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THE DETERMINATION OF FINANCIAL INTEREST RATES IN INVESTMENT ARBITRATION

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The Determination of Financial Interest Rates in Investment Arbitration

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Summary

Interest is the compensation a borrower pays to a lender for providing money on one day and promising to repay it at a later date. Lenders demand interest when providing loans for two reasons. First, interest compensates a lender for the time value of money – the idea that a dollar today is worth more than a dollar in the future, because a dollar today can be invested to earn a safe return. By extending a loan, the lender is foregoing the opportunity to earn that safe rate of interest. Second, interest compensates the lender for bearing the risk that the borrower might not repay the loan on time or at all.

Interest plays an important role in the context of investment arbitration. For a claimant to be made whole for a compensable loss suffered in the past, an award must repay that past loss plus interest to the date when compensation is paid. This interest is typically broken into two components: the 'pre-award interest', compensating for the delay from the date of the alleged harm to the issuance of the award, and the 'post-award interest', covering the period from the issuance of the award to the date of payment. As the considerations affecting pre-award and post-award interest rates can differ, we address them separately. We also address the use of interest by tribunals as compensation for the claimant as a lender to the respondent, or based on foregone opportunities for the claimant.

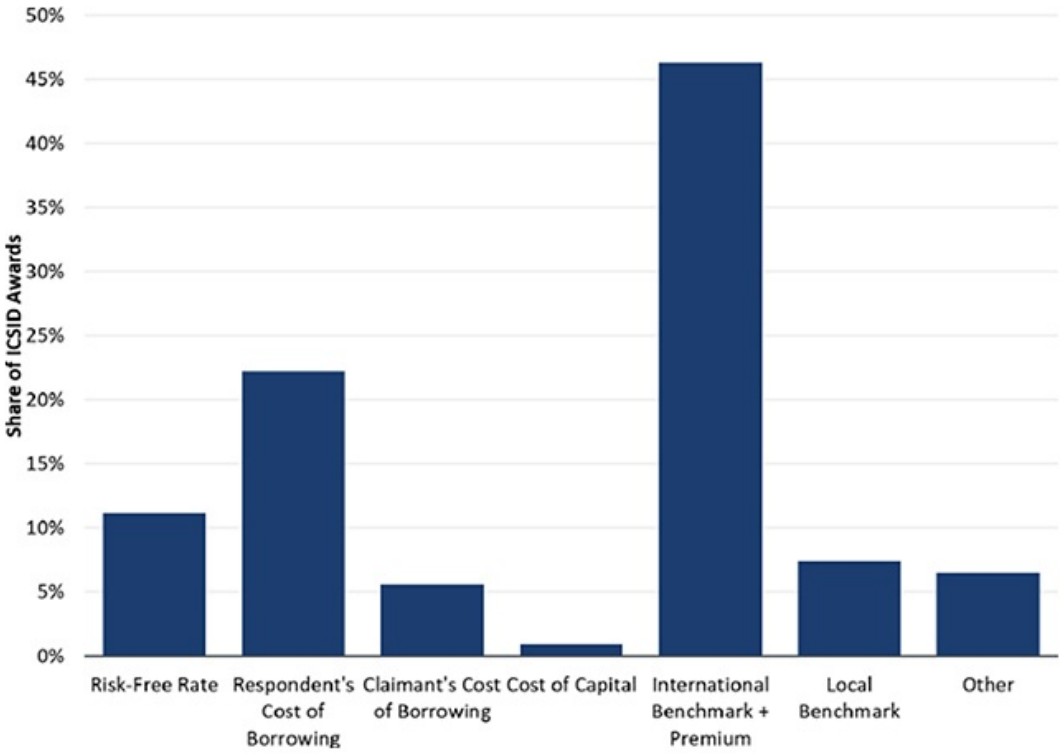
Interest on awards is necessary from an economic perspective and has important consequences. For example, in *Tenaris and Talta v. Venezuela*, the award of US$87.3 million was almost doubled to approximately US$172.8 million with interest.[1] Given the impact interest can have on damages, the rate selected determines whether compensation paid is economically fair to both claimants and respondents and also shapes the incentives for parties to arbitrate efficiently and to comply with awards in a timely manner. We discuss relevant economic principles that govern the determination of interest in investment arbitration.

Which rates have tribunals used?

There are many different rates that could be used for pre- and post-award interest, raising the question of what the economically correct interest rate is in an arbitration context. Few investment treaties provide specific guidance. For example, the (now terminated) Italy–Romania Bilateral Investment Treaty (BIT) stipulated the London Inter-Bank Offered Rate (LIBOR) as the applicable interest rate.[2] Most treaties are less specific, calling for interest at 'commercially reasonable' rates[3] or in generic terms, such as 'applicable interest'.[4]

We have analysed all international arbitration awards rendered since 2016 and published by UN Trade and Development (UNCTAD), which for the most part concern International Centre for Settlement of Investment Disputes (ICSID) and Permanent Court of Arbitration (PCA) cases. We summarise tribunals' decisions regarding pre-award interest in Figure 1, grouped into seven categories.[5]

Figure 1: Interest rate choices in I4SID and E4A awards, 2N1C–2N2j



Source: Brattle analysis of ICSID and PCA awards.

Tribunals use the risk-free rate in about 11 per cent of the awards, typically referencing US government bonds or near-risk-free international interest rate benchmarks like LIBOR (or its replacement[6]) and Euribor.[7] Tribunals justified this choice as sufficient for full reparation and noted that claimants were not exposed to continued business risk after the breach. For example, in *Clorox v. Venezuela*, the tribunal considered that after expropriation, the claimant was no longer exposed to 'commercial risk'.[8]

Approximately 22 per cent of tribunals awarded interest explicitly at the respondent's cost of borrowing. Economic literature rationalises this choice based on the 'forced loan theory', likening the claimant's situation to that of a 'forced' lender to the respondent.[9] Several tribunals have explicitly endorsed that reasoning. For example, in *PV Investors v. Spain*, [10] the tribunal considered that by not paying due amounts, the respondent 'has exposed the Claimants to risks that are identical to those assumed by investors who have lent money to [the respondent], and the government bond rate reflects the remuneration paid to market participants for bearing those risks'.[11]

The claimant's cost of borrowing was used by about 6 per cent of tribunals. The economic reasoning is based on the claimant's opportunity cost – meaning the dispute deprived the claimant of funds and required it to borrow money or, equivalently, lose the opportunity to

repay borrowed funds. For example, in *Cairn v. India*, the tribunal considered that 'in the But For Scenario, the Claimants would have alleviated their borrowing cost'.[12]

There is a more generalised version of the claimant's opportunity cost, which is based on the 'cost of capital', including both the cost of debt and equity financing. While in many cases claimants have requested compensation at that rate, most tribunals dismiss this request on the basis that it reflects compensation for a bearing risk that the claimant did not bear as a result of the alleged breach.[13] We have found only one decision that applied this rate.[14]

The most common choice, accounting for 46 per cent, involves an international benchmark rate and an added premium. The most frequently used benchmark rate was LIBOR plus a premium of 1 to 6 per cent, with 2 per cent being the most common premium adopted. Many awards do not clarify the exact basis for the selected interest rate or premium other than appealing to the concept of a commercial rate in a general sense, or by describing their choice as a reasonable rate in light of both claimant's and respondent's borrowing or opportunity costs. In several cases, the benchmark plus premium approach is described as a proxy for the claimant's borrowing rate,[15] where the added premium reflects the margin over the risk-free rate at which the claimant could borrow money.[16] In certain circumstances, the base rates (and sometimes also the premium) are dictated by specific language in the relevant investment treaty.[17]

A further 7 per cent of tribunals relied on local benchmarks, such as the Warsaw Interbank Offered Rate (WIBOR), or other local lending rates. Some of these tribunals relied on statutory rates applicable under local laws. In other cases, treaties specifically require a local commercial rate, such as in *South American Silver v. Bolivia* and Glencore v. Bolivia.[18] Tribunals choosing local benchmark rates typically describe their choice as reflecting a commercial rate, without affiliating it directly with rates applicable to either claimant or respondent. However, given local benchmark rates typically embed a premium over international benchmark rates associated with what economists term 'country risk', the choice of a local benchmark rate can, from an economic perspective, be closest to the respondent's cost of borrowing.[19]

The remaining 7 per cent of awards represent fixed rates based on either tribunal discretion or statutory interest rates from local laws in the respondent's jurisdiction.

Apart from the choice of rate, the vast majority of tribunals award interest on a compound, rather than simple, basis. Compound interest means that the amount of interest paid is a function of both the original principal sum as well as on past interest earned. Compound interest in effect assumes reinvestment, which is necessary to preserve the time value of money, and is a standard feature of commercial lending markets. Tribunals nowadays explicitly recognise that compound interest reflects economic realities,[20] and the rates used for pre-award interest typically inherently reflect certain compounding methods.[21]

Principles of rate selection

Our analysis of awards above shows that tribunals have adopted conflicting perspectives on interest. From an economic perspective, the range of debate may be narrowed by considering the relevant economic principles and understanding the available market evidence on interest rates.

Market interest rates are driven by two key economic principles. First, a dollar today is worth more than a dollar tomorrow, known as the time value of money. Second, a safe dollar is worth more than a risky dollar.

Regarding the time value of money, there is an opportunity cost for a lender when making a loan. A dollar today could be invested to start earning interest immediately without bearing any default risk. A lender that makes a loan foregoes the opportunity to use or invest the loaned funds, so it must be compensated for foregoing those alternatives. The risk-free rate compensates for the time value of money. The rate is usually based on borrowings that are considered essentially risk-free and is tied to the currency. For US dollar-denominated loans, the risk-free rate is generally based on US Treasury securities, but is sometimes based on the Secured Overnight Financing Rate (SOFR, the replacement of LIBOR) published by the Federal Reserve Bank of New York.[22] For euro-denominated loans, risk-free rates are often derived from German Bunds or the Euro Short-Term Rate (€STR).

Regarding risk, when making loans, lenders demand a premium above the risk-free rate to compensate for risk. The key component of this risk premium is typically associated with credit risk, which compensates for the risk that a borrower may default or pay late. Other factors can also contribute to the risk premium, including liquidity and duration risk.[23] Markets incorporate risk into interest rates, allowing us to measure the risk premium based on observed yields from traded bonds or credit default swaps[24] of the entity at issue (e.g., a country's sovereign debt) or from entities with similar credit ratings. To illustrate, Table 1, below, shows the risk premiums associated with different credit ratings from Professor Damodaran as of January 2025.

Table 1: Credit ratings and risk premiums

Credit rating	Risk premium (per cent)	Example countries
Aa2	0.46	Korea, Qatar
A2	0.80	Chile, Poland
Baa2	1.79	Hungary, Mexico
Ba2	2.83	Serbia, Vietnam
B2	5.18	Nicaragua, Rwanda
Caa2	8.47	Pakistan, Tunisia

From a lender's perspective, the principles of time value of money and risk that determine the appropriate interest rate on a loan similarly would apply if a tribunal were attempting to evaluate a claimant's but-for use of the funds.

In the context of disputes, the relevant interest rate may be shaped by legal considerations. For example, a treaty may limit the ability to set an interest rate that reflects the relevant economic considerations. Legal guidance may also govern the set of risks that should, or should not, be considered in setting pre- or post-award interest rates. Economic principles can be used to assess the commercially reasonable interest rate subject to these legal

considerations, which may give rise to very low or very high rates, depending on the circumstances.

As economists, the commercially reasonable rate of interest would be one that properly captures both the time value of money and risk given the context. A risk-free rate is the commercial rate for a loan that bears little or no risk. In such a situation (for example, where Switzerland – a AAA-rated country – is the respondent), adding a risk premium would be commercially unreasonable.

Similarly, using a benchmark like SOFR + 4 per cent would be commercially unreasonable for a loan to Pakistan or Tunisia, whose credit rating would require a much higher risk premium (see Table 1, above). While the available market evidence may not be perfectly applicable for every situation, market evidence can often be used to estimate a reasonable interest rate through benchmark rates, comparables analysis or interpolation.

Applying the principles: post-award interest

We start with an evaluation of post-award interest, as the economic substance of the situation is clear. Once an award has established liability and the amount owed, the claimant would naturally proceed to seek payment of the award by the respondent.[25] To determine the correct rate, we must ask the fundamental question of what is the risk associated with collecting on the award to which interest will be applied.

After an award, the claimant's situation is akin to that of a creditor to the respondent. Economic literature has likened the claimant to that of a forced lender.[26] The economically appropriate interest rate in this context should reflect the time value of money plus a market-based premium to compensate for the risk that the respondent might default. Note that we distinguish the risk of default (i.e., the non-payment of a valid award) from the risk that an award will be found invalid (i.e., annulled for cause).

From an economic perspective, setting the post-award interest rate equal to a market rate of interest that reflects the respondent's default risk is economically efficient. This is because:

1. the claimant is compensated fairly for any delay in payment and risk;
2. it avoids the incentives to defer payment because delaying payment would not benefit the respondent.[27] Conversely, a rate below the respondent's cost of borrowing could create incentives for respondents to delay benefitting from a relatively cheaper source of funding for longer; and
3. if a delay forces the claimant to borrow as a result of non-payment, the claimant should be able to do so at a rate that reflects the respondent's default risk. In efficient markets, the claimant would be able to rely on the award as 'collateral', so the risk of lending to the claimant depends on the risk associated with lending to the respondent. In other words, the cost of borrowing for the claimant (collateralised by the award) and for the respondent should be similar.[28]

The data analysis above shows that sometimes tribunal choices on interest reflect a desire to compensate the claimant for the deprivation of funds at the claimant's borrowing cost – either by quantifying borrowing costs directly or indirectly by adding a premium to a

benchmark rate as a proxy for the same. That motivation is consistent with the economic equivalence between claimant's and respondent's borrowing costs in a post-award setting. The only difference is that the quantification of the appropriate rate should focus on the respondent's borrowing costs, even if this serves as a proxy for the claimant's in this context.

In terms of quantifying borrowing costs, the risk premium demanded by creditors is easily observable for most respondents (i.e., governments in an investor–state dispute) because they will have issued bonds that are traded or because markets trade instruments that measure a borrower's credit spread, such as credit default swaps (CDSs).[29] A commercial borrowing rate for a risky borrower would then be composed of the risk-free rate plus the CDS spread. Adding a spread to a benchmark interest rate, such as a risk-free rate, is similar in terms of implementation to the choice adopted by the majority of tribunals (see the prior section). Our advice is therefore limited to ensuring that the chosen premium is anchored in an analysis of borrowing costs and credit risk.

The discussion above focuses on economic considerations in setting post-award interest rates. However, there may be legal or policy reasons to diverge from an interest rate that reflects the specific payment risk associated with a respondent. The first reason relates to discretionary premiums. In our analysis of ICSID and PCA awards, we found that a significant number of tribunals have increased the post-award interest beyond what the tribunals determined would reflect a commercial rate, specifically in order to incentivise prompt payment by the respondent. For example, in *Infracapital v. Spain*, the tribunal added a 1 per cent premium on top of the pre-award interest rate (respondent's cost of borrowing) to 'incentiviz[e] compliance with the terms of the Award as expediently as possible'.[30]

Second, a claimant having obtained an arbitration award may not face the exact same risk of non-payment as other creditors of the respondent. While it is difficult to quantify the difference in risk, empirical evidence suggests that claimants prevailing in arbitration are not immune to the risk of default by the respondent.

For example, in 2013, a group of utility companies that had prevailed in their claims against emergency measures taken by Argentina reached a settlement with the country, having previously struggled to obtain payment of the awards. Argentina relied on a series of debt restructurings in that period, having defaulted on its external debt back in 2001.[31] The settlement with the group of claimants reportedly involved a 25 per cent reduction, or 'haircut', to the originally awarded sums.[32]

Haircuts are a standard way in debt restructurings to help borrowers exit default and enable either partial repayment or full repayment, but at conditions that are worse for creditors and therefore involve a loss. The interest earned as a creditor involves compensation for the possibility of losing money in case of default. Anecdotal experience of claimants enforcing awards seems to justify compensating claimants for the respondent's default risk.[33]

In practice, there are some practical distinctions between an investor–state dispute settlement (ISDS) award and sovereign debt. While there is a market for selling ISDS awards, this market appears to lack transparency and liquidity, but sovereign debt markets can have both. This suggests that the market rate of interest might be higher for awards, all else equal. However, while both ISDS awards and sovereign debt face the risk of non-payment, the existence of multilateral treaties – such as the ICSID Convention or the

New York Convention – is intended to facilitate collection on awards. These treaties do not apply to sovereign debt holders in the event of default.

While the risk profiles associated with sovereign debt may not align perfectly with that of ISDS awards, we consider the respondent's risk of borrowing to be appropriate from an economic perspective (separate and apart from any policy or legal considerations) as a means of compensating claimants for the risk of delay and non-payment, while eliminating any material incentives for non-payment of a valid award.

Applying the principles: Pre-award interest

Unlike the post-award period, where the award has turned the claimant into a de facto forced lender to the respondent, there have been legal reasons argued that this framing is not applicable prior to the issuance of an award. One school of thought says that in a situation where liability has not yet been established, no compensation for risk is appropriate (the 'risk-free rate theory'). The theory assumes that, from a legal perspective, no liability exists prior to the issuance of an award on behalf of the claimant. Because there can be no default risk prior to the establishment of the award, no default risk premium is warranted. Absent default risk, the only economically appropriate adjustment is to account for the time value of money, which is captured in the risk-free rate.[34]

An alternative legal argument, the forced loan theory discussed in the prior section for post-award interest, is sometimes also applied for pre-award interest. Under this theory, the economically appropriate pre-award interest rate is the respondent's cost of borrowing. This rate is economically efficient because the claimant is compensated fairly for any delay in payment and for the risk of being a creditor to the respondent, and because it does not incentivise the respondent to delay payment (contrary to the risk-free rate approach).[35]

In a limited number of cases, tribunals have opted to award pre-award interest based on the claimant's opportunity cost of capital. One variant of this is the claimant's cost of capital – either the cost of equity or the cost of equity and debt capital. The other is the claimant's cost of borrowing.[36]

Both claimant's cost of borrowing and cost of capital are difficult to reconcile with economic logic. For the latter, an article by Fisher and Romaine illustrates the problem with an example:

> *The same defendant destroys two identical assets belonging to two different plaintiffs, Hetty and Ravenal. Hetty is extremely risk averse and only invests in government bonds [and hence has a low cost of capital]. Ravenal, on the other hand, invests in high-risk ventures [and hence has a high cost of capital]. (…) [I]t cannot be right to award Ravenal a higher [pre-award interest] amount than Hetty just because of the passage of time and their different investment strategies. Had the award been made at time 0, they would each have been awarded the same amount.*[37]

In other words, the breach has relieved the claimant of both the opportunity to profitably invest the funds but also the risk of losses. Awarding pre-award interest at the claimant's cost of capital would compensate the claimant for risks it did not incur.

A similar problem exists for the first option – claimant's borrowing costs. Continuing Fisher and Romaine's illustration above, given the different risks inherent in Hetty's and Ravenal's

businesses, their cost of borrowing could be very different. All else being equal, creditors of Ravenal would charge higher interest rates to compensate for the higher credit risk associated with its riskier business. Borrowing costs could also be affected by decisions made by each company on how to finance its businesses (i.e., its capital structure).

As in the example above, this approach to pre-award interest would award two companies that experienced an identical loss with different amounts, including pre-award interest, just because their businesses face different risks or have elected to use different capital structures. Hetty and Ravenal claim for the loss of two identical assets, and their other business decisions are unrelated to the breach. A commercially reasonable rate compensates claimants for the risks at hand, which, at most, relate to the risk that the respondent may be unable to pay the award once rendered.

Nevertheless, there may be legal reasons why the loss of opportunity or costs associated with additional borrowing due to the breach are compensable. A paper by Maniatis et al. proposes to include such claims directly as separate damages elements, rather than attempting to recover them implicitly through pre-award interest.[38]

Conclusion

Interest can be a significant component of awards. Our analysis finds that there remains substantial variation across awards as to how to approach the issues of pre- and post-award interest. Many awards focus on selecting a 'commercial rate' of interest. However, there is no uniformly applicable or reasonable commercial rate of interest, because rates in commerce depend on the risk faced by the lender. That risk reflects the risk of the particular borrower (and is indifferent to the particular lender).[39] All market rates, from risk-free to junk bond rates, are commercial – they just depend on the risk of the borrower. The appropriate rate also depends on the legal context.

However, in all cases, the economically appropriate commercial interest rate is a function of the time value of money and applicable credit risk. Post-award interest is best viewed through the lens of the 'forced loan' theory, as the award has, in effect, turned the claimant into a creditor to the respondent. Compensation at the respondent's borrowing cost is economically efficient in this case, as it provides compensation for payment risk and eliminates incentives to delay payment.

Pre-award interest is more contested. Both the respondent's cost of borrowing and the risk-free rate can be appropriate from an economic perspective, depending on the legal context. The latter would be consistent with the view that compensation above the risk-free rate is only warranted once an award establishes liability, while the former is consistent with the view that the award merely confirms that the claimant has been a creditor to the respondent since the date of breach.

The key to identifying the correct rate, therefore, is first to identify the relevant risks to be compensated and then to look to markets to find the appropriate rate consistent with those risks.

Endnotes

1 Award,*Tenaris SA and Talta – Trading e Marketing Sociedade Unipessoal Lda. v. Venezuela*, No. ARB/11/26, 29 January 2016, ¶625. ^ Back to section

2 Agreement Between the Government of the Italian Republic and the Government of Romania for The Promotion And Protection of Investments, 27 November 1990, Article 4(4). ^ Back to section

3 See, for example, Treaty Between the United States of America and the Republic of Bulgaria Concerning the Encouragement and Reciprocal Protection of Investment, 1992, Article 3. ^ Back to section

4 See, for example, United States Trade Representative,*2012 US Model Bilateral Investment Treaty*, Article 34. ^ Back to section

5 Our review of interest rate choices is naturally confined to cases where the tribunal decided in favour of claimants and proceeded to award damages. ^ Back to section

6 SOFR is a new index created that replaced LIBOR following concerns about manipulation of LIBOR. It reflects the cost of overnight borrowing collateralised by US Treasury securities and is therefore considered virtually risk-free. LIBOR reflects the rate at which banks lend to each other on an unsecured basis and thus embeds a small premium for credit risk. The Alternative Reference Rates Committee (ARRC) has therefore proposed a premium over SOFR for cases where parties intend to find a like-for-like replacement of LIBOR. See, for example, Federal Reserve Bank of New York, 'Transition from LIBOR', https://www.newyorkfed.org/arrc/sofr-transition. ^ Back to section

7 Like LIBOR, Euribor is an interbank short-term unsecured lending rate that is not entirely risk-free and reflects some credit risk. ^ Back to section

8 Award,*Clorox Spain SL v. Venezuela*, No. 2015-30, 9 August 2023, ¶802. Similarly, in *BayWa v. Spain*, the tribunal considered that the claimant was not exposed to 'business risk' after the breach. Award, *BayWa r.e. Renewable Energy GmbH and BayWa r.e. Asset Holding GmbH v. Spain*, ICSID No. ARB/15/16, 25 January 2021, ¶¶59 and 62. ^ Back to section

9 See discussion below. ^ Back to section

10 Final Award,*The PV Investors v. Kingdom of Spain*, No. 2012-14, 28 February 2020, ¶834. Another example is *IC Power and Kenon Holdings v. Peru*, where the tribunal considered that 'between the Valuation Date (…) and the date of the Award, Claimants were exposed only to the risk of not obtaining the damages they are entitled to'. See Award, *IC Power Ltd and Kenon Holdings Ltd v. Peru*, No. ARB/19/19, 3 October 2023, ¶603. ^ Back to section

11 In several instances, tribunals described their choice as a 'local' risk-free rate. Often that local rate represents the respondent's cost of borrowing rather than a risk-free instrument; see, for example, Final Award,*Natland Investment Group NV, Capamera Limited, GIHG Limited* and *Radiance Energy Holding SARL v. Czech Republic*, 15 December 2023, ¶700; Award, *Eurus Energy Holdings v. Spain*, No. ARB/16/4, 14 November 2022 ¶137. We have subsumed those choices under the category respondent's cost of borrowing. ^ Back to section

12 Final Award,*Cairn Energy PLC and Cairn UK Holdings Ltd. v. India*, No. 2016-07, ¶1950. ^ Back to section

13 See, for example,*RWE Innogy v. Kingdom of Spain*, where the tribunal stated that 'such a rate [i.e. the cost of capital] would result in compensating the Claimants at a rate linked to a high risk investment, when no such investment has been made' (Award, *RWE Innogy GmbH and RWE Innogy Aersa SAU*, No. ARB/14/34, ¶132); or in *Tenaris and Talta v. Venezuela*, where the tribunal agreed with the respondent that 'the use of a WACC is not appropriate because it reflects an *ex ante* risk factor for an operating company, not a commercial measure of the time value of money'. (Award, *Tenaris SA and Talta – Trading e Marketing Sociedade Unipessoal Lda v. Venezuela*, No. ARB/11/26, 29 January 2016, ¶¶573, 583). ^ Back to section

14 *ConocoPhillips v. Venezuela*, No. ARB/07/30, 8 March 2019, ¶¶807-825. The *ConocoPhillips v. Venezuela* tribunal did not rely on this rate for purposes of post-award interest rate; see ¶¶826–829. We have found one decision where the interest rate awarded is commensurate with the cost of capital. In *UP and CD Holding v. Hungary*, the tribunal awarded interest at Euribor plus a 6.01 per cent market risk premium. However, the tribunal did not endorse the rate as a cost of capital but based on an intention to include a premium over the risk-free rate in order to obtain a 'market rate'. See Award, *UP and CD Holdings Internationale v. Hungary*, No. ARB/13/35, 9 October 2018, pp. 190–191. We have therefore included the latter choice in the category 'international benchmark + premium'. ^ Back to section

15 For example, the tribunal in*Murphy v. Ecuador* chose a rate based on USD LIBOR as it 'reflects the best approximate rate that Claimant would have had to pay if it had been obliged to borrow the money'; in *Hydro Energy v. Kingdom of Spain*, the tribunal chose a rate to 'reflect a commercial borrowing rate which the Claimants would incur to compensate the deprivation of liquidity by borrowing money'. See Partial Final Award, *Murphy v. Ecuador*, 6 May 2016, ¶516 and Award, *Hydro Energy v. Spa*in, No. ARB/15/42, 5 August 2020, ¶145. ^ Back to section

16 See, for example, Partial Final Award,*Murphy v. Ecuador*, 6 May 2016, ¶517, in which the tribunal decided to add a 4 per cent premium to LIBOR as they deemed 'only the most solvent and creditworthy borrowers are able to borrow money from banks' at LIBOR without an added premium. ^ Back to section

17 See, for example, Award,*Laiki v. Greece*, No. ARB/14/16, 15 April 2021, ¶¶419–420, in which the tribunal found 'that in the present case it is appropriate to apply the LIBOR rate for six-month deposits (. . .) consistent with Art. 4 of the BIT'. ^ Back to section

18 The awards invoke Article 5(1) of the bilateral treaty stipulating that '[s]uch compensation (. . .) shall include interest at a normal commercial or legal rate, whichever is applicable in the territory of the expropriating Contracting Party'. See Award, Glencore v. Bolivia, 8 September 2023, ¶540. ^ Back to section

19 Abstracting from the issue of potential differences in currency. ^ Back to section

20 See, for example,*PV Investors v. Kingdom of Spain*: 'In the Tribunal's view, the interest should be compounded in line with generally accepted financial practice. If the Claimants had not been deprived of the funds to which they were entitled, they could have invested them and would have earned compound interest. Similarly, if as a result of the deprivation, they had to borrow money, they would also have paid compound interest.' Final Award, *The PV Investors v. Spain*, No. 2012-14, 28 February 2020 ¶854. ^ Back to section

21 We find that, in 91 per cent of cases, tribunals award compound interest. In most cases where simple interest is awarded, the justification provided relates to contractual reasons. Awarding compound interest continues a trend observed in a 2016 study by PwC, which noted that tribunals decided in favour of compound and simple interest in roughly equal proportions until around 2005, and that this split changed to close to 90 per cent being decided in favour of compound interest by 2015. See PwC, Dispute Perspective: Tribunals' Conflicts on Interest (2016), p. 2. ^ Back to section

22 See footnote 6 above. ^ Back to section

23 Liquidity risk refers to the risk that a creditor that requires access to cash may be forced to sell the loan at a discount to find a buyer. Duration refers to interest rate risk and reflects the sensitivity of price changes in response to interest rate changes, which depends on maturity and payment frequency. ^ Back to section

24 A credit default swap is a contract under which the purchaser pays a specific annual premium to insure against default. ^ Back to section

25 Or sell the award on to another party seeking enforcement of payment. ^ Back to section

26 M. Alexis Maniatis, Florin Dorobantu and Fabricio Nunez, 'A Framework for Interest Awards in International Arbitration',*Fordham International Law Journal* (2018); Roy J Epstein, 'Prejudgment Interest Rates in Patent Cases: Don't Compound an Error', 24, No. 2, IPL Newsletter (2006), p. 9; James M Patell, Roman L Weil and Mark A Wolfson, 'Accumulating Damages in Litigation: The Roles of Uncertainty and Interest Rates', 11 Journal of Legal Studies (1982), pp. 341, 343; Jeffrey M Colón and Michael S Knoll, 'Prejudgment Interest', *Litigation Services Handbook: The Role of the Financial Expert*, 6th ed. (2017), § 16.4. ^ Back to section

27 An economically efficient interest rate determination requires setting a 'floating' interest rate, which varies with market interest rates. Setting a fixed post-award interest rate may still introduce incentives to delay where market interest rates increase due to a changing interest rate environment or the respondent's default risk. ^ Back to section

28 In practice, lenders sometimes require recourse to other assets, with the result that the claimant's cost of borrowing would fall below that of the respondent. However, the requirement for recourse represents a cost to the claimant for which interest at the respondent's cost of borrowing would provide compensation. Similarly, in practice, there can be other differences in default risk between sovereign debt and awards, including in relation to collateral value. ^ Back to section

29 Even in the absence of directly observable measures of default risk, there are indirect measures based on an analysis of credit ratings, such as that developed by Professor Aswath Damodaran and mentioned further above. ^ Back to section

30 Award,*Infracapital F1 SARL and Infracapital Solar BV v. Kingdom of Spain*, No. ARB/16/18, May 2, 2023, p. 56. ^ Back to section

31 Argentina defaulted on its external debt in 2001, 2014, and 2020, and saw its debt restructured in 2005, 2010, and 2020. See, for example, European Parliamentary Research Service, Briefing,*Argentina's debt restructuring and economy ahead of the 2023 elections*, by Angelos Delivorias, Members' Research Service, PE 753.938, September 2023, https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/753938/EPRS_BRI(2023)753938_EN.pdf, pp. 1 and 4. ^ Back to section

32 Paula Hodges, Christian Leathley, and Louise Barber, 'Argentina settles five outstanding investment treaty arbitration claims in historic break with its anti-enforcement stance',*Bilaterals.org*, 14 October 2013, https://www.bilaterals.org/?argentina-settles-five-outstanding. Strictly speaking, a 'haircut' in debt restructurings typically also considers the timing of any payments. Given the claimants struggled to enforce their claims over a certain period, the haircut in present value terms exceeds the 25 per cent reported above. ^ Back to section

33 Amounts recovered in debt restructurings differ widely across countries as well as across restructurings involving the same debtor at different points in time. For example, Moody's Investor Service, Sovereign default and recovery rates, 1983–2020 shows that recovery rates ranged from as low as 17 per cent for Lebanon's debt restructuring in 2020 to as high as 95 per cent for the Dominican Republic's in 2005, with an average between 40 and 53 per cent depending on the method. In the notorious case of 'holdout' creditors to Argentina in which investors obtained a right for full repayment, the investors ultimately accepted a roughly 25 per cent haircut on their claims. Deutsche Welle, 'Argentina strikes deal with hedge funds', 29 February 2016, https://www.dw.com/en/argentina-reaches-debt-deal-after-15-year-battle/a-19083591. Also see Juan J. Cruces, and Christoph Trebesch, 'Sovereign Defaults: The Price of Haircuts', *American Economic Journal: Macroeconomics*, Vol. 5, (3), pp. 85–117 and Chuck Fang, Julian Schumacher and Christoph Trebesch, 'Restructuring sovereign bonds: holdouts, haircuts and the effectiveness of CACs', ECB Working Paper No. 2366, January 2020. ^ Back to section

34 Franklin M Fisher and R Craig Romaine, 'Janis Joplin's Yearbook and the Theory of Damages',*Journal of Accounting, Auditing & Finance*, Vol. 5, No. 1/2 (1990), pp. 146–148. ^ Back to section

35 Applying a risk-free rate for a respondent with material default risk and hence borrowing costs above the risk-free rate may create incentives to delay the resolution of a dispute in order to borrow for longer at a rate below its actual cost of borrowing. ^ Back to section

36 Unlike the situation with post-award interest, the claimant's borrowing costs need not approximate the respondent's borrowing costs because there is no award to sell or borrow against. ^ Back to section

37 Fisher and Romaine, 'Janis Joplin's Yearbook', p. 146. ^ Back to section

38 Maniatis, MA, Dorobantu, F and Nunez, F, 'A Framework for Interest Awards in International Arbitration',*Fordham International Law Journal* (2018), pp. 836–839. If compensable, such a claim would rely on the specific factual circumstances at hand and document why the claimant was unable to access funding at market rates. ^ Back to section

39 For example, the market rate of interest on a bond is identical regardless of who holds it. The risk of the lender is not relevant, only the risk of the bond's cash flows (that is, of the borrower). ^ Back to section

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