Analyzing DCF as a Valuation Method for Calculating Damages in Expropriation Arbitrations

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table of Contents</td>
<td>1</td>
</tr>
<tr>
<td>List of Abbreviations</td>
<td>2</td>
</tr>
<tr>
<td>I. Introduction</td>
<td>3</td>
</tr>
<tr>
<td>II. Expropriation</td>
<td>4</td>
</tr>
<tr>
<td>A. Lawful and Unlawful Expropriation</td>
<td>4</td>
</tr>
<tr>
<td>B. Standards of Compensation</td>
<td>6</td>
</tr>
<tr>
<td>III. Choosing a Valuation Method</td>
<td>9</td>
</tr>
<tr>
<td>A. Discounted Cash Flow Method</td>
<td>9</td>
</tr>
<tr>
<td>B. Country Risk Premium</td>
<td>12</td>
</tr>
<tr>
<td>C. Criticisms of DCF</td>
<td>17</td>
</tr>
<tr>
<td>D. Other Methods</td>
<td>18</td>
</tr>
<tr>
<td>IV. Awards Applying DCF to Determine Expropriation Damages</td>
<td>20</td>
</tr>
<tr>
<td>A. <em>Starrett Housing</em></td>
<td>20</td>
</tr>
<tr>
<td>B. <em>Phillips</em></td>
<td>23</td>
</tr>
<tr>
<td>C. <em>CME</em></td>
<td>26</td>
</tr>
<tr>
<td>D. <em>CMS</em></td>
<td>30</td>
</tr>
<tr>
<td>E. <em>ADC</em></td>
<td>35</td>
</tr>
<tr>
<td>F. <em>Sempra</em></td>
<td>39</td>
</tr>
<tr>
<td>V. Conclusion</td>
<td>48</td>
</tr>
<tr>
<td>Bibliography</td>
<td>50</td>
</tr>
</tbody>
</table>
**LIST OF ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCF</td>
<td>Discounted Cash Flow</td>
</tr>
<tr>
<td>ICSID</td>
<td>International Center for the Settlement of Investment Disputes</td>
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<td>IVSC</td>
<td>International Valuation Standards Council</td>
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<tr>
<td>FET</td>
<td>Fair and Equitable Treatment</td>
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<tr>
<td>WACC</td>
<td>Weighted Average Cost of Capital</td>
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<tr>
<td>BIT</td>
<td>Bilateral Investment Treaty</td>
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<td>FMV</td>
<td>Fair Market Value</td>
</tr>
<tr>
<td>COE</td>
<td>Cost of Equity</td>
</tr>
<tr>
<td>PPI</td>
<td>Producer Price Index</td>
</tr>
<tr>
<td>EBITDA</td>
<td>Earning Before Interest, Taxes, Depreciation, Amortization</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
</tr>
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<td>USD</td>
<td>United States Dollars</td>
</tr>
</tbody>
</table>
I. Introduction

Historically speaking, expropriations have been at the center of most investment disputes and continue to remain relevant given the large volume of investment treaty arbitrations we have seen recently and those currently pending before ICSID\(^1\) and other arbitral institutions. While there is a growing body of quality academic work and decisions addressing issues related to compensation for expropriation, there continues to be intense debate on the subject.\(^2\)

One particular issue that has received significant attention from the international community recently is the assessment of compensation in the context of both international contract disputes and international investment disputes.\(^3\) Long past are the days when damages and compensation were considered the “poor cousin”\(^4\) of more important legal battles concerning jurisdiction and merits. Despite the recent attention, damages awards remain the “most sensitive” but “least developed” aspect of investment arbitration.\(^5\) Today, compensation issues are often at the center of disputes, are among the most complicated, are contentious and difficult to resolve. This recent attention is largely

\(^{1}\)The International Center for the Settlement of Investment Disputes (“ICSID”) is an autonomous international institution established under the Convention on the Settlement of Investment Disputes between States and Nationals of Other States (the ICSID or the Washington Convention) with over one hundred and forty member States. The Convention sets forth ICSID’s mandate, organization and core functions. The primary purpose of ICSID is to provide facilities for conciliation and arbitration of international investment disputes. ICSID has seen an influx of cases in the last decade, with the majority based on expropriation claims. The Convention, a list of member-states, and all awards can be found on its website at http://icsid.worldbank.org/ICSID/Index.jsp.


\(^{5}\)Wälde & Borzu Sabahi, supra note 2, at 4.
a result of the substantial dollar amounts involved: the 2009 Arbitration Scorecard listed 92 reported\textsuperscript{6} international contract and investment treaty arbitrations active in 2007 and 2008 in which at least USD 1 billion was at stake.\textsuperscript{7} Of the nearly 250 cases in the 2009 Arbitration Scorecard, all were either commercial disputes with stakes of at least USD 500 million or investment treaty disputes with stakes of at least USD 100 million.\textsuperscript{8}

With this influx of investment disputes and the potential for large monetary awards, the perceived legitimacy of ICSID and the investment treaty arbitration system will likely depend on the ability of tribunals to clearly and precisely calculate compensation. To complicate matters, the increased sophistication of valuation techniques requires that the methods used by tribunals keep pace with those used by finance and investment banking professionals and reflect the commercial reality.

This paper will give a brief overview of the standards of compensation for expropriation, outline the discounted cash flow (“DCF”) method of valuation and the issue of how to account for sovereign risk in a DCF calculation, and then review how DCF has been employed by tribunals in reported cases to calculate damages in expropriation arbitrations.

II. Expropriation

A. Lawful and Unlawful Expropriation

When thinking about compensation, the distinction between lawful and unlawful expropriation must be considered.\textsuperscript{9} The sentiment first expressed in \textit{Chorzów}\textsuperscript{10} that legal

\begin{footnotesize}
\begin{enumerate}
\item This figure is likely substantially underestimated given the large number of unreported Awards.
\item \textit{Id.}
\item Ripinsky & Williams, \textit{supra} note 2, at 65.
\item \textit{The Factory at Chorzów (Germany v. Poland) (Claim for Indemnity)}, 1928 P.C.I.J. (ser.A) No. 17, at 48 (Sept. 13), available at http://www.worldcourts.com/pcij/eng/decisions/1928.09.13_Chorzów1/. Last visited 13 July 2009. The PCIJ held: “It follows that the compensation due to the German Government is not necessarily limited to the value of the undertaking at the moment of dispossession, plus interest to the
\end{enumerate}
\end{footnotesize}
and illegal behavior must lead to different consequences in order to preserve the
“preventative function of law,” has since been affirmed almost universally by arbitral
tribunals. The importance of this distinction is emphasized in recent decisions by the
European Court of Human Rights, which have adopted a similar approach. Some
scholars assert that the terms “compensation” and “damages” are associated with the
legality of the actions giving rise to the dispute; and that “compensation” is sometimes
understood to be distinguished from “damages” by being less linked to an unlawful act,
as for example when compensation is due for an otherwise lawful expropriation. For the
purpose of this paper, the two terms should be considered synonymous.

It is important to note that expropriation is not per se unlawful under international
law, as it is “undisputed that it is within the State’s prerogative to expropriate foreign-
owned property.” Generally, an expropriation will be deemed lawful if it is: (1) for a
public purpose; (2) non-discriminatory; (3) carried out under due process of law; and (4)
accompanied by payment of compensation. The majority of investment treaties require,
as a condition for the lawfulness of an expropriation, payment of compensation
equivalent to the fair market value (“FMV”) of the expropriated investment. These

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11 Ripinsky & Williams, supra note 2, at 65.
12 See Amoco Int’l Finance v. Iran, Award of 14 July 1987, 15 Iran-US CTR 189, 246, ¶ 192; ADC Affiliate
Limited and ADC & ADMC Management Limited v. The Republic of Hungary; ICSID Award, 2 October
2006, ¶ 141; Siemens A.G. v. The Argentine Republic; ICSID; Award, 6 February 2007, ¶ 352; Vivendi v.
The Argentine Republic, ICSID; Award of 20 August 2007, ¶ 8.2.3 – 8.2.6.
13 See Scordino v. Italy (No 1), Judgment of 29 March 2006, ¶ 250. The European Court held that “the
pecuniary consequences of a lawful expropriation cannot be assimilated to those of an unlawful
dispossession.”
damages, or any other act that a court orders to be done by a person who has caused injury to another. In
theory, compensation makes the injured person whole.” BLACK’S LAW DICTIONARY (Thompson & West:
8th Ed: 1990), at 301. Black’s defines damages as follows: “[m]oney claimed by, or ordered to be paid to, a
person as compensation for loss or injury.” BLACK’S LAW DICTIONARY (Thompson & West: 8th Ed: 1990),
at 416.
15 Ripinsky & Williams, supra note 2, at 66.
16 Id. at 66.
17 Id. at 79.
conditions have been included in most bilateral investment treaties ("BITs") and are considered a part of customary international law.\textsuperscript{18}

B. Standards of Compensation

There are two relevant standards that must be considered: the customary international law standard and the BIT standard. The now approximately 2,400 BITs\textsuperscript{19} and growing number of multilateral treaties that deal with the question of compensation upon expropriation and investment protection by specifying a compensation standard have taken the "explosiveness" out of the debate on the customary international law standard.\textsuperscript{20} The standard of "adequate, prompt and effective" compensation is broadly accepted and can be found in a vast number of BITs,\textsuperscript{21} model treaties and in Article 13 of the Energy Charter Treaty.\textsuperscript{22} Many treaties go further and specifically refer to FMV as the measure of compensation.\textsuperscript{23} International tribunals have frequently relied on the FMV as the appropriate standard of compensation for lawful expropriations and provide that it should be calculated at the moment just prior to the expropriatory act.\textsuperscript{24} This is also in line with the World Bank Guidelines for the Treatment of Foreign Investments: “Compensation will be deemed ‘adequate’ if it is based on the fair market value of the taken asset as such value is determined immediately before the time at which the taking occurred or the decision to take the asset became publicly known.”\textsuperscript{25} FMV has a widely accepted definition:

\begin{quote}
…the price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at
\end{quote}

\begin{footnotes}
\item[18] Id. at 66. See also, UNCTAD, \textit{Taking of Property} 12-13.
\item[19] Valasek, \textit{supra} note 2, at 5.
\item[20] Marboe, \textit{supra} note 2, at 730.
\item[22] Marboe, \textit{supra} note 2, at 730.
\item[23] Id. at 730.
\item[24] Id. at 730.
\end{footnotes}
arm’s length in an open and unrestricted market, when neither is under an obligation to buy or sell and when both have reasonable knowledge of the relevant facts.”

This however, as it has been noted in the literature, does not mean full compensation, as the expropriated individual will “not necessarily receive all the financial loss he or she has suffered as a consequence of the expropriation. Rather, the calculation should be based on the opinion of a hypothetical third person on the value of the affected property.” This is an objective approach as opposed to a subjective one, which would “concentrate on the actually incurred losses from the perspective of the affected individual.”

Regarding unlawful expropriations (those generally not provided for in the BITs), the guiding principle is found in the Chorzów dictum:

“The essential principle contained in the actual notion of an illegal act—a principle which seems to be established by international practice and in particular by decisions of arbitral tribunals—is that reparation must, as far as possible, wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed.”

A similar standard exists in Article 31(1) of the ILC Articles on State Responsibility, which obliges the responsible state to make “full reparation for the injury caused by the internationally wrongful act.” Article 36 elaborates further:

1. The State responsible for an internationally wrongfully act is under an obligation to compensate for the damage caused thereby, insofar as such damage is not made good by restitution.
2. The compensation shall cover any financially assessable damage including loss of profits insofar as it is established.

26 See http://www.bvappraisers.org/glossary/. Approved June 2005, Copyright 2005, American Society of Appraisers. See also Marboe, supra note 2, at 731; Starrett Housing Corp. v. Iran, Final Award, 16 Iran-US CTR 112 (1987), ¶ 277; Phillips Petroleum v. Iran, 21 Iran-US CTR 79 (1989), ¶ 111.
27 Marboe, supra note 2, at 731.
28 Id. at 731. Marboe says this corresponds to the Fifth Amendment of the U.S. Constitution, which “refers to the standard of ‘just compensation’ in case of expropriation.” She also points out that Germany has a similar “objective” test, while other states like the U.K., Austria, and Switzerland have taken different approaches that are more subjective.
29 Chorzów, supra note 10. See also Marboe, supra note 2, at 732.
30 ILC Articles on the Responsibility of States for Internationally Wrongful Acts
31 Id.
The standard is thus one of “full reparation” of the damage actually incurred by the Claimant as a result of the illegal act.\footnote{Marboe, supra note 2, at 733. Pointing out that the “full reparation” standard is also a limit, in that “the amount of damages must not exceed the damage actually incurred. This is necessary to avoid overcompensation.”} This is a subjective test, but is limited to the damage actually incurred. The tribunal or other adjudicating body must, therefore, compare the actual financial situation of the injured person with the financial situation that would have existed had the illegal act not been committed, with the difference being the damage that was caused by the illegal act.\footnote{Id.} This calculation is called a “counterfactual” or “but-for” analysis.\footnote{See also generally R. Doak Bishop & Craig S. Miles, Lost Profits And The Discounted Cash Flow Method of Calculation, 1 WORLD ARBITRATION & MEDIATION REVIEW 33 (2007); Wälde & Borzu Sabahi, supra note 2, at 4; Brower & Ottolenghi, supra note 4; Valasek, supra note 2; Ripinsky & Williams, supra note 2; MARK KANTOR, VALUATION FOR ARBITRATION: COMPENSATION STANDARDS, VALUATION METHODS AND EXPERT WITNESSES (New York, New York: Kluwer Law International, 2008).}

Regarding lost profits, the leading treatise on damages in international law states:

Prospective profits are frequently allowed in international cases, however, on the ground that such losses were within the contemplation of the parties to a contract or, in other cases, that the damage is the direct or the proximate, or the immediate consequence of the wrongful act. However, in order to be allowable, prospective profits must not be too speculative, contingent, uncertain, and the like. There must be proof that they were reasonably anticipated; and that the profits anticipated were probable and not merely possible.\footnote{MARJORIE M. WHITEMAN, DAMAGES IN INTERNATIONAL LAW, VOL.III (United States GPO, D.C. 1943) at 1836-1837.}

The standard of compensation for an unlawful act by a State is therefore one that was born from the Chorzów case and has been reinforced by the ILC’s Articles on State Responsibility. It is a standard of “full reparation,” which includes “any financially assessable damages,” including lost profits reasonably anticipated.\footnote{See Brower & Ottolenghi, supra note 4; and Bishop & Miles, supra note 34; for proposition that “lost profits damages must be proved to have been “reasonably certain” to be recoverable. Also see Wälde & Sabahi, supra note 2.}
III. Choosing a Valuation Method

After a standard of compensation is established, a tribunal must determine an appropriate quantum of damages. From the perspective of the parties this step in a tribunal’s analysis is crucial as the tribunal “must explain its methodology and in some detail,” to avoid criticism for arriving at a quantum that is insufficiently reasoned and lacking transparency of the methods and calculations made.37 Because of the large amounts of money at stake in most expropriation arbitrations, the damages valuation phase has become all the more critical since a slight modification of an assumption in a model could result in a multi-million dollar reduction in the award. As Brower and other commentator’s have pointed out, “valuation is a harder task for arbitral tribunals than that of arriving at the proper [legal] standard to be applied, as it often requires recourse to technical accounting and corporate finance principles with which tribunals may be unfamiliar.”38

A. Discounted Cash Flow Method

The DCF method has become the main tool used internationally to assess the fair market value of companies.39 World Bank has defined the DCF method:

“Discounted cash flow value” means the cash receipts realistically expected from the enterprise in each future year of its economic life as reasonably projected minus that year’s expected cash expenditure, after discounting this net cash flow for each year by a factor which reflects the time value of money, expected inflation, and the risk associated with such cash flow under realistic circumstances. Such discount rate may be measured by examining the rate of return available in the same market on alternative investments of comparable risk on the basis of their present value.40

37 Brower & Ottolenghi, supra note 4.
38 Brower & Ottolenghi, supra note 4, at n50.
The DCF method is an income-based approach of valuing a business, real property, intangible asset, or a contractual right, for example to exploit a natural resource. It is one of the most widely accepted methods used for business valuations. The actual analysis required by the DCF method is basically a three-step process: “first, a calculation must be made of the anticipated future cash flows to be generated from the enterprise for each year during the anticipated life of the enterprise or agreed term of the contract; second, there must be a calculation of future costs; and third, there must be a determination of an appropriate discount rate to be applied to future profits to reduce them to present value.” The discount factor should take into account the time value of money, risk, and prospective inflation, and is “generally calculated on the basis of the Capital Asset Pricing Model, which helps to identify the (opportunity) cost of capital of the valuation object.” One of the main advantages of the DCF method is its focus on cash flows. The focus on cash flows has the advantage of “not depending on accounting conventions that vary from country to country and that leave a margin of appreciation to the owner. Cash flows are thus better comparable.”

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41 There are generally three approaches to valuation: (1) income-based; (2) market-based; and (3) asset-based. Kantor, supra note 34, at 9. According to the income-based approach, the value of an object does not depend on historical cost but is equivalent to its ability to create financial benefits for the owner in the future. Marboe, supra note 2, at 737.
42 Kantor, supra note 34, at 131.
43 Id. The mathematical equation for calculating the net present value of a stream of future income (“NPV”) is well known:

\[ NPV = \sum_{t=1}^{T} \frac{C_t}{(1+r)^t} - C_0 \]

This is also called the discounted cash flow (or DCF) formula. Richard A. Brealey, Stewart C. Myers & Franklin Allen, Principles of Corporate Finance (New York, New York: McGraw-Hill Irwin, 9th ed. 2008) at 37. Determining the NPV of a stream of income from an asset requires a determination of the net revenues (C) for each time period (t) of the asset’s productive life and the discount rate (r). The discount rate is represented as constant here, but it can also be a variable that fluctuates depending upon the time period which is being discounted. Id. Knull points out that he is unaware of any arbitral award that differentiates between discount rates applied to different times periods of an asset’s productive life. Knull, Jones, Tyler & Deutsch, supra note 2, at 9.
44 Brower & Ottolenghi, supra note 4, at 17.
45 Marboe argues that inflation is “usually not taken into account because, in general, nominal instead of real cash flows and discount rates are used.” Supra note 4, at 738.
46 Id. at 737.
47 Id.
The Lawyer’s Business Valuation Handbook summarized the importance of DCF valuations to financial and business practitioners:

The DCF method is the predominant valuation technique employed by investment bankers to value companies for capital markets transactions or acquisitions. The discounted cash flow method is the most conceptually correct method because it captures the driving principle of valuation: Value is the present worth of future benefits. Capitalizing [i.e., the CCF method (…)] is merely a shortcut method that hopes to produce a similar result.[…]

Not only is discounted cash flow the most theoretically correct valuation method, it is also the most widely practiced valuation method in the world of corporate finance. Furthermore, the method is increasingly used by valuation experts and increasingly accepted by the courts […].

In both discounting and capitalizing, we are converting an expected stream of income into a present value. In other words, we are estimating what someone would pay today (or as of the effective valuation date) for some expected stream of future economic income. 48

In projecting the generation of cash flows for an enterprise, a critical task is to identify the particular “value drivers” that will effect the generation of cash flows. 49 The factors used will largely depend on the characteristics of the enterprise. International Tribunals have identified “value drivers” relevant for large housing projects 50, petroleum enterprises 51, and TV stations. 52 Although the underlying assumptions will vary depending on the enterprise being valued, they may include: assumptions related to the business in which the firm operates (revenues, prices, market shares, new products, operating expenses, capital expenses, inventory policy, working capital, tax requirements, etc.); assumptions regarding external macroeconomic factors (GDP growth, inflation rates, exchange rates, monetary and fiscal policy that may affect the enterprise, labor market conditions, wages and salaries); assumptions on how the relevant regulatory

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48 SHANNON PRATT, THE LAWYER’S BUSINESS VALUATION HANDBOOK (American Bar Association 2000), at 105. The Lawyer’s Business Valuation Handbook has been referred to as “the leading non-academic treatise” by the Delaware Court of Chancery in Delaware Open MRI Radiological Associates, P.A. v. Kessler, supra n. 3, at 339 n. 130 (Del. Ch. 2006).

49 ALFRED RAPPAPORT, CREATING SHAREHOLDER VALUE (New York 1986) 50; as quoted in Marboe, supra note 2, at 738, n.89.

50 Marboe, supra note 2, at 738, n.91: “In Starrett Housing, the calculation was based on the revenues from sales of apartments, parking spaces, and heavy-duty construction equipment.”

51 Marboe, supra note 2, at 738, n.92. “In Phillips Petroleum, although the enterprise had not started operation, the expert made his forecast on the basis of what he identified as the main value drivers: the existing reservoir of oil within the area of the concession; and the world market prices of oil.”

52 Marboe, supra note 2, at 738, n.93. “In CME v. Czech Republic, the most important factors were the share and the size of the advertising market. As for the forecast of costs and expenses, the programme and production costs were identified as being the most relevant with regard to the expected cash flow.”
framework will evolve, including taxation matters as well as forms of direct regulation, if applicable; and assumptions of financial viability.\textsuperscript{53} Past data and market experts are often used in this respect to buttress the valuations submitted by the parties.\textsuperscript{54} Because small changes in the assumptions can lead to significant changes in the damages calculation, it is important for tribunals to diligently evaluate the reasonableness of each assumption and to make appropriate adjustments according to their findings.

B. Country risk premium

One question that has received some attention in the finance literature but little attention from international tribunals or legal commentators is, how should a foreign investor adjust his DCF calculation to account for the increased risk associated with investment in an emerging market.\textsuperscript{55} While it is true that global diversification of a company’s investments across many countries can eliminate some country risk, “the increasing correlation across markets suggests that country risk cannot be entirely diversified away.”\textsuperscript{56} Such risks may include high levels of inflation, macroeconomic volatility, capital controls, political changes, war or civil unrest, regulatory change, poorly defined or enforced contract and investor rights, lax accounting controls, and corruption.\textsuperscript{57} Different assessments of these risks can lead to very different valuations so

\textsuperscript{53} Bishop & Miles, supra note 34, at 38.
\textsuperscript{55} For a discussion on whether such an adjustment is appropriate, see Aswath Damodaran, Country Risk and Company Exposure: Theory and Practice. 13 JOURNAL OF APPLIED FINANCE, ISSUE 2, 63 (2003); ASWATH DAMODARAN, INVESTMENT VALUATION: TOOLS AND TECHNIQUES FOR DETERMINING THE VALUE OF ANY ASSET (New York, New York: Wiley & Sons, Inc., 2\textsuperscript{nd} Ed. 2002); Brealey, Myers & Allen, supra note 43.
\textsuperscript{56} Damodaran, Country Risk and Company Exposure: Theory and Practice, supra note 55, at 75.
it is again crucial that tribunals carefully evaluate and make adjustments when necessary to the risk assumptions underlying the competing valuations submitted by the parties.\(^{58}\)

For valuations based on DCF, two options are available for incorporating the additional risks of emerging markets.\(^{59}\) The risks can either be incorporated in the assessment of the projected cash flows or in an extra risk premium added to the discount rate. The simplest and most widely used way to measure country risk is to use the rating assigned to a country’s debt by a ratings agency: Standard & Poor’s, Moody’s Investment Service, and Fitch IBCA all rate countries.\(^{60}\) While these ratings measure default risk and not equity risk, proponents of this method argue that the ratings are affected by “many of the same factors that drive equity risk—the stability of a country’s currency, its budget and trade balances, and its political stability.”\(^{61}\) The table below summarizes the default spreads (in basis points) for Latin American countries as of June 2000.\(^{62}\)

<table>
<thead>
<tr>
<th>Country</th>
<th>Rating</th>
<th>Typical Spread(^{63})</th>
<th>Market Spread(^{64})</th>
</tr>
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<tr>
<td>Argentina</td>
<td>B1</td>
<td>450</td>
<td>433</td>
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<tr>
<td>Bolivia</td>
<td>B1</td>
<td>450</td>
<td>469</td>
</tr>
<tr>
<td>Brazil</td>
<td>B2</td>
<td>550</td>
<td>483</td>
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\(^{58}\) Id.  
\(^{59}\) Id. at 81.  
\(^{60}\) Damodaran, INVESTMENT VALUATION: TOOLS AND TECHNIQUES FOR DETERMINING THE VALUE OF ANY ASSET, supra note 53, at 165-166. See also Damodaran, Country Risk and Company Exposure: Theory and Practice, supra note 55, at 59: “The first, most widely used and least effective way of dealing with country risk is to add on the country risk premium to the cost of equity for every company in an emerging market […] it tars all companies in a country with the same brush and assumes that they are all exposed to country risk in the same magnitude.”  
\(^{61}\) Damodaran, INVESTMENT VALUATION: TOOLS AND TECHNIQUES FOR DETERMINING THE VALUE OF ANY ASSET, supra note 60, at 166. The process by which country ratings are obtained is explained on the S&P website at www.ratings.standardpoor.com/criteria/index.htm.  
\(^{62}\) Table taken from Damodaran, Id. at 166. Numbers are in basis points.  
\(^{63}\) Ratings are foreign currency ratings from Moody’s Investor’s Service. Id. at 166.  
\(^{64}\) Typical Spread is estimated by looking at the default spreads on bonds issued by all countries with this rating, over and above the riskless rate (U.S. Treasury or German euro rate). Numbers are in basis points. Id. at 166.  
\(^{65}\) Market spread measures the spread difference between dollar-denominated bonds issued by this country and the U.S. Treasury bond rate. Numbers are in basis points. Id. at 166.
<table>
<thead>
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<th>Country</th>
<th>Rating</th>
<th>Default Spread</th>
<th>Other Spread</th>
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</tr>
<tr>
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<td>Ba3</td>
<td>400</td>
<td>426</td>
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<tr>
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<td>Baa3</td>
<td>145</td>
<td>174</td>
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<tr>
<td>Venezuela</td>
<td>B2</td>
<td>550</td>
<td>571</td>
</tr>
</tbody>
</table>

Analysts who use default spreads as measures of country risk typically add them to both the cost of equity and debt of every company traded in that country.\(^66\) For example, the cost of equity for an Argentinean company, estimated in USD, will be 4.33% higher than the cost of equity of an otherwise similar U.S. company. If we assume that the risk premium for the U.S. and other mature equity markets is 5.5%, the cost of equity for a Argentinean company with a beta of 1.1 can be estimated as follows (with a U.S. Treasury bond rate of 5%):\(^67\)

\[
\text{Cost of equity} = \text{Risk-free rate} + \text{Beta} \times (\text{U.S. risk premium}) + \text{Default Spread} = 5\% + 1.1(5.5\%) + 4.33\% = 15.38\%
\]

Critics of this method argue that using the credit risk of a country to measure the risk faced by investors overlooks the fact that equity investments in a country can often be less risky than investments in government bonds.\(^68\) Also, critics argue that ratings agencies often “lag markets” when it comes to responding to changes in the underlying default risk.\(^69\) Professor Stewart Myers, argues against adjusting the discount rate in this way by adding what he calls a “fudge factor” for two reasons. First, bad outcomes like drilling a dry hole or expropriation reflect diversifiable risks that do not affect the rate of

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\(^{66}\) Id. at 166.

\(^{67}\) Based on the example provided in Damodaran. Id. at 167.

\(^{68}\) See James & Keller, supra note 57, at 82; Kantor, supra note 34, at 159. This approach was rejected by Starrett and Sempra as being not economically sound. Proponents, however, argue that default spreads in fact underestimate equity risk premiums since equities in any market are likely to be more risky than bonds. Damodaran, supra note 61, at 167.

\(^{69}\) Id.
return demanded by investors.\textsuperscript{70} And second, the need for a discount rate adjustment usually arises because managers have failed to properly give bad outcomes their due weight in cash-flow forecasts; a mistake which managers try to offset by adding a fudge factor to the discount rate.\textsuperscript{71} Two other points are relevant for international arbitrations when discussing the shortcomings of adjusting the discount rate for country risk. First, sovereign bond spreads (between the US and Argentina, for example) incorporate the risk of default by the Argentinean government and implicitly Argentinean risk in general. However, when looking at the ‘but-for’ cash flows for a specific project that should enjoy specific sovereign risk protection (BIT or investment law), or has structured its operation to avoid local country risk (exports, off-shore cash accounts, specific government mandated access to forex), the sovereign risk premium would overstate the risk in the ‘but-for’ world for that project. Secondly, depending on local law, damage calculations may specifically exclude the risk of default by the owing party, which would follow through into the arbitration calculation. Again, that legal protection in an arbitration award calculation, would not be reflected in a sovereign risk premium, so again overstating the risk. Despite these criticisms, a recent survey showed that managers generally adjust for these risks by adding a risk premium to the discount rate,\textsuperscript{72} which is unfortunate since the approach will result in an overstatement of the risk and thus an underestimation of the project’s value.\textsuperscript{73}

Others have argued that a better way of incorporating country risk into valuations based on DCF, is to include those risks in the assessment of the actual cash flow by “haircutting” the cash flows. Some, for example, argue that accounting for these risks in the

\textsuperscript{70} Brealey, Myers & Allen, supra note 43, at 247-50. Warning against confusing beta with diversifiable risk: “A project may look extra risky viewed at close range, but if the project’s uncertainties are not correlated with the market or other macroeconomic risks, then the project is only average-risk to a diversified investor.”

\textsuperscript{71} Id. at 247.


\textsuperscript{73} Adding a country risk premium to the discount rate will likely result in a discount rate that is too high and thus discounted present values that are too low.
cash flows through probability-weighted scenarios\textsuperscript{74} “provides both a more solid analytical foundation” and “a more robust understanding of how value might (or might not) be created.”\textsuperscript{75} It submits that three arguments as to why this is a better approach:

First, investors can diversify most of the risks peculiar to emerging markets, such as expropriation, devaluation, and war—though not entirely […]. Since financial theory is clear that the cost of capital—the discount rate—should reflect only nondiversifiable risk, diversifiable risk is better handled in the cash flows […]. Second, many risks in a country are idiosyncratic: they don’t apply equally to all industries or even to all companies within an industry. The common approach to building a discount rate […] doesn’t take into account the different risks that different industries face; banks, for example, are more likely than retailers to be nationalized. And some companies (raw materials exporters) may benefit from a devaluation, while others (raw materials importers) will be hurt by it. Third, using the credit risk of a country as a proxy for the risk faced by corporations overlooks the fact that equity investments in a company can often be less risky than investments in government bonds.\textsuperscript{76}

To develop the different scenarios requires a three-step process. First, estimate worst-case, base-case, and best-case scenarios for the relevant macroeconomic factors (inflation rates, GDP, foreign exchange rates, interest rates) to project through the investment horizon; next, estimate worst-case, base-case, and best-case industry-specific scenarios (nominal sales growth, same store sales growth, price of oil, etc.) that are linked in the model to the macroeconomic variables so that when the macroeconomic scenario changes, cash flow items adjust automatically.\textsuperscript{77} Then, the three macroeconomic scenarios are incorporated into the company’s cash flows and discounted at an industry-specific cost of capital.\textsuperscript{78} Finally, each outcome is weighted for probability with the resulting value range being the value of the enterprise.\textsuperscript{79} One advantage of this approach is that “analyzing specific risks and their impact on value permits managers to make better plans to mitigate them.”\textsuperscript{80} Another advantage is that it allows companies to

\begin{itemize}
\item \textsuperscript{74} Also referred to as “Monte Carlo simulations”. Damodaran, \textit{Country Risk and Company Exposure: Theory and Practice, supra} note 55, at 75. Kantor, \textit{supra} note 34, at 131-161. Brealey, Myers & Allen, \textit{supra} note 43, at 279-83.
\item \textsuperscript{75} James & Keller, \textit{supra} note 57, at 81.
\item \textsuperscript{76} \textit{Id.} at 81-82.
\item \textsuperscript{77} \textit{Id.}
\item \textsuperscript{78} \textit{Id.}
\item \textsuperscript{79} James & Keller, \textit{supra} note 57, at 81-85. The article discusses McKinsey’s valuation in 1998 of a Brazilian retail grocery chain. The resulting value was USD 1.026 billion to USD 1.094 billion, which was within 10% of the company’s market value at the time. They compared this with the alternative valuation method, using base-case cash flows but adjusting for additional risk by adding the going country risk premium to the discount rate, yielding a value of USD 221 million—which was far below the market value.
\item \textsuperscript{80} \textit{Id.} at 83.
\end{itemize}
customize their forecasts by considering risks that affect them but perhaps do not effect other companies, and vice versa, which gives them a more accurate valuation.\(^\text{81}\)

C. Criticisms of DCF

Despite its nearly universal acceptance by finance and legal professionals, there have been a number of tribunals that have refused to apply DCF because of a lack of sufficient past performance by the enterprise.\(^\text{82}\) A history of successful performance, however, as we can see from the existing practices employed by professionals “is not a condition for applying the DCF method.”\(^\text{83}\) Regarding the recovery of lost profits, there has been some reluctance by tribunals to award lost profits for a “beginning industry and unperformed work,” or where the enterprise is not a “going concern” with a long earning history.\(^\text{84}\) This reluctance may be at odds with the commercial reality, however, as investment bankers and analysts do this regularly. One leading commentator argues that this reluctance is not fair to investors and can unjustly enrich the State:

\[
\text{[S]ome tribunals have imposed too high a standard of proof for the recovery of lost profits when the claimant is an established business […]. [T]he amount of lost profits does not need to be established concretely or with certainty. Such a requirement would place an almost insurmountable burden on the claimant while benefiting the party who caused the damage and prevented the claimant from being able to concretely prove its loss. In order to be entitled to lost profits, the claimant must show with reasonable certainty that profits would have been made absent the respondent’s actions. Once a claimant is able to show with reasonable certainty the fact of loss of profits, the claimant then needs only to provide a basis upon which a tribunal can reasonably estimate the extent of the claimant’s loss of profits. This approach strikes a balance between the need for evidence upon which a tribunal may base an award of lost profits and the recognition that the difficulty in proving damages stems from the respondent’s action.}\]

\(^\text{81}\) Id. at 83. See also generally Kantor, supra note 34; and Damodaran, supra note 55.


\(^\text{83}\) Marboe, supra note 2, at 738, n.90.

\(^\text{84}\) Gotanda, supra note 3, at 4.

\(^\text{85}\) Id. at 6.
It is reasonable to assume a claimant could reasonably estimate the extent of lost profits through the use of expert testimony, economic and financial data, market surveys and analyses, and business records of similar enterprises.\textsuperscript{86}

The most common criticism of DCF projections is that they are “too speculative” or “only as good as the assumptions upon which they are based. One commentary argues that DCF is “in essence a speculation about the future dressed up in the appearance of mathematical equations,” and that “the inherent subjectivity present in most of the assumptions of the financial model explains why rational bankers and business executives put highly different values to the same asset. Small, and continuously occurring, mood-influenced changes in, for example, future income growth rates or appetites towards risk have a disproportionate impact on the present value determination.”\textsuperscript{87} It is true that a DCF calculation is only as good as the assumptions upon which it is based (“garbage in, garbage out”—the GIGO rule). However, this does not undercut the efficacy of the methodology; instead, it reflects the importance of the tribunal’s job to (hopefully with the help of its own expert) understand and evaluate the reasonableness of each of the underlying assumptions in the DCF calculation before it, and to make changes to the model in accordance with their informed judgment regarding those assumptions. It is crucial that tribunals know the right questions to ask.\textsuperscript{88}

D. Other Methods

The International Valuation Standards Council (“IVSC”) has published Guidance Note GN6 on Business Valuation,\textsuperscript{89} that outlines, in addition to income-based approaches like DCF, market-based and asset-based valuation methods used in business valuations.

\textsuperscript{86} Id. at 6, n.12.
\textsuperscript{87} Wälde & Sabahi, supra note 2, at 19.
\textsuperscript{88} Id. at 20.
\textsuperscript{89} IVSC, Guidance Note GN 6 on Business Valuation (International Valuation Standards, 8\textsuperscript{th} Ed. 2007).
One such asset-based approach is the “book value” method, which is basically the current market value of net assets less net liabilities without consequential damages. The advantages of this method are that it is easily and objectively assessed in that it is based on a current record and actual historical figures and costs, as opposed to figures created solely for the purpose of the claim. The disadvantages of the net book value method are its “reliance on historical figures which may not have any relevance,” for the valuation of this specific project. Moreover, “a balance sheet may contain an entry for goodwill, but the reliability of such a figure depends upon their [sic] proximity to the moment of an actual sale.” Tribunals have found this method adequate only to value businesses not deemed to be “going concerns”—businesses that promised to make profits on a continuing basis—or where the expropriation has been lawful.

The market-based approach, by contrast, compares the enterprise to similar businesses, ownership interests, and securities that have been sold in the market, or “actually paid prices for comparable items on the market.” Like the book value method, the comparative method of a market-based approach has the advantage of being based on objective historical data as opposed to figures prepared specifically for the arbitration. However, the valuations produced by market-based approaches have been generally rejected as a “useful but only approximate guide,” requiring more explanation as to its relevance.

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90 Brower & Ottolenghi, supra note 4, at 15; Kantor, supra note 34, at 8-9.
91 Brower & Ottolenghi, supra note 4, at 15.
92 Id.
95 Brower & Ottolenghi, supra note 4, at 20; Kantor, supra note 34, at 8-9.
IV. Awards Applying DCF to Determine Expropriation Damages

A. Starrett Housing

Starrett Housing Corporation ("Starrett") and Bank Omran, an Iranian development bank under the control of the Shah and his government, contracted to develop a residential housing project in Tehran ("the Project"). Their agreement provided for the purchase by Starrett of certain tracts of land from the Bank, the construction by Starrett of approximately 6000 apartment units on those tracts, and the sale of completed apartments to Iranian purchasers as condominiums. Starrett also owned, through subsidiaries, nearly 80% of the Shah Goli Apartment Company ("Shah Goli") and all the equity in Starrett Construction, both companies incorporated under Iranian law for the purpose of carrying out the project. Starrett also claimed, and the Tribunal accepted, that it had made a series of loans to Shah Goli and Starrett Construction, which constituted the bulk of the compensation awarded. The Claimants contended that their interest in the Project had been unlawfully taken by the Iranian Government, as it had deprived them of the effective use, control and benefits of their property by means of various actions authorizing, approving and ratifying acts and conditions that prevented Starrett from completing the Project, including: (1) strikes and shortages of materials; (2) the collapse of the banking system in Iran; (3) changes in the control of Bank Omran; (4) the freezing of Shah Goli’s bank accounts; (5) harassment of Starrett personnel by Revolutionary Guards; and (6) various official measures by the Republic of Iran, including the appointment of a manager of Shah Goli by the Ministry of Housing.

i. Legal Standard

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98 Id. at 2.
99 Id.
100 Id.
101 Id.
The Tribunal found the appointment of a Manager of the Project constituted a taking of Starrett’s property and that the acts of the Iranian Government amounted to a compensable expropriation. The Tribunal determined that an expropriation had occurred, but did not decide whether the expropriation was lawful or unlawful. The Tribunal determined that under the applicable Treaty, compensation for the expropriated property should be the full market value of Starrett’s interest in the Project, held to be the amount a reasonable businessman would pay for Starrett’s rights in the Project. It also determined the day of the expropriation to be 30 January 1980, the date on which the Manager was appointed by the Ministry of Housing. The compensation awarded included the Claimants’ share of the anticipated profits for the expropriation of physical property and contractual rights to carry out the Project, including lost profits, and contractual rights to a management fee and loans made to fund the Project.

ii. Quantum of Damages

To assist with the damages valuation the Tribunal appointed a valuation expert and directed him to “give his opinion on the value of [the expropriated property] as of 31 January 1980, including the value of the Project in Shah Goli’s hands […] considering as he deems appropriate the DCF method of valuation.” In the Final Award, the Tribunal adopted the DCF method employed by the expert; and endorsed the Expert’s definition of FMV as “the price a willing buyer would pay 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.” Starrett was the first time a major arbitral tribunal used DCF to value a large award. Judge Holtzmann’s concurring opinion in the case pointed out the efficacy in his view of the DCF method:

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102 Id. at 2-3.
103 Treaty of Amity, Economic Relations, and Consular Rights between the United States of America and Iran, signed 15 August 1955.
105 Starrett, (Interlocutory Award) at 156.
106 Starrett, (Final Award) at 224, 226.
107 Starrett, (Interlocutory Award) at 157.
108 Starrett, (Final Award) at 279.
109 Brower & Ottolenghi, supra note 4, at 18.
The valuation procedure proved the great usefulness of the DCF method as a technique for establishing the fair market value of an enterprise, notwithstanding that in this case the expropriated business consisted of a relatively complex organization of related companies, including minority interests [...].

The Tribunal endorsed the Expert’s use of DCF, calling it “logical and appropriate,” for determining FMV. However the Tribunal reduced the total award calculated in its Expert’s valuation by almost 90% (from approximately 377 million Rials to 27 million Rials) because, in its view, a reasonable businessman purchasing the project would have expected that revenues would be lower for various reasons. The Tribunal made its reduction of the Expert’s valuation without assigning precise amounts to the factors it had decided warranted a departure from the Expert’s calculations—discount rate, inflation rate, and interest rate—and justified its reduction on the basis of its discretion to “determine equitably” the amount involved. Referring to the valuation of damages, the Tribunal stated that “these matters are not capable of precise quantification because they depend on the exercise of judgmental factors that are better expressed in approximations or ranges.” The reduction was not based on the Tribunal’s assessment of considerations that warranted an award of less than full market value. Rather, the Tribunal’s “equitable determination” of the amount of compensation was an attempt to come to a “reasonable approximation” of the FMV of the property expropriated, as it believed “circumstances militated against calculation of a precise figure.”

Regarding the applicable discount rate, without explaining the source of the number, the expert recommended 11% to encompass both the real rate of interest and risk, which the Tribunal adopted. This despite the fact that real interest rates at the time were said to be negative. Somewhat inexplicably, however, the Expert later reconsidered and recommended, and the Tribunal accepted, an additional 17% to account for inflation in

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110 Starrett, (Concurring Opinion of Judge Holtzmann) at 241.
111 Starrett, (Final Award) at 220-238.
112 Id.
113 Id.
114 Id.
115 Id.
116 Knull, Jones, Tyler & Deutsch, supra note 2, at 31.
accordance with the Iranian consumer price index, for a total discount rate of 28%. 117 While this sounds vaguely similar to the concept of the opportunity cost of capital the calculation “bears no resemblance to the determination of the [WACC] by reference to the project’s cost of equity and debt.” 118

The parties, Tribunal, and experts, did agree on the prudence of adjusting the cash flows (as opposed to the discount rate) to reflect country risk and the award provides in great detail how the Tribunal considered each component of the revenue computation. The Tribunal reasoned it could calculate the project’s future cash flows just as a hypothetical reasonable businessman would, and on that basis deviated from the expert’s recommendations where it thought appropriate. The Tribunal noted that these adjustments were fact-specific and not subject to expert technique. 119 In the end, while the Tribunal did agree on a methodology it could not explain how the key elements of the valuation were attained to justify a 90% reduction of Claimant’s submitted valuation.

B. Phillips

In Phillips, the claimant was party to a 1965 Joint Structure Agreement (“JSA”) with Iran, which provided for the exploration and exploitation of petroleum resources in an offshore area in the Persian Gulf. 120 The JSA was terminated by Iran in 1979 and Phillips sought compensation and based its claim on a DCF valuation of its interest in the JSA, which it calculated to be USD 159,199,000. 121

i. Legal Standard

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117 Starrett, (Final Award) at 220-238. Also see Knull, Jones, Tyler & Deutsch, supra note 2, at 31.
118 Knull, Jones, Tyler & Deutsch, supra note 2, at 31
119 Id. at 32.
120 Phillips, ¶ 100- 154.
121 Id. ¶ 154.
The Tribunal ruled that Claimant was entitled to “just compensation” equal to the “full equivalent of the property taken,” calculated according to the BIT as the fair market value of the property at the date of the expropriation.\(^{122}\)

ii. Quantum of Damages

The tribunal accepted DCF calculations put forth by the parties’ experts as “evidence the Tribunal is justified in considering and reaching its decision on value,” since “a prospective buyer of the asset would almost certainly undertake such DCF analysis to help it determine the price it would be willing to pay,” but stated “it is not an exclusive method of analysis and that all relevant considerations must be taken into account.”\(^{123}\)

While it accepted the parties’ DCF valuations as guidance, the Tribunal disagreed with three main assumptions underlying the Claimant’s DCF valuation.\(^{124}\)

First, the Tribunal thought Claimant’s assumption about the number of barrels of oil that could be produced from the field was too high. Phillips had assumed production of approximately 375 million barrels, but the Tribunal lowered this to between 280 and 290 million barrels.\(^{125}\) Also, the Tribunal thought Phillips had overestimated the price of oil and underestimated its costs in its DCF valuation calculation. Lastly, the Tribunal thought the discount rate of 4.5\% applied by Phillips was much too low given the following risks relevant to the project:

> [F]irst, the risk that not all recoverable oil might, as a practical matter and for various reasons, be produced during the remaining years of the JSA; second, the risk that world oil prices during the remaining term of the JSA might prove lower than during the range foreseen; and third, the risk of coerced revisions of the JSA in the future would reduce its economic benefits.\(^{126}\)

Without making its own calculations or determining a more appropriate discount rate, the Tribunal held that Phillips had grossly underestimated its risk in the project even if

\(^{122}\) Id. ¶ 106.
\(^{123}\) Id. ¶ 113. As quoted in Bishop & Miles, supra note 34, at 41.
\(^{124}\) Bishop & Miles, supra note 34, at 41.
\(^{125}\) Id.
\(^{126}\) Phillips, ¶ 138.
they could not quantify such risk in either the discount rate or in the cash flow projections. The Tribunal dealt separately with the other central variables in the valuation: (1) quantity of oil recoverable;\textsuperscript{127} (2) anticipated price of oil;\textsuperscript{128} (3) anticipated production costs;\textsuperscript{129} and (4) the associated risks.\textsuperscript{130} The parties had submitted conflicting figures for each of the key variables and the Tribunal came up with ranges for these values it felt was reasonable given the evidence presented. The Final Award, however, ultimately is void of any quantitative conclusions on the cash flows resulting from these adjustments.

Regarding accounting for risk, the Tribunal heard the Testimony of Professor Stewart Myers, co-author of what is now the most widely used textbook on corporate finance.\textsuperscript{131} Professor Myers calculated the WACC of a sample of large oil companies to be 4.5\.\textsuperscript{132} Professor Myers also stated that, “the high risks associated with interests in oil reserves in politically unstable areas to a large extent reflect the possibility of expropriation,” which he understood was to be “excluded from this calculation.”\textsuperscript{133} Myers concluded, “other risks and uncertainties to the components of the DCF calculation should be accounted for in the respective forecasts, which the claimant purported to have done.”\textsuperscript{134} The Tribunal concluded that two risks specifically had not been accounted for in Claimant’s DCF analysis:

- the value of the Claimant’s JSA interests in September 1979 would have been reduced substantially by virtue of the perceived risks that Iranian or OPEC policies and NIQC priorities and financial and production limitations might prevent recovery of some of the oil that otherwise could be recovered;\textsuperscript{135} and

- the value of the Claimant’s JSA interests in September 1979 would have been reduced very significantly by virtue of the perceived risk that a buyer might encounter irresistible future pressures to modify the JSA in ways that would greatly reduce the anticipated future profitability of those JSA interests.\textsuperscript{136}

\textsuperscript{127} \textit{Id.} ¶ 117-124.
\textsuperscript{128} \textit{Id.} ¶ 125-131.
\textsuperscript{129} \textit{Id.} ¶ 132-134.
\textsuperscript{130} \textit{Id.} ¶ 135-153.
\textsuperscript{131} \textit{Id.} ¶ 136-138. The textbook is Brealey, Myers & Allen, \textit{supra} note 43.
\textsuperscript{132} \textit{Id.}
\textsuperscript{133} \textit{Id.}
\textsuperscript{134} \textit{Id.}
\textsuperscript{135} \textit{Id.} ¶ 148.
\textsuperscript{136} \textit{Id.} ¶ 153.
The result was that the Tribunal did not accept the Claimant’s discount rate or cash flow projections but it “did not, however, explain how the Claimant’s DCF analysis should have incorporated these risks nor did it set out its ultimate calculation of the quantum of the award.”\textsuperscript{137}

The Tribunal declined to make its own DCF analysis but rather looked at and determined the extent to which it agreed or disagreed with the assumptions underlying the Claimant’s valuation calculation.\textsuperscript{138} The result, as pointed out by one commentator, was to “leave the process of adjusting the results of the DCF calculation for the risks perceived by the Tribunal without explanation.”\textsuperscript{139} The final award was approximately USD 55 million, or just 1/3 of the damages that Phillips sought.\textsuperscript{140}

\textit{C. CME}

This was an \textit{ad hoc} arbitration under UNCITRAL rules. CME, a Dutch corporation with a Czech subsidiary CNTS engaged in media business, brought a dispute against the Czech Republic under the Netherlands-Czech BIT, alleging several violations of the BIT by the Media Council (Czech media regulatory body) and claiming damages over USD 500 million.\textsuperscript{141} In accordance with the license granted to a Czech company CET 21 in 1993, CNTS had become an exclusive provider of broadcasting services for the first private Czech TV channel TV Nova, which turned out to be extremely successful.\textsuperscript{142} Following the Media Council’s actions and omissions and the conflict with the head of CET 21 Dr. Zelezny, the exclusive position of the CNTS as a services provider for TV Nova was first undermined in 1996 and then fully destroyed in 1999.\textsuperscript{143} As a result,

\textsuperscript{137} Knull, Jones, Tyler & Deutsch, \textit{supra} note 2, at 39.
\textsuperscript{138} \textit{Phillips}. ¶ 113-114.
\textsuperscript{139} Knull, Jones, Tyler & Deutsch, \textit{supra} note 2, at 34.
\textsuperscript{140} \textit{Phillips}. ¶ 158.
\textsuperscript{141} \textit{CME Czech Republic B.V. (The Netherlands) v. The Czech Republic}, UNCITRAL, Partial Award, 13 September 2001; Final Award, 14 March 2003, at 9-14.
\textsuperscript{142} \textit{Id}.
\textsuperscript{143} \textit{Id}.
CNTS effectively went out of business, with its place being taken by other service providers.\textsuperscript{144}

i. Legal Standard

The UNCITRAL Tribunal determined that the collapse of CME’s investment was caused by the Media Counsel’s coercion against CME. In connection with the issue of causation, the Tribunal addressed the following questions: (1) whether CME itself contributed to the loss of its investment by agreeing in 1996 to give up the initial 1993 license arrangement; (2) whether the State’s liability should be reduced because the damage was caused to the investment not only by the Media Council but also by the actions of Dr. Zelezny; and (3) causation criteria to be applied.\textsuperscript{145} On the first issue, the Tribunal found there to be no contributory fault. On the second issue, the Tribunal found that a state should be held responsible for injury to an investor even when it is not the sole cause of the injury.\textsuperscript{146} The Tribunal then adopted a “foreseeability” test to determine the causation issue. The Tribunal ultimately found that Media Council’s actions and omissions constituted an expropriation of CME’s investment and had violated provisions of the BIT and that the FMV of CME’s investment should be compensated.\textsuperscript{147}

ii. Quantum of Damages

Both parties agreed that DCF was an appropriate method to establish the value of CNTS.\textsuperscript{148} However, the experts retained by the parties to perform the analysis arrived at substantially different results in their respective valuations (USD 546 million v. USD 335 million).\textsuperscript{149} Claimant’s expert also sought an additional control premium of USD 100 million on top of the enterprise valuation, bringing Claimant’s total valuation to USD 646

\textsuperscript{144} Id.
\textsuperscript{145} Id. at 97.
\textsuperscript{146} The Tribunal said nevertheless that the claimant should not receive more than one recovery for the harm suffered.
\textsuperscript{147} CME at 97-112.
\textsuperscript{148} Id. at 132.
\textsuperscript{149} Id. at 133.
million.\textsuperscript{150} While the parties’ experts agreed on a discount rate of 10.83%,\textsuperscript{151} they disagreed on two main assumptions regarding CNTS’ projected performance: (1) advertising market share estimates; and (2) the development of CNTS’ programming costs. Both experts followed the same valuation procedure in constructing their DCF models, consisting of two parts: (1) determining the investment’s value for a 10-year forecast period (1999 to 2008), for which an explicit forecast was prepared year by year; and (2) determining the investment’s terminal value or continuing value—the value for the period following the forecast period in perpetuity (based on experts’ cash flow projections for the last year of the forecast period).\textsuperscript{152}

In addition to the DCF valuation, Claimant offered four additional methods of valuation for the Tribunal to consider: (1) valuation by stock market analysts conducted throughout the 1990s; (2) valuation based on the past sale of shares\textsuperscript{153}; (3) valuation based on a “trading multiple”\textsuperscript{154}; and (4) valuation based on an offer from a Swedish company SBS to buy CME in 1999.\textsuperscript{155}

The Tribunal rejected the market analysts’ valuation in favor of what they saw as a more reliable method (DCF), and also because it believed analysts’ valuations were only as good as the facts and financial data they receive and it was impossible to determine the “level” and “quality” of financial data that they had received.\textsuperscript{156} The Tribunal disregarded

\textsuperscript{150} Id.

\textsuperscript{151} No indication is given in the award as to how the experts arrived at this rate. CME submitted that it was “based on the WACC in accordance with conventional valuation practice.” Id. ¶164.

\textsuperscript{152} Id. at 134-154.

\textsuperscript{153} CME suggested using the amount the company paid in 1997 to Dr. Zelezny for his 5.8% stake in the company. The Claimant argued that this figure could be extrapolated to calculate a purchase price for the entire 100% of CNTS in 1997, and then dividing by the company’s EBITDA for that year to derive a multiplier. Applying this multiplier, which CME asserted was 10x, to CNTS’ EBITDA for the year preceding expropriation yielded an amount of USD 542 million. Id. at 150-154.

\textsuperscript{154} A trading multiple was derived by dividing the market value of each company by its EBITDA for a given year, and then determining the average resulting ratio for all the companies analyzed. CME’s expert examined 29 publicly traded broadcasting companies around the world, and found that the European companies’ average ratio of EBITDA to market capitalization was 10.6. When applied to CNTS’ EBITDA, this multiple yielded a total value for the company of USD 582 million. Id.

\textsuperscript{155} SBS based its valuation of CME on management projections on CNTS’ profitability, to which SBS attached a multiple of 8x to CNTS’ projected operating cash flows for years 2000-2001 (USD 50 million). On this basis, the estimated value of CNTS as a basis for the merger transaction was USD 400 million (USD 50 million x 8). Id.

\textsuperscript{156} Id.
the valuation based on past sales of shares because they believed the price offered to Dr. Zelezny was influenced by his leverage over the company\textsuperscript{157} and thus a valuation of the entire enterprise based on this price could over-estimate the value of the company. The Tribunal did not address the valuation based on a trading multiple put forth by the Claimant. Regarding the SBS valuation, the Tribunal did not accept Claimant’s argument that the 8.0 multiple should be adjusted upward to reflect the risks of operating in Eastern Europe in contrast to other countries:

The Tribunal decided that these risks should not be compensated by increasing the multiple, as requested by the Claimant—in support the arbitrators referred to the jurisprudence of the Iran-United States Claims Tribunal, which had held that “a general deterioration of the economic situation of the country where the investment was made […] must not be compensated to the investor. The purpose of the investment treaty is not to put the investor into a more favorable position than he would have been in the normal development of his investment within the circumstances provided by the host country.”\textsuperscript{158}

The Tribunal did, however, give significant credence to the SBS offer:

The Tribunal, however, makes it clear that the adjusted DCF calculation due to its dependence on disputed assumptions can serve only as a confirmation of the Tribunal’s findings in assessment of the SBS offer, which as described above provided a firm value for CNTS at the amount of USD 400 million. The Tribunal does not see any need to review this finding in the light of the parties’ DCF valuations, which contain a rather high element of uncertainty and speculation.\textsuperscript{159}

After adjusting the experts’ projections for CNTS’ advertising market share and programming costs to follow a “more conservative approach,”\textsuperscript{160} the Tribunal made a “rough assessment” of the CNTS value as of the date of expropriation of approximately USD 400 million based on the DCF methods set forth by the parties and the 1999 SBS valuation.\textsuperscript{161} The Tribunal did not treat its DCF findings as an independent basis of awarding compensation but used these calculations to support its conclusions on the primary valuation approach—the SBS offer.

\textsuperscript{157} The Tribunal believed the price offered Dr. Zelezny was largely a result of his threats made to CME that he would sell his share to a questionable third party. \textit{Id} at 127.
\textsuperscript{158} \textit{Id.} at 132.
\textsuperscript{159} \textit{Id.} at 150.
\textsuperscript{160} \textit{Id.} at 151.
\textsuperscript{161} \textit{Id.}
Because CME maintained ownership of CNTS despite the destruction of the company’s value, the Tribunal considered that the residual value of the enterprise would have to be deducted from compensation. The total amount of the residual value was determined to be USD 38.5 million. The Tribunal awarded CME damages in the amount of USD 270 million plus simple interest of 10% per annum from the date of the arbitration request up to the date of payment, which amounted to approximately USD 350 million.

D. CMS

The claimant CMS, a US corporation, owned a 30% share of TGN, an Argentinian gas transportation company. At the time of the investment, Argentina granted TGN the right to calculate tariffs in US dollars, to convert them to pesos at the prevailing exchange rate, and to adjust tariffs every six months to reflect changes in inflation. These rights were derived from Argentinian law and the license granted to TNG for the period of 35 years (until 2027). During Argentina’s economic crisis from 1999 to 2002, Argentina first temporarily suspended and then permanently terminated both TGN’s rights to calculate tariffs in US dollars and its right to make inflation adjustments. The license provided, among other things, for tariffs calculated in US Dollars and annual tariff adjustments in accordance with the US Producer Price Index (“PPI”). During the crisis, the Argentinian Government initially froze the PPI adjustment and eventually passed a new law that: (1) eliminated the PPI adjustment altogether; and (2) “pesified” the tariffs (i.e. calculated them in Argentine Pesos instead of US Dollars). Because the Peso was at that time trading at approximately 3.6 Pesos to the Dollar, this “pesification” had the

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162 Id. at 118, 154.
163 Notice of arbitration occurred 22 February 2000 and the Final Award on damages was rendered 14 March 2003.
164 CMS. at 16-21.
165 Id.
166 Id.
167 Id.
effect of reducing TGN’s tariff revenues by roughly two-thirds and a significant loss of value of TGN as a company.\footnote{168 Id. at 22.}

CMS filed for ICSID arbitration claiming that the measure at issue was in violation of several of Argentina’s obligations under the Argentina-US BIT: (1) expropriation without compensation; (2) fair and equitable treatment; (3) arbitrary and discriminatory measures; and (4) umbrella clause.\footnote{169 Id. at 18-22.} CMS argued that the PPI freeze and pesification of tariffs violated these provisions of the BIT, and requested compensation of USD 261 million (the decreased value of its shares in TGN plus interest and costs).\footnote{170 Id. at 21-22.}

i. Legal Standard

Since no choice of law had been made in the relevant agreements between the parties or in the BIT, the Tribunal applied the law of the contracting State party in the dispute and “such rules of international law as may be applicable,” in accordance with the ICSID convention.\footnote{171 Id. at 34-35. Referring to article 42(1) of the ICSID CONVENTION, REGULATIONS, AND RULES, available at http://icsid.worldbank.org/ICSID/ICSID/RulesMain.jsp. Article 42(1) reads: (1) The Tribunal shall decide a dispute in accordance with such rules of law as may be agreed by the parties. In the absence of such agreement, the Tribunal shall apply the law of the Contracting State party to the dispute (including its rules on the conflict of laws) and such rules of international law as may be applicable.} Interpreting the provision, the Tribunal cited the recent annulment decision in \textit{Wena Hotels v. Egypt}, which held:

Some of these views have in common the fact that they are aimed at restricting the role of international law and highlighting that of the law of the host State. Conversely, the view that calls for a broad application of international law aims at restructuring the role of the law of the host State. There seems not to be a single answer as to which of these approaches is the correct one. The circumstances of each case may justify one or another situation […]. What is clear is that the sense and meaning of the negotiations leading to the second sentence of Article 42(1) allowed for both legal orders to have a role. The law of the host State can indeed be applied in conjunction with international law if this is justified. So too international law can be applied by itself if the appropriate rule is found in this other ambit.\footnote{172 CMS, ¶ 116. Quoting from \textit{Wena}, at 941.}
The result was the Tribunal finding it would apply the Argentine Civil Code and Constitution in addition to the BIT and customary international law, but not indicating what hierarchy if any would exist in the application. In its analysis on damages, however, the Tribunal referred only to international sources.

The Tribunal found no expropriation or violation of the BIT had taken place since CMS had not been deprived of enjoyment of its property and retained full control and ownership of the investment. The Tribunal did find, however, that the “pesification” of the Dollar standard in tariffs and the eradication of the PPI inflation-adjustment mechanism had significantly (if not entirely) “changed the legal and business environment under which the investment had been made and which was crucial for the investment decision.” The Tribunal accordingly found that the FET standard, “inseparable from stability and predictability,” had been breached.

The Tribunal went on to discuss the appropriate standard of reparation, noting that restitution is “by far the most reliable choice to make the injured party whole as it aims at the reestablishment of the situation existing prior to the wrongful act,” but in this case it would be “utterly unrealistic for the Tribunal to order the Respondent to turn back to the regulatory framework existing before the emergency measures were adopted.” Since restitution was not possible, the Tribunal found compensation to be the proper standard and stated that compensation should include any financially assessable damage including capital value, lost profits, and expenses. Since this was not an expropriation case the BIT did not provide for a standard of compensation and so the Tribunal exercised

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173 CMS, ¶ 120-122.
174 Id., ¶ 401-415.
175 Id.
176 Id., ¶ 266-284.
177 Id., ¶ 406.
178 Id., ¶ 402.
its discretion to apply the FMV standard that was well-established in BIT case law—as if it were an expropriation.\footnote{Id. ¶ 401-415.}

ii. Quantum of Damages

The Tribunal’s task was to calculate the FMV of the loss of value suffered by CMS on its TGN shares. CMS offered expert reports employing the DCF method and calculating damages of USD 243.6 million through the end of the licensed term in 2037.\footnote{Id. ¶ 418-423.} The Tribunal stated it had “no hesitation in endorsing [DCF]” as the “most appropriate [valuation method] in this case,” given that DCF techniques have been “universally adopted, including by numerous arbitral tribunals, as an appropriate method for valuing business assets,”\footnote{Id. ¶ 416.} but felt that “certain assumptions and arguments of those experts required some adjustments.”\footnote{Id. ¶ 418.} Argentina denied all claims alleged by CMS in its filed response but did not submit its own calculation of damages.\footnote{Id. ¶ 401-430.} Nevertheless, the Tribunal employed two valuation experts to assist in the calculation of damages.

The Tribunal first highlighted the challenge it faced trying to establish FMV for a loss in a case involving a license valid through 2027 (and possibly 2037):

\begin{quote}
This task is all the more challenging in that, in order to arrive at a value loss, it is necessary to evaluate not only what the years 2000 to 2027 would have been like had TGN’s license and regulatory environment remained unchanged but also to foresee what the future holds for TGN under the new (and not completely known) regulatory environment. The uncertainty surrounding Argentina’s future economic health, the exchange rate with the US dollar, the evolution of production costs, required future investments for the maintenance of the pipeline system’s efficiency and security are only some of the factors to be taken into account. That being said, such estimates need not be arbitrary or analogous to a shot in the dark; with the appropriate methodology and the use of reasonable alternative set of hypotheses, it is possible to arrive at figures which represent a range of values which can be rationally justified, even though there is general agreement that their accurateness can only be fully assessed some 22 years later.\footnote{Id. ¶ 418-420.}
\end{quote}
The Tribunal then went on to modify several of CMS’s assumptions. First, the Tribunal disallowed the potential extension of the License until 2037 in the damages calculation as being too speculative, which reduced damages by USD 10 million. Next, the Tribunal recalculated TGN’s equity value. CMS had calculated TGN’s equity value by “calculating the cash flows to equity and the cash flows to debt; adding them together and discounting the total by the WACC to arrive at TGN’s overall firm present value; then subtracting the present value of the debt to arrive at TGN’s present equity value.” The Tribunal rejected this approach calling it “detoured,” and determined that estimating cash flows to equity and discounting them at the cost of equity was a more direct and appropriate approach. This resulted in a net reduction in the damages calculation of USD 40 million. The Tribunal also modified CMS’s assumption about the Peso-Dollar exchange rate, reducing it from 3.59 to 2.97. Additionally, the Tribunal considered the equity discount rate put forth by CMS to be too high in the “but for” scenario but too low in the actual; so it reduced the former from between 41-45% to 18%, and increased the latter from 13.45% to 14.5%. Next, the Tribunal lowered CMS’s approximation of gas demand and revenues in the “but for” scenario and increased CMS’s revenues in the actual scenario. Finally, the Tribunal reversed CMS’s assumptions that tariffs would increase in the later years of the license in the “but for” scenario and decrease in the actual scenario.

The Tribunal did not address other factors used by CMS’s expert including: (1) USD export sales; (2) tax rate; (3) depreciation; (4) interest tax rate;

185 Id. ¶ 431.
186 Id. ¶ 430.
187 Id. ¶ 431-432.
188 Id. ¶ 432.
189 Id. ¶ 449.
190 Id. ¶ 450-452.
191 Id. ¶ 453.
192 Id. ¶ 442-448.
193 Id. ¶ 456-457.
(5) target debt ratio; (6) additional capital expenditures; and (7) an adjustment for country risk. The result of the Tribunal’s reevaluation of CMS’s submitted DCF calculation was a reduction by nearly 50% of the damages claim from USD 243.6 million to USD 133.2 million.\(^4\) The calculations that led to this figure, however, were not included in the final award.

\(E. \ ADC\)

In 1995, the Claimants, ADC Affiliate and ADC & ADMC Management, both Cypriot companies, entered into a contract with a Hungarian state agency ATAA to renovate, construct, and operate two terminals of Budapest-Ferihegy International Airport in Hungary.\(^5\) In late 1998 the Claimants successfully completed construction and renovation of the terminals and operated them until the end of 2001.\(^6\) However, in December 2001 a Decree issued by the Minister of Transport of Hungary resulted in the takeover of all the activities related to the operation of the Airport from the Claimants.\(^7\) In 2003, the Claimants initiated ICSID arbitration proceedings against Hungary under the Cyprus-Hungary BIT claiming their investment had been expropriated and requesting an award of damages in the amount ranging from USD 68 million to USD 99.7 million based on three alternative claims.\(^8\)

Claimants argued their investment in Hungary had been expropriated as a result of the Decree and that the expropriation had been unlawful because: (1) the taking was not in the public interest; (2) the taking did not comply with due process since the Claimants had been denied “fair and equitable treatment”

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\(^{194}\) Bishop & Miles, supra note 34, at 40.
\(^{195}\) ADC Affiliate Limited and ADC & ADMC Management Limited v. The Republic of Hungary, Decision on Jurisdiction, 15 February 2005; Award, 2 October 2006; ¶ 79-213.
\(^{196}\) Id.
\(^{197}\) Id.
\(^{198}\) Id. ¶ 241-49.
required by the BIT; (3) the taking was discriminatory; and (4) there had been no payment of just compensation.\textsuperscript{199}

Claimants contended that as a result of the Decree handed down by the Hungarian authorities, ADC Affiliate had been deprived of the stream of dividends from the Project Company and that ADC & ADMC Management had been deprived of the management fees payable to it by the Project Company.\textsuperscript{200} The Claimants also argued that the Project Company would have had the opportunity to participate in the financing, building and operation of the proposed new Terminal 2/C or in the renovation and reopening of Terminal 1.\textsuperscript{201}

i. Legal Standard

The Tribunal determined that Respondent had breached its obligations under the investment protection standards set out in Article 3 of the BIT for “fair and equitable treatment,” “unreasonable or discriminatory measures,” and “full security and protection.”\textsuperscript{202} However, the Tribunal found that the different violations did not have separate significance since the Cyprus-Hungarian BIT could only by its terms be used for expropriation claims.\textsuperscript{203} Consequently, the Tribunal saw violations of these obligations under the BIT as a breach of the “due process” requirement in the expropriation provision.\textsuperscript{204}

In determining whether to apply the BIT standard of compensation or the standard of customary international law to the quantum of damages, the Tribunal determined the appropriate standard was the default standard contained in customary international law for damages resulting from an illegal act. The Tribunal cited the \textit{Chorzów Factory} standard for compensation:

\textsuperscript{199} Id.
\textsuperscript{200} Id.
\textsuperscript{201} Id. ¶ 197-98.
\textsuperscript{202} Id. ¶ 445.
\textsuperscript{203} Id. ¶ 423-445.
\textsuperscript{204} Id. ¶ 476.
[R]eparation must, as far as possible, wipe out all the consequences of the illegal act and re-establish the situation that would, in all probability, have existed if that act had not been committed. […] Restitution in kind, or, if it is not possible, payment of a sum corresponding to the value which a restitution in kind would bear; the award, if need be, of damages for loss sustained which would not be covered by restitution in kind or payment in place of it.\footnote{Id. ¶ 484-85.}

The Tribunal determined that restitution could not take place in this case and that damages should be equal to a “sum corresponding to the value which a restitution in kind would bear,” in accordance with Chorzów, which it held was equal to the “market value of the expropriated investments.”\footnote{Id. ¶ 499.}

In assessing from what date damages would be used for the calculation of the award, the Tribunal had to decide whether it should assess the expropriated property as of the date of expropriation—January 1, 2002—or at the date of the Award. The Tribunal noted that this was a unique case since the value of the investment after the date of expropriation had risen significantly.\footnote{Id. ¶ 496.} In contrast, other arbitrations that apply the Chorzów Factory standard all invariably involve scenarios where there has been a decline in the value of the investment after regulatory interference. Given the increase in value of the asset since the date of the expropriation, the Tribunal found that the date of the valuation should be the date of the Award:

\[\text{[I]n the present, sui generis, type of case the application of the Chorzów Factory standard requires that the date of valuation should be the date of the Award and not the date of expropriation, since this is what is necessary to put the Claimants in the same position as if the expropriation had not been committed. This approach is not without support. The PCIJ in the Chorzów Factory case stated that damages are \textquote{not necessarily limited to the value of the undertaking at the moment of dispossession.}}\footnote{Id. ¶ 497.} \]
Consequently, the Tribunal decided that the FMV of the expropriated assets was to be assessed at the date of the Award taken as 30 September 2006.\textsuperscript{209}

ii. Quantum of Damages

To estimate the FMV of the investment at the time of the Award, the Tribunal applied the DCF method as proposed by Claimants. Claimants supported their assessment of damages with reports from its experts that relied on a 2002 Business Plan of the Project Company as a basis for the DCF calculations.\textsuperscript{210} The Tribunal agreed with the use of the business plan since the ATAA had itself approved the plan prior to issuing its Decree that led to the expropriation. The Tribunal therefore concluded that the 2002 Business Plan was “the best evidence before the Tribunal of the expectations of the parties at the time of expropriation for the expected stream of cash flows.”\textsuperscript{211}

The Tribunal almost unequivocally accepted the DCF valuation put forth by Claimant, referring to it as, “reasonable and reliable,” and “an example as to how damages calculations should be presented in international arbitration; [reflecting] a high degree of professionalism, clarity, integrity and independence by financial expert witnesses.”\textsuperscript{212} The Tribunal rejected, however, the claim for lost future development activities as too speculative given that Claimants had no “firm contractual rights to those possible projects,” and would thus be “unable to quantify, with any fair degree of precision, the damages that would have resulted from the loss of those alleged opportunities.”\textsuperscript{213} Importantly, the Tribunal did not set out any methodology, relevant assumptions, or projected figures relevant to the DCF calculation, nor did it indicate how far into the future the cash flows

\textsuperscript{209} Id. ¶ 499.
\textsuperscript{210} Id. ¶ 506-507.
\textsuperscript{211} Id.
\textsuperscript{212} Id.
\textsuperscript{213} Id. ¶ 515.
were projected or indicate the appropriate discount rate. The Tribunal did emphasize its discretion and the need for approximation when awarding damages:

[T]he assessment of damages is not a science. True it is that the experts use a variety of methodologies and tools in order to attempt to arrive at the correct figure. But at the end of the day, the Tribunal can stand back and look at the work product and arrive at a figure with which it is comfortable in all the circumstances of the case.214

Discussing the discount rate, the Tribunal agreed with Claimant’s discount rate calculation that was derived from “various airports.”215 The Tribunal declined to increase the discount rate based on any minority discount, since such discounts are “usually associated with privately held companies that have erratic or volatile cash flows [whereas] regulated entities such as [this project], do not typically attract an illiquidity discount because of the relatively stable cash flows associated with them.”216 Further, the discount rate included a country risk premium, which the Tribunal accepted while not discussing how this was calculated.217

Taking 30 September 2006, as the probable date of the Award, the Tribunal awarded Claimants a combined USD 76 million (ADC Affiliate USD 55,426,973 and ADC & ADMC Management USD 20,733,027), in lock-step with Claimant’s damages valuation and without mention of any equitable considerations.218

F. Sempra

Sempra Energy International (“Sempra”), a US investor, invested an alleged total of USD 350 million in two Argentinean gas distribution companies, Camuzzi Gas Pampeana (“CGS”) and Camuzzi Gas del Sur (“CGP”), which had been

214 Id. ¶ 521.
215 Id. ¶ 511. See also Knull, Jones, Tyler & Deutsch, supra note 2, at 44: “The award does not specify exactly how the beta applied was derived from the betas of various airports or how the betas of the various airports used to derive the applied beta were calculated.”
216 Id. ¶ 512. The tribunal also refused to apply a minority discount because the claimants had various shareholder protections in the project agreement.
217 Id. ¶ 511. The award did not explain how this country risk premium was calculated.
218 Id. ¶ 543.
created during the privatization campaign in the early 1990s. At this time, in order to attract foreign investors, Argentina enacted legislation that guaranteed tariffs for gas distribution would be calculated in US Dollars and that automatic semi-annual adjustments of tariffs would be based on the US PPI. The Argentinean government also undertook to reimburse to CGS and CGP the subsidies set for residential customers of Patagonia. Relevant obligations were replicated in the licenses granted to CGS and CGP until 2027.

During the economic crisis in Argentina from 1998-2002, the Argentinean government reneged on these obligations passing the “Emergency Law,” which “pesified” the tariffs and abolished the PPI adjustment, which led to a substantial reduction in the profitability of the gas distribution business and return on Sempra’s investment. The Government also stopped reimbursing the subsidies. To avoid the default of CGS and CGP, Sempra lent them USD 56 million in December 2001.

In 2002, Sempra initiated ICSID arbitral proceedings claiming multiple violations of the 1991 US-Argentina BIT and requesting damages in the amount of USD 209.3 million. The Tribunal found that Argentina’s measures breached the FET standard and the umbrella clause. Other claims brought by Sempra were dismissed. The Tribunal also rejected Argentina’s plea of a state of necessity but took the circumstances of the economic crisis into account when assessing damages.

220 Id.
221 Id.
222 Id.
223 Id.
224 Id.
225 Id.
226 Id.
227 Id. at ¶ 290-314.
228 Id.
229 Id. at ¶ 325-392, 397.
i. Legal Standard

There was no choice of law by the parties or in the BIT, so the Tribunal applied Article 42(1) of the ICSID Convention. Under this provision, the Tribunal held that both Argentine and international law had “a role to perform in the resolution of the dispute.” The Tribunal concluded that “there is generally no inconsistency between the Argentine law and international law insofar as the basic principles governing the matter are concerned” but added that “[t]o the extent that there is any inconsistency between Argentine law and the treaties in force, however, international law will prevail.”

The Tribunal found that the “measures in question in this case have beyond any doubt substantially changed the legal and business framework under which the investment was decided and implemented” and that, therefore, the Respondent committed “an objective breach of the fair and equitable treatment due under the Treaty […] to the detriment of the Claimant’s rights.” Regarding the umbrella clause, the Tribunal noted that “ordinary commercial breaches are not the same as Treaty breaches” and that “such a distinction is necessary to avoid an indefinite and unjustified extension of the umbrella clause.” The Tribunal went on to find that the measures at issue by the Argentinean government were much more than “ordinary” contractual breaches, and were “major legal and regulatory changes introduced by the State” that gave rise to an extraordinary “change of policy.” The Tribunal found that the License granted was the “ultimate expression of a series of complex investment arrangements made with the specific intention of channeling the influx of capital into newly privatized companies,” and that having breached the obligations included in the license, the Respondent breached the umbrella clause.

230 Id. at ¶ 325-392.
231 Id. at ¶ 231-240.
232 Id. at ¶ 290-314.
233 Id. at ¶ 305-314.
234 Id. at ¶ 325-392.
235 Id. at ¶ 290-314.
Regarding the claim that the measure at issue had expropriated without compensation Claimant’s investment in equity in CGS and CGP and its contractual rights arising from the License scheme, the Tribunal decided that there had been no direct expropriation since title to Claimant’s property had not been affected and there had been no intention to expropriate. The Tribunal also rejected Claimant’s argument that there had been an indirect expropriation on the grounds that such a finding “would require that the investor no longer be in control of its business operation, or that the value of the business have been virtually annihilated,” which was not the case.

In awarding damages, the Tribunal cited its adherence to the “principles governing compensation under international law” as established in the Chorzów Factory case and codified in the ILC Articles on State Responsibility. The tribunal noted that the BIT contained rules on compensation for expropriation (FMV), and stated that in cases where a non-expropriatory breach caused “significant disruption to the investment made”, the standard of compensation might be the same as the standard for expropriation:

Although there is some discussion about the appropriate standard applicable in such a situation, several awards of arbitral tribunals dealing with similar treaty clauses have considered that compensation is the appropriate standard of reparation in respect of breaches other than expropriation, particularly if such breaches cause significant disruption to the investment made. In such cases it might be very difficult to distinguish the breach of fair and equitable treatment from indirect expropriation or other forms of taking and it is thus reasonable that the standard of reparation might be the same.

The Tribunal referred to fair market value as a “commonly accepted standard of valuation and compensation” and stated it would be “the most appropriate
standard to apply in this case to establish the value of the losses, if any, suffered by the Claimant as a result of the Treaty breaches which occurred.”

The Tribunal also emphasized several times that while it was reluctant to accept the necessity defense raised by Argentina, it would consider effects of the crisis at the valuation stage:

While these unfortunate events do not in themselves amount to a legal excuse, neither would it be reasonable for the Claimants to believe it remains wholly unaffected by them. The economic balance of the License was clearly affected by the crisis, and just as it is unreasonable for the licenses to bear the entire burden of such a changed reality, neither would it be reasonable for them to believe that nothing has happened in Argentina since the License was approved.

The Tribunal called accounting for the economic crisis in its award “a measure of justice the Tribunal was bound to respect.”

ii. Quantum of Damages

Claimant made the following four claims with respect to damages: (1) loss of equity value in the amount of USD 143.49 million; (2) historical damages concerning the US PPI adjustments in the amount of USD 9.86 million; (3) unpaid subsidies in the amount of USD 38.63 million; and (4) loss on a loan in the amount of USD 17.4 million. Both Claimant and Respondent submitted reports by their retained experts, with Respondent submitting an additional valuation report by a second retained expert. The Tribunal was assisted by an additional

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240 Id. at ¶ 404. The Tribunal used the definition of “fair market value” found in the International Glossary of Business Terms, American Society of Appraisers, ASA website, June 6, 2001, p.4. “[…] the price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical and able seller, acting at arm’s length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts.”

241 Id. at ¶ 269.

242 Id. at ¶ 397.

243 Id. at ¶ 406.

244 Id. at ¶ 399. Claimant retained as its expert Dr. Manuel A. Abdala and Dr. Pablo T. Spiller of LECG, LLC; and Respondent retained Professor Diego J. Dzodan of the Universidad Torcuato Di Tella.
valuation expert who it appointed with the agreement of the parties.\textsuperscript{245} Both the expert reports submitted by the parties and two additional reports prepared by the Tribunal’s expert were “transmitted to the parties; their comments on each report were received by the Tribunal and given due consideration.”\textsuperscript{246} Both parties’ experts adopted DCF as an appropriate methodology but followed “different paths” to arrive at their conclusions.\textsuperscript{247}

Regarding the equity value loss, Respondent’s expert proposed an original way of measuring compensation by establishing the present value of future cash flow from 2005 to 2027 under the actual conditions prevailing in Argentina, adding this value to the compounded value of historical cash flows from 1992 to 2004, and deducting from the resultant figure the compounded value of Claimant’s investment.\textsuperscript{248} The Tribunal rejected this approach without challenging its economic validity, because “[t]he problem at hand […] is not to judge whether the companies have been fairly remunerated in the past but to determine what they were worth in 2001 given their prospects over the remaining years of the licenses.”\textsuperscript{249} Instead, the Tribunal opted for the more conventional approach used by Claimant’s expert, which consisted of comparing the DCF values of the CGS and CGP with the impact of the Argentinean measures (the “pesification scenario”) and without the impact (the “but-for scenario”); with the difference in the values being the main element of compensation, adjusted by the other heads of damages mentioned above.\textsuperscript{250}

The Tribunal adopted Claimant’s valuation model but made adjustments to four of its underlying assumptions: (1) the asset base; (2) the discount rate; (3) the tariff increases that would have been approved; and (4) the consumption

\textsuperscript{245} Id. The Tribunal was assisted by Dr. Luis Carlos Valenzuela, of Bogota, Colombia.
\textsuperscript{246} Id.
\textsuperscript{247} Id. at ¶ 407.
\textsuperscript{248} Id. at ¶ 413.
\textsuperscript{249} Id.
\textsuperscript{250} Id. at ¶ 411-412.
effect. First, the Tribunal lowered the asset bases of both CGP and CGS by significant amounts (from USD 461.72 million to USD 419.13 million for CGP; and from USD 241.19 million to USD 220.23 million for CGS) from what Claimant had proposed to make them more in line with an intercompany asset base valuation received by the Argentinean national energy company, ENARGAS, done in 2002 by an independent private consultant firm. Next, it adopted the cost of equity (“COE”) proposed by the Claimant of 16.28% for CGP and 16.75% for CGS over the lower 15.56% COE for both companies proposed by Respondent, because the higher rate was in its view “reasonable” in both scenarios and was within the range of the historical cost of equity proposed by Claimants’ expert of 16 to 22% from 1992 to 2001 for the companies.

Importantly, the Tribunal rejected the idea of using the sovereign bond spread to calculate an additional country risk premium:

In fact, there is first a difference between the Argentine government’s credit risk and the country risk. It has been clearly established before the Tribunal that, even in the latter part of 2001, the country risk premium required by an investor in a private company in Argentina was significantly lower than the Government’s credit risk premium during the same period.

The Tribunal went further, noting that the difference was “even more significant” for energy companies like CGP and CGS because of their “regulated status and their relatively lower business risk,” as energy companies.

Next, it greatly reduced the peso tariff increase assumed by the Claimant to take place in 2002, which reduced the EBITDA assumed during the period. Finally, it altered Claimants’ assumptions regarding consumption to reflect a higher price elasticity of demand during the period following the economic

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251 Id. at ¶ 416.
252 Id. at ¶ 419-428.
253 Id. at ¶ 430. It is interesting to note here that the discount rate proposed by the investor was higher than that proposed by the Respondent. The situation is almost always reversed, with the investor arguing for a lower discount rate and thus higher projected cash flows from the project.
254 Id. at ¶ 431.
255 Id. at ¶ 433.
256 Id. at ¶ 433.
257 Id. at ¶ 438-445.
The net result of these changes was an equity value of USD 168,240,220 million for CGP and an equity value of USD 33,434,238 million for CGS under the but-for scenario.\textsuperscript{259}

The valuation in the pesification scenario was performed on the basis of actual conditions present in Argentina after the valuation date, taking into account the measures at issue in the dispute. The Tribunal noted that it was inclined in the initial proceedings to endorse the valuation set forth by the Claimant, but that it accepted adjustments made to Claimant’s model to reflect memorandum’s of understanding (“MOUs”) introduced by the Respondent reflecting an understanding between the parties as to the timing and severity of future tariffs on the transportation and distribution of natural gas.\textsuperscript{260} The result was an equity value of USD 21.51 million for CGP and USD -58.03 million (in practice 0 for the shareholders) for CGS.\textsuperscript{261} Thus, the total equity value loss (equity value in the but-for scenario less equity value in the pesification scenario) for CGP was determined to be USD 146.729 million and USD 33.434 million for CGS; with the total equity value loss to Claimant being USD 54.436 million (given Claimant’s 37.1% stake in the company) for CGP and USD 12.965 million (38.78% stake) for CGS, for a total equity loss of USD 67,402,603.

Regarding the historical damages, the Tribunal found Claimant was entitled to the payment of PPI adjustments that were suspended and not allowed to them in 2000 and 2001, in the amount requested by the Claimant.\textsuperscript{262}

Regarding the non-payment of subsidies the Tribunal determined that under a December 2001 Subsidies Agreement, the amount of subsidies owed was

\textsuperscript{258} Id. at ¶ 446-450. It is not clear from the award where the tribunal came up with percentage change in consumption variants by year listed in ¶ 445.

\textsuperscript{259} Id. at ¶ 450.

\textsuperscript{260} Id. at ¶ 451-459.

\textsuperscript{261} Id. at ¶ 459.

\textsuperscript{262} Id. at ¶ 467-469. Respondent did not dispute this claim. However, Claimant in his closing statement reduced the total amount requested on this head of damage by a small amount from that which he had requested in the initial valuation report, which reduced the damage by approximately USD 1 million.
approximately USD 108 million. The Tribunal also held that the claim for unpaid subsidies should cover the period ending on December 31, 2001, and that the subsidies Respondent had paid or committed to pay subsequently to that date should be deducted.263

Regarding the loss on the USD 56 million loan given by Claimant to CGP and CGS in 2001 to avert default, the Tribunal held that this loan qualified as an investment under the definition in the BIT, but that the claim was only valid with respect to CGS (which had a negative equity value). The Tribunal calculated the loss on the loan as a percentage of the negative equity value of CGS, in the fixed amount of USD 15.949 million.264

The total amount of compensation calculated by summing up the four heads of damages was fixed USD 128.250 million.265 Interest was ordered to be paid starting 1 January 2002, at the successive 6-month LIBOR rates, plus a 2% annualized premium, compounded semi-annually. The Tribunal also held that Claimant was not entitled to post-Award interest since he had initially requested interest to the date of the Award and only made a request for post-Award interest after oral arguments.266

The Tribunal noted that some of its assumptions were “not the result of a sophisticated equation but a reasonable estimate,”267 but it laid out its conclusion and underlying reasoning for each of the components in detail, including the resulting quantification of the damages equation. As one expert noted, “while certain of the tribunal’s conclusions may be subject to dispute, the detailed discussion of the subject by component made the scope of the tribunal’s judgments apparent, narrowed the impact of any individual estimate and created a

263 Id. at ¶ 470-480.
264 Id. at ¶ 462-466.
265 Id. at ¶ 482.
266 Id. at ¶ 483-486.
267 Id. at ¶ 444.
transparent record of the tribunal’s decision-making process for the benefit of the parties before it as well as subsequent parties, advocates and tribunals.”

IV. Conclusion

The use of DCF by tribunals to value compensation in investment disputes has evolved and increased in sophistication but it remains difficult to discern general principles or methodologies that are accepted on a wider scale. The limited number of expropriation arbitrations employing DCF have begun to illuminate the issues, but have not fully elaborated on how the DCF methodology is to be properly used. A more rigorous framework is needed in this regard, specifically with respect to the issue of how to appropriately incorporate sovereign risk in emerging markets. Clarity is required because, even though awards are not precedent, practitioners and advocates look to them for guidance and to establish predictability.

Indeed it is the job of Tribunals to render their awards in light of all factual, legal, and equitable circumstances and not be bound by one particular legal or economic theory; but where the result is justified by little more than a “black-box” calculation, future parties and arbitrators are left with little guidance or understanding of how the result was achieved and how to advocate these issues in future disputes. This uncertainty leads parties, arbitrators, and advocates to “replow the methodological ground each time, with the risk, each time, that variation from tested methods can lead to significant error,” and tremendous drains on time and money for everyone involved. Given the magnitude of the impact of uncertainty on value, failure to use the best tools available for valuation

\[\text{268 Knull, Jones, Tyler & Deutsch, supra note 2, at 48.}\]
\[\text{269 Marboe, supra note 2, at 723.}\]
\[\text{270 Id. at 33.}\]
\[\text{271 Knull, Jones, Tyler & Deutsch, supra note 2, at 49-50.}\]
risks error and failure to explain awards renders outcomes less predictable and furthers the perception of arbitration as a “splitting-the-baby” process.
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