

Global Arbitration Review

The Guide to Damages in International Arbitration

Editor
John A Trenor

Fourth Edition

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Preface

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

The book is a work in progress, with new and updated material being added to each successive edition. In particular, this fourth edition incorporates updated chapters from various authors and contributions from new authors, including a chapter on damages issues in light of covid-19. This fourth edition seeks to improve the presentation of the substance through the use of visuals such as charts, graphs, tables and diagrams; worked-out examples and case studies to explain how the principles discussed apply in practice; and flow charts and checklists setting out the steps in the analyses or the quantitative models. The authors have also been encouraged to make available online additional resources, such as spreadsheets, detailed calculations, additional worked examples or case studies, and other materials.

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

John A Trenor

Wilmer Cutler Pickering Hale and Dorr LLP

November 2020

Part III

Approaches and Methods for the Assessment and Quantification of Damages

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Country Risk

Tiago Duarte-Silva¹

One of the most frequent and difficult tasks in valuation is to assess how an asset's value is affected by its location in a foreign country. This effect, commonly known as country risk, is a reflection of the potentially adverse effects of the political, economic and financial risks of operating in a country. There is a wide supply of services providing investors with qualitative measures of country risk.² For example, the International Country Risk Guide by Political Risk Services (PRS) provides country-by-country measures along the lines of risk of expropriation, repatriation restrictions, corruption and risk of political unrest, and provides helpful maps with indicators for government stability, socio-economic conditions, investment profiles, internal conflicts, external conflicts, corruption, military involvement in politics, religious tensions, law and order, ethnic tensions, democratic accountability and bureaucracy quality. Other sources may include indicators for regions within countries or be specific to certain industries, such as the Fraser Institute mining survey.

Country risk is often a significant factor in estimating damages, but this is naturally more acute the riskier the country from where the damaged asset's cash flows come. For example, in *Gold Reserve v. Venezuela*, a higher assumption concerning country risk by the respondent's expert implied a discrepancy between the damages calculated by the claimant's expert and the respondent's expert of more than US\$550 million, or almost 70 per cent of the claimant's expert's figure.³

1 Tiago Duarte-Silva is a vice president at Charles River Associates

2 Some examples are Political Risk Services, the International Country Risk Guide, Aon, Institutional Investor, Standard & Poor's, Moody's and the World Bank.

3 *Gold Reserve Inc. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB(AF)/09/1, Award, 22 September 2014, pp. 216 to 220 – country risk premium: claimant's expert, 1.5 per cent; respondent's expert, 6.7 to 16.4 per cent. The claimant's expert's discounted cash flow value is after all adjustments by the tribunal, except country risk.

There is a conceptual question of whether the value of an asset is affected by the country where it generates value. This is because one of the central tenets of finance is that the value of an asset is only affected by risks that are not diversifiable. In other words, if a particular asset's risk can be eliminated by sufficiently diversified investment across multiple assets, that risk is largely reduced, or even eliminated, and therefore is irrelevant to the asset's value. Based on this concept, sufficient diversification across multiple countries could eliminate the effects of a specific asset's country on its risk, and therefore country risk would be irrelevant to valuing that asset. One counterpoint to this perspective is that investors are not sufficiently diversified across countries and therefore country risk is still a value-relevant risk. Another commonly proposed counterpoint is that, even if investors are diversified, it may be difficult to diversify away country risk because it tends to be highly correlated across countries, especially in sudden downturns, as is attested by past economic crises across multiple emerging markets.⁴ More generally, the empirical data suggest that country risk influences investor returns.⁵ So, empirical data suggest investors price it, even if economic theory suggests it should be diversifiable.

This chapter lays out how investors account for country risk in their valuations, and how it should be incorporated in damages calculations, by describing the myriad approaches to its measurement and application. The content relies to some extent on an understanding of the workings of valuation methods that are covered in other chapters of this book.

Discounted cash flow method

Valuing an asset through the discounted cash flow method involves applying a discount rate to that asset's expected future cash flows to arrive at the current value of that asset. The discount rate is a function of two factors: (1) the time value of money – a cash flow now is worth more than a cash flow some time in the future; and (2) risk – a safe future cash flow is worth more than an uncertain future cash flow. In algebraic terms, the appropriate discount rate to apply to future cash flows is the sum of a rate that reflects only the time value of money (the risk-free rate) and a risk premium.

It follows that, if generating a cash flow in a certain country implies that the cash flow is riskier, then the discount rate reflects that incremental risk through a higher risk premium: the country risk premium. This increment to the discount rate can be understood as a required return for investing in a country, as an adjustment to cash flow forecasts that do not reflect the underlying risks, or both. If understood as the former (a higher required return), then there is an implication that it reflects an undiversifiable risk, as explained above. In other words, a country risk premium on the discount rate represents systematic risk (i.e., risk that cannot be reduced or eliminated through diversification).

If understood as the latter (a downward adjustment to the cash flow forecasts), then the country risk premium on the discount rate is simply a way to transform optimistic cash flow forecasts into expected cash flow forecasts. In other words, it is a way to obtain the cash flow forecasts that are prescribed by the discounted cash flow method.

4 In theory, country risk could be diversified away even with positive correlation between countries.

5 See, e.g., Erb, C, Harvey, C, Viskanta, T, 'Expected Returns and Volatility in 135 Countries', *Journal of Portfolio Management*, 46 to 58, Spring 1996.

It may conceptually appear more straightforward to directly adjust the cash flow forecasts to arrive at the expected future cash flows. And this is indeed the method that the literature generally prescribes as the most theoretically correct adjustment to account for country risk and other risks: after projecting multiple cash flow situations into the future, the value of the asset can be calculated as the average of the values based on those various situations, weighted by their respective probabilities of occurring.^{6,7} Because country risk most often warrants a reduction in value, this method based on cash flow situations most often equates to considering additional downside situations and probability-weighting them. For a simplified example, suppose a project was forecast to generate \$10 million annually forever and the appropriate discount rate was 10 per cent, thus implying a present value of \$100 million.⁸ Suppose also those \$10 million forecast cash flows were actually optimistic in the sense that they did not account for a downside situation with 20 per cent probability of \$0 cash flows. So, the expected cash flows were instead \$8 million per year (\$10 million \times 80 per cent + \$0 \times 20 per cent) and, therefore, the project's present value is \$80 million instead.⁹

Because it is often difficult to explicitly set up various situations and their probabilities, a more common approach to value an asset subject to downside risk is to add an increment to the discount rate. The effect is the same – a reduction in value – because increasing the discount rate reduces the value of each future cash flow. These two methods, probability-weighted cash flows and adjusting the discount rate, are arithmetically equivalent. This means that an adjustment to the discount rate can be translated into, for example, a probability of total loss of an investment's value. Continuing the same example above, the correct value of \$80 million could just as well be obtained by applying a discount rate of 12.5 per cent to the forecast \$10 million cash flows.¹⁰ In other words, an increment (or country risk premium) of 2.5 per cent on top of the 10 per cent discount rate would lead to the same result as probability-weighting the cash flows.

A word of caution is warranted here. Sometimes, valuation professionals adjust cash flows downwards to account for country risks and also add a country risk premium to the discount rate. But if the expected cash flows are already depressed by certain country risks, adding a country risk premium that incorporates those same risks into the discount rate will double-count them, and therefore result in an inflated discount rate and an undervalued asset.¹¹

6 Brealey, Myers and Allen, *Principles of Corporate Finance*, p. 232 (2011).

7 A variation of this method based on adjusting the cash flow forecasts is to adjust the projected cash flows by the cost of insuring against adverse outcomes relating to country risk. The rationale is that this insurance cost will already reflect the probability and expected downward effect on cash flows of country risk. A frequent hurdle with this approach is that often there is no coverage or market for the risks that would be modelled.

8 \$10 million/10 per cent = \$100 million, based on a perpetuity value formula that current value is equal to annual cash flows divided by the discount rate.

9 \$8 million/10 per cent = \$80 million.

10 \$10 millions/12.5 per cent = \$80 million.

11 See, e.g., Bekaert, G, Harvey, C, Lundblad, C, Siegel, S, 'Political risk and international valuation', *Journal of Corporate Finance* 37, 1 to 23 (2016).

Measuring the effect of country risk on the discount rate

Measures based on sovereign default risk

Perhaps the most common way to measure country risk is to refer to the sovereign yield spread (i.e., the difference between the yield on a US dollar-denominated bond issued by the government of the respective country and the yield on a US Treasury bond of a similar maturity).¹² So suppose, for example, that the yield on a US Treasury bond is 2 per cent, but the respective country's sovereign bond of similar maturity yields 7 per cent. The sovereign yield spread is therefore 5 per cent. If the discount rate on a project that is not affected by risk outside the United States warrants a discount rate of 10 per cent, it would require a discount rate of 15 per cent if that project was instead affected by the respective country's risks.

The higher the spread between these two yields, the higher the risk that the respective country's government will default on its bonds and the lower the expected recovery to investors in the event of default. The rationale behind the use of the sovereign yield spread as a measure of country risk is that events that would cause a foreign government's default on its bonds (economic, social, political and other country factors) would also be likely to lead to downside outcomes for private assets. In other words, if a country's economic performance deteriorates, it is likely to affect both the risk of defaulting on its sovereign bonds and a variety of risks that are relevant to private enterprises, such as social instability, exchange rate volatility, supply chain issues and corporate taxes. Academic evidence that corporate bond spreads correlate with sovereign yield spreads supports the notion that sovereign default risk is associated with the risks to investors in private assets.¹³

Another commonly used measure of sovereign default risk is to use credit default swap (CDS) spreads. The CDS premium on a country's sovereign bonds is an insurance premium on the possibility of default on those bonds.¹⁴ For example, a CDS premium of 400 basis points (i.e., 4 per cent) means that insuring \$10 million of debt against default for a specified period (e.g., five years) would cost \$400,000 per year. So, the spread of that CDS premium over the CDS premium on a benchmark country's sovereign bonds (usually US Treasury bonds) reflects how much more default risk exists in that country's sovereign bonds.

Sovereign yields and other measures of country risk based on high-frequency market data have the advantage over qualitative measures or less frequently updated quantitative measures in that they reflect the market's up-to-date perspective. The importance of this feature can be illustrated with the example of Venezuela in the late 2000s: whereas its sovereign yield spread was close to 2 per cent by 2006–2007, it had risen to 6 per cent by 2008, and then over 18 per cent in 2009. So, for example, a cash flow of \$100 four

12 The maturity of the sovereign bonds should be similar to that of the project being evaluated, while taking into account that the bonds are sufficiently traded to ensure that their respective yields are representative of the market's view.

13 See, e.g., Dittmar, R. F. Yuan, K., 'Do sovereign bonds benefit corporate bonds in emerging markets?', *Review of Financial Studies* 21 (2008), 1983 to 2014; Cavallo, E. A., Valenzuela, P., 'The determinants of corporate risk in emerging markets: an option-adjusted spread analysis', *International Journal of Financial Economics* 15 (2010), 59 to 74.

14 Although credit default swaps protect against sovereign default, buyers of credit default swap [CDS] are still exposed to counterparty risk (i.e., the risk that the seller of the CDS is not able to pay in the event of default).

years from the valuation date could have changed in present value from \$64, based on a 2 per cent country risk premium on the discount rate, to \$37, based on an 18 per cent country risk premium.¹⁵

Measures based on relative volatility

Another approach to measuring country risk is to compare the volatility of local equity or debt markets to the volatility of the corresponding reference market, most often the US equity or bond market. The most typical application of this measure is to calculate the ratio between the volatility of the local market and the volatility of the reference market, and then apply it as a multiplier to the market risk premium component of the discount rate.¹⁶ For example, if the risk-free rate is 2 per cent, beta is 1.0,¹⁷ the market risk premium is 7 per cent, the specific country's market has a volatility measured by standard deviation of 60 per cent per year and the reference market's volatility is 40 per cent per year, then the discount rate would be 2 per cent + 1.0 * 7 per cent * (60 per cent/40 per cent), or 12.5 per cent.¹⁸ Stated differently, the country risk increment on the discount rate is 1.0 * 7 per cent * (60 per cent/40 per cent - 1), or 3.5 per cent.

Note that the observed volatility of the specific country's market may appear lower than it actually is if that market is not very liquid. Securities that trade infrequently will not show frequent changes in prices and, therefore, will appear to have very low volatility. So, if the specific country's market is illiquid, the ratio of relative volatilities may appear lower than it actually is and, therefore, the country risk premium would be underestimated.

Another issue that may warrant scrutiny is how concentrated the specific country's market is in specific companies or industries. Since highly concentrated markets are often more volatile than more diversified markets in many developed countries, the ratio of relative volatilities may be higher than others. If that concentration is high, it is possible that a method based on the volatility of the specific country's market is representative of the risks faced by those companies or industries, but not of the overall country risk or of the risk that is relevant to the asset that is being valued. So, for example, damages pursuant to a breach of contract related to a power plant may not be fairly calculated using a country risk premium that is based on the local equity market's volatility if the vast majority of the market capitalisation in that market is represented by mining companies.

15 Assuming 10 per cent cost of capital excluding country risk $(1 + 10 \text{ per cent} + 2 \text{ per cent})^{(-4)} = 0.64$; $(1 + 10 \text{ per cent} + 18 \text{ per cent})^{(-4)} = 0.37$.

16 Damodaran, A, 'Country risk and company exposure: theory and practice', *Journal of Applied Finance* 13 (2003), 63 to 76.

17 An asset's beta is a component of the capital asset pricing model that measures the sensitivity of the asset's value to the overall market or the economy. A beta of 1.0 means that the value of the asset changes by as much as the market, whereas a beta above 1.0 means that the value of the asset changes by more than the magnitude of market fluctuations and, conversely, a beta below 1.0 means that the value of the assets changes by less than the magnitude of market fluctuations.

18 Discount rate = risk-free rate + beta * market risk premium * (standard deviation of country's market / reference market's volatility). Although only undiversifiable risk should be relevant per mainstream finance theory, it is common to calculate these volatility ratios based on overall volatility (i.e., diversifiable and undiversifiable risk) and to measure that volatility with standard deviations, not variances.

Yet another issue relates to situations in which the respective country's inflation rate is very different from that in the benchmark country (e.g., the United States), as one may need to measure the two market volatilities in the ratio in the same currency, so as to avoid inflation unduly affecting the ratio. In these situations, it is typical to convert the respective country's market returns into US dollars, for example, and only then calculate its volatility and the respective ratio of volatilities.

Other applications and measures

Most other commonly used methods are adjustments to these approaches based on sovereign yield spreads or volatility ratios. Some methods use the sovereign yield spread but, in trying to arrive at the cost of capital on equity than on debt, adjust the sovereign yield spread for equity's higher risk. One common way to do so is to multiply the sovereign yield spread with the worldwide ratio of equity market volatility to debt market volatility. Another similar way involves applying the local country's ratio of equity-to-debt volatility to the sovereign yield spread. So, for example, if the particular country's sovereign yield spread is 5 per cent, its equity market has a volatility measured by a standard deviation of 40 per cent per year, and its sovereign bond market's volatility is 10 per cent per year, then the country risk premium would be 5 per cent \times (40 per cent/10 per cent), or 20 per cent.¹⁹

It is sometimes the case that a country has not issued sovereign debt and does not have an equity or debt market, therefore hampering the use of the measures described above. One solution is using the Ibbotson/Morningstar's Country Risk Rating Model, which is based on regression analysis and the country's credit rating by *Institutional Investor* to arrive at an estimated required return associated with investing in a specific country. For example, the country risk rating model estimated that the required return on equity in March 2015 was 12.3 per cent in Colombia and 13.7 per cent in India, whereas it was 7.6 per cent in the United States.²⁰ Based on each country's credit rating and equity returns, this approach obtains the average relation between the cost of capital and the countries' credit ratings. This average relation is then useful for estimating the cost of capital in the many countries with *Institutional Investor* credit ratings but no sovereign debt. These costs of capital are based on regression analysis in academic research.²¹

Another solution when a country has not issued sovereign debt is to rely on qualitative measures of country risk. To be useful in calculating damages, those measures of country risk need to be translated into value. There are services that provide qualitative measures and their translation to value. One way of using qualitative measures is by utilising statistical analysis to infer the relation between qualitative scores and effects on discount rates. So, for

19 Damodaran, A, 'Estimating equity risk premiums', Working paper (1999), New York University. Abuaf follows the same method, replacing the sovereign yield spread with a multiple of the country's CDS spread – Abuaf, N, 'Valuing emerging market equities – a pragmatic approach based on the empirical evidence', *Journal of Applied Corporate Finance* 27 (2015), 71 to 88.

20 Based on the linear model. The linear model assumes that risk increases in a linear fashion with the risk rating, whereas the logarithmic model assumes that risk increases in a non-linear fashion with the risk rating.

21 See Erb, C, Harvey, C, Viskanta, T, 'Country Risk and Global Equity Selection', *Journal of Portfolio Management* 21 (1995), 74 to 83.

example, a regression analysis between PRS scores and sovereign yield spreads could provide an estimate of what should be the sovereign yield spread for a country that has not issued sovereign debt but has a PRS score. Other versions of this type of analysis could focus, for example, on certain subsets of country risks and their relations with sovereign yield spreads.

In any case, qualitative measures and their quantitative derivations suffer from the subjective basis on which those risk scores were assessed and from not being exactly contemporaneous with the desired valuation date: if conditions change suddenly, the risk scores will not be updated immediately.

Other valuation methods

The comparables method essentially estimates damages as a reduction in a measure of profits multiplied by a benchmark ratio (or multiple) of value to that measure of profits.²² It is important to select (1) which multiple should be used, and (2) which transacted assets and publicly traded assets are comparable. To be comparable, an asset should be of similar risk and growth. That is often proxied by industry and size, but care must be taken also to filter for assets for which country risk is not too dissimilar. For example, valuing a company with operations, clients and suppliers all based in the United States by using as a comparable an otherwise similar transaction in Venezuela will necessarily undervalue the US-based company. So, one needs to account for the effects of country-specific risks.

Note that multiples based on past transactions will not account for the changes in country risk over time. This aspect of using past transactions is often overlooked when using past transactions of the very asset being valued for damages purposes. If country risk changed between the transaction date and the valuation date, a transaction should only be included if it is possible to update that transaction's value to the valuation date. Similarly, if it is difficult to find publicly traded assets that are comparable and of similar country risk, then the valuation should only include them if it is possible to adjust the respective multiples for the country risk of the asset being valued. This exercise involves converting the chosen benchmark ratio into its discounted cash flow counterpart, updating the country risk and converting it back to its now-adjusted multiple.

Much like the comparables method, valuation of the asset in question based on the market capitalisation of its owner (known as the market capitalisation method) and cost-based methods (e.g., book value, expenditures to date) may warrant adjustments because of changes in country risk from the measurement date to the valuation date. If cost-based methods are based on book values that were reliant on fair values, for example, at the time of the acquisition of another company, then these book values may well require adjustments for changes in country risk since then. Also, depending on the legal standard of which risks should be included or excluded, these and other methods may demand adjustments for country risk, among other factors.

22 EBITDA (earnings before interest, taxes, depreciation, and amortisation) is a commonly used measure of profits that quantifies operating-level earnings. The particular measure of profits to be used depends on the value drivers of the asset being valued. For example, the particular measure to be used in a comparables approach often depends on the asset's industry, and multiples are often based on measures such as sales, number of production units or book value.

Relevant risks in a damages calculation

After having covered why country risk is relevant, the various forms of measuring it and how it is applied in different valuation methods, it is important to note to the extent to which country risk should affect the asset's valuation or damages assessment.

Exposure

An asset's risk does not necessarily equate to the country's risk. For example, an asset that does not rely on local capital or labour inputs is less exposed to that country's conditions than one that uses those inputs. This notion has direct implications on the use of measures of country risk. For example, sovereign yield spreads are a function of the country risk for sovereign borrowers, but they may not reflect all the country risks faced by private businesses investing in the country. The government's default risk reflects only the effects of country risk to the extent that they affect the government's fiscal situation. Although these conditions will also affect local businesses to varying degrees, private businesses face other risks that do not factor into the government's default risk or are at least less related to it (for example, risks relating to expropriation, changes in corporate taxes, environmental regulations, labour market regulations, capital market regulations and foreign exchange controls). In other words, there are many government policy changes that can affect the profitability of operating in a given country. For this reason, sovereign default risk is not necessarily the maximum risk that private investors face and, therefore, the sovereign yield spread is not necessarily the maximum country risk that is relevant to an asset's value.

Conversely, it can be argued that not all the sovereign yield spread is relevant to the country risk faced by an asset's cash flows, and therefore an asset's country risk can be lower than the sovereign default risk. Consistent with this notion, the tribunal in *Sempra v. Argentina* contended that the country risk premium associated with a private company was lower than the Argentinian sovereign default risk.²³ Moreover, the academic literature shows that the risks to private investors can be lower than the sovereign default risk. Empirically, this is evidenced by the fact that sovereign yields can be higher than those of corporate bonds, especially if those bonds were issued by firms with considerable earnings from exports or there is a very close relationship with a foreign firm or the home government.²⁴

Using only a portion of country risk to adjust an asset's discount rate is most often accomplished through multiplying the measure of country risk (e.g., sovereign yield spread) by a factor below 1. A factor below 1 implies that the asset's relevant country risk is lower than the average country risk of the assets in that country. One way proposed in the literature to estimate that factor is to average the asset's access to capital markets, its susceptibility to political risk and its financial importance to the investor.²⁵ Another way proposed in the practitioner literature assumes that the asset's exposure to country risk (commonly referred to as λ , or lambda) can be estimated through the proportion of the revenues or the operating margin of the asset that originates from the country in question or other items,

23 *Sempra Energy International v. The Argentine Republic*, ICSID Case No. ARB/02/16, Award, 28 September 2007.

24 Durbin, E, Ng, D, 'The sovereign ceiling and emerging market corporate bond spreads', *J. Int. Money Finance* 24 (2005), 631 to 649.

25 Zenner, M, Akaydin, E, 'A practical approach to the international valuation and capital allocation puzzle', *Global Corporate Finance Report* (2002) Salomon Smith Barney.

such as having production plants in that country.²⁶ So, for example, an asset's λ would be the ratio between (1) the share of revenues generated by that asset in a given country and (2) the share of revenues generated by an average asset in the same country. More rigorous statistical approaches would measure λ through a regression of, for example, the asset's stock returns, if available, against the sovereign debt's returns.

In making adjustments of country-wide measures to reach the risk relevant to the asset in question, one should consider, for example, the weight of revenues and costs from the country, the location of production facilities, the exposure to local controls and regulatory pressures, and the degree of execution risk (e.g., unpredictable technical problems). One should also exercise due care in avoiding the frequent assumption that the company's headquarters equate to the location of its risks, as well as examine whether the asset or company is hedged against adverse actions (through insurance or derivatives, for example).

Risks evaluated immediately prior to valuation date

The discussion so far indicates that, in most circumstances, higher country risk diminishes the value of the asset at issue, and therefore reduces damages. This leads to the possibility that the government of a country pursues actions that increased country risk, subsequently causing harm to the asset or even expropriating it, in which case the value of the asset had already been diminished before that harm. So, it is possible that taking into account the respondent's actions that diminished the value of the asset prior to the valuation date may adhere to the concept of the economic consideration reflecting the market's perception but may also reward poor behaviour on the part of the respondent. In these circumstances, the claimant's position will often be that only the risks that are not protected by investment treaties (e.g., foreign exchange risk or general business conditions) are relevant to calculating damages, and therefore all other risks should be excluded. The result is a lower discount rate and higher damages. Conversely, the respondent's position will often be that the claimant invested while aware of the risks and should not be compensated with a higher value as if those risks had not existed.

Tribunal decisions in recent years have generally tended towards incorporating all risks prior to the valuation date, therefore lowering assets' values and damages. However, tribunals vary in the inclusion or exclusion of components of country risk. The tribunal in *Saint Gobain* considered that the bilateral investment treaty and the arbitration did 'not serve the purpose of insuring Claimant against the general risks of investing in Venezuela that a willing buyer would take into account in its assessment of the purchase price it would pay' and, therefore, 'the country risk premium must reflect all political risks associated with investing in Venezuela, including the alleged general risk of being expropriated without

26 Damodaran, A, 'Country risk and company exposure: theory and practice', *Journal of Applied Finance* 13 (2003), 63 to 76.

payment of (sufficient) compensation'.²⁷ In *Venezuela Holdings*²⁸ and *Tidewater*,²⁹ the tribunals also decided to include expropriation risk. In contrast, the tribunal in *Gold Reserve* decided to exclude expropriation risk, therefore not allowing it to reduce damages.³⁰ The tribunal in *Flughafen* took a middle ground by excluding the increase in expropriation risk from the time of investment to the date of harm.³¹

Conclusions

It is well known that risk varies from country to country. And even if the concept of country risk may encounter theoretical challenges, adjustments to asset valuations based on country risk are routinely applied, owing to the empirical evidence of its existence and relevance to investors. Even within the same country, country risk varies, depending on time and assets. The country risk that is relevant to a particular project may be higher or lower than that country's country-wide measures of risk.

There is a wide variety of approaches to measure country risk and most of this variety is concentrated in adjustments to the discounted cash flow method of valuation. As the various approaches to measure country risk may often lead to different results, the correct approach, or approaches, must be chosen with due care.

27 *Saint Gobain Performance Plastics Europe v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/12/13, Award, 30 December 2016, paras. 718, 719, 723.

28 *Venezuela Holdings BV & Others v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/07/27, Award, 9 October 2014, paras. 364–354.

29 *Tidewater Investment SRL and Tidewater Caribe C/A v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/10/5, Award, 13 March 2015.

30 *Gold Reserve Inc. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB(AF)/09/1, Award, 22 September 2014, pp. 216 to 220, paras. 840 to 841.

31 *Flughafen Zurich AG and Gestion e Ingenieria IDC SA v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/10/19, Award, 18 November 2014.

Appendix 1

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His expertise in commercial and investment disputes includes valuation and lost profits involving breach of contract, treaty breaches, expropriation and temporary injunction, among others. Dr Duarte-Silva's experience also includes several years in equity research covering European and Latin American companies.

His case experience spans various industries, including financial services, energy, natural resources, consumer products, technology, pharmaceuticals, chemicals, telecommunications, insurance, outsourcing, education and distribution.

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