–502

damages in intellectual property disputes, 502–03

industry overview, 491

introduction, 490

merger and acquisition arbitrations

accuracy of financial

statements, 507–08

conclusions, 518

damage quantification, 506–07

introduction, 504–06

locked box mechanism, 508–09

proof of damages, 506

purchase price adjustment mechanisms, 508

purchase price multipliers, 509

structure of disputes, 505

oil and gas and mining arbitrations

commercial activity, 443

conclusion, 462

country risk, 449

deposit size, 446–50

extraction costs, 449

fair market value, 446

fiscal terms, 449

government concessions, 441–42

income approach, 451–54

introduction, 441–46

life cycle of projects, 444–45

market approach, 454–61

media claim amounts, 446

- mega projects, 445–46
- mining resources and reserves classification framework, 447
- oil and gas resources classification framework, 447–48
- price expectations, 448–49
- social and environmental risk, 449–50
- valuation standards and guidelines, 450–51
- value drivers, 446–50
- shareholder arbitrations
 - adjustments to values derived, 514–15
 - conclusions, 518
 - fair value, 510–11
 - introduction, 504, 510
 - market value, 510–11
 - price paid, 510–11
 - valuation approaches, 511–14
- Inflation**
 - discounted cash flow, 266
- Intangible assets**
 - accounting-based valuation approach, 346–47
- Intellectual property**
 - life sciences arbitrations
 - collaborations, 496
 - damages, 502–03
- Intellectual property arbitrations**
 - enforceability of awards, 532
 - European approaches
 - to assessing damages
 - knowing infringement, 525
 - negative economic consequences, 527–29
 - recovery of royalties, 525–27
 - right to damages, 523–25
 - unexploited rights, 525–27
 - unfair profits, 529–32
 - introduction, 519–21
 - TRIPS Agreement, 522–23
- Interest**
 - basic principles, 213
 - compound interest, 94, 390–92
 - Convention on the International Sale of Goods
 - accrual period, 91
 - exemptions, 94–99
 - generally, 90
 - obligation to pay, 94
 - rate of interest, 92–93
 - simple versus compound interest, 94
 - introduction, 213
 - post-award interest, 386–87
 - pre-award interest
 - compound interest, 390–92
 - financial markets, 384–85
 - interest rates, 385–96
 - introduction, 384
 - simple interest, 390–91
 - rates of interest
 - bank deposits, 389
 - benchmark rates, 387
 - contractual rates, 387
 - Convention on the International Sale of Goods, 92–93
 - cost of capital, 388–89
 - cost of debt of respondent, 388
 - currencies, 392–93
 - fixed rates, 389
 - floating rates, 389
 - illustration of use of different rates, 391–92
 - interbank rates, 387–88
 - nominal rates, 389–90
 - preferable rate on economic grounds, 393–94
 - rates used by tribunals, 394–96
 - real rates, 389–90
 - reference rates, 387
 - risk-free rate, 388
 - simple interest, 94, 390–91
- International Centre for Settlement of Investment Disputes (ICSID)**
 - costs, 406
- International Chamber of Commerce (ICC)**
 - applicable law, 42
 - costs, 406
 - lex arbitri*, 43

non-compensatory damages
 authority to award, 42
 enforcement of awards, 47

International commercial arbitration
 non-compensatory damages
 applicable law, 42
 arbitration agreement, 43–44
 arbitration rules, 44–45
 authority to make awards, 42
 excess of jurisdiction, 45–48
 generally, 41
lex arbitri, 43
 public policy considerations, 45–48
 scrutiny of awards, 45–48

International financial reporting standards
 accounting basics, 205–06

Inventory
 accounting-based valuation
 approach, 345–46

Investment costs
 gas and electricity arbitrations, 464

Investment treaty claims
 life sciences arbitrations, 496
 non-compensatory damages
 generally, 48
 moral damages, 50–55
 overview of damages in
 international law, 48–50

Italy
 compensatory damages
 mitigation, 19
 non-compensatory damages
 enforcement of award, 46

Japan
 compensatory damages
 mitigation, 19

Knowing infringement
 intellectual property arbitrations, 525

Lebanon
 moral damages, 40

Lex arbitri
 international commercial arbitration
 power to award non-compensatory
 damages, 41

Libya

non-compensatory damages
 authority of tribunal to award, 42
 moral damages, 40

Life cycles

life sciences arbitrations, 493–94
 resource extraction projects, 444–45

Life sciences arbitrations

collaborations and disputes
 commercially reasonable
 efforts, 495
 generally, 494–95
 intellectual property, 496
 investment treaty claims, 496
 damages and sales forecasts, 503
 damages for lost sales
 assessing conduct, 497–99
 determining unit sales impact,
 499–500
 generally, 497
 incremental manufacturing
 costs, 500–01
 incremental marketing
 costs, 501–02
 incremental revenues, 500
 damages in intellectual property
 disputes, 502–03
 industry overview
 data, 494
 generally, 491
 life cycle, 493–94
 manufacturing, 492
 marketing, 492–93
 research and development, 491–92
 introduction, 490

Limitation on damages

Convention on the International Sale
 of Goods
 material loss, 71–72
 monetary relief, 71
 punitive damages, 72

Limitation period

Convention on the International Sale
 of Goods, 78

Liquidated damages

contract terms, 36–37

- contractual limitations
- on damages, 107–08
- Convention on the International Sale of Goods, 74–75
- generally, 10
- non-compensatory damages, 36–37

Liquidation

- assessment of damages, 209, 211

Liquidity risk

- shareholder disputes, 515–16

Locked box mechanism

- merger and acquisition
- arbitrations, 508–09

Loss

- breach of contract
 - implementing loss
 - calculation, 222–23
 - period of loss, 221–22
- business value
 - discounted cash flow, 243–44
- compensatory damages
 - recoverable losses, 19–20
- Convention on the International Sale of Goods
 - calculation of, 68
 - consequential loss, 64–66
 - currency, 70
 - direct loss, 62–63
 - generally, 60–61
 - incidental loss, 63–64
 - legal costs, 65
 - lost profits, 66–68
 - place, 70
 - reputation, 66
 - time, 70
- non-pecuniary loss, 7
- pecuniary loss, 7
- proving loss, 137
- taxation
 - loss of assets, 369
 - lost profits, 369

Loss of volume

- Convention on the International Sale of Goods
 - general principles, 76
 - mitigation damages, 89

Lost opportunity

- bar against speculative damages, 122–23

Lost profits

- basic principles, 207–09
- Convention on the International Sale of Goods, 66–68
- discounted cash flow, 243–44

Lost sales

- life sciences arbitrations
 - assessing conduct, 497–99
 - determining unit sales
 - impact, 499–500
 - generally, 497
 - incremental manufacturing costs, 500–01
 - incremental marketing costs, 501–02
 - incremental revenues, 500

Lucrum cessans

- recoverable losses, 20

Management costs

- basic principles, 210

Manufacturing

- life sciences arbitrations
 - collaborations, 495
 - incremental manufacturing costs, 500–01
 - industry overview, 492
 - investment treaty claims, 496
 - lost sales, 497

Market-based approach

- see also* Comparables
- applicable approach, 230–31
- environmental, social and governance issues, 536–37
- oil and gas and mining arbitrations
 - direct market evidence of asset's value, 460–61
 - introduction, 454–55
 - P/NAV multiple, 459–60
 - valuation multiples from comparable assets, 455–59
- shareholder arbitrations, 513

Market capitalisation

- country risk, 361

- oil and gas and mining arbitrations
 - direct market evidence of asset's value, 460–61
 - P/NAV mining industry valuation method, 459–60
- Market value**
 - shareholder arbitrations, 510–11
- Marketing**
 - life sciences arbitrations, 492–93
- Material loss**
 - Convention on the International Sale of Goods, 71–72
- Measure of damages**
 - compensatory damages
 - certainty of damages, 24–25
 - general approach, 21–22
 - methods, 23–24
 - recoverable losses, categories of, 22–23
- Medical devices**
 - see* Life sciences arbitrations
- Merger and acquisition arbitrations**
 - accuracy of financial statements, 507–08
 - conclusions, 518
 - damage quantification, 506–07
 - introduction, 504–06
 - locked box mechanism, 508–09
 - proof of damages, 506
 - purchase price adjustment mechanisms, 508
 - purchase price multipliers, 509
 - structure of disputes, 505
- Mining arbitrations**
 - see* Oil and gas and mining arbitrations
- Mitigation**
 - breach of contract, 221–22
 - compensatory damages, 18–21
 - costs, 413–14
 - reduction of damages, 125–27
- Mitigation damages**
 - Convention on the International Sale of Goods
 - burden of proof, 90
 - generally, 88
 - lost volume sales, 89
 - obligation to mitigate, 88–89
- Models for assessing damages**
 - see also* Valuation methods
 - basic principles, 213–14
 - expert's role
 - control panels on spreadsheets, 185–86
 - joint models, 187
 - preparation of, 181–85
- Money**
 - see also* Currency
 - time value of, 341
- Moral damages**
 - generally, 39–41
 - investment treaty arbitrations, 50–54
- Multiples**
 - see also* Comparables
 - country risk, 361
 - oil and gas and mining arbitrations
 - P/NAV multiple, 459–60
 - valuation multiples from comparable assets, 455–59
- Natural resources**
 - see* Oil and gas and mining arbitrations
- Net asset value**
 - shareholder arbitrations, 514
- Net debt**
 - discounted cash flow, 262
- Net working capital**
 - discounted cash flow, 261–62
- New York Convention**
 - enforcement of awards, 45, 532
- Nominal damages**
 - availability of, 35–36
- Non-balance sheet items**
 - accounting-based valuation approach, 343–44
- Non-compensatory damages**
 - conclusions, 54
 - damages as main form of compensation, 31–33
 - exceptions to rule, 33–34
 - international commercial arbitration
 - applicable law, 42
 - arbitration agreement, 43–44
 - arbitration rules, 44–45
 - authority to make awards, 42
 - excess of jurisdiction, 45–48

- generally, 41
- lex arbitri*, 43
- public policy considerations, 45–48
- scrutiny of awards, 45–48
- introduction, 30–31
- investment treaty arbitrations
 - generally, 48
 - moral damages, 50–54
 - overview of damages in international law, 48–50
- types of
 - clause pénale*, 36–37
 - generally, 35
 - liquidated damages, 36–37
 - moral damages, 39–41
 - nominal damages, 35–36
 - punitive damages, 38–39
 - restitutionary damages, 37–38
- Non-operating assets**
 - discounted cash flow method, 263
- Non-pecuniary losses**
 - meaning, 7
- Oil and gas and mining arbitrations**
 - commercial activity, 443
 - conclusion, 462
 - government concessions, 441–42
 - income approach, 451–54
 - introduction, 441–46
 - life cycle of projects, 444–45
 - market approach
 - direct market evidence of asset's value, 460–61
 - introduction, 454–55
 - P/NAV multiple, 459–60
 - valuation multiples from comparable assets, 455–59
 - mega projects, 445–46
 - media claim amounts, 446
 - valuation standards and guidelines, 450–51
 - value drivers
 - country risk, 449
 - deposit size, 446–50
 - extraction costs, 449
 - fair market value, 446
 - fiscal terms, 449
 - mining resources and reserves classification framework, 447
 - oil and gas resources classification framework, 447–48
 - price expectations, 448–49
 - social and environmental risk, 449–50
- Operating costs**
 - cash flow, components of, 271
- Overhead costs**
 - assessment of damages, 208
- Overhead recovery rates**
 - assessment of damages, 210
- P-values**
 - econometric and statistical analysis, 430
- Pecuniary losses**
 - meaning, 7
- Penalty clauses**
 - Convention on the International Sale of Goods, 74–75
- Performance damages**
 - recoverable losses, 21
- Pharmaceutical industry**
 - see* Life sciences arbitrations
- Portugal**
 - compensatory damages mitigation, 19
- Pre-award interest**
 - compound interest, 390–92
 - financial markets, 384–85
 - interest rates
 - bank deposits, 389
 - benchmark rates, 387
 - contractual rates, 387
 - Convention on the International Sale of Goods, 92–93
 - cost of capital, 388–89
 - cost of debt of respondent, 388
 - currencies, 392–93
 - fixed rates, 389
 - floating rates, 389
 - illustration of use of different rates, 391–92
 - interbank rates, 387–88
 - nominal rates, 389–90

- preferable rate on economic grounds, 393–94
 - rates used by tribunals, 394–96
 - real rates, 389–90
 - reference rates, 387
 - risk-free rate, 388
- introduction, 384
- simple interest, 390–91
- Pre-hearing meetings**
 - expert witnesses, 193–94
- Price**
 - Convention on the International Sale of Goods
 - contractual price, 85–86
 - current price, 84–85
 - price reduction, 100
 - merger and acquisition arbitrations
 - purchase price adjustment mechanisms, 508
 - purchase price multipliers, 509
 - shareholder arbitrations, 510–11
- Principles of European Contract Law 2002**
 - compensatory damages, 10
- Procedural issues**
 - bifurcation, 147–51
 - case management, 160–61
 - costs, 160–61
 - document production, 157–60
 - introduction, 147
 - witness evidence
 - quantum experts, 152–57
 - witnesses of fact, 151–52
- Profit and loss account**
 - accounting basics, 204
- Project-specific risks**
 - accounting-based valuation approach, 342
- Public policy**
 - non-compensatory damages, scrutiny of awards of, 45–48
- Punitive damages**
 - availability of, 38–39
- Purchase price adjustment mechanisms**
 - merger and acquisition arbitrations, 508
- Purchase price multipliers**
 - merger and acquisition arbitrations, 509
- Quality control**
 - DCF models, 279
- Quantum experts**
 - see* Expert witnesses
- Quebec**
 - compensatory damages, 19, 28
 - non-compensatory damages, 33
- Recoverable amount**
 - compensatory damages, 22–23
- Reduction of damages**
 - bar against speculative damages, 120–23
 - causation, 118–20
 - checklist, 132–33
 - contributory fault, 124–25
 - double recovery, 127–28
 - foreseeability, 123–24
 - introduction, 117
 - mitigation, 125–27
 - sensitivities in discounted cash flow method, 128–32
- Regression analysis**
 - assessment of damages, 214–15
- Regression out**
 - econometric and statistical analysis
 - examples of regressions, 431–37
 - meaning, 428
 - multicollinearity, 430
 - P-value, 430
 - R-squared, 429
 - standard error, 430
 - types of, 429
 - use of, 428
- Regulated industries**
 - accounting-based valuation approach, 348–50
- Related-party transactions**
 - accounting basics, 206
- Reliance damages**
 - breach of contract, 224–25
 - recoverable losses, 22
- Reparation**
 - see* Full reparation principle

Research and development

life sciences arbitrations, 491–92

Restitutionary damages

availability of, 37–38

Revenue

accounting basics, 205

Risk

see also Country risk

accounting-based valuation approach

country risk, 342

resolution of project-specific

risks, 342

resolution of systematic risk, 341

oil and gas and mining arbitrations

country risk, 449

social and environmental

risk, 449–50

weighted average cost of capital

debt risk premium, 293–94, 299

equity risk premium, 294, 299

risk-free rate, 293, 299

Risk-free rate

pre-award interest, 388

weighted average cost of

capital, 293, 299

Royalties

intellectual property

arbitrations, 525–27

life sciences arbitrations, 496, 502–03

Russia

compensatory damages

mitigation, 20

Sales forecasts

life sciences arbitrations, 503

Sales revenue

cash flow, components of, 271

Sampling

assessment of damages, 214

Seasonal adjustments

assessment of damages, 215

Sensitivity analysis

expert's reports, 191–93

Settlement offers

costs, 414

Share of market

life sciences arbitrations

assessing conduct, 499–500

Share of voice

life sciences arbitrations

assessing conduct, 499–500

Shareholder arbitrations

adjustments to values derived

control premiums, 517–18

illiquidity discount, 515–16

lack of control discount, 517–18

need for, 514–15

circumstances giving rise to, 510

conclusions, 518

fair value, 510–11

introduction, 504, 510

market value, 510–11

price paid, 510–11

valuation approaches

cost-based approaches, 514

discounted cash flow, 513–14

generally, 511–12

income-based approaches, 513–14

market-based approach, 513

net asset value, 514

Simple interest

see Interest

Simulation

gas and electricity arbitrations, 475–76

Social and environmental risk

oil and gas and mining

arbitrations, 449–50

Sovereign default risk

adjusting valuations for country

risk, 356–58

Spain

non-compensatory damages

enforcement of awards, 46

Specific performance

Convention on the International Sale

of Goods, 100

Speculative damages

bar against, 120–23

Spreadsheets

DCF models, 274–75

Standard of proof

compensatory damages, 12–13

Convention on the International Sale

of Goods, 77–78

Storage limitations

gas and electricity arbitrations, 464–65

Substitution transactions

Convention on the International Sale of Goods

avoidance of contract, 79

burden of proof, 82

calculating damages, 81

foreseeability, 82

further damages, 81–82

generally, 78–79

reasonable time and manner, 80–81

substitute transactions, 79–80

Sunk costs

gas and electricity arbitrations, 464

generally, 210

Switzerland

contractual limitations on damages

exclusion of particular type of damage, 112

limits on, 105

penalty clauses, 108

non-compensatory damages

authority of tribunal to award, 42

enforcement of awards, 46

lex arbitri, 43

punitive damages, 39

standard of proof, 12

Systematic risk

accounting-based valuation

approach, 341

Tax rate

weighted average cost of

capital, 296–97, 300–01

Taxation

calculating damages, 367

calculating tax impact, 374

cash flow, components of, 271

diversity in national approaches

to tax, 369–70

foreign profits, 369

French perspective, 373–74

full compensation principle, 367

generally, 212

importance of tax matters, 367–68

introduction, 366

loss of assets, 369

lost profits, 369

pre-tax and post-tax valuations, 371

tax analysis, issues raised by, 368–71

tax rates, 212

UK perspective, 371–72

US perspective, 373–74

Terminal growth rate

discounted cash flow, 264–65

Terminal value

discounted cash flow method, 264–65

discounted cash flow models, 283–84

Termination costs

construction arbitration, 488

Testing

DCF models, 279

Third-party claims

Convention on the International Sale of Goods, 75

Third-party funding

costs, 419–20

Time value of money

accounting-based valuation

approach, 341

risk-free rate, 388

Trading history

assessment of damages, 209

Trapped cash

discounted cash flow method, 263

Tribunal-appointed experts

see Expert witnesses

TRIPS Agreement

intellectual property

arbitrations, 522–23

UNCITRAL Arbitration Rules

costs, 405

UNCITRAL Model Law

costs, 404

Unfair profits

intellectual property

arbitrations, 529–32

UNIDROIT Principles of International Commercial Contracts 2010

bar against speculative

damages, 120–21, 123

compensatory damages, 8, 9, 15, 21

full compensation principle, 135

United States

- compensatory damages, 21
- contractual limitations on damages, 105
- full compensation principle, 134
- full reparation principle, 140
- non-compensatory damages
 - arbitration agreement, 43
 - authority of tribunal to award, 42
 - enforcement of awards, 46
 - punitive damages, 38
- taxation issues, 373–74

Up-front investment costs

- gas and electricity arbitrations, 464

Valuation date

- country risks evaluation just prior to, 364–65
- discounted cash flow, 242, 249–50
- full reparation principle, 141

Valuation methods

- applicable valuation approach
 - basis of selecting approach, 237
 - concept of value, 226–27
 - conclusions, 238
 - cost approach, 232
 - income approach, 228–30
 - introduction, 226
 - main valuation approaches, 227–33
 - market approach, 230–31
 - selection of approach to conduct damage assessments, 234–37
- basis for selecting approach, 237
- comparables
 - conclusion, 332
 - extensions applicable in damages estimation, 329–31
 - implementing comparables-based valuation, 319–24
 - introduction, 317–18
 - use of in different contexts, 325–29
- conclusion, 238
- cost approach, 232
- discounted cash flow
 - application of, 241–48
 - assumptions, 248–69
 - documentation supporting results of methodology, 269

- enterprise valuation, 241
- equity valuation, 240
- generally, 211, 239–40
- earnings approach, 211–12
- income approach, 211, 228–30
- market approach, 211–12, 230–31
- net assets approach, 212

Valuation object

- discounted cash flow, 249

Valuation or loss period

- discounted cash flow, 250, 273

Volatility

- country risk, 358–59

Wasted expenditure

- breach of contract, 224–25
- recoverable losses, 22

Weighted average cost of capital

- basic principles, 290–91
- conclusions, 297–98
- discounted cash flow method, 241
- estimating
 - beta, 294–95, 300
 - debt risk premium, 293–94, 299
 - debt-equity ratio, 295–96, 300
 - equity risk premium, 294, 299
 - generally, 291–92
 - risk-free rate, 293, 299
 - tax rate, 296–97, 300–01
- introduction, 289
- reduction of damages, 129
- worked example, 299–301

Witnesses

- costs, 417–18
- quantum experts
 - introduction, 152
 - risk of party-appointed experts, 154–55
 - role of, 153
 - tribunal engagement with, 155–57
- witnesses of fact, 151–52

Working capital

- cash flows
 - components of, 271
 - growth of, 284

Yemen

- moral damages, 40

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