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“GOING CONCERN” AS A LIMITING FACTOR ON DAMAGES IN INVESTOR-STATE ARBITRATIONS

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Arbitral tribunals in investor-state arbitrations have utilized a range of methodologies to estimate damages suffered by investors as a consequence of treaty violations by sovereigns. If the state expropriated a business or property in which claimant had invested, or otherwise destroyed its value, it is customary to compensate claimant by an award equal to the fair market value of the asset by utilizing, separately or in combination, the income and the market approaches to valuation. The income method (a.k.a. the discounted cash flow (“DCF”) approach) typically entails discounting the anticipated future cash flows that the investment would have generated but-for the offending measure at a discount rate that reflects all the project’s risks.

The DCF methodology is commonly used by economists to value businesses. However, some tribunals have expressed reluctance to employ it unless the business or property in which the claimant invested was a “going concern” as of the valuation date. In some cases, this is defined as a concern that has an earnings history of at least 2-3 years. The unease of these tribunals, sometimes expressed and sometimes implicit, is that calculating cash flows into the future is speculative unless the concern has a track record of earning profits. In those cases, these tribunals limit recovery to sunk costs — the amount of money invested by claimant in the business or property — or look at other measures such as a current property valuation. This may be a safe result, but it is inappropriate in most cases because the only reason claimant invested its funds, thus putting them at risk, was

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the expectation that they would generate a return larger than the original investment. Imposing a *de facto* “going concern” requirement on the recovery of lost future profits will often frustrate the purpose of Bilateral Investment Treaties to encourage risk-taking investments by foreign investors.

This article explores the following questions regarding the “going concern” limitation on DCF recoveries:

- a. How is “going concern” defined?
- b. Does the definition differ for different types of projects or industries?
- c. How do arbitral tribunals apply the “going concern” criterion in determining what damages methodology to utilize?
- d. Does it make economic sense to apply the “going concern” criterion to projects or enterprises that have been substantially de-risked?
- e. Are there alternative methodologies for addressing investment risk?

I. STANDARDS FOR DETERMINING DAMAGES

The accepted standard for computing damages in investment arbitration is the Chorzów Factory compensation standard, which states 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..... 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.

Factory at Chorzów Factory (Ger. v. Pol.), P.C.I.J. (ser. A), No. 17 (Sept. 13). Tribunals often decide that actual restitution cannot take place and therefore, proceed to determine a sum corresponding to the value which restitution in kind would bear in accordance with the *Chorzów Factory* dictum. See *ADC Affiliate*

Ltd. v. Republic of Hungary, ICSID Case No. ARB/03/16 (Award dispatched Oct. 2, 2006), ¶¶484-85. The *Chorzów Factory* formulation of reparation in the form of compensation is widely viewed as consistent with the principles of restitution laid out in the International Law Commission (“ILC”) Articles on State Responsibility, Article 36. See SERGEY RIPINSKY & KEVIN WILLIAMS, DAMAGES IN INTERNATIONAL INVESTMENT LAW 182-86, 188 (2008). See also MARK KANTOR, VALUATION FOR ARBITRATION: COMPENSATION STANDARDS, VALUATION METHODS AND EXPERT EVIDENCE (2008):

Arbitral tribunals applying public international law also often focus on fair market value. Crawford’s Commentaries on the International Law Commission’s 2001 Draft articles on Responsibility of States for Internationally Wrongful Acts point out that “[c]ompensation reflecting the capital value of property taken or destroyed as a result of an internationally wrongful act is generally assessed on the basis of ‘fair market value’ of the property lost.”

Id. at 34 (citing JAMES CRAWFORD, THE INTERNATIONAL LAW COMMISSION’S ARTICLES ON STATE RESPONSIBILITY 255 (2002)).

The applicable investment treaty provisions often state, in general terms, the measure of compensation in the event a foreign investment is compromised by actions of the State. For example, in *Wena Hotels v. Arab Republic of Egypt*, ICSID Case No. ARB/98/4 (Award dated Sept. 8, 2000), the treaty between the United Kingdom and Egypt provided that, in the event of an expropriation, private investors shall be entitled to “prompt, adequate and effective compensation” and “such compensation shall amount to the market value of the investment immediately before the expropriation.” *Id.* ¶118. See also *Tecnicas Medioambientales Tecmed S.A. v. United Mexican States (“Tecmed”)*, ICSID Case No. ARB (AF)/00/2 (Award dispatched May 29, 2003), ¶187 (under the Spain-Mexico BIT, “[c]ompensation shall be equivalent to the fair market value of the expropriated investment immediately before the time when the expropriation took place ...”).

In *CMS v. Argentina*, the tribunal defined, in terms consistent with *Chorzów*, the sum corresponding to the market value of the enterprise as:

“...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 arms 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.”

CMS Gas Transmission Co. v. The Argentine Republic, ICSID Case No. ARB/01/8 (Award dispatched May 12, 2005), ¶402.

This classic formulation of market value, which is viewed as being consistent with the international standard embodied in the *Chorzów Factory* dictum and ILC Articles, provides the framework for application of valuation methodologies in investment cases, and for understanding the rationale for and pitfalls of applying the “going concern” criterion to selection of the proper methodology.

A. *Methodologies for Determining Market Value of Investment*

There are three generally accepted methodologies to determine an asset’s value, commonly referred to as the Income Approach, the Market Approach, and the Asset Approach.¹

1. Income Approach

The Income Approach, the most widely used valuation approach, is based on the assumption that the value of an asset is equal to the present discounted value of its expected future cash flows.² Under the Income Approach the anticipated future cash flow is discounted back to a present value by employing a discount rate commensurate with the risks of the anticipated cash flow. Thus this methodology to calculate the market value of an enterprise is called Discounted Cash Flow or “DCF.” As the Tribunal stated in *Occidental Petroleum Corp. v. Republic of Ecuador*, ICSID Case No. ARB/06/11 (Award dispatched Oct. 5, 2012):

¹ See *International Valuation Standards Framework (“IVS Framework”)*, ¶ 56 (2011).

² See *id.*, ¶¶59-62. See also JAMES R. HITCHNER, FINANCIAL VALUATION, APPLICATIONS AND MODEL 97-98 (3d ed. 2011) (hereinafter “HITCHNER”).

...[T]he standard economic approach to measuring the fair market value today of a stream of net revenues (i.e., gross revenues minus attendant costs) that can be earned from the operation of a multi-year project such as OEPC’s development of Block 15 is the calculation of the present value, as of 16 May 2006, of the net benefits, or “discounted cash flows.” ... The difference between these two cash flow streams (the “but for” state of the world with no termination less the actual state of the world with contract termination), discounted to the date of the actual contract termination, **is the economically appropriate and reliable measure of the cumulative harm** suffered by the Claimants as a consequence of the contract termination.

Id., ¶708 (emphasis added).

2. Market Approach

The Market Approach determines the value of an asset by reference to a group of reasonably comparable companies for which values are known.³ The values may be known because the guideline companies are either publicly traded on an open stock exchange or because they were recently sold and the terms of the transaction were disclosed. These methods (the “comparable companies” method and the “comparable transactions” method) are often considered to be secondary and are used in support or to confirm the results obtained using the DCF method.

Yet in the recent *Yukos* award, the tribunal found the DCF estimate contained in Claimant’s expert report unreliable, in part due to errors and in part based on his admission “that his DCF analysis had been influenced by his own predetermined notions as to what would be an appropriate result.” *Hulley Enterprises Ltd. v. Russian Federation*, PCA Case No. AA 226 (Final Award dated 2014), ¶1785. The tribunal proceeded to employ a market approach to calculating damages, resulting in a damages award to Claimant of \$50 billion (after a 25 percent reduction for contributory fault). *Id.*, ¶1827. The tribunal explained:

By contrast to all of the other methods canvassed above, the Tribunal does have a measure of confidence in the

³ See *IVS Framework*, *supra*, ¶¶57-58. See also *HITCHNER*, *supra*, at 267.

comparable companies method as a means of determining Yukos' value.... The Tribunal for its part finds that the comparable companies method is, in the circumstances, the most tenable approach to determine Yukos' value as of 21 November 2007, and therefore the starting point for the Tribunal's further analysis.

Id., ¶1787.

3. Assets Approach

The Asset Approach, sometimes referred to as the Cost Approach, uses the books of the company to identify the fair value of its assets, both tangible and intangible, and its liabilities to determine a net value for the company. It equates the value of a business to the value of its assets net of liabilities. Generally, this approach starts with the balance sheet included in financial statements as close to the valuation date as possible and then restates the tangible and intangible assets and liabilities to their fair market values.⁴ Whereas the market and the income approaches focus on the income statement, the asset approach primarily utilizes the company's balance sheet. The asset approach is utilized when a company is no longer operating and is preparing for liquidation. Other times, the asset approach can be used when the business is based on its assets, as in the case of investment vehicles, and not on income, such as a production company.

The Asset Approach is the least commonly employed approach to valuation among economists and other valuation professionals.⁵ Yet, it is the often favored method by tribunals as it seems to fit with the *Damnum emergens* component of damages and tribunals often feel more comfortable assessing past losses and putting the investor in the position it was in before the investment was made, rather than "speculate" valuing an investment to ascertain the position in which it would have been in, had the wrongful act not occurred.

The tribunal in *Tecmed v. Mexico, supra*, rejected the DCF approach to valuing a landfill and instead awarded damages

⁴ See *IVS Framework, supra*, ¶¶63-64. See also *HITCHNER, supra*, at 317.

⁵ See *HITCHNER, supra*, at 320.

based on the acquisition price plus amounts invested by the Claimant up to the time of expropriation and two years’ worth of profits. *Id.*, ¶195. The tribunal explained:

The Arbitral Tribunal has noted both the remarkable disparity between the estimates of the two expert witnesses upheld throughout the examination directed by the parties and the Arbitral Tribunal at the hearing held on May, 20-24, 2002, and also the considerable difference in the amount paid under the tender offer for the assets related to the Landfill — US\$ 4,028,788 — and the relief sought by the Claimant, amounting to US\$ 52,000,000, likely to be inconsistent with the legitimate and genuine estimates on return on the Claimant’s investment at the time of making the investment. The non-relevance of the brief history of operation of the Landfill by Cytrar — a little more than two years — and the difficulties in obtaining objective data allowing for application of the discounted cash flow method on the basis of estimates for a protracted future, not less than 15 years, together with the fact that such future cash flow also depends upon investments to be made — building of seven additional cells — in the long term, lead the Arbitral Tribunal to disregard such methodology to determine the relief to be awarded to the Claimant.

Id., ¶186.

II. APPLICATION OF “GOING CONCERN” CRITERION IN VALUATION OF INVESTMENTS

In some cases, tribunals decided that, despite the fact that an investment would likely generate future earnings, the fact that it could not be considered a “going concern” was an indication that it faced so much risk that its future profits were speculative and thus supported arguments against the use of the DCF methodology (or market approaches to valuation). For example, in *Phelps Dodge Corp. v. Islamic Republic of Iran*, 10 IRAN-U.S. CL. TRIB. REP. 121 (1986), Phelps Dodge lost its investment in an Iranian company (SICAB) that manufactured wire and cable products as a result of the Iranian revolution in 1979. The tribunal acknowledged that SICAB “*could reasonably have been expected to become profitable in the long term, given its well-equipped factory*” *Id.*, ¶30. However, the tribunal stated that it

“cannot agree that SICAB had become a ‘going concern’ prior to November 1980 so that such elements of value as future profits and goodwill could confidently be valued.” *Id.* Describing these measures of value as “highly speculative” in the case of SICAB, the tribunal observed that, in light of the Iranian Revolution, “*SICAB’s short-term prospects would certainly have been seen in November 1980 as sufficiently uncertain to require considerable discounting of the anticipated long-term profits.*” *Id.* Paradoxically, however, rather than discounting an estimate of SICAB’s long-term earnings, the tribunal limited Phelps Dodge to recovery of its cash expenditures of \$2.4 million. *Id.*, ¶31. This reflects the attitude of some tribunals that, in the case of investments that face risks that may impair the long-term profitability of the enterprise, consider that valuing the enterprise using a DCF methodology would be “speculative.”

As will be discussed further below, it is a tenet of valuation theory that the value of an asset is its capacity to generate future returns, which are, inherently, risky. Some arbitral tribunals have contended that an asset’s degree of risk can neatly be ascertained depending on whether it is a “going concern” or not. In general, however, assets face a continuum of risk that is difficult to estimate with precision and that can hardly be categorized in one of two disjointed buckets: “going concern” or “not-going concern.” While the future is always uncertain, as we will see, both the Income Approach and the Market Approach strive to estimate the impact of risks on value.

A. *Definition of “Going Concern”*

Tribunals that have applied the “going concern” limitation on valuation of enterprises in investment cases have not provided a clear definition of that term. As Kantor has noted, the International Accounting Standards, International Standard on Auditing, GAAP and GAAS define “going concern” in terms of whether an entity can meet its obligations as they become due or whether management intends to liquidate the entity. Mark Kantor, *Valuation for Arbitration: Uses and Limits of Income-Based Valuation Methodologies*, 4 T.D.M. (Nov. 2007), at 30. As Kantor notes:

Start-up companies and companies engaged in the development or construction stages of their activities

do, of course, generally satisfy these accounting and regulatory standards as a “going concern.”

Id. at 31. Of course, start-up companies would not have a history of profitability that some tribunals demand to qualify as a “going concern.”

Tribunals have cited the World Bank Guidelines on the Treatment of Foreign Direct Investment (“Guidelines”) as a touchstone for their analysis. The Guidelines generally state that “[w]ithout implying the exclusive validity of a single standard of fairness by which compensation is to be determined ... such determination will be deemed reasonable if conducted as follows: (i) for a going concern with a proven record of profitability, on the basis of the discounted cash flow value.” The Guidelines define “going concern” as follows:

[A] “going concern” means an enterprise consisting of income-producing assets which has been in operation for a sufficient period of time to generate the data required for the calculation of future income and which could have been expected with reasonable certainty, if the taking had not occurred, to continue producing legitimate income over the course of its economic life in the general circumstances following the taking[.]

Guidelines, Section IV, ¶6.⁶ See *Al-Bahloul v. Tajikistan*, SCC Case No. 064/2008 (Final Award dated June 8, 2010), ¶71.

Under U.S. generally accepted accounting principles (“GAAP”), and similar rules in other countries, financial statements are prepared under the presumption that the reporting entity will be able to continue as a going concern; that is, the entity will

⁶ In contradistinction to the definition included in the Guidelines, in Valuation Theory the opposite of a “going concern” is a distressed company, when there is a significant likelihood that a firm will not survive the immediate future. In those cases there are at least four methods to estimate values with the DCF method: run simulations and allow for the possibility that a string of negative outcomes can push the firm into distress; use probability distributions to estimate expected cash flows that reflect the likelihood of distress; adjust the DCF estimate for the probability of distress; and value the firm as an unlevered firm and then consider both the benefits (tax) and costs (bankruptcy) of debt. See ASWATH DAMODARAN, INVESTMENT VALUATION: TOOLS AND TECHNIQUES FOR DETERMINING THE VALUE OF ANY ASSET ch. 22 (3d ed. 2012).

continue to operate such that it will be able to realize its assets and meet its obligations in the ordinary course of business (the going concern presumption). Financial statements are prepared under the going concern presumption unless and until an entity's liquidation is imminent. When liquidation is imminent, an entity starts applying the liquidation basis of accounting.⁷

To the extent tribunals have attempted to define "going concern," they have focused on whether the enterprise at issue had a history of earnings before the expropriation or other adverse action of the sovereign. In *Metalclad Corp. v. United Mexican States*, ICSID Case No. ARB(AF)/97/1 (Award dispatched Aug. 30, 2000), Metalclad successfully established that the Mexican states had violated NAFTA by interfering with its investment in a hazardous waste landfill which had never gone into operation. In rejecting the DCF valuation of the landfill, the tribunal stated:

However, where the enterprise has not operated for a sufficiently long time to establish a performance record or where it has failed to make a profit, future profits cannot be used to determine going concern or fair market value [Asian Agric. Prods. v. Sri Lanka] observed ... that its ascertainment "requires the prior presence on the market for at least two or three years, which is the minimum period needed in order to establish continuing business connections."

Id., ¶120 (quoting *Asian Agric. Prods. Ltd. (AAPL) v. Sri Lanka*, ICSID Case No. ARB/87/3(Final Award dated June 27, 1990) at 292). See also *Al-Bahloul, supra*, ¶72 ("investment treaty tribunals have rejected application of the DCF-method where the project had not even started but was in a mere planning stage or had operated for less than two years."); *PSEG Global Inc. v. Republic of Turkey*, ICSID Case No. ARB/02/05 (Award dispatched Jan. 19, 2007), ¶310 (lost profits recovery "is normally reserved for the compensation of investments that have been substantially made and have a record of profits, and refused when such profits offer no certainty.")

⁷ FASB Exposure Draft: Proposed Accounting Standards Update (June 26, 2013), at 1.

Evidently, the “two or three years” criterion is arbitrary and not rooted in economics. Some tribunals have recognized this fact. In *Compania de Aguas del Aconquija and Vivendi Universal SA v. Argentina*, ICSID Case No. ARB/97/3 (Award dispatched Aug. 20, 2007), the tribunal held that Argentina had deprived the claimants of their investment in a water and sewage concession. Although the tribunal rejected use of the DCF methodology to value the concession, it stated that a “claimant might be able to establish the likelihood of lost profits with sufficient certainty even in the absence of a genuine going concern.” *Id.*, ¶8.3.4. The tribunal refined this test further by stating:

A claimant which cannot rely on a record of demonstrated profitability requires to present a thoroughly prepared record of its (or others) successes, based on first hand experience (its own or that of qualified experts) or corporate records which establish **on the balance of the probabilities it would have produced profits from the concession in question in the face of the particular risks involved**, other than those of the Treaty violation.

Id., ¶8.3.10 (emphasis added). Thus, the tribunal in *Vivendi* properly linked demonstration of future lost profits to the more fundamental requirement to establish an adequate evidentiary record, including an evaluation of “the particular risks involved.”

B. *Application of Going Concern Criterion to Different Industries*

1. Undeveloped Properties

Whether or not a tribunal requires that the claimant be a “going concern” in order to recover damages based on the DCF methodology may depend on the type of investment at issue. The classic case for applying this limitation is where the claimant invested in a project that had not been completed as of the time of the adverse State action. For example, in *Wena Hotels v. Egypt*, *supra*, a U.K. investor entered into leases with the Egyptian Hotel Company (“EHC”), a public sector company, to manage the Luxor and El Nile hotels. The tribunal held that EHC violated the investment treaty between the U.K. and Egypt by seizing the hotels. However, the tribunal declined to value the hotels using the DCF methodology. Noting that at the time of the seizure, Wena had

operated the Luxor hotel for less than 18 months, and had not even completed its renovations of the Nile hotel, the tribunal cited the *Metalclad* decision as the basis for its conclusion:

The Tribunal agrees with Egypt that, in this case, Wena's claims for lost profits (using a discounted cash flow analysis), lost opportunities and reinstatement costs are inappropriate—because an award based on such claims would be too speculative.

Id., ¶¶123, 124. Of course, operating hotels at a profit is an inherently risky proposition, and when such properties are under development or have only been in operation for a short time, there may be a basis for considering a lost profit recovery “too speculative.”

Similarly, in *Autopista Concessionada de Venezuela, C.A. (Aucoven) v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/00/5 (Award dispatched Sept. 23, 2003), the tribunal denied recovery of lost profits to the investor in a highway project, stating:

[T]he fact remains that Aucoven had no record of profits and that it never made the investments in the project nor built the Bridge required by the Concession Agreement. In these circumstances, the Tribunal considers that Aucoven's claim for future profits does not rest on sufficiently certain economic projections and thus appears speculative.

Id., ¶362.

2. De-risked Commodity Projects, Including Mining

In contrast to the investments discussed in the foregoing section, for some development properties, it is quite feasible to estimate future profitability based upon accepted criteria. Examples include extractive industries, such as minerals and hydrocarbons. In such cases, the product of the investment—gold, uranium, oil, gas, coal—already exists, and can be quantified by geologists and geophysicists using accepted methodologies. Moreover, because these products are commodities, there is no uncertainty about whether a particular producer's product will be able to compete with the products of other producers based on quality or price. Thus, the market value of a defined quantity of

the commodity can be predictably estimated based on projected market prices for the mineral or hydrocarbon. When the costs of building the necessary infrastructure and extracting the mineral or hydrocarbon are factored in, future cash flows can be estimated with some degree of certainty. *Occidental Petroleum*, discussed above, is an example of a case in which the DCF methodology was used to determine the value of proven oil reserves.

In *Al-Bahloul, supra*, the tribunal cited *Vivendi* for the proposition that “a claimant might be able to establish the likelihood of lost profits with sufficient certainty even in the absence of a genuine going concern.” *Al Bahloul, supra*, ¶74 (citing *Vivendi, supra*, ¶8.3.4). The tribunal went on to observe:

The Tribunal considers that the application might be justified, inter alia, where the exploration of hydrocarbons is at issue. The determination of future cash flow from the exploitation of hydrocarbon reserves need not depend on a past record of profitability. There are numerous hydrocarbon reserves around the world, and sufficient data allowing for future cash flow projections should be available to allow a DCF-calculation.

Id., ¶75. However, the tribunal ultimately rejected use of the DCF methodology in that case, noting that there were “too many unsubstantiated assumptions[,]” including that claimant would have been able to develop economically exploitable reserves in light of the fact that “[n]o oil or gas has been produced or *even found* by Claimant ...” *Id.*, ¶¶73, 96 (emphasis added).

Most recently, an ICSID Tribunal awarded damages based on the DCF model for deprivation of an investment in a gold mine that had been explored but never operated. *Gold Reserve Inc. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB(AF)/09/1 (Award dispatched September 22, 2014). Based upon projections of reserves, earnings and costs contained in a feasibility report, the Tribunal awarded damages of \$713 million, stating:

Although the Brisas Project was never a functioning mine and therefore did not have a history of cashflow which would lend itself to a DCF model, the Tribunal accepts the explanation of [both side's experts] that a DCF method

can be reliably used in the instant case because of the commodity nature of the product and detailed mining cashflow analysis previously performed.

Id., ¶830 (emphasis added). This decision confirms that the distinctive nature of projects involving extraction of minerals or hydrocarbons justifies use of the DCF method of calculating damages even when the project was not a going concern at the time of the treaty breach.

Several countries have implemented disclosure and valuation standards in an effort to de-risk mining and hydrocarbon projects. In Canada, the *Standards of Disclosure for Mineral Projects* (National Instrument 43-101, or NI 43-101) is the codified set of rules and guidelines for reporting and displaying information related to mineral properties owned by, or explored by, companies which report these results to stock exchanges within Canada.⁸ Its purpose is to ensure that misleading, erroneous or fraudulent information relating to mineral properties is not published and promoted to investors.⁹

NI 43-101 compliant reports (feasibility studies) disclose estimates of mineral reserves and provide an evaluation of the economics of establishing mining and mineral processing facilities including the mining and processing costs of extracting it, thereby de-risking projects in a systematized and transparent manner. In turn, the CIMVAL Standards ("Canadian Institute Of Mining, Metallurgy and Petroleum on Valuation of Mineral Properties") are the standard for valuation of mining projects in Canada (recognized by the Toronto Stock Exchange) and are intended to augment NI 43-101, with respect to the valuation of Mineral Properties. The Australian JORC¹⁰/VALMIN¹¹ structure and the

⁸ The equivalent in the United States is the U.S. Securities and Exchange Commission's Industry Guide 7.

⁹ It was created after the Bre-X scandal when it was alleged that the Busang gold deposit contained up to 200 million ounces (up to 8% of the entire world's gold reserves at that time). However, it was a massive fraud and there was no gold; the core samples had been faked by salting them with outside gold. In 1997, Bre-X collapsed and its shares became worthless in one of the biggest stock scandals in Canadian history.

¹⁰ Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.

South African SAMREC¹²/SAMVAL¹³ pairs are analogous to the Canadian NI 43-101/CIMVAL Standards.

The Committee for Mineral Reserves International Reporting Standards (CRIRSCO) has offered a set of consistent definitions to establish a classification of mineral deposits: “Mineral Resources” are defined to be estimates of the amount of mineral in the ground and “Mineral Reserves” are defined to be estimates of mineral that could be mined (allowing for losses/dilution) given prices and costs. Mineral Reserves can further be classified as Possible; Probable; and Proved according to the probability of their recovery.¹⁴ Thus project feasibility is a function of both geological knowledge and socio-economic viability.

The CIMVAL Standards state that, in the case of mineral properties, the Valuation approach depends on the stage of exploration or development of the property. They categorize mineral properties as four types: Exploration Properties; Mineral Resource Properties; Development Properties; and Production Properties. The CIMVAL Standards note that there are no clear-cut boundaries between these types, and that it may be difficult to classify some Mineral Properties as to one specific category. Table 1 shows which Valuation approaches are generally considered appropriate to apply to each type of Mineral Property.

¹¹ Code and Guidelines for Technical Assessment and/or Valuation of Mineral and Petroleum Assets and Mineral and Petroleum Securities for Independent Expert Reports.

¹² South African Code for the Reporting of Mineral Resources and Mineral Reserves.

¹³ South African Code for the Reporting of Mineral Asset Valuation.

¹⁴ The Society of Petroleum Engineers, the largest individual-member organization serving managers, engineers, scientists and other professionals worldwide in the upstream segment of the oil and gas industry, defines reserves as “proved” when there is at least a 90% probability that the quantities actually recovered will equal or exceed the estimate. Reserves are probable (P50) when there is at least a 50% probability that recovered quantities will equal or exceed the estimate; and reserves are estimated to be possible (P10) when there is at least a 10% probability that recovered quantities will equal or exceed the estimate.

TABLE 1. Valuation Approaches for Different Types of Mineral Properties

Valuation Approach	PROPERTY TYPE			
	Exploration	Mineral Resource	Development	Production
Income	No	In some cases	Yes	Yes
Market	Yes	Yes	Yes	Yes
Cost	Yes	In some cases	No	No

Thus, under the CIMVAL standards, even a mining property that is still undergoing development, and thus arguably not a “going concern” under the World Bank Guidelines, should be valued using either the income or market methodologies, rather than a cost-based approach.

C. Mathematical Certainty Cannot be Achieved Regardless of “Going Concern” Status of Asset

As discussed above, the main rationale articulated by tribunals for applying the “going concern” criterion in investment cases is to avoid “speculative” damage awards. However, other tribunals have recognized that calculation of damages using the DCF methodology inevitably involves application of judgment, whether or not the enterprise at issue is a “going concern.” For example, in *Rumeli Telecom AS v. Kazakhstan*, ICSID Case No. ARB/05/16 (Award dated July 21, 2008), Turkish telephone companies invested in a Kazak joint venture, KaR-Tel, to provide mobile telecommunications services through a GSM license issued by the Ministry of Transportation and Telecommunications (“MTT”). The tribunal held that Kazakhstan violated the Turkish-Kazak investment treaty by denying fair and equitable treatment to the Turkish investors. The tribunal awarded damages of \$125 million based on application of the DCF methodology.

The tribunal in *Rumeli* quoted and relied on the World Bank Guidelines regarding application of the “going concern” methodology. *Id.*, ¶803. Under a strict application of those Guidelines, KaR-Tel would not have been considered a “going concern” because as of the date of the adverse state actions in October 2003, “the enterprise had not been in existence for long

enough to have generated the data required for the calculation of future income.” *Id.*, ¶811. Under the Guidelines, this would have relegated the valuation of KaR-Tel to its liquidation value. However, the tribunal stated:

Despite this, the application of the “liquidation value” still makes it necessary to ascribe a value to KaR-Tel’s only asset of real value, namely its license to operate the mobile telecommunications network. On any view that clearly had a value in October 2003 far in excess of its book value. Since the value of that asset was directly linked to its potential to produce future income, there is no realistic alternative to using the DCF method to ascribe a value to it.

Id.

Importantly, the tribunal in *Rumeli* acknowledged that the DCF valuation methodology does not in any case guarantee mathematical certainty in the calculation of damages:

It is well known that DCF values are to a greater or lesser extent sensitive to the validity of the data on which they are based, such as the inflation rate, the discount rate, the assumptions underlying the predicted cash flows. ...[Sensitivity analyses by the claimant’s expert] demonstrate that the method must be understood as an approximation which is dependent on the validity of the assumptions, and not as a mechanical calculation which will yield a value whose validity is not open to question.

Id., ¶810. As discussed below, the tribunal took account of the risks that KaR-Tel faced in generating cash flows from the DSM license by reducing the dollar amount yielded by the claimant’s cash flow analysis to account for those risks. *See also Amco Asia Corp. v. Republic of Indonesia*, ICSID Case No. ARB/81/8 (Final Awards dated June 5, 1990 and Oct. 17, 1990), ¶108: “*The DCF method is at once a flexible tool that allows for an application of factors and elements judged as relevant. At the same time, it allows for the application of these judgmental elements to be articulated.*”

The tribunal in the *Patuha Power* case recognized the flexibility of the DCF methodology, and observed that it reflects the way executives value enterprises in the business world:

There is no reason to apologize for the fact that [the DCF] approach involves approximations; they are inherent and inevitable. Nor can it be criticized as unrealistic or unbusinesslike; it is precisely how business executives must, and do proceed when they evaluate a going concern.

Patuha Power Ltd (Bermuda) v. PT (Persero) Perusahaan Listrik Negara (Indonesia) (Final Award dated May 4, 1999), ¶487.

The more realistic application of the DCF methodology in *Rumeli, Amco Asia* and *Patuha*, divorced from the rigid application of a “going concern” test, more faithfully reflects application of sound economic principles, and business practice, as discussed in the sections that follow.

D. *Economic Principles Governing Application of DCF Methodology*

Tribunals have shown a preference to limit awards to sunk costs when they believed that the business that was expropriated was not a going concern. A damage award limited to sunk costs disregards the value of the investment related with *all* future possibilities open to claimant in the but-for world; thus it does not adequately compensate claimant for all that was destroyed because the future was the only reason for the investment — even if the business is not considered to be a going concern.

Many factors can impact a claimant’s ability to successfully monetize an opportunity; complicating factors include — but are not limited to — access to capital, technical knowhow, or operating capacity. Given these circumstances, even if it is intuitive to conclude that claimant’s business may not have been a viable going concern, it is quite problematic to base a damage award on sunk costs for a number of reasons.

First, going concern should be measured on a fair market basis and not based on historical facts specific to the claimant: indeed even in cases when a tribunal can reasonably conclude that under claimant’s control the company would not be viable, claimant still

held an asset/opportunity that under a “fair market value” assumption, someone or some other entity could potentially monetize. The claimant could therefore sell its asset to a better situated company and receive the market price of those assets, which is to say the net present value of those future cash flows.

Second, there is a fundamental difference between sunk costs and the Cost Approach to valuation. Sunk costs are typically considered to be funds invested in the opportunity up to the date of valuation, whereas the Cost Approach to valuation typically employed in liquidation valuations, is an approach that estimates the present value of assets on the books as of the valuation date. Given this difference it is not unreasonable for the two calculations to yield different results. Assume, for example, that claimant purchased land for \$500,000 and spent \$300,000 to build a house on it. Under the sunk cost approach, damages would equal \$800,000. However, suppose that subsequent to the purchase of land there was an appreciation (or depreciation) in the value of the land: assume that the lot with a constructed home is worth \$1,500,000 (\$500,000). The Cost Approach to valuation would suggest that the value of the assets were \$1,500,000 (\$500,000), the cost to replace those assets, not the cost to acquire them.

The DCF approach to valuation discounts future cash flows with a discount rate that endeavors to reflect all the risks of an undertaking including: the risk inherent in any and all projects (“undiversifiable or systemic risk”); country risk; equity risk; company risk and project risk (e.g. the risk that the investment will end up being more costly than planned; the risk that the operating costs will be larger than expected; and the risk that the demand for the product has been misjudged); some analysts additionally include a risk factor to account for the size of the firm.

Certain financial analysts and brokers sometimes apply a discount to their assessed DCF values to account for the execution risk of mining assets and the *probability of survival*. Indeed, the mortality of young companies can be high: a study of 5,196 start-ups in Australia found that the annual failure rate was in excess of 9% and that 64% of the businesses failed in a 10-year period.¹⁵

¹⁵ John Watson and Jim Everett, *Do Small Businesses Have High Failure Rates?*, 34 J. OF SMALL BUSINESS MGMT. 45-63 (1996) (cited in Aswath

Knaup and Piazza (2005, 2008) used data from the Bureau of Labor Statistics to calculate survival statistics across US businesses. Using a seven-year database from 1998 to 2005, they found that only 44% of all businesses founded in 1998 survived at least 4 years and only 31% made it through all seven years.¹⁶ Cook, Campbell and Kelly (CCK) examined the survival patterns of new firms created during difficult economic times (2009-2011), and how their survival rates might compare to earlier research using a more inclusive measure of births than before.¹⁷ CCK focused on New Jersey and directly interviewed 459 firms that were started between June 2009 and June 2010. Their interviews took place in August 2010 and they measured the effect of the age of the business on its probability of survival. While previous studies suggested a range of 19 to 22 % of firms exit the market in their first year of existence CCK found the mortality to be closer to 24% and to be the same whether they were one-year-old firms or two-year-old firms.

There are four components to a DCF valuation: the cash flows from existing assets; the expected growth from both new investments and improved efficiency on existing assets; the discount rates that emerge from our assessments of risk; and the assessment of when the firm will become a stable growth firm (so the economist can estimate terminal value). On each of these four components young firms pose estimation challenges.¹⁸ Estimating the probability of survival of a firm is an important component of calculating terminal value but while its explicit consideration is not, in and of itself, contrary to valuation best practices it is important to make sure that there is no double counting with the way the WACC is calculated.

Damodaran, *Valuing Young, Start-up and Growth Companies: Estimation Issues and Valuation Challenges* (May 2009) (hereinafter "Damodaran").

¹⁶ Amy Knaup, *Survival and longevity in the Business Employment Dynamics Data*, MONTHLY LABOR REV. 50-56 (May 2005); Amy Knaup and M.C. Piazza, *Business Employment Dynamics Data: Survival and Longevity*, MONTHLY LABOR REV. 3-10 (Sept. 2007) (cited in Damodaran, *supra.*, at 3).

¹⁷ Ron Cook, Diane Campbell, Caroline Kelly, *Survival Rates of New Firms: An Exploratory Study*, 8 SMALL BUSINESS INSTITUTE J. 35-42 (2012).

¹⁸ DAMODARAN, *supra.*, at 7.

Some of the project risks of young companies can also be addressed by including additional discount parameters for the fact that their success may depend upon the owner or a few key people for their success or for the fact that the investment may be illiquid. As in the case of the probability of success, the most important aspect is to make sure that there is no double-counting with the way the WACC is calculated.

Valuation, fundamentally, remains the same no matter what type of firm one is analyzing. There are three groups of firms where the exercise of valuation becomes more difficult and estimates of value more noisy.....The second group of firms where estimates are difficult to make are young firms with little or no financial history. Here, information on comparable firms can substitute for historical data and allow analysts to estimate the inputs needed for valuation.¹⁹

Rumeli Telecom, discussed above, provides an example of using a form of discounting to account for risks faced by a fledgling enterprise, in that case operation of a GSM concession in Turkey. The tribunal catalogued a number of risks facing KaR-Tel in generating future profits from exploitation of the GSM license, including the risks that it would be unable to regain market share from its main competitor, raise capital, and overcome doubts about the quality of its equipment. *Rumeli, supra*, ¶812. The claimant’s expert had valued the claimant’s 60% share of KaR-Tel at \$227 million. Taking account of these and other risks that the joint venture faced, the tribunal reduced the damage award to \$125 million, without explaining how it calculated the reduction. *Id.*, ¶814.

III. CONCLUSION

Tribunals that apply a rigid “going concern” limitation on use of DCF valuations of investments overlook the inherent uncertainty in application of any valuation methodology, regardless of whether or not the enterprise at issue is a “going concern” under some definition. Absolute mathematical accuracy is not possible and should not be the goal in valuing the future earning power of an investment property or business. Rather,

¹⁹ *Id.*, ch. 23.

tribunals should recognize that risks and uncertainties in DCF valuations, and indeed any valuation methodology, can be dealt with through, for example, adjusting the discount rate. This more flexible approach would lead to more equitable determinations of damages than inflexible rules that may result on investors losing the opportunity to earn an adequate return on the funds they put at risk in making the investment.