

Valuation in Investor-State Arbitration: Toward A More Exact Science

By
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INTRODUCTION

The stakes of international arbitration are rising. In cases between investors and states,¹ at least seven arbitral awards have topped one hundred million dollars in the past five years,² while several pending cases involve claims for billions of dollars.³ The arbitrators who preside over these high-stakes cases typically confront complex and divergent calculations of damages, which they may be ill equipped to reconcile. A long-standing refrain for determining damages is

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1. Arbitration between foreign investors and host states (“investor-state arbitration” or “international investment arbitration”) is distinct from international commercial arbitration between two private parties.

2. See *Chevron Corp. v. Ecuador*, Partial Award (UNCITRAL Mar. 30, 2010) (\$698 million); *BG Grp. PLC v. Argentina*, Final Award (UNCITRAL Dec. 24, 2008) [hereinafter *BG Group v. Argentina*] (\$185 million); *Rumeli Telekom A.S. v. Kazakhstan*, ICSID Case No. ARB/05/16, Award (July 21, 2008) [hereinafter *Rumeli Award*] (\$125 million); *Sempra Energy Int’l v. Argentina*, ICSID Case No. ARB/02/16, Award (Sept. 18, 2007) [hereinafter *Sempra v. Argentina*] (\$128 million); *Compañía de Aguas del Aconquija S.A. v. Argentina*, ICSID Case No. ARB/97/3, Award (Aug. 3, 2007) [hereinafter *Compañía de Aguas v. Argentina*] (\$105 million); *Enron Corp. v. Argentina*, ICSID Case No. ARB/01/3, Award (May 22, 2007) [hereinafter *Enron v. Argentina*] (\$106 million); *Siemens A.G. v. Argentina*, ICSID Case No. ARB/02/8, Award (Feb. 6, 2007) [hereinafter *Siemens v. Argentina*] (\$218 million); *Azurix Corp. v. Argentina*, ICSID Case No. ARB/01/12, Award (July 14, 2006) [hereinafter *Azurix v. Argentina Award*] (\$165 million).

3. Shareholders in the former Yukos oil company are seeking an estimated \$100 billion in damages from the Russian government. See Andrew E. Kramer, *A Victory for Holders of Yukos*, N.Y. TIMES, Dec. 1, 2009, at B1. A recent case brought against Turkey involves a claim of over \$19 billion. See Luke Eric Peterson, *Turkey Prevails in Uzan-Related \$19 Billion Arbitration Claim*, INV. ARBITRATION REPORTER, July 19, 2010, <http://www.iareporter.com/articles/20100802>. Two cases pending against Venezuela reportedly involve claims of at least \$7 billion and \$20 billion. See, e.g., *Venezuela Sees Oil Arbitration Rulings 2011-12*, REUTERS, Nov. 2, 2010, <http://www.reuters.com/article/2010/11/03/venezuela-arbitration-idUSN0225824020101103>.

that it is not an “exact science.”⁴ But increasingly the legitimacy of international arbitration depends on the well-explained and financially sound resolution of valuation disputes.

The damages phase of investor-state arbitration presents a variety of challenges, particularly when fair market value applies as the standard for calculating damages. Under customary international law, a fundamental principle of reparation is to “wipe out all the consequences of the illegal act.”⁵ This Article focuses on compensation of fair market value as a means of achieving such reparation, as opposed to restitution,⁶ contractual formulas,⁷ or moral damages.⁸ That is, the focus is on determining “the price that a willing buyer would pay to a willing seller in circumstances in which each had good information, each desired to maximize his financial gain, and neither was under duress or threat.”⁹

4. See, e.g., *Compañía de Aguas v. Argentina*, *supra* note 2, ¶ 8.3.16 (“[T]he settling of damages is not an exact science.”); see also *Azurix Corp. v. Argentina*, ICSID Case No. ARB/01/12, Annulment Proceeding, ¶ 351 (Sept. 1, 2009); *ADC Affiliate Ltd. v. Hungary*, ICSID Case No. ARB/03/16, Final Award, ¶ 521 (Sept. 27, 2006) [hereinafter *ADC v. Hungary*]; *Himpurna Cal. Energy Ltd. v. PT (Persero) Persusahaan Listrik Negara (Indon.)*, Final Award, ¶ 374 (UNCITRAL May 4, 1999), 25 Y.B. Comm. Arb. 13 (2000) [hereinafter *Himpurna v. PLN*]; *Sapphire Int’l Petroleum Ltd. v. Nat’l Iranian Oil Co.*, Arbitral Award (Mar. 15, 1963), 35 I.L.R. 136, 187-88; MARJORIE M. WHITEMAN, DAMAGES IN INTERNATIONAL LAW 1694, 1699 (1943) (quoting *Delagoa Bay & E. African Ry. Co. (U.S. v. Port.)* (1900)).

5. *Factory at Chorzów (Ger. v. Pol.)*, 1928 P.C.I.J. (ser. A) No. 17 at 47 (Sept. 13). “The *Chorzów Factory* decision is the authority most frequently cited by international tribunals in investor-state disputes involving matters of compensation.” SERGEY RIPINSKY & KEVIN WILLIAMS, DAMAGES IN INTERNATIONAL INVESTMENT LAW 35 (2008); see also Pierre Bienvenu & Martin J. Valasek, *Compensation for Unlawful Expropriation, and Other Recent Manifestations of the Principle of Full Reparation in International Investment Law*, in 50 YEARS OF THE NEW YORK CONVENTION 231-37 (Albert Jan van den Berg ed. 2009) (“One of the bedrock principles in international law is full reparation.”).

6. See *Draft Articles on Responsibility of States for Internationally Wrongful Acts*, in *Report of the International Law Commission on the Work of its Fifty-Third Session* 56 U.N. GAOR Supp. (No. 10) at art. 35, U.N. Doc. A/56/10 (2001) [hereinafter ILC Articles on State Responsibility] (“A State responsible for an internationally wrongful act is under an obligation to make restitution, that is, to re-establish the situation which existed before the wrongful act was committed, provided and to the extent that restitution: (a) is not materially impossible; (b) does not involve a burden out of all proportion to the benefit deriving from restitution instead of compensation.”). In the event that restitution cannot be made, a state must provide compensation for the damage caused by its internationally wrongful act. See *id.* at art. 36.

7. Damages in many international commercial arbitration cases are determined pursuant to a provision in the underlying contract. Still, the challenges of determining damages in international commercial disputes are often analogous to those addressed in this Article, because international law allows for the recovery of lost profits in breach of contract cases. See *infra* nn.150-153 and accompanying text; see also John Y. Gotanda, *Recovering Lost Profits in International Disputes*, 36 GEO. J. INT’L L. 61, 63, 86, 94 n.180 (2004) [hereinafter Gotanda, *Lost Profits*].

8. The question of moral damages has recently been a hot topic in international arbitration. See, e.g., Patrick Dumberry, *Compensation for Moral Damages in Investor-State Arbitration Disputes*, 27 J. INT’L ARB. 247 (2010). By virtue of their inherently equitable nature, moral damages contrast starkly with fair market valuation.

9. *Starrett Hous. Corp. v. Iran*, 16 Iran-U.S. Cl. Trib. Rep. 201 (1987) [hereinafter *Starrett Hous. Corp. v. Iran*]; see also World Bank, Guidelines on the Treatment of Foreign Direct Invest-

The question of fair market value poses notable challenges for arbitrators because it relates more closely to finance than law. These challenges loom large because arbitrators frequently must determine fair market value in investor-state arbitration.¹⁰

The negative consequences of inaccurate and opaque valuations can extend to the entire arbitral system, beginning with lost confidence in awards and unreliable expectations about future cases. For example, unexplained large awards may strain the budget of a developing country and give rise to significant domestic political opposition.¹¹ When facing inconsistent damages awards across similar arbitrations, state governments may also “find themselves in an untenable position of explaining to taxpayers why they are subject to damage awards for hundreds of millions of U.S. dollars in one case but not another.”¹² Conversely, investors would not submit claims to arbitration if they could not expect an outcome worth the risk and the costs of pursuing arbitration.¹³ Without reasonable investor confidence in the system, the benefits of investor-state arbitration would begin to disappear.

Predictable, accurate valuations are necessary not only for the confidence of parties in arbitration proceedings, but also for the efficiency of international investment law. Before adopting measures that harm an investment, states should be able to weigh the benefits of such measures against their expected costs. Compensation of fair market value deters inefficient state actions.¹⁴ By the

ment, Guideline IV, sec. 5 (1992). The principle of fair market value requires that the value not include any diminution because of the state’s unlawful measures.

10. In the past five years, fair market value has been a significant basis of compensation in roughly half of the investor-state decisions that involve damages analysis. *See infra* Part III.B. General principles of international law and nearly all investment treaties invoke the standard of fair market value. *See* ILC Articles on State Responsibility, *supra* note 6, art. 36, cmt. 22 n.550 (“Compensation reflecting the capital value of property taken or destroyed as the result of an internationally wrongful act is generally assessed on the basis of the ‘fair market value’ of the property lost.”); *see also* Abby Cohen Smutny, *Some Observations on the Principles Relating to Compensation in the Investment Treaty Context*, 22 ICSID REV.—FOR. INV. L.J. 1, 9 (2007). This Article does not address the important questions of whether and when fair market value is the appropriate standard of compensation.

11. *See, e.g.*, CME Czech B.V. v. Czech, Final Award, ¶¶ 77-78 (UNCITRAL Mar. 14, 2003) (separate opinion of Ian Brownlie) [hereinafter *CME v. Czech Republic*].

12. Susan D. Franck, *The Legitimacy Crisis in Investment Treaty Arbitration: Privatizing Public International Law Through Inconsistent Decisions*, 73 FORDHAM L. REV. 1521, 1558 (2005) [hereinafter Franck, *Legitimacy Crisis*]; *see also* Thomas W. Wälde, *Procedural Challenges in Investment Arbitration Under the Shadow of the Dual Role of the State: Asymmetries and Tribunals’ Duty to Ensure, Pro-actively, the Equality of Arms*, 26 ARB. INT’L 3, 19 (2010) (noting that, for states, losing in an international arbitration dispute can be “politically very embarrassing”).

13. The costs of investor-state arbitration are often substantial, including attorneys’ and administrative fees, as well as the potential loss of political and social capital in a country. Investors must weigh these costs against the expected value of an award before choosing the arbitration route.

14. *See, e.g.*, *Bienvenu & Valasek*, *supra* note 5, at 237. This deterrent effect can also “distinguish the consequences of lawful and unlawful State [expropriation].” *Id.* This Article does not confront the distinction, because accurate and legitimate valuations are important in both lawful and

same logic, states would have an incentive for “efficient breaches” only if investors do not receive more than fair market value.¹⁵ An expropriation will be efficient only if the state (and its people) gain more from the taking than the cost of fully compensating for the value of the expropriated investment.¹⁶

Scholarly guidance regarding the calculation of damages in arbitration has developed quickly in recent years,¹⁷ highlighting the growing awareness of “one of the least understood and most unpredictable areas of international investment law.”¹⁸ The emerging literature has principally addressed the mechanics of quantifying damages, rather than the effect of damages determinations on the perceived legitimacy of international arbitration. Likewise, the literature regarding the legitimacy of international arbitration has not targeted the issue of valuation.¹⁹ This Article begins to fill this gap in the literature. In doing so, this Article takes on what has been described as the “urgent matter” of “encouraging the convergence of methods of calculating awards toward uniform and appropriate

unlawful expropriation cases (and sometimes for drawing the line between the two, *see id.* at 255-57).

15. This assumes that “efficient breaches” would be desirable in some circumstances. For an argument in support of that position, *see* Louis Wells, *Double Dipping in Arbitration Awards? An Economist Questions Damages Awarded to Karaha Bodas Company in Indonesia*, 19 *ARB. INT’L* 471, 478 n.23 (2003) (“[E]xcessive awards discourage government takings, or breach of contract, when such actions are in fact efficient and thus desirable.”) (citing RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* (3d ed. 1986)). Such “efficiency” concerns are particularly important when states do not have greater protections of property under domestic law than under international law.

16. In other words, Pareto optimality depends on arbitrators accurately determining (and states paying) the fair market value of an expropriated investment. *See id.* at 473, 480. Admittedly, the value of a state’s “gain” may be more difficult to predict than the costs of compensation. But the more accurately a state predicts costs, the more able it will be to act efficiently. States’ actual payment of damages awarded in international arbitration is outside the scope of this Article.

17. As recently as 2005, an arbitrator might find relatively limited guidance on damages in treatises, and damages were said to be the “neglected aspect.” *See* Geoffrey Beresford Hartwell et al., *Assessing Damages—Are Arbitrators Good At It? Should They Be Assisted by Experts? Should They Be Entitled to Decide ex aequo et bono? Some War Stories*, 6 *J. WORLD INV. & TRADE* 7, 17 (2005) (comments by Serge Lazareff); *see also* Thomas R. Stauffer, *Valuation of Assets in International Takings*, 17 *ENERGY L.J.* 459, 460 (1996) (noting that the “economic dimension—the ‘quantification of the quantum’—[had been] given short shrift”). In the few years since then, three books have been published on the subject of damages in international arbitration. *See* IRMGARD MARBOE, *CALCULATION OF COMPENSATION AND DAMAGES IN INTERNATIONAL INVESTMENT LAW* (2009); MARK KANTOR, *VALUATION FOR ARBITRATION* (2008); RIPINSKY & WILLIAMS, *supra* note 5. The increasing focus on damages includes a “new interest in interest.” John Y. Gotanda, *A Study of Interest*, in *INTEREST, AUXILIARY AND ALTERNATIVE REMEDIES IN INTERNATIONAL ARBITRATION*, DOSSIER V OF THE ICC INSTITUTE OF WORLD BUSINESS LAW 169 (ICC Publication No. 684, 2008).

18. NOAH RUBINS & NORMAN KINSELLA, *INTERNATIONAL INVESTMENT POLITICAL RISK AND DISPUTE RESOLUTION: A PRACTITIONER’S GUIDE* 258 (2005).

19. *See, e.g.*, Franck, *Legitimacy Crisis*, *supra* note 12, at 1586-87 nn.326-29 (summarizing scholarship regarding the larger problem of “the ability to determine with certainty the respective rights and obligations of investors and Sovereigns in a given situation”). One complaint lodged against investor-state arbitration is that awards are “unpredictable . . . and extremely generous to foreign corporations.” Asha Kaushal, *Revisiting History: How the Past Matters for the Present Backlash Against the Foreign Investment Regime*, 50 *HARV. INT’L L.J.* 491, 510 (2009).

methods.”²⁰

Part II sets forth the framework of challenges facing investor-state arbitration, within the context of its continuing expansion. Part III links those challenges to questions about the legitimacy of valuation. The limited financial and economic experience of most arbitrators plants a seed of doubt regarding valuation. That doubt grows because of perceptions that arbitrators merely “split the baby” between the parties’ proposed valuations, particularly when awards are poorly explained. This Article’s study of recently published decisions involving valuation corroborates those perceptions, because the ratio of the amount awarded to the amount claimed usually falls within the range of one-fifth to one-half. In addition, several annulment petitions demonstrate parties’ frustrations with opaque (“black box”) determinations of fair market value.

Part IV addresses two fundamental aspects of valuation. First, it discusses the issue of awarding interest. The recent trend toward awarding compound interest illustrates how convergence on damages methodologies furthers the legitimacy of arbitral awards. Second, Part IV describes perhaps the most prominent method of determining fair market value: discounted cash flow (DCF) analysis. Despite theoretical agreement on the DCF method of valuation, some tribunals exhibit lingering reluctance to apply the DCF method in practice.

Part V suggests that tribunals should not reject a well-pleaded DCF analysis simply on the basis of “uncertainty,” “speculation,” and “going concern” tests. Several components of DCF analysis can address uncertainty and allow for transparent resolution of the parties’ competing positions. In connection with more frequent usage of the DCF method, tribunals should be more willing to appoint an independent financial expert. As a few recent decisions show, tribunal-appointed experts are helpful guides for valuation and can augment the accuracy and transparency of arbitral awards. When billions of dollars are at stake, it is worth the cost of an independent financial expert to enhance the legitimacy of investor-state arbitration.

I.

FRAMEWORK OF THE LEGITIMACY DEBATE

The past decade has witnessed a well-documented growth spurt of international investment arbitration. States typically consent to such arbitration through investment treaties, which designate the rules that will govern dispute resolution. Empowered by thousands of investment treaties—mostly in the form of bilateral investment treaties (BITs)—investors have increasingly submitted disputes against states to arbitration. By the end of 2010, the number of total known investor-state disputes submitted to arbitration was 390, at least twenty-five more than in 2009.²¹

20. Wells, *supra* note 15, at 479.

21. See United Nations Conference on Trade and Development, *Latest Developments in Inves-*

Most recent, publicly available awards in investor-state disputes have been decided under the auspices of the International Centre for Settlement of Investment Disputes (ICSID).²² ICSID has witnessed a particularly sharp increase in filings over the past decade,²³ spreading across most regions of the world and economic sectors.²⁴ Investor-state arbitration has grown under many other rule systems as well, although growth is difficult to measure because, unlike in ICSID cases, the existence of such arbitrations may remain confidential and unknown to the public.²⁵

A consequence of this growth is an increased scrutiny of the legitimacy of international investment arbitration.²⁶ The numerous cases brought against Argentina have been a source of criticism,²⁷ and the recent withdrawals of Ecuador and Bolivia from the ICSID Convention demonstrate further concern about the system.²⁸ Challenges to legitimacy include inconsistent decisions, preferential

tor-State Dispute Settlement, at 1 (2010). For a graph showing the steady, continuing rise of investment treaty arbitrations, *see id.* at 2. Note, however, that the pace slowed slightly in the past few years.

22. ICSID cases constituted 245 of the 390 known disputes by the end of 2010. *See id.* at 1-2; *see also* Jeffrey P. Commission, *A Citation Analysis of Developing Jurisprudence*, 24 J. INT'L ARB. 129, 130 n.10 (2007).

23. *See* ICSID – INTERNATIONAL CENTRE FOR SETTLEMENT OF INVESTMENT DISPUTES, THE ICSID CASELOAD — STATISTICS 7 (2011) [hereinafter ICSID Caseload Statistics] (showing the number of cases registered each year). From a mere handful of cases in the 1970s, 1980s, and early 1990s, over 250 cases have been filed in just the past ten years. Although ICSID filings seemed to peak in 2007 (thirty-seven cases registered), the number of filings has remained steadily above twenty per year since then.

24. *See id.* at 11-12.

25. Other arbitral institutions with independent rule systems include the United Nations Commission on International Trade Law (UNCITRAL), the International Chamber of Commerce (ICC), the International Centre for Dispute Resolution of the American Arbitration Association (AAA/ICDR), the London Court of International Arbitration (LCIA), and the Stockholm Chamber of Commerce (SCC).

26. *See, e.g.*, Franck, *Legitimacy Crisis*, *supra* note 12; William W. Burke-White & Andreas von Staden, *Private Litigation in a Public Law Sphere: The Standard of Review in Investor-State Arbitrations*, 35 YALE J. INT'L L. 283, 344 (2010) (“As states react to the extraordinary awards against Argentina, consider the troubled jurisprudence of many ICSID tribunals, and watch the growing number of arbitrations that challenge public regulations, the legitimacy of ICSID and the future of investor-state arbitration are being called into question.”); Joachim Karl, *International Investment Arbitration: A Threat to State Sovereignty*, in REDEFINING SOVEREIGNTY IN INTERNATIONAL ECONOMIC LAW 225, 232-33 (Wenhua Shan et al. eds., 2008); Carlos G. Garcia, *All the Other Dirty Little Secrets: Investment Treaties, Latin America, and the Necessary Evil of Investor-State Arbitration*, 16 FLA. J. INT'L L. 301, 306-08, 338 (2004).

27. *See, e.g.*, Burke-White & von Staden, *supra* note 26, at 284-85, 297-301 (“The divergent decisions in these cases, their often strained legal reasoning, and the exceptional sums awarded to claimants against Argentina have called into question, at least in the eyes of some states, the legitimacy of the ICSID system.”); Kathryn Khamsi, *Compensation for Non-Expropriatory Investment Treaty Breaches in the Argentina Gas Sector Cases: Issues and Implications*, in THE BACKLASH AGAINST INVESTMENT ARBITRATION 165 (Michael Waibel et al., eds., 2010).

28. Bolivia withdrew from ICSID in 2007 and Ecuador withdrew in 2010. UNCTAD – UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, DENUNCIATION OF THE ICSID

treatment of foreign investors over domestic investors, bias toward investors, arbitrator independence, and intrusions on the regulatory sovereignty of states.²⁹ Despite these challenges, the pace of investor-state arbitration has shown little sign of slowing.

A. The Endurance of Investor-State Arbitration

States and investors both stand to benefit from international arbitration. For states, the benefits of investment treaties have differed historically between developed and developing nations.³⁰ Developed, capital-exporting nations can secure protection for their investors and avoid the challenges of diplomatic protection by ensuring that their investors have a private right of action to arbitration.³¹ Thanks in part to the enforcement mechanism of arbitration, investment treaties also contribute to broad-scale liberalization.³² At the domestic level, investment treaties support liberalization because their protections limit government interference in markets.³³ Similarly, by protecting property rights and providing mechanisms of dispute resolution, investment treaties can substitute for poor in-

CONVENTION AND BITS: IMPACT ON INVESTOR-STATE CLAIMS 1, 1 (2010); *see also* Ignacio A. Vincentelli, *The Uncertain Future of ICSID in Latin America*, 16 LAW & BUS. REV. AM. 409, 410 (2010).

29. *See, e.g.*, Jason W. Yackee, *Pacta Sunt Servanda and State Promises to Foreign Investors Before Bilateral Investment Treaties: Myth and Reality*, 32 FORDHAM INT'L L.J. 1550, 1556 (2008); Karl, *supra* note 26, at 232-37; Franck, *Legitimacy Crisis*, *supra* note 12; Charles N. Brower, *A Crisis of Legitimacy*, 26 NAT'L L.J. 7 (2002); Charles H. Brower, *Investor-State Disputes under NAFTA: The Empire Strikes Back*, 40 COLUM. J. TRANSNAT'L L. 43, 45-46 (2001) (noting allegations of the "'aggressive' use of investor-state arbitration as an 'offensive' weapon that has 'chilled' the exercise of regulatory authority and caused an 'alarming' loss of sovereignty").

30. The geopolitical implications of those differences have been a source of much debate. *See, e.g.*, Jeswald W. Salacuse, *The Emerging Global Regime for Investment*, 51 HARV. INT'L L.J. 427, 434-35 (2010); Garcia, *supra* note 26, at 314-17. In the 1960s and 1970s, developing countries took a strong position against the Hull Rule (the requirement of "prompt, adequate, and effective" compensation for a taking of property) such that it could no longer be relied on as customary international law. *See* Andrew T. Guzman, *Why LDCs Sign Treaties that Hurt Them: Explaining the Popularity of Bilateral Investment Treaties*, 38 VA. J. INT'L L. 639, 646-51 (1998). Paradoxically, by entering into investment treaties that require prompt, adequate, and effective compensation, developing countries have reestablished the fundamental principle of the Hull Rule. *See id.* at 666-69; *see also* Kaushal, *supra* note 19, at 501.

31. *See, e.g.*, Salacuse, *supra* note 30, at 439-40, 459-60; *see also id.* at 462-63 ("Prior to the institution of investor-state arbitration, governments had to deal with their nationals seeking diplomatic protection and other forms of interventions [which] entailed significant diplomatic, political, and economic costs for home governments . . .").

32. *See* UNCTAD-UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, THE ROLE OF INTERNATIONAL INVESTMENT AGREEMENTS IN ATTRACTING FOREIGN DIRECT INVESTMENT IN DEVELOPING COUNTRIES 1, 20-23 (2009) [hereinafter UNCTAD, *Attracting FDI*], (explaining that some investment treaties "confirm and lock in the already existing degree of openness to foreign investment" and others "actually result in new liberalization"); Jeswald W. Salacuse & Nicolas P. Sullivan, *Do BITs Really Work? An Evaluation of Bilateral Investment Treaties and Their Grand Bargain*, 46 HARV. INT'L L.J. 67, 94-95 (2005).

33. *See* Salacuse & Sullivan, *supra* note 32, at 92-94.

stitutional quality and a weak rule of law in a host state.³⁴ To the extent such advances limit state sovereignty, they may prove controversial and ultimately require states to pay an unpredictable price to exercise their sovereignty.³⁵

Developing countries agree to these limitations because they reasonably believe that investment treaty protections signal to foreign investors that the country will provide a measure of stability and protection. Econometric studies suggest that such signaling has promoted foreign investment, although the evidence is somewhat mixed.³⁶ Regardless of the actual effectiveness of BITs, developing countries seek to attract foreign investment when they enter into investment treaties.³⁷ For example, developing nations may perceive that investment treaties are necessary for making credible commitments to investors, particularly in light of growing competition for foreign direct investment among developing nations.³⁸ Developing countries enhance the credibility of their commitments by consenting in investment treaties to arbitration of their disputes with foreign investors, and by establishing fair market value as a standard of compensation.

As a result of this international bargain, investors have gained standing to pursue arbitration against states. Setting aside the nuanced question of investors' considerations when deciding whether to invest in a particular state, the growing number of arbitration claims shows that investors are becoming savvier to the

34. UNCTAD, *Attracting FDI*, *supra* note 32, at 16-17. Investment treaties "may contribute to the coherence, transparency, predictability and stability of the investment frameworks of host countries." *Id.* at 25-26; *see also* Kaushal, *supra* note 19, at 517 (describing how "the international nudges the national toward convergence on a high level of investment protection").

35. *See* Tai-Heng Cheng, *Power, Authority and International Investment Law*, 20 AM. U. INT'L L. REV. 465, 496 *et seq.* (2005); *cf.* Susan D. Franck, *Empirically Evaluating Claims about Investment Treaty Arbitration*, 86 N.C. L. REV. 1, 63 (2007) [hereinafter Franck, *Empirically Evaluating*] ("[W]hen governments assess the costs and benefits of entering into or renewing investment treaties, they may be unable to make reliable assessments of their financial exposure."). Another criticism of limiting state sovereignty through investment treaties (and arbitration) is the trumping of "public" concepts with private interests. *See, e.g.*, Kaushal, *supra* note 19, at 518-19.

36. "Whereas the findings of early empirical studies on the impact of BITs on [foreign direct investment (FDI)] flows were ambiguous, with some showing weak or considerable impact (and one or two no impact at all), more recent studies published between 2004 and 2008—based on much larger data samples, improved econometric models and more tests—have shifted the balance towards concurring that BITs appear to have an impact on FDI inflows from developed countries into developing countries." UNCTAD, *Attracting FDI*, *supra* note 32, at 29-55; *see also* Jason W. Yackee, *Do Bilateral Investment Treaties Promote Foreign Direct Investment? Some Hints from Alternative Evidence*, 51 VA. J. INT'L L. 397, 405-14 (2010) (describing reasons why "analysts have had great difficulty reliably demonstrating a statistically significant, substantively meaningful correlation between BITs and FDI"); Susan D. Franck, *Empiricism and International Law: Insights for Investment Treaty Dispute Resolution*, 48 VA. J. INT'L L. 793 n.116 (2008); Salacuse & Sullivan, *supra* note 32, at 96, 111-12; Kenneth J. Vandeveld, *The Economics of Bilateral Investment Treaties*, 41 HARV. INT'L L.J. 469, 489, 498 (2000).

37. *See* UNCTAD, *Attracting FDI*, *supra* note 32, at 29 ("Developing countries have concluded BITs as part of their desire to improve their policy framework in order to attract more FDI and benefit from it.").

38. *See* Guzman, *supra* note 30, at 669-71.

possibility of international arbitration.³⁹ Evidence of investors' heightened awareness of international arbitration can also be seen in the growing and accepted practice of restructuring an investment in order to acquire investment treaty protection.⁴⁰

Today, if a government measure harms a foreign investment, a foreign investor will likely have greater confidence in international arbitration than in domestic courts of the host state.⁴¹ Yet the confidence of investors in international arbitration cannot be taken for granted. A recent survey suggests that major corporations are skeptical about the protections provided by investment treaties.⁴² Particularly with respect to compensation, investors may have a growing sense that international arbitration is unlikely to result in adequate compensation for the harms caused by host states.⁴³

B. Determinacy, Transparency, and Consistency

The legitimacy of international arbitration depends in large part on investors and states having reliable expectations and confidence in the resolution of their disputes through arbitration. That confidence can develop or deteriorate in a variety of ways. Two critical factors are the determinacy and coherence of investment arbitration decisions, which help ensure that the rules governing arbitration "convey clear and transparent expectations" to the parties.⁴⁴ Arbitral tri-

39. For a summary of "signs that investor awareness about BITs is increasing," see UNCTAD, *Attracting FDI*, *supra* note 32, at 53.

40. See Barton Legum, *Defining Investment and Investor: Who Is Entitled To Claim?*, ICSID, OECD, UNCTAD Symposium on Making The Most Of International Investment Agreements (Dec. 12, 2005), at 5 ("[T]he emergence of th[e] [BIT-shopping] industry suggests that, perhaps for the first time, BITs really are beginning to encourage and promote foreign investment in the way they were intended to do."); see also Anthony Sinclair, *ICSID's Nationality Requirements*, in INVESTMENT TREATY ARBITRATION AND INTERNATIONAL LAW 85, 116 (T.J. Weiler ed., 2008).

41. Two principal reasons for this confidence are the belief in a (more) fair proceeding and the enforceability of an award in international arbitration. Under the ICSID Convention, for example, awards become immediately enforceable in the host state's courts. See Convention on the Settlement of Investment Disputes Between States and Nationals of Other States, art. 54(1) (Mar. 18, 1965) 17 U.S.T. 1270, 575 U.N.T.S. 159 [hereinafter ICSID Convention] ("Each Contracting State shall recognize an award rendered pursuant to this Convention as binding and enforce the pecuniary obligations imposed by that award within its territories as if it were a final judgment of a court in that State.").

42. Jason W. Yackee conducted a survey of the general counsels of the top 200 U.S. corporations on the Fortune 500 list. The results of the survey "indicate a low level of familiarity with BITs, a pessimistic view of their ability to protect against adverse host state actions, and a low level of influence over FDI decisions." Yackee, *supra* note 36, at 429; see also *id.* at 429-30 (reporting that representatives of major corporations "did not view BITs as particularly effective at protections against expropriation" and had "skepticism about the ability of BITs to protect against regulatory change"); Salacuse & Sullivan, *supra* note 32, at 96 ("Local economic conditions and government policies are probably more important than BITs in influencing the investment decision.").

43. See *infra* Part III; Yackee, *supra* note 36, at 434-35; Franck, *Empirically Evaluating*, *supra* note 35, at 49-50.

44. See Franck, *Legitimacy Crisis*, *supra* note 12, at 1584 ("Legitimacy depends in large part

bunals should be consistent in their interpretation and application of those rules.⁴⁵ Before turning to the detrimental impact of inconsistencies, the overarching trend of convergence should be explained.

Investment treaties do not provide substantial determinacy; they typically set forth only brief and basic rules.⁴⁶ For example, most investment treaties say nothing at all about the appropriate damages for non-expropriatory treaty violations.⁴⁷ The standard of compensation for expropriation—while referring to the payment of fair market value—also lacks detail in most investment treaties.⁴⁸ A common provision for lawful compensation is payment of “prompt, adequate, and effective” compensation of “fair market value.”⁴⁹ That sample provision includes no instruction on numerous calculation issues, including the appropriate methodology for determining fair market value or whether to compound interest.

Despite the indeterminacy of investment treaties, the publication of more and more investment arbitration decisions has furthered transparency and improved the reliability of parties’ expectations. Transparency can come in a number of forms.⁵⁰ The parties in investor-state arbitration usually consent at least to the publication of decisions, which are available on a number of websites.⁵¹ When a state is a party to arbitration, the public has a strong interest and expect-

upon factors such as determinacy and coherence, which can in turn beget predictability and reliability.”) (citing THOMAS M. FRANCK, *THE POWER OF LEGITIMACY AMONG NATIONS* 49 (1990)).

45. See Karl, *supra* note 26, at 236-37; Franck, *Legitimacy Crisis*, *supra* note 12, at 1585.

46. See Franck, *Legitimacy Crisis*, *supra* note 12, at 1584-85; Garcia, *supra* note 26, at 340, 347 (including the phrase “just compensation” in investment treaties).

47. See, e.g., LG&E Energy Corp. et al. v. Argentina, ICSID Case No. ARB/02/1, Award, ¶ 39 (July 25, 2007) [hereinafter *LG&E v. Argentina*] (“The Tribunal notes, however, that when addressing the question of the absence of applicable treaty compensation standards for breaches other than expropriation, recent tribunals have opted to apply FMV. Yet, their decisions were grounded on the correspondence between the situation under analysis and expropriation.”); see also RIPINSKY & WILLIAMS, *supra* note 5, at 23, 25.

48. See RIPINSKY & WILLIAMS, *supra* note 5, at 22-23, 79-80 (noting the number of phrases that treaties include to require compensation of fair market value); see also *id.* annex IV (collecting treaty provisions).

49. See, e.g., United States Model Bilateral Investment Treaty, arts. 6(1)(c), 6(2)(b) (2004).

50. Examples include public decisions, public hearings, and public involvement in the proceedings. See Jack J. Coe, Jr., *Transparency in the Resolution of Investor-State Disputes—Adoption, Adaptation, and NAFTA Leadership*, 54 U. KAN. L. REV. 1339, 1355-64 (2006). For example, a recent hearing was made public via live internet video, in the case of Pac Rim Cayman L.L.C. v. Republic of El Salvador, ICSID Case No. ARB/09/12), available at mms://wbmswebcast1.worldbank.org/ICS/2010-05-31/ICSID_En.asf.

51. Investment arbitration awards can be found, among other places at (1) <http://icsid.worldbank.org/ICSID/FrontServlet?requestType=CasesRH&reqFrom=Main&actionVal=OnlineAward> (ICSID website), (2) <http://www.investmentclaims.com> (Oxford University Press), and (3) http://ita.law.uvic.ca/alphabetical_list.htm (Investment Treaty Arbitration). See also Susan D. Franck, *The Nature and Enforcement of Investor Rights under Investment Treaties: Do Investment Treaties Have a Bright Future*, 12 U.C. DAVIS J. INT’L L. & POL’Y 47, 74, n.105 (2005). Even when awards are not made public, a number of online reporters uncover and disclose the core holdings of cases. See, e.g., INVESTMENT ARBITRATION REPORTER, <http://www.iareporter.com> (last visited Oct. 30, 2011).

tation of transparency.⁵² The trend toward publishing awards in investor-state arbitration (and particularly ICSID arbitration) is therefore well established, and it has enabled international lawyers and academics to contribute to the development of international investment law.⁵³

The swell in publicly available decisions has contributed to the influence of precedent as a *de facto* reality in international arbitration. As a matter of law, arbitral tribunals are not bound by prior decisions, and international arbitration is not a system of common law.⁵⁴ Yet parties frequently cite to, and arbitrators often rely on, previously published decisions.⁵⁵ This has led to the emergence of “case law” and “jurisprudence” in international investment law,⁵⁶ as well as to the characterization that investment treaties constitute an international “regime.”⁵⁷ As Jeffrey Commission explains, “[g]iven that international investment law now principally develops through case law, the precedential value of each decision, award, and order, is, rightly or wrongly, tremendously significant.”⁵⁸ International arbitration therefore serves as an accelerated, if disaggregated, forum for international investment law. A recognized goal of that forum is to build a coherent body of law.⁵⁹

Notwithstanding the influence of precedent, tribunals have reached conclusions that conflict directly with prior decisions. Criticisms of inconsistency have focused on the most-favored-nation principle, the excuse of necessity, and regu-

52. See Coe, Jr., *supra* note 50, at 1353.

53. See, e.g., Salacuse, *supra* note 30, at 466-67; Franck, *Legitimacy Crisis*, *supra* note 12, at 1614-16; see also Coe, Jr., *supra* note 50, at 1356-57; J. Anthony VanDuzer, *Enhancing Procedural Legitimacy of Investor-State Arbitration through Transparency and Amicus Curiae Participation*, 52 MCGILL L.J. 681, 706-08 (2007).

54. See, e.g., *El Paso Energy Int'l Co. v. Argentine Republic*, ICSID Case No. ARB/03/15, Decision on Jurisdiction, ¶ 39 (Apr. 27, 2006) (stating there is “no provision, either in the [ICSID] Convention or in the BIT, establishing an obligation of *stare decisis*”).

55. See Commission, *supra* note 22, at 142-43, 149-50.

56. See Alec Stone Sweet, *Investor-State Arbitration: Proportionality's New Frontier*, 4 LAW & ETHICS HUM. RTS. 47, 60-61 (2010); Commission, *supra* note 22, at 129; see also W. Mark C. Weidemaier, *Toward A Theory of Precedent in Arbitration*, 51 WM. & MARY L. REV. 1895, 1908 (2010) (“Through this engagement with past awards, ICSID tribunals have gradually fashioned what has been called an investment treaty ‘case law or jurisprudence.’”).

57. See Salacuse, *supra* note 30, at 436 (“[L]awyers and arbitrators . . . implicitly treat investment treaties as constituting a regime in that they regularly refer to prior decisions applying one treaty in order to interpret a wholly separate treaty.”).

58. See Commission, *supra* note 22, at 131.

59. See M.C.I. Power Group L.C. et al. v. Ecuador, ICSID Case No. ARB/03/6, Decision on Annulment, ¶ 24 (Oct. 19, 2009) (“The responsibility for ensuring consistency in the jurisprudence and for building a coherent body of law rests primarily with the investment tribunals.”). Such a body of law would “establish a predictable, stable legal framework for investments . . .” Salacuse, *supra* note 30, at 461 (citing *Saipem v. Bangladesh*, ICSID Case No. ARB/05/07, Decision on Jurisdiction, ¶ 67 (Mar. 21, 2007)). In international law, judicial decisions constitute “subsidiary means for the determination of rules of law.” Statute of the International Court of Justice, art. 38, June 26, 1945, 59 Stat. 1055, 33 U.N.T.S. 993; see also Commission, *supra* note 22, at 134-35.

latory takings.⁶⁰ In the context of damages, there have been fewer studies of inconsistencies, despite a “common perception [of] a lack of a coherent systematic approach to compensation issues.”⁶¹ As discussed in Part IV, one prominent inconsistency in the realm of damages is the appropriate methodology for valuation.

Inconsistent decisions can be debilitating to the legitimacy of investor-state arbitration. As Susan Franck has explained, “[i]nconsistency tends to signal errors, lends itself to suggestions of unfairness, creates inefficiencies, and generates difficulties related to coherence, most notably a lack of predictability, reliability, and clarity.”⁶² In the words of Nigel Blackaby, the co-existence of “diametrically opposed decisions . . . shock[s] the sense of rule of law or fairness.”⁶³ Despite those potentially dire consequences, it seems a stretch to claim that “chaos reign[s]” in investor-state arbitration because of inconsistent decisions.⁶⁴ A more accurate understanding is that, despite several conflicting decisions, international investment law is converging around the growing body of precedent reflected in public decisions.⁶⁵ The legitimacy critiques arising from inconsistencies are a healthy sign of pressure toward continuing harmonization. Such convergence is critical in the area of valuation, given the notable challenges that valuation presents in investor-state arbitration.

60. See, e.g., Karl, *supra* note 26, at 236-37; Gabriel Egli, *Don't Get Bit: Addressing ICSID's Inconsistent Application of Most-Favored-Nation Clauses to Dispute Resolution Provisions*, 34 PEPP. L. REV. 1045 (2007); Franck, *Legitimacy Crisis*, *supra* note 12, 1559-82 (describing inconsistencies in the Lauder arbitration, the SGS cases, and three NAFTA cases); see also Burke-White & von Staden, *supra* note 27, at 297 (“ICSID arbitrations have generated a contradictory jurisprudence that lacks theoretical coherence and remains tied to the private law origins of international arbitration. The Argentine cases are illustrative of the problematic jurisprudence to date.”).

61. RIPINSKY & WILLIAMS, *supra* note 5, at xxxv (noting that the lack of coherence “contributes to the uncertainty of the legal environment and the unpredictability of outcomes of disputes”). As another commentator put it, there “appears to be strikingly little uniformity in the calculations of awards in international arbitrations.” Wells, *supra* note 15, at 478.

62. Franck, *Do Investment Treaties Have a Bright Future*, *supra* note 51, at 63-67 (citations omitted). See also Karl, *supra* note 26, at 236-37; Franck, *Legitimacy Crisis*, *supra* note 12, at 1558 (“Inconsistency creates uncertainty and damages the legitimate expectations of investors and Sovereigns.”).

63. Franck, *Legitimacy Crisis*, *supra* note 12, 1583 (quoting Nigel Blackaby of Freshfields Bruckhaus Deringer).

64. Garcia, *supra* note 26, at 350-51.

65. See Karl, *supra* note 26, at 237 (“[A]s case law develops, future arbitration tribunals will have more precedents at hand, which should have a certain harmonising effect.”); Salacuse, *supra* note 30, at 467 (“Despite the decentralized and private decisionmaking processes of the [international investment] regime, the resulting decisions by arbitral tribunals demonstrate a surprisingly high degree of uniformity and consistency.”); Weidemaier, *supra* note 56, at 1944 (“[T]he system of precedent can be understood as a response by arbitrators to external critics whose objections threatened ICSID’s viability as a forum for resolving investment disputes,” and “ICSID arbitrators are remarkably well positioned to foster norms concerning their role as producers of law.”).

II.

THE LEGITIMACY CHALLENGES OF VALUATION

Multiple valuation challenges threaten to undermine the legitimacy of investor-state arbitration, including the financial competency of arbitrators, awards perceived to “split the baby,” and poorly explained and inconsistent methodologies. By entering into treaties that give foreign investors a private right of action and establish fair market value as a basis for compensation, host states arguably have accepted that economics will prevail over politics in matters of compensation.⁶⁶ Arbitrators seeking to determine fair market value in investor-state cases do not have the unfettered discretion to decide damages *ex aequo et bono*, i.e., on equitable principles.⁶⁷ They must engage in the task of valuation.

A. *The Financial Competency of Arbitrators*

The perceived competency of arbitrators impacts the legitimacy of their conclusions. For most of the challenging issues that are raised in investor-state arbitration, arbitrators are among the most experienced and adept persons in the world at settling the parties’ disputes.⁶⁸ Arbitral tribunals decide, for example, on complex and dispositive questions of jurisdiction, liability, and standards of compensation. These legal issues are the bread and butter of international arbitrators. If a tribunal proceeds past those questions—that is, concludes that it has jurisdiction, that the state is liable, and that the appropriate standard of compensation is fair market value—then the tribunal must determine the value (or diminished value) of the investment in question. For many arbitrators, this is the “harder part”⁶⁹ and “dangerous territory.”⁷⁰

66. This can be viewed as part of a move in the international order in which “economics replac[es] politics as law’s sidekick and nemesis.” See Burke-White & von Staden, *supra* note 26, at n.14 (quoting David Kennedy, *The International Style in Postwar Law and Policy*, 1994 UTAH L. REV. 7, 63 (1994)). The measure of fair market value will nonetheless rarely limit a state’s freedom to exercise its sovereignty. See, e.g., *id.* at 288-89. The payment of fair market value could affect sovereignty if it pushed a state toward bankruptcy. See *CME v. Czech Republic*, *supra* note 11; RIPINSKY & WILLIAMS, *supra* note 5, at 356. Of course, states remain free to opt out of value-based compensation standards (or to revise investment treaties accordingly).

67. “The term ‘value’ is an ‘objective concept with an economic content’ and . . . therefore, where the law prescribes compensation to be equivalent to the value of the asset taken, there is little room for the exercise of an equitable discretion.” RIPINSKY & WILLIAMS, *supra* note 5, at 128 (quoting E. Lauterpacht); see also Hartwell et al., *supra* note 17, at 21 (comments of B. Hanotiau).

68. Many commentators have remarked upon the small, elite pool of arbitrators who preside over major international investment disputes. See, e.g., Weidemaier, *supra* note 56, at 1950 (describing ICSID arbitrators as an “elite group”); Commission, *supra* note 22, at 137-38.

69. Markham Ball, *Assessing Damages in Claims by Investors Against States*, 16 ICSID REV.—FOR. INV. L.J. 408, 417 (2001); see also Christer Söderlund et al., *The Valuation of Lost Profits—Finding it Right*, 6 J. WORLD INV. & TRADE 23, 31 (2005) (“Damages are one of the most challenging topics in arbitration.”).

70. *RosInvest Co. U.K. Ltd. v. Russian Federation*, SCC Case No. 075/2009, Final Award, ¶ 669 (Sept. 12, 2010) [hereinafter *RosInvest v. Russia*] (“[T]he tribunal might steer into dangerous

In most modern investor-state arbitration proceedings, the complexity of valuation is beyond the traditional legal training of arbitrators.⁷¹ Nearly all arbitrators in investor-state proceedings hail from legal backgrounds, whether in private practice, government, or academia.⁷² A survey of the publicly available biographies of leading arbitrators reveals that none of those arbitrators have post-graduate degrees in the fields of finance, economics, or mathematics.⁷³ Because of their backgrounds, arbitrators may be reluctant to immerse themselves in the detailed formulas and spreadsheets submitted by the parties. Legal training and analysis do not align well with the task of assessing fair market value.⁷⁴ Even if arbitrators were fully able to acquire the necessary financial competency,⁷⁵ they could not overcome the fact that they are neither economists nor financial analysts.

Arbitrators' legal backgrounds lead to tainted perceptions of the quality of some damages awards. In other words:

Whether or not modern arbitrators are good at assessing damages is not, I sug-

territory by attempting to enter its own economic valuation into the findings of the respective economic experts' opinions . . .").

71. The existence of an early investor-state decision with apparent "flawed economic reasoning" has not helped the case of arbitrators. See RIPINSKY & WILLIAMS, *supra* note 5, at 208-10 (summarizing criticisms of the valuation analysis in *Amoco Int'l Fin. Corp. v. Iran*, Partial Award, 15 Iran-U.S. Cl. Trib. Rep. 189 (1987)); see also *id.* at 190 ("Valuation can be a sophisticated exercise going beyond the expertise of the legal profession.").

72. See Burke-White & von Staden, *supra* note 26, at 330, n.239; see also Salacuse, *supra* note 30, at 467 ("[A]rbitrators are very much a part of an international epistemic community with similar training and, in many cases, comparable backgrounds.").

73. Biographies of arbitrators are published, among other places, on the website of the INTERNATIONAL ARBITRATION INSTITUTE (<http://www.iaiparis.com>). The nineteen leading arbitrators are Gabrielle Kaufmann-Kohler, L. Yves Fortier, Marc Lalonde, V.V. Veeder, Francisco Orrego Vicuña, Piero Bernardini, Charles N. Brower, Ahmed Sadek El-Kosheri, Brigitte Stern, Albert Jan van den Berg, Henri C. Alvarez, Bernardo M. Cremades, Pedro Nikken, Karl-Heinz Böckstiegel, James R. Crawford, Pierre-Marie Dupuy, W. Michael Reisman, Francisco Rezek, and Pierre Tercier. Jeffrey Commission identified this esteemed group as the most frequently selected arbitrators in pending ICSID cases as of 2007. Commission, *supra* note 22, at 137-39.

74. See *infra* Part V.B; Hartwell et al., *supra* note 17, at 11-12 (comments by Nicolas Ulmer) ("Are [a]rbitrators [g]ood at [a]ssessing [d]amages? Answer: no. . . . [W]hat lawyers like particularly, and what they are trained to like, is putting damages in categories, cutting them out, and deciding whether they are allowable, which is not the same thing as assessing them."); see also J. Brian Casey et al., *Arbitration and the Valuator*, J. BUS. VALUATION 105, 112-13 (2007).

75. Legal backgrounds in no way foreclose arbitrators from having significant expertise in deciding valuation disputes. Experienced arbitrators have likely confronted a wide array of damages calculations, set forth in well-argued briefs and detailed expert reports. That experience could be as important as formal education. In addition, economics is far from a stranger to law, and arbitrators may well have studied economics because of the growing connection between the fields. For example, of the surveyed prominent arbitrators, at least one taught "business law and economics" (Lalonde) and another has a Ph.D. in international law from the London School of Economics (Orrego Vicuña). See INTERNATIONAL ARBITRATION INSTITUTE, <http://www.iaiparis.com> (last visited Oct. 21, 2011). There is also little doubt as to the capacity of arbitrators, over time, to learn what is needed for calculating damages in a given case. Yet parties to an arbitration might object to the efficiency of such on-the-job learning.

gest, the point. The question is whether parties can have confidence that the person assessing damages is properly qualified to do so, and I suggest that in general, with the very greatest respect to all my friends, the modern legal arbitrator is not so qualified for self-evident reasons. Legal and economic reasoning are different.⁷⁶

Perceptions of arbitrators' limited skills with respect to valuation are likely to persist, particularly if arbitrators do not properly apply and explain appropriate valuation methodologies.

B. The Perception of "Splitting the Baby"

Imagine a simple formula to resolve a disputed fair market value in international arbitration. The investor claims a valuation of X (hundreds of millions) dollars. The state asserts that Y (near-zero) dollars would be an appropriate award. The arbitral tribunal applies the following formula: Damages = (X + Y) / 2. Such a "split the baby"⁷⁷ approach would be consistent and predictable but would wholly fail to inspire confidence. Fair market value is a fact-intensive (and often unique) determination, so the parties do not expect formulaic awards.⁷⁸ Rather, parties expect consistent, well-founded methodologies and accurate valuations.

Yet baby-splitting is perceived as the reality in international arbitration.⁷⁹ As explained below, evidence of this perception can be seen in parties' failure to converge on valuation, and in the gulf between states' non-quantified or zero-

76. Hartwell et al., *supra* note 17, at 8 (comments by Hartwell); *see also, e.g.*, Thierry J. Sénéchal & John Y. Gotanda, *Interest as Damages*, 47 COLUM. J. TRANSNAT'L L. 491, 494 (2009) (describing arbitral tribunals as "unfamiliar with modern economic and financial principles"). If arbitrators can be criticized as "lack[ing] critical expertise in public law adjudication," *see* Burke-White & von Staden, *supra* note 26, at 286, 330, parties have all the more justification for questioning arbitrators' relative inexperience with modern principles of finance.

77. The phrase "split the baby" is an awkward fit to damages determinations. It is based on the Old Testament story of King Solomon threatening to split a baby to identify the true mother of a child. *See* Christopher R. Drahozal, *Busting Arbitration Myths*, 56 U. KAN. L. REV. 663, 673 (2007) (citing 1 Kings 3:16-28). The typical task of arbitrators is determining fair market value of property that has been taken by a state, not who gets to keep the property. Despite the imperfect fit, "splitting the baby" is a well-recognized characterization of tribunals seeking a middle ground between the positions of the parties.

78. *See* Franck, *Do Investment Treaties Have a Bright Future*, *supra* note 51, at 78.

79. *See, e.g.*, RIPINSKY & WILLIAMS, *supra* note 5, at 122, 191; Kevin T. Jacobs & Matthew G. Paulson, *The Convergence of Renewed Nationalization, Rising Commodities, and "Americanization" in International Arbitration and the Need for More Rigorous Legal and Procedural Defenses*, 43 TEX. INT'L L.J. 359, 365 (2007) (noting a "perceived tendency of arbitrators to 'split the baby'") (quoting Robert B. von Mehren, *An International Arbitrator's Point of View*, 10 AM. REV. INT'L ARB. 203, 208 (1999)); Ball, *supra* note 69, at 425-27. Whether tribunals actually "split the baby" is a matter of important debate. The focus of empirical studies thus far has been on commercial arbitration, rather than investor-state arbitration. *See* Stephanie E. Keer & Richard W. Naimark, *Arbitrators Do Not "Split the Baby": Empirical Evidence from International Business Arbitrations*, 18 J. INT'L ARB. 573 (2001) (studying cases awarded through the American Arbitration Association from 1995-2000); Drahozal, *supra* note 77, at 673-77.

damages positions and investors' claims.⁸⁰ One reason for this perception is the competency of arbitrators: "Given that assessment of damages . . . may be a complex exercise requiring knowledge of financial analysis and economic models, 'splitting the baby' may offer itself as an attractive option when tribunals get lost in the intricacies of valuation techniques."⁸¹ Such a simplistic approach to valuation shows how the competency of arbitrators might cast doubt on the enterprise of valuation, thereby undermining the legitimacy of tribunals' awards.

Assuming for a moment that tribunals in fact applied the formula above (Damages = $(X + Y) / 2$), recent published decisions suggest that the denominator should be higher than two.⁸² From mid-2006 to mid-2011, there were fifteen published investor-state decisions in which a determination of fair market value comprised a large portion of the tribunal's damages analysis.⁸³ Those fifteen cases are drawn from approximately thirty decisions published during that time in which tribunals reached the damages phase of the proceedings.⁸⁴ This is a

80. In theory, a check on this type of divergence is the weighting of opposing damages figures by their plausibility. See Richard Posner, *An Economic Approach to the Law of Evidence*, 51 STAN. L. REV. 1477, 1539 (1999). Of course, that check depends on a good understanding of the plausibility of damages figures. Another proposal for limiting such divergence is for states to "put cost-shifting guidelines into investment treaties to reward investors whose claimed damages are in line with the ultimate award or provide deterrence for inflating claimed damages." Franck, *Empirically Evaluating*, *supra* note 35, at 63.

81. RIPINSKY & WILLIAMS, *supra* note 5, at 122 (citing Ball, *supra* note 69, at 425-27). Compromise between arbitrators is another reason why awards might seem to "split the baby." Such compromise awards can also undermine the legitimacy of valuations, because an award "not supported by articulated reasons does disservice to the credibility of the outcome." Ball, *supra* note 69, at 427.

82. Canvassing awards prior to June 1, 2006, Susan D. Franck observed that the ratio of average amounts awarded to average amounts claimed was less than one-tenth. See Franck, *Empirically Evaluating*, *supra* note 35, at 58-60 (stating that, in twenty-one cases prior to June 1, 2006, in which tribunals awarded cash to an investor, the average amount awarded was \$25.6 million and the average amount claimed was \$345.5 million). That fraction does not distinguish between cases based on fair market value versus other forms of damages. Franck's study also includes cases in which tribunals were not actually required to quantify damages, thus not addressing tribunals' calculation of damages. See *id.* at 24-25, 58-60 (stating that, of the fifty-two cases she studied, there were thirty-one in which tribunals awarded investors nothing).

83. The decisions are *Azurix v. Argentina Award*, *supra* note 2; *ADC v. Hungary*, *supra* note 4; *Siemens v. Argentina*, *supra* note 2; *Enron v. Argentina*, *supra* note 2; *Compañía de Aguas v. Argentina*, *supra* note 2; *Sempra v. Argentina*, *supra* note 2; *BG Group v. Argentina*, *supra* note 2; *Biwater Gauff (Tanz.) Ltd. v. Tanzania*, ICSID Case No. ARB/05/22, Award (July 18, 2008) [hereinafter *Biwater v. Tanzania*]; *Rumeli Award*, *supra* note 2; *Nat'l Grid P.L.C. v. Argentina*, Award (UNCITRAL Nov. 3, 2008) [hereinafter *Nat'l Grid v. Argentina*]; *Siag and Vecchi v. Egypt*, ICSID Case No. ARB/05/15, Award (May 1, 2009) [hereinafter *Siag v. Egypt*]; *Walter Bau v. Thailand*, Award (UNCITRAL July 1, 2009) [hereinafter *Walter Bau v. Thailand*]; *Kardassopoulos v. Georgia*, ICSID Case Nos. ARB/05/18, ARB/07/15, Award (Feb. 28, 2010) (a revision proceeding is currently pending); *RosInvest v. Russia*, *supra* note 70; *Alpha Projektholding GmbH v. Ukraine*, ICSID Case No. ARB/07/16, Award (Oct. 20, 2010) [hereinafter *Alpha v. Ukraine*].

84. The selection of a case as a "fair market value" case required the exercise of discretion in some instances. This discretion was necessary because some decisions do not indicate whether the tribunal was determining fair market value. In addition, a few cases involving the valuation of a fungible asset or of real property have not been included.

significant body of awards, given that tribunals awarded damages in only twenty-one such cases between 1990 and June 2006.⁸⁵ The average claimed valuation in the fifteen fair-market-value cases was \$203 million.⁸⁶ The respondents in these cases challenged the claimed valuations but rarely put forward quantifiable counter-valuations.⁸⁷ The average valuation awarded was \$80 million, roughly two-fifths the average amount claimed.⁸⁸

Averages serve as “blunt statistical instrument[s]”⁸⁹ and hide important outliers. For example, in *ADC Affiliate Ltd. v. The Republic of Hungary*, ICSID Case No. ARB/03/16, Award of the Tribunal (Oct. 2, 2006) and *Kardassopoulos v. Georgia*, ICSID Case Nos. ARB/05/18, ARB/07/15, Award of the Tribunal (Feb. 28, 2010), the tribunals awarded exactly or almost exactly the amount claimed by the investors.⁹⁰ In *BG Grp. PLC v. Argentina*, Final Award (UNCITRAL Dec. 24, 2008) and *Rumeli Telekom A.S. v. Kazakhstan*, ICSID Case No. ARB/05/16, Decision of the Ad Hoc Committee on the Application for Annulment, (Mar. 25 2010), the tribunals awarded over half of the valuation amount claimed. Yet in *RosInvest Co. U.K. Ltd. v. Russian Federation*, SCC Case No. 075/2009, Final Award, (Sept. 12, 2010) and *Biwater Gauff (Tanz.) Ltd. v. Tanzania*, ICSID Case No. ARB/05/22, Award (July 18, 2008), the tribunals awarded little to nothing compared to the amounts claimed.⁹¹ Still, in nine of the fifteen cases studied, tribunals awarded between one-fifth and one-half of the amounts claimed. This elementary empirical evidence corroborates the perception that arbitrators continue to “split the baby,” which is difficult to refute without published decisions that reveal a rigorous quantification of fair market

85. Franck, *Empirically Evaluating*, *supra* note 35, at 58.

86. For some cases, the average amount claimed is based on the mean of multiple claims, because investors used different valuation approaches and economic models to propose a range of valuations. See, e.g., *Enron v. Argentina*, *supra* note 2, ¶¶ 348-51. Where investors proposed valuations at different dates, the higher amount claimed was used. If decisions clearly delineated damages based on fair market value from other damages (such as historical losses, interest, and costs), the average amounts claimed and awarded are based only on the fair market value portion. See, e.g., *Stag v. Egypt*, *supra* note 83, ¶¶ 519, 584. The highest and lowest amounts claimed were, respectively, \$553 million (in *Azurix v. Argentina*) and \$9 million (in *Alpha v. Ukraine*). The median amount claimed was \$183 million (in *RosInvest Co. v. Russia*).

87. Two exceptions are *Kardassopoulos v. Georgia* and *RosInvest Co. v. Russia*. Notably, the tribunal in *RosInvest Co. v. Russia* arrived at a valuation equal to the highest amount proposed by Russia. See *RosInvest v. Russia*, *supra* note 70, ¶¶ 657, 660, 675-76.

88. This average does not include the interest or costs and fees awarded in each case. The median amount awarded was \$76 million (in *ADC v. Hungary*). The highest and lowest amounts awarded were, respectively, \$199 million (in *Siemens v. Argentina*) and zero (in *Biwater v. Tanzania*).

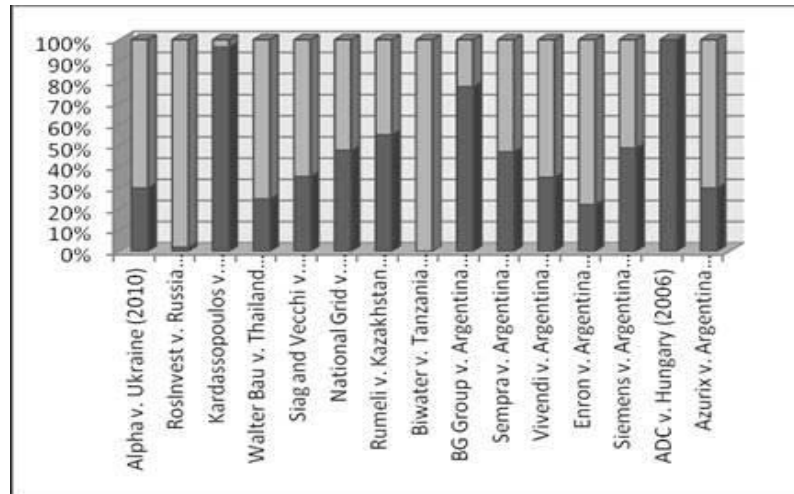
89. See Franck, *Empirically Evaluating*, *supra* note 35, at 60.

90. The amounts awarded were \$76 million (in *ADC v. Hungary*) and \$30 million (in *Kardassopoulos v. Georgia*). The tribunal in *ADC v. Hungary* declined to award certain lost development opportunities, seemingly because the claimants did not put forward a quantification of their value. See *supra* note 4.

91. The amounts claimed were \$183 million (in *RosInvest v. Russia*) and \$20 million (in *Biwater v. Tanzania*).

value. The results are summarized in the chart below.

*Fair Market Value in Recent Investor-State Cases:
Amounts Awarded as a Percentage of Amounts Claimed⁹²*



C. The Failure to Explain Calculations

Arbitrators bolster the legitimacy of their awards by thoroughly explaining their resolution of complex issues of valuation. By contrast, vague and ambiguous decisions invite criticism and undermine the legitimacy of an award. Parties will rarely be satisfied with the excuse of valuation being “inherently uncertain.”⁹³ Valuation may not be an “exact science,”⁹⁴ but it can nonetheless be described with precision.

Well-reasoned decisions benefit the parties, other arbitrators, and third parties. Potential benefits include promotion of settlement between the parties and broader jurisprudential development.⁹⁵ From all perspectives, international arbi-

92. As explained above, the data underlying this chart isolates the valuation component of each award and does not include other, potentially significant sources of compensation, such as interest, costs, and fees.

93. Rumeli Telekom, A.S. v. Kazakhstan, ICSID Case No. ARB/05/16, Decision of the Ad Hoc Committee on the Application for Annulment, ¶ 142 (Mar. 25 2010) [hereinafter *Rumeli Annulment*].

94. See cases cited, *supra* note 4.

95. See, e.g., Weidemaier, *supra* note 56, at 1908. Those benefits will not be realized, however, from decisions that have flawed or incomplete reasoning. Such flaws may well lead to annulment of an award. See CHRISTOPH SCHREUER, *THE ICSID CONVENTION: A COMMENTARY* 997 (2d ed.

tration is more legitimate when parties and nonparties understand the issues and reasoning underlying a decision. Because awards against states require the use of public funds, tribunals may have an added responsibility to quantify damages transparently.⁹⁶ Investors, too, will benefit from detailed, publicly available explanations that “neutralize the repeat player advantage” of states and alert investors to the practices of states with respect to foreign investors.⁹⁷ Arbitrators also have self-interest in publishing well-reasoned decisions, which support the arbitral system⁹⁸ and an arbitrator’s personal reputation, both of which are necessary for future appointments. In short, “[a] reasoned judgment contributes to ensuring not only that justice is done but that it is perceived to be done.”⁹⁹

Although investor-state decisions are moving toward better explanations of valuation,¹⁰⁰ deficient discussions of specific calculations remain a common exception to the trend. The failure to explain calculations in detail is perhaps justified in rare cases in which investors claim relatively small amounts.¹⁰¹ In most cases, however, the failure to explain valuation adequately hints at a failure to address the issue methodically, thus exposing an award to greater skepticism.¹⁰²

2009) (“No doubt frivolous, perfunctory or absurd arguments by a tribunal would not amount to ‘reasons’ for purposes of annulment). Because of the many sources that arbitrators may rely on for their decisions, detailed (and of course intellectually honest) reasoning is critical to legitimacy. See Garcia, *supra* note 26, at 342.

96. H. Perezcano Diaz, *Damages in Investor-State Arbitration: Applicable Law and Burden of Proof*, in EVALUATION OF DAMAGES IN INTERNATIONAL ARBITRATION 129 (Yves Derains & Richard H. Kreindler eds., 2006). Those explanations are critical because, if a state does not perceive a damages award to be legitimate, it will be less likely to voluntarily comply with the award. See Weidemaier, *supra* note 56, at 1918-19 (“Whether the reputational costs of noncompliance provide a substantial inducement to pay depends in part on whether parties in a position to impose these costs—perhaps including investors, international financial institutions, and even the borrower’s own citizens—perceive the award and the arbitration process that produced it as legitimate.”).

97. Coe, Jr., *supra* note 50, at 1358-59, n.108; see also Franck, *Do Investment Treaties Have a Bright Future*, *supra* note 51, at 86-88 (discussing the importance of “the equality of arms”).

98. See Weidemaier, *supra* note 56, at 1946 (“[A]rbitrators may use the award to communicate information to appease ICSID’s many critics. For example, the award may discuss past awards explicitly and in depth This kind of direct engagement signals that the decision resulted from a deliberative, systematic process, rather than from an ad hoc balancing of the equities in a particular case.”).

99. See SCHREUER, *supra* note 95, at 996 (citing *Lucchetti v. Peru*, ICSID Case No. ARB/03/4, Decision on Annulment, ¶ 98 (Aug. 13, 2007)).

100. See *infra* Part V.2; RIPINSKY & WILLIAMS, *supra* note 5, at 191 (listing “examples of awards where arbitral tribunals treated valuation matters quite thoroughly”). Fifteen years ago, by contrast, one commentator explained that “[m]ost . . . tribunal awards are parsimonious in the economic detail which is presented. Whatever financial data is offered by the court has been filtered through a jurist’s prism and typically is not amenable to economic analysis. The terminology is either too casual—confusing income with cash flow, for example—or the pieces of the financial puzzle are too few.” Stauffer, *supra* note 17, at 480.

101. See, e.g., *Funnekotter v. Zimbabwe*, ICSID Case No. ARB/05/6, Award, ¶¶ 128, 135 (Apr. 22, 2009) [hereinafter *Funnekotter v. Zimbabwe*]; *Bogdanov v. Moldova*, SCC Case No V/114/2009, Award, ¶¶ 84-86 (Sept. 22, 2005) (the tribunal devoted no more than a couple sentences to its “estimate” of damages, which was in the \$100,000 range).

102. Taking an example from international commercial arbitration, the decision in *Karaha*

At a minimum, tribunals in ICSID arbitration must state the reasons for their decision to protect awards from annulment under the ICSID Convention.¹⁰³ Annulment is a limited exception to the principle of finality of ICSID awards.¹⁰⁴ It should not be confused with an appellate procedure in the United States, in part because of the limited, non-substantive scope of annulment.¹⁰⁵ Annulment seeks to balance concerns of correctness and finality, with a thumb on the scale of finality.¹⁰⁶

In principle, the “failure to state reasons” annulment standard is a bulwark for legitimacy.¹⁰⁷ The annulment decision in *Mar. Int’l Nominees Establishment v. Guinea*, ICSID Case No. ARB/84/4, Decision on Annulment, (Dec. 22, 1989) (*MINE*) serves as an early example of how this standard deters arbitrators from poorly explained valuations.¹⁰⁸ In that case, the annulment committee upheld a challenge to the tribunal’s failure to state reasons with respect to its calculation

Bodas v. Pertamina has been attacked in part because the final damages figure looks as if it “was pulled out of the air.” See Wells, *supra* note 15, at 476; KANTOR, *supra* note 17, at 82-87, n.281 (explaining that a reader could not “recreate the calculation” of the tribunal in *Karaha Bodas* and that “[t]he ambiguity in the panel’s computation of damages has invited criticism by commentators”). A similar criticism has been lodged against awards of lost future profits “by a rough assessment.” See *CME v. Czech Republic*, *supra* note 11; see also Cheng, *supra* note 35, at 497; Wells, *supra* note 15, at 473 (finding it “frustratingly difficult to determine exactly how the arbitrators calculated [lost] profits”). The copying and pasting of the parties’ arguments is also no substitute for providing detailed analysis, particularly with respect to damages. For example, in *Rumeli Award*, the tribunal laid out the parties’ arguments in detail but devoted only a few paragraphs to its determination of the actual amount to be awarded. Compare *Rumeli Award*, *supra* note 2, ¶¶ 752-784 with *id.* ¶¶ 805-818. The inadequate explanation in the decision surely contributed to the state’s decision to seek annulment, as discussed below.

103. See ICSID Convention, art. 52(1)(e) (listing as a ground for annulment “that the award has failed to state the reasons on which it is based”). The failure to state reasons has been a common ground for challenging the damages portions of awards. See *infra* n.116.

104. SCHREUER, *supra* note 95, at 899.

105. As compared to a U.S. appeal, “annulment is only concerned with the legitimacy of the process of the decision: it is not concerned with its substantive correctness.” *Id.* at 901. This distinction also applies with respect to damages. See, e.g., *Azurix Annulment*, *supra* note 116, ¶ 362 (“The Committee recalls that it is not a court of appeal, and that it is not the function of the Committee to pass judgment upon the substance of the Tribunal’s decision with respect to the quantum of damages.”).

106. See SCHREUER, *supra* note 95, at 903 (“In international arbitration the principle of finality is often seen to take precedence over the principle of correctness.”); see also Franck, *Legitimacy Crisis*, *supra* note 12, at 1548 (“Ultimately, because legal errors cannot be corrected in ICSID awards, the possibility of inconsistent awards is an accepted reality at ICSID, and the correctness of decisions has been sacrificed for the sake of finality.”). For a criticism of the limited scope of ICSID annulment, see Garcia, *supra* note 26, at 344-45.

107. As one annulment committee explained, this standard “aims at ensuring the parties’ right to ascertain whether or to what extent a tribunal’s findings are sufficiently based on the law and on a proper evaluation of relevant facts.” *Lucchetti v. Peru*, ICSID Case No. ARB/03/4, Decision on Annulment, ¶ 98 (Aug. 13, 2007).

108. *Mar. Int’l Nominees Establishment (MINE) v. Guinea*, ICSID Case No. ARB/84/4, Decision on Annulment, ¶¶ 6.83-92, 6.108 (Dec. 22, 1989), [hereinafter *MINE v. Guinea Annulment*].

of lost profits.¹⁰⁹ The claimant in *MINE* had proposed two methodologies for calculating lost profits (theories “Y” and “Z”). The tribunal rejected those proposals because their results were too speculative, and instead used a third method that it found more realistic.¹¹⁰ The annulment committee held that “[h]aving concluded that theories ‘Y’ and ‘Z’ were unusable because of their speculative character, the Tribunal could not, without contradicting itself, adopt a ‘damages theory’ which disregarded the real situation and relied on hypotheses which the Tribunal itself had rejected as a basis for the calculation of damages.”¹¹¹ The annulment decision in *MINE* demonstrates how poorly explained valuations can lead parties (and others) to challenge the legitimacy of an award.¹¹²

The annulment in *MINE* is an exception, however, because the “failure to state reasons” standard has not been used in any other case to overturn a decision based on an inadequate explanation of valuation. The standard may have become watered down by its repetitive invocation: the “failure to state reasons” has been an alleged ground for annulment in every publicly available annulment decision.¹¹³ Annulment committees, while sometimes criticizing decisions’ opaque rationales, have generally accepted “implicit” reasoning and given deference to tribunals’ modest explanations.¹¹⁴ Parties have also infrequently pursued annulment of ICSID awards: out of one hundred twenty-seven awards rendered, parties sought annulment of thirty-two awards and prevailed in eleven of those cases.¹¹⁵ Moreover, parties typically pursue annulment on a wide variety of grounds, such that the “failure to state reasons” for valuation is rarely a stand-alone challenge. For those reasons, avoidance of annulment, while important, is an insufficient and sub-optimal incentive for more thoroughly explained valuations in international arbitration. Decisions can survive an annulment proceeding with a bare explanation of damages,¹¹⁶ which undermines the confidence of par-

109. *Id.* ¶ 6.107.

110. *Id.*; See also Mar. Int’l Nominees Establishment (*MINE*) v. Guinea, ICSID Case No. ARB/84/4, Award (Jan. 6, 1988), 4 ICSID REP. 54, 75-76 (1997).

111. *MINE v. Guinea Annulment*, *supra* note 108, ¶ 6.107. This decision has proved controversial with respect to the appropriate application of the “failure to state reasons” standard for annulment. See SCHREUER, *supra* note 95, at 1012-13 (“The *ad hoc* Committee’s arguments on this point are not convincing and have been criticized by several commentators.”).

112. As one prominent scholar stated, “[t]he only possible criticism that may be levelled against the Tribunal is that the Award could have explained in more detail why it found the method for the calculation of damages that it adopted more realistic than the theories that it dismissed.” See SCHREUER, *supra* note 95, at 1013.

113. *Id.* at 998.

114. *Id.* at 999-1003 (noting numerous instances of annulment committees “reconstructing reasoning” that was not apparent in the tribunal’s award).

115. ICSID Caseload Statistics, *supra* note 23, at 15.

116. States have challenged damages for “failure to state reasons” in a number of cases, including: *Duke Energy Int’l Peru Invs. No. 1, Ltd. v. Peru*, ICSID Case No. ARB/03/28, Decision of the Ad Hoc Committee, ¶ 258 (Feb. 28, 2011) [hereinafter *Duke Energy v. Peru*]; *Azurix Corp. v. Argentina*, ICSID Case No. ARB/01/12, Decision on Application for Annulment (Sept. 1, 2009) [hereinafter *Azurix Annulment*]; *MTD Equity Sdn. Bhd. v. Chile*, ICSID Case No. ARB/01/7, Decision on

ties and stifles the legitimacy-building effect of greater transparency.

Nevertheless, parties continue to pursue annulment challenges because of inadequate analyses of damages. A clear, recent example is the annulment proceeding in *Rumeli Telekom*. There, the state challenged the award of the arbitral tribunal principally because its “decision to award damages of \$125 million was inexplicable, being based on inconsistent, illogical or nonexistent reasons.”¹¹⁷ The state put forward a laundry list of complaints about the tribunal’s determination of damages. One basis for the state’s challenge was “that the DCF approach required an actual calculation, not a ‘shot in the dark.’”¹¹⁸ In other words, “when a tribunal adopted a DCF analysis, it was required to provide full reasons for its decision to reject or adopt certain factors”¹¹⁹ The state’s challenge essentially was that the tribunal needed to show its math:

[I]f that [\$125 million] figure was reached as the product of a DCF analysis, it was not possible to see how the figure was reached. No inputs were given by the Tribunal, and the methodology was not described. Rather than being “*extremely succinct*,” the [state] contended that the reasons were nonexistent and that tribunals are obliged to properly reason their awards to avoid deciding *ex aequo et bono*.¹²⁰

The Annulment Committee denied the state’s challenge even though the “[t]he figure of US\$125 million is baldly stated in the Award, without an explanation of the mathematical calculation undertaken by the Tribunal in arriving at it.”¹²¹

Similarly, in *Azurix Corp. v. Argentina*, ICSID Case No. ARB/01/12, Award (July 14, 2006), the tribunal stated without much support that only “a fraction” of the claimed value was recoverable, and therefore concluded that the value should be \$60 million.¹²² The state sought to annul the award for many reasons, including that the tribunal had come up with a damages value without providing “any formulae or principles in the Award as to how that figure was calculated or otherwise obtained.”¹²³ The investor countered that “[i]t is not necessary to prove the exact damage suffered in order to award damages; determining damages is not an exact science, and a certain amount of independent judgment is required.”¹²⁴ The Annulment Committee seemed to agree. It held that

Annulment, ¶¶ 102-06 (Feb. 16, 2007) (denying annulment even though “the reasons given by Tribunal for [one] aspect of its quantum decision were extremely succinct”); *Wena Hotels Ltd. v. Egypt*, ICSID Case No. ARB/98/4, Decision on Annulment Application, ¶¶ 87-93 (Feb. 5, 2002) [hereinafter *Wena Hotels v. Egypt*]. Those annulment applications were rejected.

117. *Rumeli Annulment*, *supra* note 93, ¶ 118.

118. *Id.* ¶ 124.

119. *Id.* ¶ 126.

120. *Id.* ¶ 129.

121. *Id.* ¶ 178.

122. *Azurix v. Argentina Award*, *supra* note 2, ¶ 429.

123. *Azurix Annulment*, *supra* note 116, ¶ 297(j).

124. *Id.* ¶ 298(h). The investor also argued that tribunals have broad discretion in calculating damages. *Id.* ¶ 298(g, m).

the tribunal's limited discussion overcame the "failure to state reasons" threshold: "[a]lthough the Tribunal in this case may not have said so expressly, the Committee considers it clear from the Award that the figure of USD 60 million was an approximation that the Tribunal considered to be fair in all the circumstances."¹²⁵ But the state obviously did not agree.

These annulment petitions are more than thorough advocacy; they show that the states were frustrated with tribunals' discussions of *quantum*. Indeed, annulment petitions premised on damages highlight the central role of damages for the legitimacy of international arbitration. If an arbitrator awarding damages to an investor wanted to draft an "annulment-proof" decision, the arbitrator would rightly seek to explain all the building blocks for the award, such as jurisdiction and liability. Yet the arbitrator must also focus on the pinnacle of the award—the amount of compensation due.

III.

CONVERGENCE AROUND COMPOUND INTEREST AND THE DCF METHOD

Jurisprudential convergence provides parties with more accurate expectations. The developing international investment law on awards of interest shows the benefits of such convergence, as it enables parties to better predict the damages at stake. By contrast, parties will be uncertain in many cases about which methodologies a tribunal will endorse for valuation. That uncertainty, as explained above, can be debilitating to the investor-state arbitration system. While there has been promising convergence around the DCF method in theory, inconsistencies persist with respect to tribunals' application of the DCF method in practice. This is particularly true in cases involving limited evidence.¹²⁶

A. The Trend in Interest

The trend toward compound interest demonstrates the benefits of convergence. This convergence has significant consequences, because interest awards may involve stakes as high as valuation itself. The basic principle of awarding interest is well settled.¹²⁷ As stated in the Draft Articles on State Responsibility, "[i]nterest on any principal sum . . . shall be payable when necessary in order to

125. *Id.* ¶ 351.

126. The following discussion assumes that investors, in seeking to satisfy the burden of proving their case, will adequately develop and argue for the appropriate methodology. That assumption is reasonable in light of the increasing stakes of investor-state arbitration and the sophistication of most lawyers and party-appointed experts involved.

127. See Sénéchal & Gotanda, *supra* note 76, at 495; RIPINSKY & WILLIAMS, *supra* note 5, at 362-64; John Y. Gotanda, *Compounding Interest in Interest: The Global Economy, Deflation and Interest*, in CONTEMPORARY ISSUES IN INTERNATIONAL ARBITRATION AND MEDIATION: THE FORDHAM PAPERS (2009) 263 (Arthur W. Rovine ed., 2010) [hereinafter Gotanda, *Compounding Interest*] (citing *Compañía de Aguas v. Argentina*, *supra* note 2, ¶ 9.2.3).

ensure full reparation. The interest rate and mode of calculation shall be set so as to achieve that result.”¹²⁸ This established principle of international law is consistent with principles of finance—the time value of money means that full compensation requires an award of interest to compensate for the loss of the use of money between the time of the alleged harm and the award.¹²⁹ Despite widespread acceptance of interest as generally appropriate, the amount of interest to award had long been in a state of flux.¹³⁰ Two fundamental questions for determining interest are (1) whether to apply simple or compound interest; and (2) which rate of interest to apply. This Article focuses on the former question, because it is the clearest example of convergence.¹³¹

1. Convergence Around Compound Interest

The monetary difference between simple and compound interest can be substantial for high-stakes claims in investment arbitration, particularly because of the increasingly long periods of time between harmful state action and an award.¹³² Simple interest is calculated only on the principal owed and is never added to the principal. Compound interest is “interest on interest”—meaning that interest is added to the principal.¹³³ Under compound interest, therefore, the amount of interest in later periods will be higher than the amount of interest in earlier periods. Despite the potentially large impact of the simple versus compound interest distinction, that binary question is left unanswered under most

128. ILC Articles on State Responsibility, *supra* note 6, art. 38(1); *see also* Sénéchal & Gotanda, *supra* note 76, at 508, n.73, 516.

129. *See* Sénéchal & Gotanda, *supra* note 76, at 495-96, n.15 (explaining that awards of interest also prevent unjust enrichment and promote efficiency).

130. *See, e.g.*, RIPINSKY & WILLIAMS, *supra* note 5, at 361, n.1 (“International investment tribunals have routinely awarded interest, although frequently without much consistency or even explanation.”); Gotanda, *Compounding Interest*, *supra* note 127, at 261 (“In recent years, perhaps no area of private international law has undergone more significant changes than the awarding of interest.”); Sénéchal & Gotanda, *supra* note 76, at 493.

131. There has also arguably been some convergence with respect to rates of interest in recent years. In exercising their typically wide discretion in determining the rate of interest, *see* RIPINSKY & WILLIAMS, *supra* note 5, at 366-67, tribunals tend to be shifting away from “fair” approximations and toward the “investment alternatives” approach to interest, based on floating market rates (i.e. U.S. Treasury Bills and the London Inter Bank Offer Rate (LIBOR)). *See* Aaron Xavier Fellmeth, *Below-Market Interest in International Claims Against States*, 13 J. INT’L ECON. L. 423, 431-37 (2010); Sénéchal & Gotanda, *supra* note 76, at 493-94, 508, n.72 (listing cases); Gotanda, *Compounding Interest*, *supra* note 127, at 278-79, 282.

132. *See* Sénéchal & Gotanda, *supra* note 76, at 532-33 (“[C]ompounding will have greater impact for high interest rates and longer periods of time.”); RIPINSKY & WILLIAMS, *supra* note 5, at 380. As with valuation, determinations of interest often involve millions of dollars, sometimes as large as the principal claim itself. *See id.* at 492-93, n.2.

133. *See* Sénéchal & Gotanda, *supra* note 76, at 504, n.59 (“Compound interest is calculated through the use of the following formula: $FV = PV(1+i)^n$, where FV is the future value of the total award, including interest, PV is the present value of the award (i.e., not including interest), i is the interest rate per compounding period, and n is the number of compounding periods.”).

instruments of international law and applicable treaty provisions.¹³⁴

Throughout most of the twentieth century, simple interest was the norm in international arbitration. According to a leading mid-century treatise, “there are few rules within the scope of the subject of damages in international law that are better settled than the one that compound interest is not allowable.”¹³⁵ That rule eroded in subsequent decades.¹³⁶ In 2000, the tribunal in *Compañía del Desarrollo de Santa Elena S.A. v. Costa Rica*, ICSID Case No. ARB/96/1, Final Award, (Feb. 17, 2000) issued a seminal decision awarding compound interest and noting the shifting jurisprudence from simple to compound interest.¹³⁷ Still, as late as 2001, one scholar observed that “[w]hile there is little consensus on approaches to awarding interest generally in international arbitration, the issue of compound interest is especially problematic.”¹³⁸ In other words, the arbitration community began converging around compound interest, but it had not yet been firmly established.

Ten years later, little to no uncertainty remains with respect to awarding compound interest in investor-state arbitration. Tribunals in the vast majority of published investor-state cases of the past decade have applied compound interest.¹³⁹ Indeed, claimants have used empirical data to support the frequent application of compound interest. In *Siag v. Egypt*, ICSID Case No. ARB/05/15, Award, (May 11, 2009) (hereinafter *Siag & Vecchi*), for example, the claimants “submitted that since 2000, no less than 15 out of 16 tribunals have awarded compound interest on damages in investment disputes.”¹⁴⁰ Commentators have described this trend as compound interest “com[ing] to be treated as the default

134. RIPINSKY & WILLIAMS, *supra* note 5, at 365, n.12 (stating that the ILC Articles of State Responsibility, by “refraining from setting out specific rules on the award of interest,” confirmed that as of 2001 there was an “absence of any consistent practice on the matter”).

135. MARJORIE M. WHITEMAN, DAMAGES IN INTERNATIONAL LAW 1997 (1943); RIPINSKY & WILLIAMS, *supra* note 5, at 382; *but see* Natasha Affolder, *Awarding Compound Interest in International Arbitration*, 12 AM. REV. INT’L ARB. 45, 71-73 (2001) (“The authorities cited by Ms. Whiteman . . . fail to support the existence of a general principle of international law against the awarding of compound interest. At most, it can be said that the question of whether compound interest can be awarded is an unsettled question before international tribunals.”).

136. *See Starrett Hous. Corp. v. Iran*, *supra* note 9, at 237 (Holtzmann, J., concurring); F.A. Mann, *Compound Interest as an Item of Damage in International Law*, in FURTHER STUDIES IN INTERNATIONAL LAW 381 (F.A. Mann ed., 1990) (noting that “the general principles of law recognized by civilized nations do not yield an unequivocal guidance” on the question of compound interest); *see also* RIPINSKY & WILLIAMS, *supra* note 5, at 383-84 (surveying criticisms of the simple interest rule).

137. *See* *Compañía del Desarrollo de Santa Elena S.A. v. Costa Rica*, ICSID Case No. ARB/96/1, Final Award, ¶¶ 96-107 (Feb. 17, 2000) (“[W]hile simple interest tends to be awarded more frequently than compound, compound interest certainly is not unknown or excluded in international law.”).

138. Affolder, *supra* note 135, at 45-46 (“This lack of uniformity mean[t] that it may be entirely impossible to predict in advance whether an arbitral tribunal will award compound interest.”).

139. *See, e.g.*, RIPINSKY & WILLIAMS, *supra* note 5, at 384-87; Sénéchal & Gotanda, *supra* note 76, at 508-09.

140. *Siag v. Egypt*, ICSID Case No. ARB/05/15, Award, ¶ 595 (May 11, 2009).

solution.”¹⁴¹ In sum, international investment law has converged around the principle of compound interest.

2. *The Benefits of Convergence*

Before the convergence around compound interest, parties had limited ability to predict the amount of interest that would be awarded. The negative consequences of that uncertainty included reduced chances of settlement, unnecessary delay in proceedings, and increased litigation costs.¹⁴² Parties also had reason to doubt the competence of arbitrators with respect to interest determinations.¹⁴³ Now, however, parties have little doubt with respect to compounding. The convergence around compound interest leads to a more predictable jurisprudence, largely because tribunals turn to arbitral precedent when determining interest. Parties considering settlement, for example, can reliably expect that adequate compensation will include interest at a compound rate. Over time, parties may even avoid incurring the costs of disputing whether interest should be simple or compound.¹⁴⁴

A broader legitimizing benefit of the trend toward awarding compound interest is that it aligns with economic reality.¹⁴⁵ As one tribunal explained, quoting Gotanda, “almost all financing and investment vehicles involve compound interest If the claimant could have received compound interest merely by placing its money in a readily available and commonly used investment vehicle,

141. RIPINSKY & WILLIAMS, *supra* note 5, at 387.

142. See Affolder, *supra* note 135, at 46 (“Uncertainty as to whether compound interest will be awarded is problematic. The fact that parties are unable to ascertain their liabilities (or the amount they may possibly gain) may reduce chances of settlement. Parties may further delay the arbitral process if they believe the cost of interest which they will eventually pay is below the market rate. This lack of uniformity means that parties in similar situations are treated differently so that considerable resources are spent in litigating interest issues.”); see also David J. Branson & Richard E. Wallace Jr., *Awarding Interest in International Commercial Arbitration: Establishing a Uniform Approach*, 28 VA. J. INT’L L. 919, 921 (1988).

143. See Fellmeth, *supra* note 131, at 435.

144. Of course, as with all damages issues, the convergence around interest does not mean that tribunals will necessarily take up the issue on their own accord. As illustrated by *Enron v. Argentina*, a tribunal faces the concern of exceeding its powers if it were to award interest that the claimant has not specifically requested. *Enron v. Argentina*, ICSID Case No. ARB/01/3, Decision on Claimants’ Request for Rectification and/or Supplementary Decision of the Award, ¶¶ 41-42, 56 (Oct. 3, 2007). That remains true notwithstanding an “extensive arbitration practice” of awarding interest to update compensation in light of the time value of money. *Id.* ¶ 41. But see *Wena Hotels v. Egypt*, *supra* note 116 (awarding compound interest at a rate of 9% even though the claimant claimed interest “but neither specified a rate nor whether interest should be compounded).

145. See Sénéchal & Gotanda, *supra* note 76, at 505 (explaining “that a loss of value incurred by a company, active in normal trading operations, implies the loss of use of that value”); see also Affolder, *supra* note 136, at 90-91. Alignment with economic reality also reinforces the convergence around compound interest, because it provides “strong theoretical support.” RIPINSKY & WILLIAMS, *supra* note 5, at 387.

it is neither logical nor equitable to award the claimant only simple interest.”¹⁴⁶ Simply put, “compound interest is a closer measure to the actual value lost by an investor.”¹⁴⁷ The convergence around compound interest is therefore consistent with the principle of full reparation under international law.

B. The Prominence of the DCF Method

The fundamentals of DCF analysis are well established and well known in the investment arbitration community. In short, forecasting and discounting the cash flows generated by that enterprise determine the value of an enterprise. Cash flows in the future are worth less than cash flows today.¹⁴⁸ Accordingly, “forecasted cash flows are discounted to obtain present value. The appropriate discount rate is the opportunity cost of capital, that is, the expected rate of return from investing in other assets of equivalent risk. . . .”¹⁴⁹ The principal grounds of dispute regarding a DCF valuation are the amount of projected cash flows and the appropriate discount rate.

The future cash flows valued in a DCF analysis are akin to “lost profits,” but it is important to distinguish the two concepts. In breach of contract cases, lost profits (*lucrum cessans*) are the future gains that a party would have earned if not for the actions of the other party, as opposed to actual losses suffered (*damnum emergens*).¹⁵⁰ Awarding *damnum emergens* is more straightforward and less controversial than awarding *lucrum cessans*.¹⁵¹ DCF, as a method of determining fair market value, is analytically distinct from *lucrum cessans*,

146. *Wena Hotels v. Egypt*, *supra* note 116, ¶ 129.

147. *Siemens v. Argentina*, *supra* note 2, ¶ 399.

148. See RICHARD A. BREALEY ET AL., PRINCIPLES OF CORPORATE FINANCE 16 (8th ed. 2006) (“The first basic principle of finance is that *a dollar today is worth more than a dollar tomorrow*, because the dollar today can be invested to start earning interest immediately. Financial managers refer to this as the *time value of money*.”).

149. Ball, *supra* note 69, at 419 (quoting Report of Stewart C. Myers in *Phillips Petroleum Co. v. Iran*); see also BREALEY ET AL., *supra* note 148, at 16 (“To calculate present value, we discount expected payoffs by the rate of return offered by equivalent investment alternatives in the capital market. This rate of return is the discount rate, hurdle rate, or opportunity cost of capital.”). For a more detailed explanation of how the DCF method operates in the context of investor-state arbitration, see William H. Knull et al., *Accounting for Uncertainty in Discounted Cash Flow Valuation of Upstream Oil and Gas Investments*, 25 J. ENERGY & NAT. RES. L. 268 (2007).

150. Gotanda, *Lost Profits*, *supra* note 7, at 65-66. “Where the claimant seeks both *damnum emergens* and the *lucrum cessans*, [tribunals] need to be careful to avoid double counting” when applying the DCF method. *Id.* at 111. Note that an award of interest “compensates for the same general class of injury” as lost profits. See Fellmeth, *supra* note 131, at 427.

151. See RIPINSKY & WILLIAMS, *supra* note 5, at 107 (“Tribunals rarely have a problem in awarding *damnum emergens* because this is a loss that has already occurred and is relatively easy to establish and quantify,” but *lucrum cessans* claims “are de facto much more difficult to sustain, primarily due to a degree of uncertainty inherent in future profits.”); see also Gotanda, *Lost Profits*, *supra* note 7, at 62 (stating that lost profits is “arguably the most complicated issues for a tribunal deciding a transnational contracting dispute”).

which is a component of damages.¹⁵² Despite their differences, both the DCF method and “lost profits” analysis involve similar evidentiary challenges that require a look into the future.¹⁵³

1. Other Valuation Methods

Tribunals employ a variety of methodologies to determine fair market value, including the DCF method, comparable transactions, book value, and amount invested. Tribunals in investor-state arbitration have encouraged the application of multiple methodologies to corroborate their results.¹⁵⁴ The analysis of comparable transactions is widely accepted, because such transactions indicate what a willing buyer has in fact paid a willing seller for an investment similar to the one at issue in the arbitration (that is the “comparable”).¹⁵⁵ Still, using comparable transactions involves its own share of controversy, as exemplified by debates about the relative similarity of the assets or interests at issue.¹⁵⁶ Perhaps the greatest difficulty with respect to comparables is their availability—because many investor-state arbitrations involve unique investments, comparable transactions are typically limited or non-existent.¹⁵⁷

Two other methodologies, book value and amount invested, can be helpful in some contexts, but come up short as systematic approaches to valuation. By definition, book value is not fair market value.¹⁵⁸ Nor is the amount invested

152. For a more detailed explanation of this distinction and an overview of its implications, see RIPINSKY & WILLIAMS, *supra* note 5, at 294-98. See also Söderlund et al., *supra* note 69, at 36 (“Cash flow is not the same as profit.”)

153. The general principle of international law is simply that “compensation shall cover any financially assessable damages including loss of profits insofar as it is established.” ILC Articles of State Responsibility, *supra* note 6, art. 36(2). Both lost profits and DCF analysis tend to involve complex financial models that generate discomfort for arbitrators. Because of the complexity, John Gotanda has observed that, in international commercial arbitration, the calculation of future profits often results in “different approaches and seemingly arbitrary awards.” Gotanda, *Lost Profits*, *supra* note 7, at 88. The following sections show that the same is true with respect to the DCF method in investor-state arbitration.

154. See, e.g., *Nat'l Grid v. Argentina*, *supra* note 83, ¶ 285; *Compañía de Aguas v. Argentina*, *supra* note 2, ¶ 8.1.4; see also KANTOR, *supra* note 17, at 26-30; Jack Coe, Jr. & Noah Rubins, *Regulatory Expropriation and the Tecmed Case: Context and Contributions*, in INTERNATIONAL INVESTMENT LAW AND ARBITRATION: LEADING CASES FROM THE ICSID, NAFTA, BILATERAL TREATIES AND CUSTOMARY INTERNATIONAL LAW 597, 629 (Todd Weiler ed., 2005).

155. KANTOR, *supra* note 17, at 18 (“The best evidence of fair market value may be the price agreed between a willing buyer and a willing seller, each with knowledge of the relevant facts, in a recent arm’s length transaction.”)

156. KANTOR, *supra* note 17, at 125-30 (providing a checklist of comparability issues).

157. See *Kardassopoulos v. Georgia*, *supra* note 83, ¶ 598 (“It is not common in investment treaty arbitrations that a Tribunal has available to it three arm’s-length, contemporaneous transactions (or potential transactions) to assist in valuing an investment, much less three that converge in a narrow range of value”); see also Paul D. Friedland & Eleanor Wong, *Measuring Damages for the Deprivation of Income-Producing Assets: ICSID Case Studies*, 6 ICSID REV.—FOR. INV. L.J. 400, 404-05 (1991).

158. “Net Book Value” equals the assets minus the liabilities of a company, as recorded in ac-

equal to fair market value, even though it can be appealing as an easy approximation of value for recent investments, since it might show what a willing buyer paid to a willing seller for the interests in question.¹⁵⁹ Yet the amount invested has the potential to overvalue or undervalue an investment.¹⁶⁰ Notwithstanding those limitations, valuations based on book value or the amount invested can corroborate valuations based on comparable transactions and DCF analysis. Only in rare cases, however, will book value or the amount invested be appropriate as the exclusive methodology for determining fair market value. By contrast, the DCF method can serve as an appropriate stand-alone methodology, particularly when comparable transactions are not available.

2. Theoretical Convergence Around the DCF Method

In the business and financial spheres, the DCF method is standard practice. Of the many valuation methods, it is the “most conceptually correct method because it captures the driving principle of valuation: value is the present worth of future benefits.”¹⁶¹ Financial analysts therefore begin the task of valuation by calculating DCF.¹⁶² Tribunals have followed suit, accepting decades ago the DCF method as a matter of theory and applying it to determine fair market value.¹⁶³ Yet the method was described even in 2001 as “*relatively* new in the histo-

counting books. Book value tends to undervalue an investment because, *inter alia*, it does not take into account reasonably expected future profits. See generally KANTOR, *supra* note 17, at 231-49; RIPINSKY & WILLIAMS, *supra* note 5, at 221-22. That tendency is particularly notable in periods of inflation. See JAMES CRAWFORD, THE INTERNATIONAL LAW COMMISSION’S ARTICLES ON STATE RESPONSIBILITY: INTRODUCTION, TEXT AND COMMENTARIES 255 (2002). Book value can also be difficult to calculate because of its reliance on nuanced accounting methods. See KANTOR, *supra* note 17, at 232-33. For a defense of the book value methodology, particularly as compared to the DCF method, see Stauffer, *supra* note 17, at 485-88.

159. See KANTOR, *supra* note 17, at 49-51; RIPINSKY & WILLIAMS, *supra* note 5, at 229-31. An interesting question for future study is whether the “amount invested” should prevail over other valuation methods simply because an investor made a “speculative investment.” See *RosInvest v. Russia*, *supra* note 70, ¶¶ 668-71.

160. “If one starts with investment as a measure of FMV, however, one must be willing to ask whether there are reasons why the market value might differ substantially from the amount spent, and make appropriate adjustments. There are indeed reasons that might justify modifications.” Wells, *supra* note 15, at 474-75 (explaining the complications and weaknesses of the “amount invested” approach).

161. KANTOR, *supra* note 17, at 132-33 n.411 (quoting SHANNON PRATT, THE LAWYER’S BUSINESS VALUATION HANDBOOK: UNDERSTANDING FINANCIAL STATEMENTS, APPRAISAL REPORTS, AND EXPERT TESTIMONY 105 (2002)); see also, e.g., Friedland & Wong, *supra* note 157, at 407 (noting in 1991 that, in “the business and academic communities, the DCF method is frequently regarded as the most appropriate method of valuing an income-producing asset”).

162. See Ball, *supra* note 69, at 419 (“The DCF method is a real-world method that businessmen and financiers apply every day in deciding how much to invest in a business.”); see also Wells, *supra* note 15, at 473 (“In calculating the FMV of commercial property, or an ongoing business, analysts are likely to begin with the net present value (NPV) of the expected future stream of cash flow from the project as a measure.”).

163. *Starrett Hous. Corp. v. Iran*, *supra* note 9, at 157-58.

ry of international arbitration.¹⁶⁴ The novelty has worn away by now.

Recent investor-state arbitration awards demonstrate theoretical convergence around the DCF method. Tribunals have recognized that the “DCF method is widely endorsed, both by financial institutions and international jurists.”¹⁶⁵ Indeed, “DCF techniques have been *universally adopted*, including by numerous arbitral tribunals, as an appropriate method for valuing business assets,”¹⁶⁶ because they form “[t]he only method which can accurately track value through time . . .”¹⁶⁷ As stated by one expert in the field:

The DCF is the most common methodology used in valuation analyses. First, it is widely supported by the professional literature, and its workings are well understood. Indeed, most investors rely on a DCF analysis to determine whether or not to undertake a particular project. Second, the DCF approach is widely accepted by international agencies, such as the World Bank, as a valid method to estimate damages and fair market valuations in international disputes.¹⁶⁸

Parties’ arguments in arbitration proceedings confirm the broad acceptance of DCF analysis. Some claimants have asserted, for example, that DCF is the most “widely accepted and highly regarded methodology used to calculate the value of cash flows being generated by a business.”¹⁶⁹ Respondent states also increasingly accept that DCF is proper as a matter of theory.¹⁷⁰ Accordingly, ex-

164. Ball, *supra* note 69, at 419-21 (“It took some decades for the cases to establish that *lucrum cessans* (lost future profits) is an allowable element of compensation for expropriation. The next step—developing techniques for calculating the value of the lost profits and convincing tribunals of the validity of this method—is a relatively late method.”); *see also* CABELL MCLACHLAN ET AL., INTERNATIONAL INVESTMENT ARBITRATION 331 (2007) (“The view of these authors is that the DCF approach is becoming so widely accepted because it is, put simply, the best method for valuing lost profits.”).

165. *Enron v. Argentina*, *supra* note 2, ¶ 385, n.118.

166. *CMS Gas Transmission Co. v. Argentina*, ICSID Case No. ARB/01/8, Award, ¶ 416 (May 12, 2005) [hereinafter *CMS v. Argentina*].

167. *Walter Bau v. Thailand*, *supra* note 83, ¶ 14.12. Another tribunal stated that valuation based on future lost profits “theoretically . . . may even be the preferred method of calculating damages in cases involving the expropriation of or fundamental impairment of going concerns.” *Compañía de Aguas v. Argentina*, *supra* note 2, ¶ 8.3.3.

168. Manuel A. Abdala, *Key Damage Compensation Issues in Oil and Gas International Arbitration Cases*, 24 AM. U. INT’L L. REV. 539, 548-49 (2009); *see also* Ball, *supra* note 69, at 427 (“[T]he DCF method is recognized increasingly as a valid valuation method, even in cases in which tribunals have found the evidence insufficient to support a DCF analysis.”).

169. *Rumeli Award*, *supra* note 2, ¶ 722; *see also* *Compañía de Aguas v. Argentina*, *supra* note 2, ¶ 8.3.1 (“Claimants contend that a DCF analysis is recognised as the preferred approach to valuation in modern practice where projected cash flows are reasonably capable of determination and are not speculative.”).

170. *Compare Rumeli Award*, *supra* note 2, ¶ 726, and *CMS v. Argentina*, *supra* note 166, ¶ 417 (the experts from both sides agreed “that DCF was the proper method in this case for determining losses that extend through a prolonged period of time”), with *Rumeli Annulment*, *supra* note 93, ¶¶ 124-26, and *CMS v. Argentina*, *supra* note 166, ¶ 398 (“The Respondent also asserts that the DCF method is not appropriate and that it has resulted in gross overvaluation of the shares.”). *See also* *Enron v. Argentina*, *supra* note 2, ¶ 355 (“The Respondent objects to the use of DCF to calculate the value of equity damage as a matter of principle and formulates specific objections to the results obtained by the Claimants.”). For a now dated example of a respondent state’s more theoretical criti-

perts for respondent states have submitted their own DCF analyses in order to counter the valuations submitted by investors.¹⁷¹ The use of DCF analysis by state governments and state-owned entities supports the proposition that parties are moving away from theoretical challenges to the DCF method of valuation.¹⁷²

3. Arbitrators' Lingering Reluctance

Despite its growing acceptance, the DCF method continues to face inconsistent and hesitant application in investor-state arbitration. In some cases, tribunals avoid DCF analysis for legal reasons, for example, by finding that fair market value is not the appropriate standard of compensation in a non-expropriation case.¹⁷³ More important is arbitrators' possible avoidance of the DCF method for evidentiary or subjective reasons. Tribunals rejected the DCF method for such reasons in *Metalclad Corp. v. Mexico*, ICSID Case No. ARB(AF)/97/1, Award, (Aug. 30, 2000), *Wena Hotels Ltd. v. Egypt*, ICSID Case No. ARB/98/4, Decision on Annulment Application, (Feb. 5, 2002), *Tecnicas Medioambientales Tecmed, S.A. v. Mexico*, ICSID Case No. ARB(AF)/00/2, Award, (May 29, 2003), *S. Pac. Props. (Middle East) Ltd. v. Egypt*, ICSID Case No. ARB/84/3, Award, (May 20, 1992), and *Amoco Int'l Fin. Corp. v. Iran*, Partial Award, 15 Iran-U.S. Cl. Trib. Rep. 189 (1987).¹⁷⁴ More recently, tribunals rejected DCF analyses in four of the past twelve public decisions in which investors proposed a fair market valuation principally based on the DCF method.¹⁷⁵ To understand

cisms of the method, see *S. Pac. Props. (Middle East) Ltd. v. Egypt*, ICSID Case No. ARB/84/3, Award, ¶¶ 186-87 (May 20, 1992) [hereinafter *SPP v. Egypt*].

171. See, e.g., *Sempra v. Argentina*, *supra* note 2, ¶ 407; *CME v. Czech Republic*, *supra* note 102, ¶¶ 563-64.

172. See KANTOR, *supra* note 17, at 135 n.416.

173. This legal question has also reflected tribunals' inconsistent approach to valuation. See Khamsi, *supra* note 27, at 175-78, 183. In *LG&E v. Argentina*, for example the tribunal rejected the DCF method because, while appropriate in expropriation and "total loss of investment" cases, DCF (as a measure of asset value) was not appropriate for the non-expropriation breaches in question. See *LG&E v. Argentina*, *supra* note 47, ¶¶ 35-39; see also *PSEG Global Inc. v. Turkey* ICSID Case No. ARB/02/5, Award, ¶ 309 (June 4, 2004) ("The Tribunal accordingly finds that the fair market value shall not be retained as the measure for compensation in this case and hence it will also not discuss the many technical aspects raised by the parties in connection with the factors that were taken into account for assigning a value to the claim and the appropriate method for its calculation.") [hereinafter *PSEG v. Turkey*]. The typical posture of the parties was reversed in *LG&E v. Argentina*. The claimants did not propose the DCF method and instead relied on the sale price of their publicly-traded shares in the investment and comparables. *LG&E v. Argentina*, *supra* note 47, ¶¶ 13-15. The respondent's expert proposed "the use of DCF as a more appropriate and rigorous method to value the investments," as compared to the claimants' stock-price method. *Id.* ¶ 23. Yet, interestingly, the respondent did not conduct a calculation based on the DCF method. *Id.* ¶ 34.

174. See RIPINSKY & WILLIAMS, *supra* note 5, at 205-10 (summarizing six cases in which tribunals rejected the DCF method). See also KANTOR, *supra* note 17, at 136 n.421 (listing early investor-state cases in which tribunals declined to award lost profits).

175. The twelve cases considered are *Alpha v. Ukraine*, *Walter Bau v. Thailand*, *Siag v. Egypt*, *Nat'l Grid v. Argentina*, *Rumeli Award*, *Biwater v. Tanzania*, *BG Grp. v. Argentina*, *Sempra v. Argentina*, *Compañía de Aguas v. Argentina*, *Enron v. Argentina*, *Siemens v. Argentina*, and *ADC v.*

this persistent and sometimes puzzling reluctance toward accepting the DCF method,¹⁷⁶ an analysis of the four recent cases in which the DCF method was rejected is necessary.

Siemens v. Argentina. In *Siemens A.G. v. Argentina*, ICSID Case No. ARB/02/8, Award (Feb. 6, 2007), the claimant presented an unusual argument that compensation should be calculated based in part on book value and in part on “discounting an estimate of profits” that were expected from the investment.¹⁷⁷ Commenting on that proposal, the tribunal stated that “the DCF method is applied to ongoing concerns based on the historical data of their revenues and profits; otherwise, it is considered that the data is too speculative to calculate future profits.”¹⁷⁸ The tribunal accepted the book value approach, but rejected the DCF value of lost profits as “very unlikely to have ever materialized” for five reasons: (1) the “excessive” amount of profit assumed by the claimant needed to be reduced; (2) that reduced amount included a value added tax that needed to be subtracted; (3) a discount rate of thirteen percent needed to be applied; (4) the profits depended on uncertain assumptions about possible contract extension; and (5) the profits would have been subject to a corporate profits tax.¹⁷⁹

The tribunal’s analysis illustrates both quantified and unquantified explanations of the DCF method. For its first two stated reasons, the tribunal gave exact numerical reductions that should have been applied to the proposed DCF analysis (resulting in profits before taxes of AR\$81 million). For its next three stated reasons, the tribunal did not quantify how any of those three reasons could reduce the admitted value of AR\$81 million (over US\$20 million)¹⁸⁰ to zero. The tribunal’s failure to explain the specific adjustments of the DCF analysis that resulted in a zero or negative value gives rise to doubt about whether the tribunal undertook to perform a complete DCF analysis.

Compañía de Aguas v. Argentina. In *Compañía de Aguas del Aconquija S.A. v. Argentina*, ICSID Case No. ARB/97/3, Award (Aug. 3, 2007), the claimant used the DCF method to value over twenty-seven years of lost profits.¹⁸¹ The respondent challenged the use of that method, and the claimant provided no alternative in response.¹⁸² The tribunal held that the claimants “failed to establish

Hungary. The claimant in *Kardassopoulos v. Georgia* also implicitly supported DCF analysis through its proposed analysis of comparable transactions.

176. Coe & Rubins, *supra* note 154, at 659 (“[I]t is one of the puzzling aspects of contemporary investment arbitration practice that tribunals have repeatedly resisted a method nearly universally recognized in the economics community as the most reliable way to estimate the fair market value of ongoing concerns.”).

177. *Siemens v. Argentina*, *supra* note 2, ¶¶ 355-57.

178. *Id.*

179. *Id.* ¶¶ 379-84.

180. *See id.* ¶ 381.

181. *Compañía de Aguas v. Argentina*, *supra* note 2, ¶¶ 8.1.2, 8.3.1.

182. *Id.* ¶¶ 8.1.3-8.1.4, 8.3.2 (according to the respondent, the DCF method was inappropriate because the investment “was never a genuine going concern, there was no proven record of profita-

with a sufficient degree of certainty” that the investment in question would have been profitable.¹⁸³ The tribunal explained that “the net present value provided by a DCF analysis is not always appropriate and becomes less so as the assumptions and projections become increasingly speculative.”¹⁸⁴ While the tribunal acknowledged that “the absence of a history of demonstrated profitability does not absolutely preclude the use of DCF valuation methodology,” it stated that, “to overcome the hurdle of its absence, a claimant must lead convincing evidence of its ability to produce profits in the particular circumstances it faced.”¹⁸⁵ Under that “convincing evidence” standard, the tribunal found the “claimants’ evidence deficient.”¹⁸⁶ The tribunal therefore found that it was unnecessary to further analyze the claimants’ valuation based on the DCF method.¹⁸⁷

BG Group v. Argentina. In *BG Group*, the claimant’s damages expert applied the DCF method to determine the reduction in value of its investment.¹⁸⁸ With little discussion, the tribunal concluded that the DCF analysis led “to a result which is uncertain and speculative.”¹⁸⁹ The tribunal did not address the specifics of the claimant’s proposed DCF methodology, such as the projected future cash flows or the discount rate. Instead, the tribunal relied exclusively on two transactions related to the investment in question.¹⁹⁰ The tribunal’s discussion begs the question, at least for non-parties, of why the proposed DCF valuation was “uncertain and speculative.” Similarly, the award leaves one to wonder why the proposed DCF valuation was not a helpful crosscheck for the implied values of the other transactions.

Siag & Vecchi. In *Siag & Vecchi*, the claimant submitted three methodologies for calculating the fair market value of an expropriated investment: comparable transactions, residual land valuation, and DCF.¹⁹¹ Egypt countered that on-

bility and . . . Claimants’ approach entirely ignore[d] the substantial risk associated with privatization by wrongly assuming the Concession Agreement’s income stream to be a minimum, rather than a maximum.”). The tribunal denied the claimants’ attempt after the hearing to submit evidence for alternative valuation methodologies. *Id.* ¶¶ 8.1.6-8.1.9.

183. *Id.* ¶ 8.3.5.

184. *Id.* ¶ 8.3.3.

185. *Id.* ¶ 8.3.8.

186. *Id.*; see also *id.* ¶ 8.3.10 (“A claimant which cannot rely on a record of demonstrated profitability requires to present a thoroughly prepared record of its (or others) successes, based on first hand experience (its own or that of qualified experts) or corporate records which establish on the balance of the probabilities it would have produced profits from the concession in question in the face of the particular risks involved, other than those of Treaty violation. This approach was not taken here.”).

187. *Id.* ¶ 8.3.11.

188. *BG Grp. v. Argentina*, *supra* note 2, ¶¶ 415, 438.

189. *Id.* ¶ 439.

190. *Id.* ¶¶ 440-44.

191. *Siag v. Egypt*, *supra* note 83, ¶¶ 519, 549-52. Perhaps reading cues from the tribunal, the claimants shifted their focus to the comparables analysis by the time of closing submissions in the proceeding. *Id.* ¶ 571.

ly an analysis of comparables was appropriate.¹⁹² The tribunal found that the investment did not “lend itself to a robust DCF analysis”¹⁹³ and based its valuation exclusively on the comparables analysis.¹⁹⁴ The tribunal expressed unease with the DCF method because of its “numerous ‘moving parts’ . . . whether at the front end in terms of building up the model of revenue and operating costs and capital expenditure, or in terms of the Weighted Average Cost of Capital (WACC) used to discount future cash flows back to a present value.”¹⁹⁵ With respect to the discount rate, the tribunal stated that it was “not necessary to attempt the *impossible exercise* of determining which figure is ‘right’ to realise that the DCF analysis in such a case is attended by *considerable uncertainty*.”¹⁹⁶ Accordingly, the tribunal agreed with

the wisdom in the *established reluctance* of tribunals . . . to utilise DCF analyses for ‘young’ businesses lacking a long track record of established trading. In all probability that reluctance ought to be even more pronounced in cases such as the present where the business is still in its relatively early development phase and has no trading history at all.¹⁹⁷

The decisions discussed above reflect two common, interrelated circumstances that lead arbitrators to reject DCF as a method of determining fair market value. First, arbitrators appear willing to reject the DCF method when there is clear, reliable evidence of comparable transactions. That approach, while reasonable in some cases, overlooks the benefit that the DCF method provides as a crosscheck for valuations based on comparable transactions. For example, in *CME Czech Republic B.V. v. Czech Republic*, Final Award (UNCITRAL Mar. 14, 2003) the tribunal used an “adjusted DCF calculation”—which the tribunal had explained in great, numerical detail—“as a confirmation of the Tribunal’s findings” based on a comparable transaction.¹⁹⁸ Second, and more troubling, arbitrators reject the DCF method outright when there is a basis for deeming it uncertain and speculative.¹⁹⁹ The degree of speculation and uncertainty varies in

192. *Id.* ¶¶ 526-28.

193. *Id.* ¶ 566.

194. *Id.* ¶¶ 572-73. The tribunal’s preference for valuation based on comparables seemed to derive from its appreciation of the expert who presented that analysis. *See id.*

195. *Id.* ¶ 568 (describing the cost projections of the DCF analysis as “necessarily a sketch or rough estimate”).

196. *Id.* ¶ 569 (emphases added).

197. *Id.* ¶ 570 (emphasis added).

198. *CME v. Czech Republic*, *supra* note 102, ¶ 604. The DCF method is a particularly helpful tool for corroborating the value suggested by comparable transactions, because the parties involved in those transactions likely utilized DCF analysis for their purchase and sale decisions. *See id.* ¶¶ 514-17 (explaining how the potential purchases in a comparable transaction had relied on the “budget numbers” of the seller and adjusted “projections for market growth” and other factors).

199. *See* Thomas Wälde & Borzu Sabahi, *Compensation, Damages, and Valuation*, in *THE OXFORD HANDBOOK OF INTERNATIONAL INVESTMENT LAW* 1075 (Peter Muchlinski et al. eds., 2008) (“Almost every tribunal now repeats the mantra that ‘speculative profits’ or ‘speculative elements’ should be discounted in valuation.”); *see also* RIPINSKY & WILLIAMS, *supra* note 5, at 210 (stating that a tribunal’s “skepticism of DCF calculations owing to their speculative character . . . is

every case,²⁰⁰ but tribunals often fail to explain such variances when dismissing DCF calculations. It is therefore hard to reconcile theoretical convergence around the DCF method with arbitrators' reluctance to apply it.²⁰¹

The confused standard of evidence helps explain this inconsistency toward the DCF method.²⁰² Tribunals have broad discretion to decide the evidentiary threshold for future cash flows²⁰³ and they "are split on what constitutes sufficient evidence."²⁰⁴ Some tribunals employ a "certainty" standard in DCF analysis that seems stricter than the more common "reasonable certainty" standard for proving damages.²⁰⁵ For example, several investor-state decisions suggest that arbitrators have applied a "certainty" requirement to not only the showing of damages *per se*, but also to the amount of damages.²⁰⁶ Yet, in general, "it is well

not a sensible basis for rejecting the DCF method as a valuation technique."); RUBINS & KINSELLA, *supra* note 18, at 248 ("Any sensible determination of value, however, must inquire into the future."). The desire to avoid "speculative" awards can also be seen in determinations of interest rates. For example, in *PSEG v. Turkey*, the tribunal rejected with no explanation the claimants' argument for interest based on lost opportunity cost because such a rate would have been speculative. *PSEG v. Turkey*, *supra* note 173, ¶¶ 341-45; *see also* Sénéchal & Gotanda, *supra* note 76, at 511.

200. *See* SCHREUER, *supra* note 95, at 1012 ("The speculative character of damages theories in the calculation of lost profits is a matter of degree.").

201. *See, e.g.*, RIPINSKY & WILLIAMS, *supra* note 5, at 201 nn.71-72 (citing seven cases in which the DCF method was applied and seven cases in which it was rejected); RUBINS & KINSELLA, *supra* note 18, at 249 *et seq.*; Cheng, *supra* note 35, at 497 (noting the inconsistency between the willingness to make a "rough assessment" of lost profits in *CME v. Czech Republic* and the refusal to award compensation "for the earning capacity of an expropriated license in the absence of 'proof of concrete contracts missed and of the profits lost from them'" in *SPP v. Egypt*).

202. Ball, *supra* note 69, at 422; Nigel Blackaby et al., *Arbitration under Investment Treaties*, in REDFERN AND HUNTER ON INTERNATIONAL ARBITRATION ¶ 8.116 (2009); Henry Weisburg & Christopher Ryan, *Means to Be Made Whole: Damages in the Context of International Investment Arbitration*, in EVALUATION OF DAMAGES IN INTERNATIONAL ARBITRATION 165, 174-77 (Yves Derains & Richard H. Kreindler eds., 2006) (discussing *Teemed v. Mexico* and *Aucoven v. Venezuela*); *cf.* Zeevi Holdings v. Bulgaria et al., Final Award, ¶¶ 1161-1162 (UNCITRAL Oct. 25, 2006).

203. *See* ILC Articles on State Responsibility, *supra* note 6, art. 36(2). Investment treaties and applicable arbitral rules provide little to no guidance on the standard of evidence.

204. Weisburg & Ryan, *supra* note 202, at 175-77; *see also* Khamsi, *supra* note 27 (explaining the divergent approaches to compensation in cases against Argentina, and particularly "the divergent approaches to certainty").

205. KANTOR, *supra* note 17, at 77 (noting a "somewhat stricter test" in international investment law); *see also id.* at 80 ("[A] tendency on the part of tribunals to decline to award future-looking damages on the basis of insufficient certainty often shows up in claims by investors against States — claimants face a high burden of proof requirement [as compared to] U.S. breach of contract cases . . ."); Gotanda, *Lost Profits*, *supra* note 7, at 87 ("In general, the claimant must prove lost profits with reasonable certainty. In many countries, though, the certainty rule applies only the fact that the breach resulted in claimant's loss of future revenues and not to the amount of profits it lost. The UNIDROIT Principles require that lost profits be established with a reasonable degree of certainty.").

206. *See, e.g.*, *LG&E v. Argentina*, *supra* note 47, ¶ 51 ("[L]ost future profits . . . have only been awarded when 'an anticipated income stream has attained sufficient attributes to be considered legally protected interests of sufficient certainty to be compensable.' Or, in the words of the Draft Articles, 'in so far as it is established'. The question is one of 'certainty'. 'Tribunals have been reluctant to provide compensation for claims with inherently speculative elements.'") (citations omit-

settled that the fact that damages cannot be assessed with certainty is no reason not to award damages when a loss has been incurred.”²⁰⁷ The standard of evidence is particularly important for entities with little to no track record. Such entities are not “going concerns,”²⁰⁸ a categorization that arbitrators frequently employ when rejecting a DCF analysis.²⁰⁹ The “going concern” label thus serves as states’ primary weapon for opposing DCF valuations.²¹⁰ Whether a company satisfies the definition of a “going concern” is essentially an evidentiary question of the certainty of cash flows.²¹¹ Business plans also demonstrate tribunals’ division on evidence of future cash flows. For example, one tribunal has stated that “[i]t is always difficult to assess lost profits. One cannot simply rely on a

ted); *PSEG v. Turkey*, *supra* note 173, ¶¶ 310-15 (listing cases in which tribunals “required a record of profits and a performance record” or “refused to consider profits that were too speculative or uncertain”); *Tecnicas Medioambientales Tecmed, S.A. v. Mexico*, ICSID Case No. ARB(AF)/00/2, Award, ¶ 186 (May 29, 2003) [hereinafter *Tecmed v. Mexico*]; *Autopista Concesionada de Venezuela, C.A. v. Venezuela*, ICSID Case No. ARB/00/5, Award, ¶ 355 (Sept. 27, 2001); *see also* *Sénéchal & Gotanda*, *supra* note 76, at 520. An example of a high evidentiary bar is a requirement of “proof of concrete contracts missed and of the profits lost from them.” *Middle East Shipping & Handling Co. v. Egypt*, ICSID Case No. ARB/99/6, Award, ¶ 128 (Apr. 12, 2002); *see also* *Archer Daniels Midland Co. et al. v. Mexico*, ICSID Case No. ARB(AF)/04/05, Award and Separate Opinion, ¶ 285 (Sept. 26, 2007) (“In the Tribunal’s view, lost profits are allowable insofar as the Claimants prove that the alleged damage is not speculative or uncertain — *i.e.*, that the profits anticipated were probable or reasonably anticipated and not merely possible.”).

207. *SPP v. Egypt*, *supra* note 170, ¶ 215; *see also* *RIPINSKY & WILLIAMS*, *supra* note 5, at 121. This has been the case under US law, where courts’ traditional hesitance in awarding lost profits for new businesses has been replaced by a trend of not requiring certain proof of the amount of lost profits. *See* *Gotanda, Lost Profits*, *supra* note 7, at 71-72 (citing, *inter alia*, Robert I. Abrams et al., *Stillborn Enterprises: Calculating Expectation Damages Using Forensic Economics*, 57 OHIO ST. L.J. 809 (1996)); *KANTOR*, *supra* note 17, at 91; *see also* *Kyocera Corp. v. Prudential-Bache Trade Serv., Inc.*, 299 F.3d 769, 790 (9th Cir. 2002). The same is true in other common law countries. *See* *Gotanda, Lost Profits*, *supra* note 7, at 71. By contrast, some civil law countries impose a higher standard of proof for recovery of lost profits. *See id.* at 77-78.

208. As defined under the *World Bank Guidelines on the Treatment of Foreign Direct Investment*, a “going concern” 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 been expected with reasonable certainty, if the taking had not occurred” WORLD BANK, GUIDELINES ON THE TREATMENT OF FOREIGN DIRECT INVESTMENT, § 6 (1992) (emphasis added). That definition is “widely recognized” and a “well respected statement of the modern practice.” *Rumeli Award*, *supra* note 2, ¶¶ 803-04; *see also* *Compañía de Aguas v. Argentina*, *supra* note 2, ¶ 8.3.6 (defining a “going concern” as “a business enterprise with demonstrable future earning power”).

209. *See* *Metalclad Corp. v. Mexico*, ICSID Case No. ARB(AF)/97/1, Award, ¶¶ 119-21 (Aug. 30, 2000); *Wena Hotels v. Egypt*, *supra* note 116, ¶¶ 123-124; *see also* ANDREW NEWCOMBE & LLUÍS PARADELL, LAW AND PRACTICE OF INVESTMENT TREATIES: STANDARDS OF TREATMENT 388 (2009).

210. *See, e.g.,* *Compañía de Aguas v. Argentina*, *supra* note 2, ¶ 8.3.2 (“Respondent argued strongly against the appropriateness of a DCF valuation” in part because the investment in question “was never a genuine going concern” and had “no proven record of profitability.”).

211. Mark Kantor explains that “[t]ribunals employing the term ‘going concern’ are in reality worried about establishing forward-looking compensation with ‘reasonable certainty.’” *KANTOR*, *supra* note 17, at 95, 102.

business plan.”²¹² By contrast, another tribunal recognized that business plans “constitute the best evidence before the Tribunal of the expectations of the parties at the time of expropriation for the expected stream of cash flows.”²¹³ Such evidentiary disagreements suggest a deeper cause of inconsistency.

The varying competence and unease of arbitrators with respect to the DCF method is critical. Some arbitrators and commentators have made clear their discomfort with DCF’s requirements of forecasting and detailed financial analysis.²¹⁴ More generally, tribunals have insisted that DCF “be used with caution,”²¹⁵ or even “great caution.”²¹⁶ The ILC Articles on State Responsibility disparage the DCF method as relying on “a wide range of inherently speculative elements, some of which have a significant impact upon the outcome (for example discount rates, currency fluctuations, inflation figures, commodity prices, interest rates and other commercial risks).”²¹⁷ Tribunals appear to appreciate an easier, more certain method of calculating damages.²¹⁸

Another possible reason for arbitrators’ rejection of the DCF method is political sensitivity to large awards against states and a perception of the DCF method “as putting too much of a burden on the respondent state.”²¹⁹ That sensi-

212. *Eastern Sugar B.V. v. Czech Republic*, SCC No. 088/2004, Partial Award, ¶ 355 (UNCITRAL Mar. 27, 2007).

213. *ADC v. Hungary*, *supra* note 4, ¶ 507; *see also Walter Bau v. Thailand*, *supra* note 83, ¶ 14.21; *CME v. Czech Republic*, *supra* note 102, ¶ 59 (separate opinion of Ian Brownlie) (stating that a business plan was “a reliable guide to the business expectations of the investors”).

214. *See, e.g., Söderlund et al.*, *supra* note 69, at 24 (“The forward-projecting assessment methods . . . strike us as being *very uncertain, very speculative, and not agreeable at all to apply.*”) (emphasis added); Thomas Wälde, *Introductory Note to SVEA Court of Appeals: Czech Republic v. CME Czech Republic B.V.*, 42 I.L.M. 915, 918 (2003) (“Damages in complex businesses relying on calculations of future cash flows (quite speculative) discounted to present value by applying a specific discount rate (itself very uncertain as the risk factor added to the risk-free discount rate is inevitably highly subjective) can be reasonably and plausibly determined within a very wide range.”); *see also supra* Part III.A. This discomfort has been highlighted by some in the arbitral community who find the DCF method to be “extremely difficult.” *See Weisburg & Ryan*, *supra* note 202, at 174; *see also, e.g., Wälde & Sabahi*, *supra* note 199, at 1073 (“The difficulty with [the DCF] method . . . is that while it may look objective and scientific when presented by experts using spreadsheet models, it does not provide objective and predictable outcomes. The DCF method is in essence a speculation about the future dressed up in the appearance of mathematical equations.”); *Wells*, *supra* note 15, at 474-75; *Cheng*, *supra* note 35, at 497.

215. *Enron v. Argentina*, *supra* note 2, ¶ 385.

216. *ADC v. Hungary*, *supra* note 4, ¶ 502 (noting “the Respondent’s admonishment that ‘international tribunals have exercised great caution in using the [DCF] method due to its inherently speculative nature’”).

217. ILC Articles on State Responsibility, *supra* note 6, art. 36, ¶ 26.

218. *See Siag v. Egypt*, *supra* note 83, ¶ 583 (“[T]he Tribunal prefers to apply a simple analysis to what is on its face a fairly simple contractual term.”); *Azurix Award*, *supra* note 2, ¶ 425 (“[The Claimant] has asserted in addition that the argument in support of using actual investment is compelling as the investment is recent and highly ascertainable. The Tribunal agrees that the actual investment method is a valid one in this instance.”).

219. RIPINSKY & WILLIAMS, *supra* note 5, at 231. Sergey Ripinsky provided this explanation in a presentation to the Investment Treaty Forum of the British Institute of International and Compara-

tivity might give arbitrators considerable pause when an award based on fair market value would “entail catastrophic repercussions for the livelihood and economic well-being” of a state’s population.²²⁰ Regardless of the validity of these considerations, if political or equitable factors in fact drive a tribunal’s award, the tribunal should not purport to award damages based solely on an accurate valuation. Nor should the relative uncertainty of the DCF method be a scapegoat for arbitrators who seek to avoid fair market valuation for political or equitable reasons.

IV.

RECOMMENDATIONS FOR A MORE EXACT SCIENCE

Arbitrators could enhance the legitimacy of valuation in investor-state arbitration through more consistent willingness to apply the DCF method and more frequent appointments of independent valuation experts. Those two beneficial shifts would face few obstacles. Most investment treaties and arbitral rule systems give tribunals broad discretion to employ the DCF method and enlist tribunal-appointed experts. Parties will likely continue to propose the DCF method and are not likely to oppose a tribunal’s appointment of an expert. Indeed, particularly in high-stakes cases, parties may welcome the involvement of such experts, who would likely contribute to financially sound, well explained, and thus legitimate valuations.

A. Utilize the DCF Method to Address Uncertainty

The general trend in favor of the DCF method is consistent with principles of modern finance. Yet tribunals and commentators have continued to decry the complexity and inexact components of DCF analysis. Except in cases of notably deficient evidence, tribunals should not dismiss a detailed DCF analysis of fair market value with the magic wands of “uncertainty,” “speculation,” and “not a going concern.” This is not to say that “uncertainty” or “speculation” do not exist. Rather, to the extent that “uncertainty” and “speculation” have become legal bars that limit the precision of damages awards, those legal bars should be abandoned.²²¹ Arbitrators should employ the DCF method as a tool to help pinpoint

tive Law. See KANTOR, *supra* note 17, at 137. He argued that tribunals are “reverse engineering” outcomes to avoid large awards—“first the ‘fair’ outcome, then the reasoning to match that outcome.” *Id.* As Mark Kantor explains, “international investment law cases like *LG&E* and *PSEG* betray a noticeable desire on the part of the arbitrators to look for means of minimizing the compensation payable by the breaching host State.” *Id.* at 80.

220. See *CME v. Czech Republic*, *supra* note 102, ¶¶ 77-78 (separate opinion of Ian Brownlie); see also Olivia Chung, Note, *The Lopsided International Investment Law Regime and Its Effect on the Future of Investor-State Arbitration*, 47 VA. J. INT’L L. 953, 965-66 (2007).

221. See RIPINSKY & WILLIAMS, *supra* note 5, at 211 (“[T]he true contradiction may be said to be between the two key legal principles in the law of damages: (a) the principle of prohibiting the award of speculative damages, and (b) the principle requiring the award of the ‘fair market value’ of the investment. If one really wishes to estimate the *market* value of an investment, then one should

and reduce sources of uncertainty and speculation. At least three related benefits would result from this usage of the DCF method: closer alignment with accepted business practices, increased transparency, and an unbiased approach to valuation.

1. Alignment with Established Business Practices

Unlike arbitral tribunals, analysts in the modern business world are very unlikely to reject the DCF method simply because of “uncertainty” or “speculation.” Because tribunals are seeking to determine market value, their decisions should be informed by the real-world practices of willing buyers and willing sellers. Such an approach would be consistent with the legitimate expectations of investors.²²² Even where there are questions related to the historical data of a company, “a DCF valuation would likely have formed one of the measures which would have informed a discussion between a willing seller and a willing buyer”²²³ In other words, even when lost profits are “very unlikely to have ever materialized,”²²⁴ those lost profits have a value. Perhaps that value will be minimal, but it will not be zero. If there is any probability of future profits, a willing buyer can determine a price at which it would purchase the rights to those profits.

Financial analysts account for uncertainty in their forecasts by adjusting inputs to their models and evaluating a range of outcomes.²²⁵ Arbitrators would benefit from doing the same. The DCF method can help weed out claims that have no evidentiary basis (as opposed to general “uncertainty”). The DCF method “has the advantage of forcing the parties to articulate the various factors which enter into their calculations and, where some individual items are too

use most common and accepted methods to reach that value, and the DCF method *is* an appropriate method. Speculation and uncertainty, inherent in any DCF analysis, can be dealt with by taking conservative estimates of cash flow projections and application of a higher discount rate.”)

222. See, e.g., *Walter Bau v. Thailand*, *supra* note 83, ¶ 14.22 (“If value and damages must be computed on the basis of what was legitimately expected at any given time, then the DCF method is the most reasonable one to apply.”).

223. *Rumeli Award*, *supra* note 2, ¶ 810 (“But the discussion would certainly not have ended there. It is well known that DCF values are to a greater or lesser extent sensitive to the validity of the data on which they are based, such as the inflation rate, the discount rate, the assumptions underlying the predicted cash flows. Claimants’ expert’s report contains a number of sensitivity analyses which demonstrate that quite small changes in input can materially affect the outcome. . . . The Tribunal is aware that the sensitivity analyses are used as a cross check on the figure adopted by the expert, and not to invalidate the figure. Nevertheless, they demonstrate that the method must be understood as an approximation which is dependent on the validity of the assumptions, and not as a mechanical calculation which will yield a value whose validity is not open to question.”). Another tribunal, while rejecting the claimant’s proposed DCF approach, explained that “implicit in the valuation of” comparable transactions “is an expectation of cash flow to equity.” *BG Grp. v. Argentina*, *supra* note 2, ¶ 452.

224. *Siemens v. Argentina*, *supra* note 2, ¶ 379.

225. BREALEY ET AL., *supra* note 148, at 248-57 (describing sensitivity analysis, scenario analysis, and Monte Carlo simulation as methods of accounting for uncertainty).

speculative to properly constitute damages, they may be excluded on an item-by-item basis.”²²⁶ For example, in *ADC v. Hungary*, the tribunal accepted the DCF method for the bulk of the claim, but the tribunal rejected a portion of the claim for future opportunities because “the Claimants had no firm contractual rights to those possible projects.”²²⁷

Like financial analysts, arbitrators will of course be called upon to make reasonable approximations, particularly regarding projected cash flows. These approximations are all the more necessary and acceptable when evidence is limited or the projections extend far into the future.²²⁸ But approximation does not undermine the validity of a tribunal’s application of the DCF method.²²⁹ As one tribunal explained:

There is no reason to apologise for the fact that [the modified DCF] approach involves approximations; they are inherent and inevitable. Nor can it be criticised as unrealistic or unbusinesslike; it is precisely how business executives must, and do, proceed when they evaluate a going concern. The fact that they use ranges and estimates does not imply abandonment of the discipline of economic analysis; nor, when adopted by arbitrators, does this method imply abandonment of the discipline of assessing the evidence before them.²³⁰

The challenges of forecasting are most acute for investments with limited track records,²³¹ including enterprises that would not be characterized as “going concerns” for purposes of investor-state arbitration. In such cases, it may be particularly appropriate to corroborate and supplement a DCF analysis with other valuation methods.²³² Yet arbitrators should abandon the practice of dismissing the DCF method simply because an entity being valued is not a “going concern.” Financial analysts employ the method even for enterprises that arbitral tribunals would not deem “going concerns.”

226. CHRISTOPHER DUGAN ET AL., *INVESTOR-STATE ARBITRATION* 586 (2008); see also MCLACHLAN ET AL., *supra* note 164, at 331-32. In addition, the discount rate accounts for much of the macroeconomic risk or “uncertainty” that tribunals fear. As explained two decades ago but still under-appreciated, “[t]hrough the risk factor in the discount rate, the DCF method *explicitly recognizes the uncertainty* which is inherent in valuing an income-producing asset.” Friedland & Wong, *supra* note 157, at 408 (emphasis added).

227. *ADC v. Hungary*, *supra* note 4, ¶ 515 (noting that the claimants were “unable to quantify, with any fair degree of precision, the damages that would have resulted from the loss of those alleged opportunities”).

228. See RIPINSKY & WILLIAMS, *supra* note 5, at 121-22, 170-72.

229. “[A]pproximations are inevitable; the settling of damages is not an exact science.” *Compañía de Aguas v. Argentina*, *supra* note 2, ¶ 8.3.16.

230. *Himpurna v. PLN*, *supra* note 4, ¶ 376; see also Sénéchal & Gotanda, *supra* note 76, at 521.

231. *S.D. Myers, Inc. v. Canada*, Second Partial Award, ¶ 173 (UNCITRAL Oct. 21, 2002) [hereinafter *S.D. Myers, Inc. v. Canada*].

232. Cf. Wells, *supra* note 15, at 473-74 (“Projecting the stream of earnings for 30 years requires some heroic assumptions, especially for a project that has not yet been completed and thus has no track record; in some cases, such projections are essential, as uncertain as they might be; but there are advantages in seeking another approach when another is feasible.”).

One reason for this disconnect is terminology. Arbitrators' usage of "going concern" incorporates the evidentiary question of demonstrable future earning power.²³³ By contrast, in the business community, a "going concern" is "a business enterprise that is expected to continue to operate into the future,"²³⁴ without requiring evidence of future earnings. Mark Kantor aptly suggests avoiding the phrase "going concern" and points to the example of Google Inc.: the current "going concern" test in international arbitration would not have valued the expected future cash flows of Google in 2004, even though Google's stock market capitalization was over \$50 billion after an initial public offering in 2004.²³⁵ That valuation depended on "uncertain" and "speculative" future cash flows based in part on conjectural sources of revenue.²³⁶ John Gotanda similarly recommended in the context of international commercial arbitration that "[t]he rule prohibiting the recovery of lost profits whenever the injured business is not a going concern is inappropriate and should be discarded."²³⁷ The same is true in investor-state arbitration. Just as a party in a breach of contract case is entitled to the benefit of its bargain,²³⁸ investors in arbitrations against states are entitled to full reparation.

In order to "wipe out" the consequences of unlawful state action, arbitrators will often be required to determine the fair market value of an investment. When a tribunal denies an accepted method for valuation simply because of uncertainty, justice is impeded.²³⁹ For financial analysts, the DCF method is hardly a "fig leaf" or an "illusion of scientific analysis [masking] the reality of subjective approximations."²⁴⁰ The opposite is true: the DCF method removes the fig leaf and the illusion, revealing the approximations inherent in valuation. To realize that benefit, it is paramount that tribunals thoroughly explain their application of the DCF method.

233. See Weisburg & Ryan, *supra* note 202, at 172.

234. KANTOR, *supra* note 17, at 95 (quoting International Glossary of Business Valuation Terms).

235. KANTOR, *supra* note 17, at 100, 102; see also Weisburg & Ryan, *supra* note 202, at 175 ("[T]he DCF method can be applied to value both new and established going concerns.").

236. See Ben Eglin, *Google: A \$50 Billion 'One-Trick Pony'?*, BUSINESS WEEK, March 3, 2005, www.businessweek.com/magazine/content/05_11/b3924047_mz011.htm.

237. See Gotanda, *Lost Profits*, *supra* note 7, at 100; RIPINSKY & WILLIAMS, *supra* note 5, at 283 ("The approach of rejecting lost profits in respect of enterprises which at the time of breach were not going concerns with a profitable record has been criticized as leaving the injured party less than whole and failing to achieve the goal of full compensation.").

238. See Gotanda, *Lost Profits*, *supra* note 7, at 101 ("Denying lost profits simply because the injured business is new would leave the injured claimant less than whole and would fail to achieve the goal of full compensation.").

239. *Himpurna v. PLN*, *supra* note 4, ¶ 237 ("In this case as in so many others, it is impossible to establish damages as a matter of scientific certainty. This does not, however, impede the course of justice.").

240. *Id.* ¶ 373.

2. Increasing Transparency: Getting Outside the Black Box

Advances in computer technology have enabled unprecedented precision and clarity for valuations, including better explanations of the adjustments made in determining fair market value. Tribunals increasingly have provided detailed, line-item summations of damages, often based on Excel spreadsheets provided by the parties.²⁴¹ DCF analysis has undoubtedly benefited from these technology advances. Before today's ubiquitous spreadsheets, tribunals might explain their consideration of a party's inputs to a DCF analysis, but fail to quantify any of their adjustments, resulting in a non-verifiable award.²⁴² Of course, the mere involvement of spreadsheets and the DCF method will not guarantee a transparent decision. As discussed above, the attempted annulment of the black-box award in *Rumeli Telekom* shows that the inputs to DCF analysis should be explained.²⁴³

The DCF method is amenable to transparent explanations because it has two readily observable components: projected cash flows and a discount rate. Tribunals may also adjust the period of projected cash flows to be valued. If a tribunal explains those inputs, then both parties and nonparties will be in a good position to understand the tribunal's valuation. The analysis of the tribunal in *Alpha v. Ukraine* is illustrative. In that case, the claimant's expert submitted a spreadsheet setting forth the basis for its calculation of the NPV components of the damages claim.²⁴⁴ The tribunal accepted several inputs from the claimant's

241. See, e.g., *S.D. Myers, Inc. v. Canada*, *supra* note 231, ¶ 175 (UNCITRAL Oct. 21, 2002) (“[T]he accounting experts provided to the Tribunal spreadsheets which stated amounts claimed by categories. The Tribunal found the spreadsheets to be a useful tool, which assisted its analysis.”). Still, only the “courageous arbitrator” is likely request such computerized financial models. *KANTOR*, *supra* note 17, at 301. Indeed, the failure to submit a spreadsheet has been found to indicate a failure of proof. See *BG Grp. v. Argentina*, *supra* note 2, ¶ 448 (finding no support for a claim of historical losses in part because a spreadsheet “used as a source for . . . calculations [was] not on the record”); *Zhinvali v. Georgia*, ICSID Case No. ARB/00/1, Award, ¶¶ 35-37 (Jan. 24, 2003) (finding that if an electronic version of the claimant's financial model was not produced, the tribunal would not take the model into account in determining damages).

242. An early and prominent investor-state decision involving DCF analysis and such rough adjustments is *Phillips Petroleum v. Iran*. See *RIPINSKY & WILLIAMS*, *supra* note 5, at 205 (noting the tribunal's “lengthy examination of the variables affecting the claimant's proposed DCF valuation” but the lack of any indication of the “precise quantitative effect” of each of those variables). This has also been true in national courts. See, e.g., *KANTOR*, *supra* note 17, at 91 n.295 (“Once financial advisors had access to the computational power of such programs as EXCEL to develop future earnings forecasts, courts in the U.S. soon followed suit.”).

243. See *supra* Part III.C; *Rumeli Award*, *supra* note 2, ¶¶ 724-36. Ironically, the tribunal in the *Rumeli Award* provided a good explanation of the DCF method's role in valuation and took the claimants' DCF base case valuation as its starting point. *Id.* ¶¶ 810, 813. The tribunal then explained *why* it moved from that starting point (US\$227 million) to the valuation awarded (US\$125 million)—for example, because of the value of shares implied by the subsequent purchase of the entity (US\$210 million). *Id.* ¶¶ 813-14. The tribunal failed, however, to quantify or even mention *how* the DCF “starting point” was modified because of those reasons. If it had, Kazakhstan would have had little basis for pursuing annulment of that portion of the award for “failure to state reasons.” See *id.*

244. *Alpha v. Ukraine*, *supra* note 83, ¶ 478.

expert, such as the discount rate,²⁴⁵ and explained the precise portions of the spreadsheet that it used in quantifying damages.²⁴⁶

Computerized financial models do not solve the challenges of forecasting in DCF analysis. Rather, because the DCF method makes clear the effects of adjustments to the projections proposed by parties, arbitrators should use it to evaluate those projections and to exercise their discretion. Arbitrators should also heed the principles of business and finance underlying the method, such as accounting for certain risks by adjusting forecasted cash flows instead of arbitrarily increasing the discount rate.²⁴⁷

3. An Unbiased and Fair Method

Arbitrators' more frequent and improved application of DCF analysis does not favor investors or states at the expense of the other. The typical posture of a case involves an investor proposing the DCF method and a state opposing it, which suggests that the DCF method is more likely to benefit investors than states.²⁴⁸ On the one hand, this perception is correct because rejection of the DCF method can work to the advantage of respondent states in several ways. First, if investors rely exclusively on the DCF method in support of their valuations, tribunals might have no other evidentiary basis for awarding fair market value. Second, if denial of the DCF method results in denial of full market value, arbitration awards would not adequately deter against states breaching their obligations under international law. Third, because some of the "uncertainty" of the DCF method stems from the allegedly unlawful actions of a respondent state (for example, because of expropriation), states have an incentive to limit investors' ability to put forward a well-documented valuation based on the DCF method.²⁴⁹

On the other hand, the DCF method is not a tool for inflating claims. It is a

245. *Id.* ¶¶ 482-83.

246. *Id.* ¶¶ 489-90.

247. BREALEY ET AL., *supra* note 148, at 223-24. Some commentators have confused this point. *See, e.g.,* Smutny, *supra* note 10, at 13 ("Where there is a high degree of uncertainty as to what future revenues and costs would be, the discounted cash flow method simply calls for application of a higher discount rate factor to reflect the greater risk that the predicted level of profits in fact would be achieved."); Weisburg & Ryan, *supra* note 202, at 178.

248. Coe & Rubins, *supra* note 154, at 629 (noting that respondent states "may push for a method based upon 'book value' or 'sunk costs,' which tend to yield a lower result than DCF"); Stauffer, *supra* note 17, at 478 (discussing the possibility of a "Cinderella effect" by which investors use the DCF method to overvalue assets for purposes of their claims in arbitration).

249. *See* Funnekotter v. Zimbabwe, *supra* note 101, ¶ 124 ("[U]nder general international law as well as under the BIT, investors have a right to indemnities corresponding to the value of their investment, independently of the origin and past success of their investment, as well as of the number and aim of the expropriations done"); *see also* Gotanda, *Lost Profits*, *supra* note 7, at 102 ("[B]ecause the respondent's wrongful act caused the difficulty in proving damages with certainty, from a policy standpoint, the respondent should not be able to escape liability on the ground that lost profits are inappropriate because they are uncertain.").

tool for determining and corroborating accurate valuations. Even if parties use the DCF method to compute “vastly different damages amounts,”²⁵⁰ the DCF method is not to blame for the divergent calculations. Parties will usually employ whatever tools are available to put forward a damages amount in their favor. The DCF method has the advantage of clarifying whether and how the parties have inflated or deflated valuations, such that arbitrators can adjust the assumptions and calculations as they deem appropriate.

Several arbitration decisions demonstrate the neutrality of the DCF method. For example, in *CMS Gas Transmission Co. v. Argentina*, ICSID Case No. ARB/01/8, Award, (May 12, 2005) and *Enron Corp. v. Argentina*, ICSID Case No. ARB/01/3, Award (May 22, 2007), tribunals employed the DCF method and step-by-step explanations of the relevant inputs to reduce the amount of the valuation proposed by investors.²⁵¹ Another example of where the parties’ positions on the DCF method defied the norm is *Biwater Gauff*. The claimant asserted that the DCF approach was “too speculative on the facts” because no profits had been made as of the date of expropriation.²⁵² Tanzania countered that the net present value of future cash flows from the claimant’s investment was negative.²⁵³ In other words, Tanzania argued, “[n]o prospective purchaser would have been credulous enough to pay anything for [the claimant’s] investment” as of the valuation date.²⁵⁴ The tribunal agreed with Tanzania and held that the fair market value of the expropriated investment “was nil.”²⁵⁵ The DCF method thus worked in favor of the state.

B. Enlist An Independent Financial Expert

Given the enormous stakes and complicated valuations in many investor-state cases, one might expect that arbitral tribunals frequently turn to independent experts, or perhaps that parties would recommend that tribunals do so. Yet this practice has not been commonplace. Although tribunals have long had the authority to appoint independent experts under nearly all existing arbitration rules,²⁵⁶ their use of financial experts has been quite rare. For example, the Iran-

250. See Weisburg & Ryan, *supra* note 202, at 174; RIPINSKY & WILLIAMS, *supra* note 5, at 201 (discussing the tendency of experts using DCF analysis to arrive at diverging results).

251. See, e.g., *CMS v. Argentina*, *supra* note 166, ¶¶ 434-67 (applying “a number of changes to [the] assumptions” of the claimant’s expert’s evaluation of damages); *Enron v. Argentina*, *supra* note 2, ¶¶ 405-07 (finding that “a number of variables [in the DCF analysis proposed by the claimants] require adjustment”); see also RIPINSKY & WILLIAMS, *supra* note 5, at 334, 337.

252. *Biwater v. Tanzania*, *supra* note 83, ¶ 749.

253. *Id.* ¶ 766.

254. *Id.* Of course, aside from political motivations, this argument begs the question of why Tanzania seized the assets at issue if they had no economic value.

255. *Id.* ¶¶ 793-97.

256. See MEG N. KINNEAR ET AL., INVESTMENT DISPUTES UNDER NAFTA: AN ANNOTATED GUIDE TO NAFTA CHAPTER 11, 1133-1-2 (Supp. No. 1 2008) (noting that, although arbitral tribunals have the authority, no tribunal had appointed its own expert in NAFTA arbitration); Claus von

US Claims Tribunal appointed an independent expert in less than 1% of the claims brought before it.²⁵⁷ Some commentators have suggested that there is also a trend away from tribunal-appointed experts in international arbitration.²⁵⁸ Despite a growing body of literature on the mechanics of using tribunal-appointed experts,²⁵⁹ there has been little commentary regarding *whether* tribunals should appoint an expert on damages.²⁶⁰ The circumstances of many recent investor-state arbitrations indicate that tribunals should appoint valuation experts more often.

1. The Results of Recent Appointments

The rare cases in which tribunals have appointed an independent financial expert demonstrate the potential benefits of the practice. Four recent decisions are exemplary: *CMS v. Argentina*, *Sempra Energy v. Argentina*, *Enron v. Argentina*, and *Nat'l Grid P.L.C. v. Argentina*, Award (UNCITRAL Nov. 3, 2008).

CMS v. Argentina. In *CMS*, the tribunal enlisted, and “was ably assisted” by, its own experts.²⁶¹ Perhaps because of this expert assistance, the tribunal explained its decisions regarding numerous approaches to the DCF analysis well,

Wobeser, *The Arbitral Tribunal-Appointed Expert*, in INTERNATIONAL ARBITRATION 2006: BACK TO BASICS? 801, 803 n.10 (Albert Jan van den Berg ed., 2007).

257. See Richard C. Allison & Howard M. Holtzmann, *The Tribunal's Use of Experts*, in THE IRAN-UNITED STATES CLAIMS TRIBUNAL AND THE PROCESS OF INTERNATIONAL CLAIMS RESOLUTION 269, 269 (David D. Caron et al. eds., 2000) (noting that, “[o]f more than 1,000 large claims . . . brought before the Tribunal, it has appointed experts in only eight cases”).

258. See FRANZ T. SCHWARZ & CHRISTIAN W. KONRAD, THE VIENNA RULES: A COMMENTARY ON INTERNATIONAL ARBITRATION IN AUSTRIA ¶ 21-006 (2009); see also GARY B. BORN, INTERNATIONAL COMMERCIAL ARBITRATION 1860 (2009) (noting that in international commercial arbitration “arbitral tribunals only rarely appoint experts to address technical issues which the parties have already addressed through party-appointed experts”); Ball, *supra* note 69, at 427 (observing that arbitrators “will doubtless remain constitutionally skeptical of experts”).

259. See KANTOR, *supra* note 17, at 304-14; von Wobeser, *supra* note 256, at 803 n.10; Nathalie Voser & Anna Katharina Mueller, *Appointment of Experts by the Arbitral Tribunal: The Civil Law Perspective*, 7 BUS. L. INT'L 73 (2006); Alexandra Weiss & Karin Bürgli Locatelli, *Der vom Schiedsgericht bestellte Experte – ein Überblick aus Sicht eines Internationalen Schiedsgerichts mit Sitz in der Schweiz*, 22 ASA BULLETIN 479 (2004); Allison & Holtzmann, *supra* note 257; Michael E. Schneider, *Technical Experts in International Arbitration*, 11 ASA BULLETIN 446 (1993). For a discussion of tribunal-appointed experts under Swiss Rules of International Arbitration, see TOBIAS ZUBERBÜHLER ET AL., SWISS RULES OF INTERNATIONAL ARBITRATION: COMMENTARY 241-51 (2005).

260. John Gotanda noted briefly in the context of commercial arbitration that tribunals “may consider a greater use of experts to assist in evaluating claims for lost profits” in part because of “the complexities involved in calculating damages” and the possibility of “a more reasoned decision.” Gotanda, *Lost Profits* *supra* note 7, at 110. Allison and Holtzmann observed in the context of the Iran-US Claims Tribunal that “the parties’ confidence factor in the arbitrators’ ultimate award can be greatly enhanced by the belief that crucial issues have been given the benefit of exposure and analysis by an independent expert.” See Allison & Holtzmann, *supra* note 257, at 282. In the context of US rules of evidence, Judge Richard Posner has expressed hesitance with respect to neutral experts on damages. POSNER, *supra* note 80, at 1539.

261. *CMS v. Argentina*, *supra* note 166, ¶ 418.

including the proper capital structure and whether to use “the indirect equity value” or the “direct equity value.”²⁶² More impressively, the tribunal “built its own model” for DCF analysis with the help of its experts.²⁶³ With that model in hand, the tribunal was able to systematically modify the assumptions of the claimant’s expert.²⁶⁴

Sempra Energy v. Argentina. The tribunal in *Sempra Energy* also presented a thorough, number-intensive explanation of its valuation.²⁶⁵ Although the decision does not reveal the extent to which the tribunal relied on its appointed financial expert, the careful reasoning of the decision suggests that the expert played an important role.²⁶⁶

Enron v. Argentina. In *Enron*, the tribunal-appointed expert helped the tribunal address the parties’ competing positions. The tribunal accepted the expert’s recommendations and explanations regarding the tariff base,²⁶⁷ the discount rate,²⁶⁸ and the basis for attributing earnings.²⁶⁹ It is not surprising that the tribunal found the approach of its expert to be “more balanced and realistic” than the approaches of the parties’ experts, given that the tribunal’s expert had a nonpartisan role.²⁷⁰ One commentator used the tribunal’s decision as an example of how the DCF method is properly applied in investor-state arbitration.²⁷¹

National Grid v. Argentina. Most recently, in *National Grid*, the tribunal appointed an independent expert pursuant to criteria provided by the parties.²⁷² Appointing an expert was particularly useful in this case because the tribunal did not have the benefit of a competing valuation from the state.²⁷³ Roughly four months after his appointment, the independent expert submitted his final report to the parties and the tribunal, which included the expert’s identification of “manifest errors.”²⁷⁴ In its decision, the tribunal expressed its gratitude to all of the experts “for their contribution to [the tribunal’s] understanding of this matter.”²⁷⁵ The tribunal followed several recommendations by its appointed expert,

262. *Id.* ¶¶ 424-33.

263. *Id.* ¶ 435.

264. *Id.* ¶¶ 439-63.

265. *See Sempra v. Argentina*, *supra* note 2, ¶¶ 407-82.

266. The decision notes that the expert produced two reports, and that the tribunal gave “due consideration” to the parties’ comments on those reports. *Id.* ¶ 399.

267. *Enron v. Argentina*, *supra* note 2, ¶¶ 408-10.

268. *Id.* ¶¶ 411-12.

269. *Id.* ¶¶ 418-19.

270. *Id.* ¶ 435.

271. RIPINSKY & WILLIAMS, *supra* note 5, at 203-04.

272. *Nat'l Grid v. Argentina*, *supra* note 83, ¶ 46.

273. *Id.* ¶ 267 (“The Respondent did not present its own model or methodology attempting to evaluate [damages], submitting instead an expert report purporting to show at least four serious conceptual errors and four methodological errors in the analysis presented by Claimant’s expert.”).

274. *Id.* ¶¶ 47-49.

275. *Id.* ¶ 271.

including (i) recourse to comparable transactions (as a check on DCF)²⁷⁶ and (ii) an increase in the discount rate proposed by the claimant's expert.²⁷⁷

In contrast to the positive examples in those four cases, there has been one clear statement that demonstrates the detriment to legitimacy that might result from not appointing an independent expert. An arbitrator wrote separately in *Siemens v. Argentina* about the tribunal's refusal to appoint an expert:

It should be noted that the present case comprises complex valuation and financial issues, which were amply argued and discussed by the parties and their respective experts, with very complicated opinions and data. In light of the above, a report from an independent expert is necessary in order to calculate and fully support the amount of damages to be awarded, for all of which I find reasonable the request of its appointment and unjustified its refusal, as such a request never seemed impertinent or untimely to me, but rather reasonable, which acceptance would not have implied any inconveniences.²⁷⁸

The tribunal's decision not to appoint an independent expert in the face of that arbitrator's clear desire and need for such assistance does not inspire confidence. Even if only a subset of arbitrators on a tribunal would benefit from a tribunal-appointed expert, such an appointment could bolster the legitimacy of the tribunal's awarded valuation.

2. The Benefits of Tribunal-Appointed Experts

As the cases above show, tribunal-appointed experts can serve as guides to arbitrators, both in understanding and adjusting financial models and in explaining how those adjustments result in the ultimate award.²⁷⁹ Independent expert guidance thus helps alleviate concerns that arbitrators lack financial expertise. Over time, the involvement of independent financial experts might also serve an educational function for individual arbitrators and more generally for the proper application of the DCF method.²⁸⁰ At the very least, financial experts lend the technical ability to understand and analyze complex valuation formulas and programs.²⁸¹

276. *Id.* ¶ 285.

277. *Id.* ¶ 289.

278. *Siemens v. Argentina*, *supra*, note 2, ¶¶ 4-5 (separate opinion of Domingo Bello Janeiro).

279. The cases therefore confirm the general observation of Ripinsky and Williams that such experts "can assist the tribunal in evaluating the reports of the parties' experts, in understanding complicated financial models and, ultimately, to be able to render a well-reasoned decision." RIPINSKY & WILLIAMS, *supra* note 5, at 176.

280. *See id.* at 177-78 (explaining that the reports of independent experts may "be useful in developing the law relating to the award of damages where a tribunal endorses an expert's findings and conclusions on the assessment of compensation," largely because "judicial endorsement of valuation techniques used in circumstances that arise frequently can provide useful guidance to parties and their experts in valuing similar claims").

281. Such benefits of expert assistance were recognized two decades ago, in connection with the rising importance of computerized expert evidence. Arthur L. Marriott, *Evidence in International Arbitration*, 5 ARB. INT'L 280, 284 (1989).

Thanks to rapidly advancing technology, today's financial models are often far beyond the traditional training of arbitrators.²⁸² These complexities are perhaps most pressing in the context of DCF analysis.²⁸³ When valuing a sophisticated enterprise, the DCF method requires technical skills akin to other "scientific" areas.²⁸⁴ Billions of dollars can hinge on the many interlinked formulas typically embedded in an expert's computerized financial model.²⁸⁵ In most investor-state cases, the models "are a riot of numbers, value, and shorthand identifiers for computer calculations, where each printed spreadsheet page (itself highly complex) represents many hidden underlying, inter-linked equations."²⁸⁶ For example, a thorough valuation might require multiple simulations to evaluate a broad distribution of expected future cash flow outcomes.²⁸⁷

In addition to serving as guides, tribunal-appointed experts provide a useful independent voice in the typical investor-state case in which the parties submit detailed but widely divergent expert reports on damages. The "battle of experts" has become the norm, and the battle can be hardest to judge when the experts submit drastically different valuations.²⁸⁸ The parties' experts often take instructions from counsel and therefore are perceived to have questionable independ-

282. See *supra* Part III.A; see also KANTOR, *supra* note 17, at 302 (noting that "arbitrators are often unfamiliar with the intricacies of manipulating EXCEL spreadsheets or the detailed building blocks of an Income-Based [*e.g.*, DCF] forecast" and that "[a]rbitrators cannot intuit these relationships").

283. Of course, tribunal-appointed experts can aid tribunals in any method of determining fair market value. For example, if the parties argue only on the basis of book value, expertise in "the application of 'complex accounting principles to determine the quantum of damages to be awarded' . . . ensures that the arbitral tribunal has a proper understanding of the facts and their relation to the applicable law, and increases the prospects that decisions regarding liability and damages will be fully informed, accurate, and, most of all, just." DAVID D. CARON ET AL., THE UNCITRAL ARBITRATION RULES 665-66 (2006).

284. There are indications of more willingness to use tribunal-appointed experts in "scientific" fields than in finance. For example, the US Model BIT explicitly considers tribunal-appointed experts on "any factual issue concerning environmental, health, safety, or other scientific matters," but does not mention the possibility of tribunal-appointed experts on damages issues. See U.S. MODEL BIT, art. 32; but see *id.* art. 20(3)(c)(i), 20(5) (encouraging parties in disputes related to financial services to "take appropriate steps to ensure that the tribunal has expertise or experience in financial services law or practice").

285. See KANTOR, *supra* note 17, at 302. Financial experts would likely identify and address mistakes in such models that arbitrators would not catch. See *id.*

286. *Id.* at 133; see also, *e.g.*, *Duke Energy v. Peru*, *supra* note 116, ¶¶ 463-64 (noting that the claimant's expert had constructed a financial model that covered over 6,000 assets and had twenty-three steps accounting for the annual cash flow impact of the government measures in question).

287. BREALEY ET AL., *supra* note 148, at 253-57; see also Knull et al., *supra* note 149, at 24-25. For such complex simulation models, even business managers "may delegate the task of constructing the model to management scientists or consultants." BREALEY ET AL., *supra* note 148, at 257. There are nonetheless practical limits to the complexity of a model prepared by an expert, including the ability of the decision maker to understand the model. See *id.*

288. See Weisburg & Ryan, *supra* note 202, at 174; Michael Straus, *The Practice of the Iran-U.S. Claims Tribunal in Receiving Evidence from Parties and from Experts*, 3 J. INT'L ARB. 57, 63-67 (1986).

ence.²⁸⁹ Even if the parties' experts are independent, in many cases they will be subject to cross-examinations that seek simply to undermine their credibility and obfuscate the relevant issues.²⁹⁰ Moreover, as commentators have noted, there is an "unwillingness of experts on opposing sides of a dispute to reach any meaningful consensus in many cases . . ."²⁹¹ The problem has also been described as "two ships passing in the night," based on the perception of expert evidence as "highly-paid advocacy from a credentialed witness."²⁹²

Although some commentators are skeptical that tribunal-appointed experts will assist in solving the battle of the experts,²⁹³ other methods of managing opposing experts come up short compared to independent experts. Expert conferencing, for example, has become one popular practice in the battle of the experts. Also referred to as "hot-tubbing," such conferencing involves experts from opposing sides sitting together for questions from the tribunal and, in some instances, the parties. These "hot tubs" can yield benefits such as reducing tensions, highlighting differences in opinion, and exploring those differences and the credibility of the experts.²⁹⁴ However, several factors limit the effectiveness of hot-tubbing, including the tendency of experts to focus solely on avoiding hurting their party's case, rather than genuinely seeking agreement or guiding

289. See J. Martin Hunter, *Expert Conferencing and New Methods*, in INTERNATIONAL ARBITRATION 2006: BACK TO BASICS? 820, 821-24 (Albert Jan van den Berg ed., 2007); KANTOR, *supra* note 17, at 298.

290. See KANTOR, *supra* note 17, at 134 ("[A]rbitrators are regularly left with two widely different valuations, each having suffered heavy damage to its credibility from litigation artillery duels.").

291. Jacobs & Paulson, *supra* note 79, at 399. There is a risk that a tribunal-appointed expert will be just another opinion that does not help the tribunal decide between the parties. See, e.g., *Act II: Pre-Hearing Advocacy*, 21 ARB. INT'L 561, 569 (2005) (comment by Rob Smit). That risk will likely be minor (or at least a risk worth taking) with respect to the complex valuations at issue in investor-state arbitration.

292. See Frances P. Kao et al., *Into the Hot Tub . . . A Practical Guide to Alternative Witness Procedures in International Arbitration*, 44 INT'L LAW 1035, 1035-36 (2010) (describing in particular the issues of expert evidence in United State litigation, and stating that international arbitration "frequently looks like the usual morass found in the U.S. courts, particularly where American lawyers are involved. . . . This posture may result in polarized, intractable positions between the parties' experts. Most importantly, lawyer control over the examination process means that the important questions--typically the thorniest ones--can go unanswered or are glossed over, either because they are intentionally sidestepped or because counsel does not have sufficient facility with the particular topics at issue to elicit clear, relevant testimony.").

293. See CARON ET AL., *supra* note 283, at 668 (arguing against the use of tribunal-appointed experts because of avoiding a "battle of experts" in which the parties feel "compelled to seek expert advice for purposes of evaluating and possibly challenging the conclusions of the tribunal-appointed expert); Allison & Holtzmann, *supra* note 257, at 281 ("[A]n economic analysis of such matters as the future level of prices for a given commodity or the prospects for a particular trade or business may, perhaps, be as readily determined by the application of common sense and careful analysis by the arbitrators of the evidence before them as by an expert opinion will, predictably, be subjected to attached leveled against it by other experts marshaled by the parties.").

294. See Kao et al., *supra* note 292, at 1042-43.

the arbitrators.²⁹⁵ Having an independent expert join the hot tub could help overcome these limitations by moderating the competing experts' positions and helping identify common ground. One might therefore think of independent experts as specialized *ad hoc* scholars on expert valuation battles: they enter the fray, offer analysis, and provide clarity.²⁹⁶

3. The Costs of Tribunal-Appointed Experts

Two principal objections to a tribunal's appointment of an expert are cost and overreliance on (or delegation to) the expert. The parties are responsible for paying the direct costs of a tribunal-appointed expert,²⁹⁷ and will likely incur even greater costs in reviewing and potentially challenging the conclusions of such an expert.²⁹⁸ The parties therefore may believe that a tribunal-appointed expert will only delay and increase the costs of the arbitration.²⁹⁹ That would likely be true when the parties' experts have submitted calculations that are within a close range of, or that rely on, similar methodologies and present detailed, comparable analysis.³⁰⁰

Arbitrators must therefore consider the amount at stake and complexity of the valuation dispute in deciding whether to appoint an expert.³⁰¹ There will be

295. The hot tub might place undue emphasis on the general appeal of an expert, rather than the solidity of the positions he or she is endorsing. *See id.* at 1044 (listing the important traits of an expert for the hot-tubbing process, including teaching ability, likeability, and skills with "cross-examining" the opposing expert); KANTOR, *supra* note 17, at 300-01.

296. *Cf. Franck, Legitimacy Crisis, supra* note 12, at 1615, 1582 n.450.

297. *See, e.g., INTERNATIONAL BAR ASSOCIATION RULES ON THE TAKING OF EVIDENCE IN INTERNATIONAL ARBITRATION* art. 6(8) ("The fees and expenses of a Tribunal-Appointed Expert, to be funded in a manner determined by the Arbitral Tribunal, shall form part of the costs of the arbitration.") [hereinafter IBA RULES]. The financial burden of a tribunal-appointed expert will be typically be relatively less imposing for states than for investors. *See Wälde, supra* note 12, at 23. Yet, because tribunal-appointed experts are most appropriate in high-stakes cases, it is reasonable to expect that in those cases investors will have adequate funds to cover the costs of a tribunal-appointed expert.

298. Allison & Holtzmann, *supra* note 257, at 281 (noting that an independent expert's "opinion will, predictably, be subjected to attached leveled against it by other experts marshaled by the parties").

299. *See Hunter, supra* note 289; *see also Hartwell et al., supra* note 17, at 20 (comments of B. Hanotiau).

300. *See, e.g., Walter Bau v. Thailand, supra* note 83, ¶¶ 14.5, 14.23-14.24. An ideal outcome is that both sides' experts submit damages calculations that "reflect a high degree of professionalism, clarity, integrity and independence," such that those calculations can be weighed without requiring supplemental financial analysis. *See ADC v. Hungary, supra* note 4, ¶ 516.

301. *See Michael McIlwrath & John Savage, The Conduct of Arbitration, in INTERNATIONAL ARBITRATION AND MEDIATION: A PRACTICAL GUIDE* ¶ 5-222 (2010) ("Whether a tribunal will choose to appoint an expert will depend on a variety of factors: the technical complexity of the dispute, the existence of relevant expertise within the tribunal, the assistance provided by the parties' experts [if any are appointed], and the amount at stake. A tribunal that counts lawyers among its members will be unlikely to appoint an expert to assist it on issues of law."); Allison & Holtzmann, *supra* note 257, at 271 ("[T]he [Iran-US Claims] Tribunal generally has focused upon two considera-

relatively small or simple cases in which the costs of a tribunal-appointed expert will not be justified.³⁰² The trend in investor-state arbitration is not, however, toward small and simple disputes. Rather, the high stakes of recent investor-state cases involve complex valuations and require several years to resolve. A pressing reality of this trend is that parties will continue to submit calculations with such drastic differences that arbitrators will face great difficulty in reconciling them.³⁰³ Arbitrators will face similar difficulty in resolving disputed valuations when investors submit detailed expert reports, but respondent states do not provide such detail.³⁰⁴

One perhaps counterintuitive method for limiting the monetary costs associated with a tribunal-appointed expert is to raise the issue early in the proceedings. As one commentator observed, “as soon as the arbitral tribunal realizes the importance or necessity of appointing an expert, it should initiate the appropriate steps and inform the parties as soon as possible in order to receive their perspectives.”³⁰⁵ In an ICSID arbitration, for example, tribunals will often learn from the request for arbitration that a complex valuation is likely to ensue. Accordingly, a tribunal could pose to the parties the question of whether to appoint an expert at the first procedural session.³⁰⁶ While unlikely, the parties may even agree that a single, tribunal-appointed expert would be preferable to the high costs of engaging competing party-appointed experts.³⁰⁷

The second potential disadvantage of a tribunal-appointed expert is that arbitrators could defer too much of their authority to such experts, or that a perception of such deference would undermine parties’ confidence in an award. Ar-

tions when deciding on the appointment of an expert: (1) complexity of an issue, including complexity arising from differing opinions of party-appointed experts; and (2) whether appointing an expert is expedient under the circumstances of the case.”).

302. See, e.g., *Funnkotter v. Zimbabwe*, *supra* note 101, ¶ 128 (“Although the valuations advanced by the parties are very different [approximately \$10 million versus \$1 million], the Tribunal does not deem it necessary to have recourse to further expertise, which, in the circumstances of the case, would most probably not provide more useful information.”); see also CARON ET AL., *supra* note 283, at 667; Allison & Holtzmann, *supra* note 257, at 272.

303. Cf. Casey et al., *supra* note 74, at 110 (“[I]n appropriate cases, [a tribunal-appointed expert] can considerably reduce the time otherwise spent during the arbitration creating and deflating exaggerated claims or theories proposed by experts who have perceived their role to be merely that of a ‘hired gun.’”).

304. See Ball, *supra* note 69, at 425.

305. See von Wobeser, *supra* note 256, at 806; cf. RIPINSKY & WILLIAMS, *supra* note 5, at 236 (“The quantum proceedings would be significantly facilitated if guidance on . . . important drivers of valuation was provided by arbitrators as early as practicable.”).

306. See ICSID ARBITRATION RULES 20(1) (“As early as possible after the constitution of a Tribunal, its President shall endeavor to ascertain the views of the parties regarding questions of procedure.”).

307. See INTERNATIONAL CHAMBER OF COMMERCE, Techniques for Controlling Time and Costs in Arbitration, ¶ 71 (2007); Harold S. Crowter & Anthony G.V. Tobin, *Ensuring that Arbitration Remains a Preferred Option for International Dispute Resolution - Some Practical Considerations*, 19 J. INT’L ARB. 301, 304-05 (2002).

bitral rule systems and general principles of international arbitration provide an important defense against such deference. It is the tribunal's responsibility to determine the final damages amount. As stated in the IBA Rules, "[a]ny Expert Report made by a Tribunal-Appointed Expert and its conclusions shall be assessed by the Arbitral Tribunal with due regard to all circumstances of the case."³⁰⁸ Tribunal-appointed experts also may not investigate and develop the underlying facts, which would aid a party in proving its case.³⁰⁹

Despite such established principles, parties might still view arbitrators as dependent on their experts' analyses.³¹⁰ Ironically, one reason for doubting a tribunal's independence in assessing damages might be the same limited financial competency that makes a tribunal-appointed expert advisable. There is an important distinction, however, between useful reliance on an expert's guidance and complete deference. For example, if an independent expert submits a report that is "whole, meticulous and comprehensive,"³¹¹ it is reasonable for a tribunal to rely on that report. In each of the positive examples discussed in this Article, the tribunals followed the guidance of their experts, but also undertook their own analysis.³¹²

Perceptions of over-reliance on an independent expert are more likely to arise from parties with common law backgrounds because of their relatively limited familiarity with independent experts.³¹³ In contrast to adversarial common

308. IBA RULES art. 6(7); *see also Starrett Hous. Corp. v. Iran*, *supra* note 9, at 197.

309. *See* von Wobeser, *supra* note 256, at 805 ("[I]t does not serve to liberate either of the parties from the burden of proving its case."). Such an expansion of a tribunal-appointed expert's role will prove controversial, as illustrated by *Behring International, Inc. v. Islamic Republic Iranian Air Force*. In that case, one arbitrator dissented to the decision in part because he perceived that the tribunal's expert was "in reality aiding one Party to engage in what amounts to a 'fishing expedition.'" *Behring Int'l, Inc. v. Islamic Republic Iranian Air Force*, 15 Iran-U.S. Cl. Trib. Rep. 89, 93-95 (J. Richard M. Mosk dissenting).

310. *See, e.g.,* Smutny, *supra* note 10, at 23 ("[M]any parties would object to a tribunal hiring a 'neutral' expert to perform the necessary calculations, as it may be seen as too great a delegation of the arbitrators' decision-making authority . . ."); Hartwell et al., *supra* note 17, at 18 (comments of Serge Lazareff) ("It is very difficult for a tribunal not to follow the expert it has itself appointed. It then must find technical reasons to go against its own expert, and I think it becomes sort of vicious."); *id.* at 9 (comments of G. Hartwell).

311. *Starrett Hous. Corp. v. Iran*, *supra* note 9, ¶¶ 265-73.

312. *See supra* Part IV.B.1. In *National Grid*, for example, the tribunal selected a discount rate that was closer to the Claimant's proposed rate than to the high end of the tribunal-appointed expert's range of proposed rates. *Nat'l Grid v. Argentina*, *supra* note 83, ¶ 289.

313. *See* Voser & Mueller, *supra* note 259, at 73-74, 80; JANE JENKINS & JAMES STEBBINGS, INTERNATIONAL CONSTRUCTION ARBITRATION LAW 204 (2006) ("While certain parties [particularly those from civil law jurisdictions, who are accustomed to inquisitorial-style proceedings] may be comfortable with this arrangement, most parties from common law jurisdictions are not."); Ruth Fenton, *A Civil Matter for a Common Expert: How Should Parties and Tribunals Use Experts in International Commercial Arbitration*, 6 PEPP. DISP. RESOL. L.J. 279, 288-91 (2006); YVES DERAIS & ERIC A. SCHWARTZ, GUIDE TO THE ICC RULES OF ARBITRATION 278 (2005) ("[T]he practice of appointing such experts in ICC arbitration is still much more prevalent among civil law lawyers than their common law counterparts, who are more accustomed to weighing expert evidence presented by each of the parties."); Garcia, *supra* note 26, at 362-63; Allison & Holtzmann, *supra*

law practices, civil law systems might not even grant arbitrators the task of “decid[ing] between the opinions of two conflicting technical experts.”³¹⁴ It is thus all the more critical that parties from common law traditions have full opportunities to question a tribunal-appointed expert, under the tribunal’s procedural oversight.

4. *The Procedures for Tribunal-Appointed Experts*

Tribunal-appointed experts must be selected and managed with care. Tribunals should ensure that they appoint an expert who is well suited for the task and unlikely to be challenged.³¹⁵ While the parties are unlikely to agree on who should serve as an independent expert,³¹⁶ tribunals might turn to the party-appointed experts in seeking consensus.³¹⁷ Four essential qualifications for a tribunal-appointed expert are: (1) requisite level of expertise in the relevant field; (2) independence and impartiality; (3) availability; and (4) an ability to perform the necessary function within the financial constraints imposed by the arbitral tribunal.³¹⁸ Consistent with these suggested requirements, the recently revised IBA Rules on the Taking of Evidence in International Arbitration require that a tribunal-appointed expert submit to the tribunal and the parties not only a statement of independence, but also “a description of his or her qualifications.”³¹⁹ Once appointed, an expert may be challenged under the IBA Rules only for “reasons of which the Party becomes aware after the appointment has been made.”³²⁰

Creating a single list of qualified experts on valuation would be unnecessary and potentially counterproductive. Rather than artificially limiting available

note 257, at 270 (explaining the distinct approaches to experts in civil law and common law traditions, and noting that certain arbitral rules “incorporate and meld the characteristics of both systems”).

314. See Robert Briner, *Domestic Arbitration: Practice in Continental Europe and its Lessons for Arbitration in England*, 13 *ARB. INT’L* 155, 163 (1997). Yet the expert does not “become a decision-maker on the same level as arbitrators, but only a finder of facts under the supervision and scrutiny of the parties and the arbitrator.” *Id.* at 164.

315. See von Wobeser, *supra* note 256, at 806-07. Tribunals may employ a variety of procedures for such appointment. See, e.g., Allison & Holtzmann, *supra* note 257, at 275. Those procedural details are outside the scope of this Article. Some arbitral rule systems require that an arbitral tribunal consult with the parties before appointing an expert. INTERNATIONAL CHAMBER OF COMMERCE RULES OF ARBITRATION art. 20(4).

316. See Allison & Holtzmann, *supra* note 257, at 275 (noting that the parties reached such an agreement in only one case before the Iran-US Claims Tribunal).

317. See Posner, *supra* note 80, at 1539 n.138.

318. See Allison & Holtzmann, *supra* note 257, at 275-77; see also Hartwell et al., *supra* note 17, at 9 (comments of G. Hartwell) (noting the importance of independent experts keeping “an open mind that the tribunal has always learned to have . . .”).

319. IBA RULES art. 6.2. The revised IBA Rules also add a requirement that tribunal-appointed experts submit a statement of independence from the parties’ “legal advisors,” as well as from the parties. *Id.*

320. *Id.*

experts,³²¹ tribunals should utilize their own experience with experts and seek the recommendations and approval of the parties. Over time, the arbitration community will likely establish an unofficial set of tribunal-appointed “repeat player” experts. There is already a pool of qualified experts who have offered opinions on behalf of both investors and states in a variety of cases. For example, published investor-state decisions from the past five years reveal that Brent Kaczmarek of Navigant Consulting has worked with states in at least two cases (*Walter Bau v. Thailand* and *Rumeli Telekom*) and with investors in at least three (*Duke Energy v. Ecuador*, *Duke Energy v. Peru*, and *Pey Casado v. Chile*). Such experts have begun to represent a “cottage industry” in international arbitration, which reinforces the importance of an expert’s reputation.³²² Just as an *esprit de corps* has developed among arbitrators,³²³ the same is beginning to develop among financial experts in international investment arbitration.

After selecting an appropriate expert, tribunals must “precisely define the scope of the functions entrusted”³²⁴ A number of commentators have provided guidance on how tribunals should handle terms of reference and the management of tribunal-appointed experts.³²⁵ For independent financial experts, the terms of reference should at a minimum assign the task of analyzing the valuations proposed by the party-appointed experts. In some cases, arbitrators might be justified in requesting that an independent expert prepare a separate financial model.

Whatever the scope of an independent expert’s involvement, tribunals should ensure that there are adequate procedural restraints. The 1999 version of the IBA Rules outlined the basic procedures for tribunal-appointed experts, including requesting relevant information from the parties, submitting a report in writing to the tribunal, and answering questions from the tribunal and the parties.³²⁶ The revised 2010 version of the IBA Rules keeps these provisions intact and makes several noteworthy additions. For example, the revised IBA Rules set forth a more detailed rubric for written reports by a tribunal-appointed expert, including “a statement of the facts on which he or she is basing his or her expert opinions and conclusions,” “a description of the methods, evidence and infor-

321. For a brief statement in favor of such a list, see Hartwell et al., *supra* note 17, at 9 (comments of G. Hartwell) (“[M]ore work [should] be done—and this could be done by institutions of various kinds—to inculcate the necessary judicial or quasi-judicial skills in those experts who wish to serve tribunals. Then, perhaps gradually, over the years, the barriers between lawyers and experts might disappear.”).

322. See Jacobs & Paulson, *supra* note 79, at 383 n. 128.

323. See Commission, *supra* note 22, at 135 (noting arbitrators’ similar “backgrounds, qualifications, experiences in international law and their regular interactions, both professionally and otherwise”).

324. See von Wobeser, *supra* note 256, at 807.

325. See Jacobs & Paulson, *supra* note 79, at 399; von Wobeser, *supra* note 256, at 801; Schneider, *supra* note 259, at 448-64; Allison & Holtzmann, *supra* note 257, at 273-74.

326. IBA RULES art. 6(1)-(6).

mation used in arriving at the conclusions,” and the submission of “[d]ocuments on which the Tribunal-Appointed Expert relies that have not already been submitted.”³²⁷ These procedural steps give parties an opportunity to test an independent expert—a process that contributes to the legitimacy of the expert’s analysis.

CONCLUSION

The jurisprudence of investor-state arbitration is evolving quickly. In 1992, Professor Amerasinghe observed that “the assessment of full compensation is at the present time filled with variables and is certainly *not a very scientific process*.”³²⁸ Much has changed. As the stakes of investor-state arbitration have risen, so too has the “scientific” precision of valuation. Yet several roadblocks stand in the way of further progress toward a more exact science. Poorly explained valuations are at the root of many challenges, including persistent perceptions that arbitrators lack the competence required for valuation and continue to “split the baby.” Arbitrators can also retreat to the legal safe havens of uncertainty and speculation to avoid DCF analysis, even in circumstances where financial analysts would readily employ the DCF method to evaluate and explain uncertainty. To sidestep those roadblocks, tribunals should appoint an independent financial expert. The benefits of such experts outweigh their costs in these high-stakes cases. The experts would help arbitrators make valuation a more exact science, and that is critical for the legitimacy of investor-state arbitration.

327. *Id.* art. 6(4).

328. See C.F. Amerasinghe, *Issues of Compensation for the Taking of Alien Property in the Light of Recent Cases and Practice*, 41 INT’L & COMP. L.Q. 22, 63 (1992) (emphasis added).