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> "THE ROLE OF QUANTUM EXPERTS IS TO PREPARE REASONABLE AND WELL-SUPPORTED ANALYSES IN ORDER TO HELP THE TRIBUNAL'S DECISION-MAKING PROCESS."

Possible Sources Of Disagreement Between Quantum Experts In Discount Rate Estimation: A Review Of ICSID Awards

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Quantum experts often rely on the Discounted Cash Flow (DCF) approach to assess losses. The DCF approach is one of the most widely-used and accepted valuation methods, thanks in large part to its flexibility and the fact that it can be tailored to accommodate a wide array of assumptions.

The DCF approach is a method to estimate the current value of a stream of future cash flows. It is predominantly used in cases where the claimant can demonstrate some sort of track record, suggesting that projections of cash flows are not purely speculative. Arbitration tribunals have indeed tended to require a track record of at least two years to provide a basis for the projections required for DCF calculations.

Even when the DCF approach is not the primary valuation method used by a quantum expert, it is often used as a method to provide some confirmation for results obtained with alternative valuation methods.

Making reasonable estimates of future cash flows requires the expert to support his/her projections of the revenues and costs for the period for which projections are made. Counsel also has to choose and support the date for which the assessment of loss is to be made. And, usually most disputed, the expert must determine the rate at which future cash flows are to be discounted to determine the net present value of the future cash flows.

In practice, the discount rate often turns out to be one of the most disputed and most significant elements of a DCF valuation. It reflects both (i) the time value of money (a dollar today is worth more than a dollar tomorrow, if only due to the passage of time) and (ii) the risk attached to future cash flows. It can have a significant impact on any loss assessment: while EUR 100 to be received in five years has a value of EUR 78 today at a 5% discount rate, it would be valued only at EUR 40 at a 20% discount rate.

The quantum expert needs to support the selection of a number of inputs when estimating a discount rate through the use of the *Weighted-Average Cost of Capital* (WACC), a blend of the cost of equity and cost of debt. In order to calculate this WACC, the expert first calculates a risk-adjusted cost of equity, based on: risk-free rate, market risk premium, applicable beta, country risk premium, other risk premiums (control, small size, etc.), as well as debt-to-equity ratio. The expert then needs to choose a relevant cost of debt.

Claimant's experts and respondent's experts almost always disagree on the appropriate discount rate. On the basis of available ICSID awards, we provide below a selection of examples of such disagreements with respect to: (1) country risk, which is usually the most disputed parameter, (2) risk-free rate, (3) applicable beta, (4) debt-to-equity ratio, (5) equity market risk premium and (6) company size

premium. Note that the impact on the assessment of loss of each parameter described below may vary, we have aimed at focusing on the type of disagreements rather than the magnitude of them in those examples.

First, debates arise over the choice of the country risk premium, which aims at reflecting the additional risk (political instability, volatile exchange rate, etc.) associated with investing in a developing country rather than in the United States or another developed country. In *El Paso Energy International Company v. Argentine Republic* (ARB/03/15) for example, the parties' respective experts proposed widely divergent discount rates, reflecting their respective views on country risk. The claimant's expert computed a discount rate in the range of 12-13%, while the respondent's expert argued that a 35% discount rate was warranted because of the severity of the Argentine economic crisis.

Neither approach convinced the tribunal. It considered that, while the discount rate calculated by the claimant's expert was consistent with a risk assessment made under normal economic circumstances, it did not reflect the increased risks caused by Argentina's sovereign default, which were bound to affect private investors as well. The tribunal further rejected the discount rate calculated by the respondent's expert on the basis that the use of this rate did not lead to the assessment of fair market value since it attributed all the change in value to the sole economic crisis. The tribunal eventually settled on a 15.4% discount rate, by adjusting the claimant's expert's discount rate estimate upwards.

A frequent question, not addressed here, is whether expropriation risk should be taken out of the usual country risk premium when an investment is covered by a BIT.

Second, debates also exist over the choice of the risk-free rate, which corresponds to the rate of return of an investment that bears no default risk, such as government bonds from developed countries. In EDF *International S.A., SAUR International S.A. and León Participaciones Argentinas S.A. v. Argentine Republic* (ARB/03/23) for example, quantum experts disagreed on the relevant measure of the risk-free rate. The claimant's expert argued that a 10-year US Treasury Bond rate (5.09% at the time) was warranted because it most closely matched the duration of the cash flows under consideration. The respondent's expert, however, considered the rate of 30-year Treasury Bonds to be more appropriate.

The tribunal sided with the claimant's expert on this issue, although on more technical grounds than the ones put forth by the claimant's expert. The tribunal indeed argued that the risk-free rate should be the return on a zero beta portfolio, and that the beta value from the 10-year rate was closer to zero than that of the 30-year bonds.

Third, the company beta, which measures how much the company's share price moves against the market as a whole, is frequently discussed among quantum experts. In *OI European Group B.V. v. Bolivarian Republic of Venezuela* (ARB/11/25) for example, quantum experts disagreed on the proper way to estimate the company beta.

Both quantum experts retained the same sample of seven comparable companies when estimating the company beta, but disagreed on whether the average should be weighted or simple. The claimant's expert argued that it was necessary to assign greater weight to the companies that appeared to be more comparable to the company being valued. This reasoning convinced the tribunal, which stated that a weighted-average was reasonable to account for these differences in similarity.

Further, although this was not the case in this arbitration, debates about beta also occur over the selection of the relevant industry. Betas are usually taken from published calculations for a given industry, but the projects being analysed often do not perfectly match these industry calculations.

Fourth, the debt-to-equity ratio, which determines the capital structure, is needed to calculate the WACC. We present below two examples where this ratio was disputed among the quantum experts. In *Alpha Projektholding GmbH v. Ukraine* (ARB/07/16), the claimant's expert argued that the relevant ratio was the average 40% debt and 60% equity ratio of a set of comparable companies in the hotels & motels category for emerging markets, as it represented a better measure of the target capital structure of the company being valued. The claimant's expert estimated a discount rate of 12.1%.

The respondent's expert, however, considered that the relevant capital structure was the one which had been envisioned for the project under consideration, i.e. 100% equity and 0% debt. The respondent's expert estimated a discount rate of 14.4%.

The tribunal agreed with the need to rely on the target capital structure and decided to adopt the 12.1% discount rate.

In *OI European Group B.V. v. Bolivarian Republic of Venezuela* (ARB/11/25), the claimant's expert chose to use a larger sample of 16 comparable companies, when assessing the debt-to-equity ratio, than the one he used to estimate the company beta. The respondent's expert argued that the same sample should be used, as a matter of consistency.

The tribunal recognised that both approaches were acceptable, and stated that using the same sample for estimating the company beta and debt-to-equity ratio would be methodologically more consistent. Yet, it sided with the claimant's expert because the latter's estimate of the debt-to-equity ratio appeared to be in line with reputable benchmarks, while the estimate of the respondent's expert was brushed aside for being unreasonable.

Fifth, the equity market risk premium, which reflects the additional risk and expected return of investing in the market, in comparison to risk-free investment. In *Tidewater Investment SRL and Tidewater Caribe, C.A. v. The Bolivarian Republic of Venezuela* (ARB/10/5) for example, quantum experts disagreed on the correct size of the equity market risk premium. The claimants' expert argued that a 5% premium was appropriate, based on an approximate average of the range of estimates recommended in empirical studies. The respondent's expert, on the other hand, argued that a 6.5% premium represented the most accurate long-term equity risk premium and was supported by published data sources.

The tribunal reviewed the information exhibited in the quantum experts' reports. It accepted the respondent's expert's view based on three primary sources of long-term equity risk premium, which gave a long-term market risk premium of between 6.0% and 6.7% at the date of assessment of loss.

Finally, there are cases where quantum experts add a size premium to calculate the relevant discount rate. In *Tenaris S.A. and Talta – Trading e Marketing Sociedade Unipessoal Lda. v. Bolivarian Republic of Venezuela* (ARB/12/23), quantum experts disagreed on the need to add such a premium.

The claimant's expert did not use a size premium on the basis that the company being valued was very large compared to other domestic companies in the same industry. The respondent's expert, on the contrary, argued that a size premium of 2.73% was warranted since the company being valued was much smaller than the comparable companies which constituted the sample used to estimate the beta.

The tribunal agreed with the respondent's expert, explaining that adding a size premium was reasonable when the size of the company being valued was smaller than the average of comparable companies used to estimate the beta.

In conclusion, estimating the discount rate is a difficult and highly sensitive task. It is the source of frequent disagreement between quantum experts in international arbitration cases. The role of quantum experts is to prepare reasonable and well-supported analyses in order to help the tribunal's decision-making process.

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