



THE GUIDE TO TELECOMS ARBITRATIONS

SECOND EDITION

Editor
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Second Edition

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Publisher's Note

Global Arbitration Review is delighted to publish *The Guide to Telecoms Arbitrations*.

For newcomers, GAR is the online home for the international arbitration specialists everywhere. We tell them all they need to know about everything that matters in their chosen niche.

GAR is perhaps best known for daily news. But we also have a growing range of other output, including our technical library (the Guides); our retrospective annual regional reviews; our GAR Live events; workflow tools such as the Arbitrator Research Tool (ART) and Primary Sources, which map the connections between key players; and our new GAR online Academy, where newcomers can learn advocacy and skills at the foot of the masters. Please visit www.globalarbitrationreview.com if you are interested in finding out more.

As the unofficial 'official journal' of international arbitration, we often spot gaps in the literature before others. This guide to telecoms arbitrations is a prime example. Few industries seek the counsel of arbitration specialists so regularly, and yet there has been no definitive book for either counsel or client on some of the practicalities of those disputes – until now. On this occasion, however, the joy of accomplishment is tempered with serious embarrassment. GAR has been writing about telecoms disputes since our inception in 2006. In fact, if I had to pick one industry that regularly produces large shareholder disputes, it would be telecoms. We should have thought of this one long ago.

Still, better late than never. And the timing may in fact be apposite. As editor Wesley Pydiamah notes in his introduction, demand for international arbitration from telecoms clients is only likely to increase as the industry goes through a series of technology releases and system upgrades.

As with most of our other sector-specific guides, this is not a complete toolbox (the exception being our guide to intellectual property arbitration); rather, it assumes a certain knowledge of the process on the part of the reader and jumps you straight to the practical points that are current and pertinent for telecoms.

We trust you will find it a useful addition to your library. If so, you may be interested in the other books in the GAR Guides series. They cover energy, construction, intellectual property disputes, mining, M&A, challenging and enforcing awards, investor-state arbitration, evidence and, soon, aviation and space-related disputes – all in the same practical way. We also have a book on advocacy in arbitration and one on how to become better at thinking about damages – as well as a handy citation manual (*Universal Citation in International Arbitration* (UCIA)).

We're delighted to have worked with so many leading names in creating *The Guide to Telecoms Arbitrations*. My thanks to all of them. And last, special thanks to Wesley Pydiamah for proposing the idea and for his elan in developing the vision. And as always to my Law Business Research colleagues for creating such a polished work.

David Samuels

Publisher, GAR

September 2023

Part II

Investment Treaty Arbitration

CHAPTER 12

Valuation Approaches: Investment Treaty Arbitrations

Lucrezio Figurelli and Richard Caldwell¹

There are several industry characteristics that expose the telecoms sector to investor-state disputes. Telecoms networks routinely require large investments for development and upgrades, with investors expecting to earn future profits through many years of operation. Telecoms investments have attracted significant amounts of foreign capital over the past decades. At the same time, the development of telecoms networks is a matter of strategic national interest, similar to energy, prompting heavy regulation of these markets. Investors often must obtain several layers of authorisations and licences to operate a network, and regulators have sometimes imposed additional restrictions on ownership and control by foreign investors. Furthermore, wireless spectrum and many telecoms networks have witnessed large and unexpected revenue growth, which has increased the incentives for states to seek to extract more value from these assets.

It is not surprising, therefore, that the number of investment treaty arbitrations in the telecoms sector has continued to rise in recent years, leading several practitioners to view spectrum – the scarce resource necessary to provide wireless telecoms services – as ‘the new oil’ and to foresee a further increase in disputes for the next several years.²

In this chapter, we first review the investment treaty arbitrations initiated by telecoms operators since the 1990s, which we have identified through the ICSID database and the United Nations Conference on Trade and Development

1 Lucrezio Figurelli and Richard Caldwell are principals at The Brattle Group.

2 Romilly Holland, ‘Is Spectrum the New Oil: Trends in Investor-State Disputes in the Telecommunications Sector’, *Dispute Resolution International*, Vol. 12, No. 2 (October 2018).

(UNCTAD) Investment Dispute Settlement Navigator. We then analyse instances in which damages were awarded and discuss the relevance and use of the discounted cash flow (DCF) method in these cases. We then discuss specific issues that emerge when valuing telecommunications assets in the context of treaty arbitrations, including how to account for regulatory, country and business risk and how to value spectrum under an alternative market approach.

Overview of surveyed disputes

Overall, we have identified at least 64 telecoms-related disputes between private investors and host states arising under bilateral investment treaties during the period from 1996 to 2021, 13 of which were initiated in 2020 and 2021.³ In most telecoms-related disputes, investors claim that the host state has deliberately taken unreasonable measures to deprive them of the investment's value, resulting in direct or indirect expropriation without full and proper compensation, or in a breach of the host state's obligation to fair and equitable treatment.

Most of the disputes involved mobile telecoms networks (46 of the 64), while the others concerned fixed broadband and cable (15) and satellite terrestrial networks (3). The marked concentration of disputes in the mobile sector is not surprising. The initial development of 2G networks and the later upgrade to 3G and 4G technologies attracted numerous foreign investors, requiring risky up-front investments in tangible and intangible assets.

On the other hand, governments have regulated the sector with the goal of favouring the development of modern mobile networks with state-of-the-art technology, relying on competitive auctions to allocate radio spectrum and imposing stringent conditions on concessions and licences in terms of duration, technology and roll-out requirements. In contrast, fixed telecommunications have often been characterised by the presence of a dominant, formerly state-owned incumbent, a limited degree of network overbuild and a relatively more mature technology.

The surveyed disputes can be classified into four main categories, ones that depend on whether the dispute involved (1) a licence or concession dispute, (2) the levy of taxes and licence fees, (3) criminal investigations and political interference

3 In this chapter, we only consider investment treaty arbitrations initiated by telecommunications operators, loosely defined as operators offering a combination of wired or wireless telecommunications services. To identify the relevant arbitrations, we have used the International Centre for Settlement of Investment Disputes (ICSID) database and the United Nations Conference on Trade and Development (UNCTAD) Investment Dispute Settlement Navigator.

or (4) restrictions to foreign ownership and control – or a combination of the four. All these issues often involved changes to the regulation, which potentially affected the value and profitability of the foreign investment.

Twenty-seven of the 64 telecoms-related disputes involved the early termination, revocation or denied renewal of a licence or concession to operate. Most of these disputes involved mobile telecoms networks and concerned wireless spectrum licences for 2G, 3G and 4G technology. For example, in *Khaitan Holdings v. India* (2013),⁴ the Mauritius-based company Khaitan Holdings (Mauritius) Ltd, a 27 per cent minority shareholder in Loop Telecom, filed an arbitration against the Indian government after the Indian Supreme Court had cancelled Loop Telecom's 21 2G licences in February 2012.

In *Orange v. Jordan* (2015),⁵ the French telecoms company Orange filed a claim against Jordan for discriminatory practices in the renewal of the 15-year 2G licence of its local subsidiary, the formerly state-owned Jordan Telecommunications Company (JTC). Orange alleged that the regulator had required JTC to buy 'a much broader and more expensive licence than was required when it first entered the market and imposed an arbitrary renewal fee, as part of an opaque licensing procedure'.⁶

Ten other telecoms-related disputes involved the levy of additional taxes, fines or licence fees that the investor did not foresee, which were allegedly adopted by the host state to reclaim some of the profits made by the foreign investor or to drive the investor out of business intentionally.

A prominent example is Vodafone's 'retrospective taxation case' against India (2014).⁷ In 2007, Vodafone had bought a 67 per cent stake in Hutchison Whampoa Essar (HEL) for US\$11 billion. In September 2007, the Indian government demanded about US\$1.1 billion in capital gains and withholding tax from Vodafone, arguing that the company should have deducted the tax before making the payment for the purchase. After a five-year judicial battle, the Indian Supreme Court ruled in favour of Vodafone in 2012, arguing that the company did not have to pay any taxes for the stake purchase. But after the Supreme Court's decision, the Indian parliament passed an amendment to the Finance Act, giving the Income Tax Department the power to retrospectively tax the deal.

4 *Khaitan Holdings Mauritius Limited v. India*, PCA Case No. 2018-50.

5 *Orange SA v. Hashemite Kingdom of Jordan*, ICSID Case No. ARB/15/10.

6 See 'Jordan instructs counsel in telecoms claim', *Global Arbitration Review* (6 May 2015).

7 *Vodafone International Holdings BV v. India (I)*, PCA Case No. 2016-35.

In 2014, Vodafone filed an arbitral claim against India over US\$2.6 billion in tax liabilities. In 2018, the bilateral investment treaty (BIT) tribunal ruled in favour of Vodafone, inviting India to stop efforts to recover these taxes from Vodafone.

In *Orascom v. Algeria* (2012),⁸ the Luxembourg-based company Orascom filed a claim against the state of Algeria, alleging that the tax reassessment policies pursued by the Algerian government had forced the sale of their Algerian subsidiary, OTA, in 2011. Orascom alleged that Algeria had imposed unreasonable restrictions on dividend transfers between Orascom and OTA, enforced an injunction freezing OTA's bank accounts and imposed a customs blockade that prevented OTA from conducting its day-to-day operations. In 2017, the case was declined over jurisdiction.

Nine more telecoms-related disputes involved criminal investigations that were allegedly politically driven or otherwise involved forms of political interferences enacted by the host state to expropriate or sabotage the investor's business. In *Abanto v. Venezuela* (2018),⁹ the Peruvian entrepreneur Dick Fernando Abanto Ishivata launched a claim against Venezuela over the seizure of his telecoms company Omnivisión, operating in Venezuela through the brand name Movilmax. Mr Ishivata alleged that the government had unlawfully seized the company, using the excuse of a court order that gave them the power to intervene in the properties owned by an associate of Mr Ishivata who had been indicted in previous criminal proceedings.¹⁰

Meanwhile, in *Astro v. India* (2016),¹¹ the UK and Mauritian affiliates of the Malaysian satellite television group Astro filed a claim against India following a criminal investigation into their investment in Sun Direct, an Indian satellite television company partially owned by a sibling of the former Indian telecoms minister Dayanidhi Maran. The Indian authorities alleged that Astro's investments in Sun Direct were kickbacks to the Maran family. The case settled in 2018.

Finally, eight telecoms-related disputes involved restrictions on foreign ownership and control, which were allegedly implemented by the host state as a means to expropriate the investor in violation of its treaty obligations. In

8 *Orascom TMT Investments S.à r.l. v. People's Democratic Republic of Algeria*, ICSID Case No. RB/12/35.

9 *Dick Fernando Abanto Ishivata v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB(AF)/18/6.

10 See 'Peruvian telecoms investor brings claim against Venezuela', Global Arbitration Review [7 November 2018].

11 *Astro and South Asian Entertainment v. India*, UNCITRAL.

Euro Telecom v. Bolivia (2007),¹² Euro Telecom (a Dutch subsidiary of Telecom Italia) filed an arbitral claim against the Republic of Bolivia after the Bolivian government nationalised the largest telecommunications company, Entel, in which Euro Telecom had a 50 per cent stake. Euro Telecom argued that this amounted to expropriation of its assets without proper compensation under the Netherlands-Bolivia BIT.

In *Huawei Technologies v. Sweden* (2022),¹³ Huawei filed a claim against Sweden after the Swedish Post and Telecoms Agency (PTS) explicitly prohibited telecoms network operators in the country from collaborating with Huawei to instal new frequency bands to upgrade Sweden's 5G network, and asserted that Huawei's 3G and 4G equipment currently in use should be phased out by no later than January 2025.

Damages awarded

Of the 64 disputes reviewed, five were decided in favour of the investor, 19 were settled, 10 were decided in favour of the state, three were discontinued and 20 were still pending at the time of writing. Tribunals declined jurisdiction in seven cases. Of the five cases decided in favour of the investor, damages were awarded in four.¹⁴

In *France Telecom v. Lebanon* (2002),¹⁵ the tribunal found that Lebanon's termination of its contract with France Telecom to operate a mobile network was a breach of fair and equitable treatment. France Telecom had initially sought US\$956 million in compensation. The tribunal awarded US\$266 million in damages but the award has not been made public.

In *Rumeli and Telsim v. Kazakhstan* (2005),¹⁶ the tribunal found that Kazakhstan had breached its obligation to accord telecoms companies Rumeli and Telsim fair and equitable treatment and that it had expropriated Rumeli and Telsim's investment. Claimants had initially sought US\$458 million in damages. The tribunal awarded US\$125 million.

12 *E.T.I. Euro Telecom International N.V. v. Plurinational State of Bolivia (I)*, ICSID Case No. ARB/07/28.

13 *Huawei Technologies Co, Ltd v. Kingdom of Sweden*, ICSID Case No. ARB/22/2.

14 In the fifth, the tribunal concluded that Vodafone did not have to pay close to US\$3 billion in back taxes.

15 *France Telecom v. Lebanon*, UNCITRAL.

16 *Rumeli Telekom AS and Telsim Mobil Telekomunikasyon Hizmetleri AS v. Republic of Kazakhstan*, ICSID Case No. ARB/05/16.

In *Deutsche Telekom v. India* (2013)¹⁷ and *CC/Devas v. India* (2012)¹⁸ – two parallel BIT claims against India involving the annulment of a 2005 agreement between Antrix and Devas for the lease of satellite spectrum – the respective tribunals found the Indian government responsible for indirect expropriation and violation of fair and equitable treatment. In May 2020, Deutsche Telekom was awarded US\$93.30 million, plus interest, against an initial claim of US\$270 million. In October of the same year, CC/Devas was awarded US\$111 million, plus interest, against an initial claim of US\$580 million.

Also relevant is *Dunkeld v. Belize* (2010).¹⁹ The subject of this dispute related to a compulsory acquisition order by the Belize government of the shares in Belize Telemedia held by the British firm Dunkeld International Investment Limited. The parties agreed to a partial settlement in September 2015, leaving it to the tribunal to determine the quantum. The tribunal issued the award in June 2016, quantifying damages at US\$96.9 million against an initial claim of US\$298.7 million.

Regarding the valuation method, DCF analysis was used in all cases for which information is publicly available, typically in combination with alternative supporting methods.²⁰ The primary use of DCF is not surprising. The valuation task in investor-state arbitration is not unique and corresponds closely to the valuation task in commercial arbitration. Therefore, the appropriate valuation methodology is not determined by the legal forum but by the assets or rights under consideration. Nevertheless, particular issues emerge when valuing telecoms assets in the context of treaty arbitrations.

In what follows, we first discuss the relevance and common use of the DCF approach in the valuation of telecoms assets in treaty arbitrations; we then discuss several particular issues, including how to account for regulatory, country and business risk and how to value spectrum under an alternative market approach.

17 *Deutsche Telekom AG v. The Republic of India*, PCA Case No. 2014-10.

18 *CC/Devas (Mauritius) Ltd, Devas Employees Mauritius Private Limited and Telcom Devas Mauritius Limited v. Republic of India*, PCA Case No. 2013-09.

19 *Dunkeld International Investment Ltd v. The Government of Belize (I)*, PCA Case No. 2010-13, UNCITRAL.

20 Although the discounted cash flow (DCF) approach was considered in all cases for which information is publicly available, a variety of other asset-based and market-based approaches were used, generally in support or as an alternative to the DCF calculation. These approaches included the liquidation value approach, the investment cost approach, the investment cost plus approach, the sunk cost approach and the market value approach.

Relevance and use of the DCF approach

Most investment treaty arbitrations in the telecoms sector have involved the valuation of a telecoms network or licence, in some cases before the business had started operations. In general, the value of telecoms assets, including radio spectrum, ultimately depends on the expected cash flow generation. DCF analysis is thus the natural valuation approach. However, modelling expected cash flows requires careful consideration of the likely evolution of demand, technology and regulation, as well as the related risks.

Investor due diligences typically involve the valuation of telecoms assets using detailed bottom-up DCF models, which factor in a granular network model and reasonable assumptions about the evolution of demand, regulation and tariffs. BIT tribunals, however, have accepted the use of these models with caution.

In *Rumeli and Telsim v. Kazakhstan* (2005), the tribunal adopted the DCF valuation by the claimants' expert as its starting point to determine the fair market value of the expropriated investments in Kazakhstan's telecoms company Kar-Tel. However, the business was at 'a relatively immature stage of development' at the time of the expropriation, 'with no established and stable track record of past income from which to predict future income'.²¹ The tribunal discussed the reliability of the DCF method in the absence of adequate historical data and considered the adoption of the liquidation value approach as a possible alternative since the business could 'not be treated as a going concern under the World Bank Guidelines'.²² Nevertheless, the tribunal ultimately decided that the DCF method was the only suitable method to ascribe a value to Kar-Tel's licence to operate a mobile communication network, which 'is directly linked to its potential to produce income'.²³

In the settled *Dunkeld v. Belize* (2010), the parties agreed that the standard of damages would be the fair market value of the expropriated investment as estimated using the DCF method and asked the tribunal to opine on this value. Both the claimant's and the respondent's experts carried out respective DCF valuations of Telemedia, arriving at significantly different estimates. The claimant's expert used a detailed bottom-up model of expected cash flows over a 15-year period. The respondent's expert instead used a simplified top-down model of expected cash flows, largely based on the cash flow predictions of Telemedia's business plan. The tribunal ultimately considered that the projections underpinning the

21 Award, dated 29 July 2008, para. 811.

22 *ibid.*

23 *ibid.*

claimant expert's bottom-up valuation model were speculative, increasing 'the degree of uncertainty in the claimant's calculations beyond what the Tribunal considers reasonable'.²⁴ Accordingly, the tribunal preferred the respondent's top-down model as the starting point for its own conclusions.

Surprisingly, the tribunal in *Deutsche Telekom v. India* (2013) rejected the use of the DCF method, even though it was advanced by Deutsche Telekom's expert. The expert prepared a DCF valuation based on the most recent iteration of Deutsche Telekom's business plan for Devas, the 'Darwin model', which had been prepared in the ordinary course of business.²⁵ The Darwin model was a detailed bottom-up model that Deutsche Telekom had initially prepared as it was considering buying a stake in Devas. The Darwin model was developed jointly by engineers and finance professionals, including personnel with experience of deploying terrestrial networks and developing business plans for similar projects for Deutsche Telekom. The tribunal nevertheless disagreed with the DCF approach because Devas' business had not yet started to generate cash flows as of the relevant valuation date. Furthermore, Devas lacked the licence required for the terrestrial reuse of the spectrum, creating uncertainty about the potential issuance and licence fee. Based on its untested cost estimates and lack of a profitable track record, the tribunal ruled that using the DCF methodology in the case was inappropriate.²⁶

As an alternative to DCF, Deutsche Telekom had also proposed an 'investment plus' method, which took Deutsche Telekom's March 2008 cash payment for its investment in Devas as a starting point, and adjusted it to factor in Deutsche Telekom's in-kind contribution to the fair market value of Devas and the progress of the firm between 2008 and the valuation date. The tribunal also disregarded this method as it was not considered to be grounded in economic theory.²⁷ In the end, the tribunal decided that quantifying damages based on the recovery of sunk costs was the most appropriate method.

In contrast, the DCF approach was approved by the tribunal in the parallel case *CC/Devas v. India* (2012). Devas' experts used the same Darwin model as Deutsche Telekom's expert as a starting point but applied an established three-step venture capital method developed by Yale School of Management Professor Andrew Metrick, 'specifically tailored to measuring the value of young companies

24 Award, dated 28 June 2016.

25 Award, dated 27 May 2020, para. 171.

26 *id.*, para. 203.

27 *ibid.*

in Devas'.²⁸ The three-step DCF method first calculated the value that Devas would have had as a mature company using 'the same discount rate as would apply to a mature Indian telecommunications company'.²⁹ It then accounted for the risk of failure by applying a pre-revenue adjustment that 'reduces the cash flows to reflect the chance the company would not make it to maturity'.³⁰ It finally discounted that value back to the valuation date using the venture company's cost of capital.³¹

Devas' experts further applied three risk adjustments to the cash flows to account for diversifiable regulatory risks, including the payment of a terrestrial reuse fee 'on the basis of the highest internationally observable fee', the imposition of a very costly build-out requirement and the elimination of all cash flows after the 24-year contract period to account conservatively for renegotiation risk. Diversifiable country risk was accounted for by relying on Indian data. The tribunal accepted the DCF method proposed by the claimants' experts, making only minor adjustments to certain specific parameters.

Accounting for regulatory risk

One of the key issues in investment treaty arbitrations is the treatment of regulatory risk. Foreign investors in telecoms assets must consider potential changes to regulations that may affect the value of their investments. Governments regulate telecoms markets based on strategic national interests and try to allocate resources optimally. National interest also involves the revenues that states may extract from licence and concession fees. Spectrum licences and concessions are generally assigned for a specific duration and purpose. States may impose restrictions on use and ancillary obligations such as roll-out requirements that affect the value of investments. Governments may change and adapt existing regulations for legitimate national interests, for example, by introducing new rules to ensure a level playing field among market participants or repurposing spectrum bands for use by a different technology.

Together, all these issues have implications not only on what constitutes fair and equitable treatment or full reparation but also on the appropriate but-for world and modelling assumptions underlying the valuation of the assets and the quantification of damages. For example, we can imagine one but-for scenario that

28 *CC/Devas v. India*, Award, dated 13 October 2020, para. 427.

29 *id.*, para. 428.

30 *id.*, para. 429.

31 *id.*, para. 430.

simply removes the relevant bad acts as inconsistent with the treaty and another that removes the bad acts and then speculates about other acts that the host state could have adopted and remained compliant with treaty obligations. The choice between possible but-for scenarios will necessarily depend on the applicable law.

For example, in *CC/Devas v. India*, a relevant point of dispute between the parties was whether the Indian government would have granted a licence for terrestrial reuse of the satellite spectrum and what fee it would have charged. After signing its agreement with Antrix, Devas was in a ‘box-out’ position, meaning that there could have been no other competing application for operation in the spectrum allocated to it.³² The respondents’ experts and witnesses contended that India would not have granted such a terrestrial reuse licence and, if it did, India would have charged a (value-destroying) terrestrial reuse fee commensurate with auction prices. The claimants’ experts noted instead that, by 2009, India had already granted all necessary licences to develop experimental trials on terrestrial reuse and that ‘no rational government would have lent its own time and resources to a trial programme if (as it now claims) the system was never going to be and, indeed, could not be, approved’.³³ Importantly, given Devas’ box-out position, no other operator could have used the spectrum allocated to it. Therefore, failing to provide a licence for terrestrial reuse at a reasonable price would have left the spectrum underused, which would be unacceptable from a public policy perspective. The tribunal ultimately accepted the claimant’s view that Devas and the Indian government would have arrived at a mutually satisfactory fee level and determined that ‘reference to the highest fee registered in the world outside India’ would be reasonable for establishing the damage suffered by Devas.³⁴

Accounting for country risk

Another relevant issue for valuation in investment treaty arbitrations is how to account for country risk. Country risk refers to the adverse political and economic factors that are specific to the host country, which may reduce the future cash flows of an investment. These factors may include the relative stability of economic and social conditions, characteristics of a country’s institutions and unlawful political conduct that violates a state’s treaty obligations. There is no doubt that investors consider these types of risks in their investment decisions. The relevant economic question is thus how to account for country risk in a DCF valuation.

³² *id.*, para. 384.

³³ *id.*, para. 384, citing Claimants’ Reply on Quantum, para. 104.

³⁴ *id.*, para. 386.

Valuing an asset through the DCF method involves (1) calculating a stream of expected cash flows and (2) discounting them to the valuation date to account for risk and the time value of money. Here, expected cash flows are ‘risk-adjusted’ cash flows, which should reflect the best prediction of future cash flows at the valuation date. Therefore, expected cash flows should account for country risk. In evaluating an investment in a telecoms asset, one should identify country risks relevant to the project’s cash flows and adjust the cash flows accordingly.

A more difficult question is whether country risk should also be accounted for in the discount rate. Finance theory suggests that only non-diversifiable risk should be accounted for in the discount rate. This does not mean that diversifiable risk does not affect the value of an investment – diversifiable risk does affect projected cash flows, but it does not increase the cost of capital. Therefore, whether one should account for country risk in the discount rate depends, in principle, on whether country risk is systematic or not.

Valuation experts disagree, however, on the extent to which country risk is diversifiable or not. Although evidence in the academic literature suggests that most country risk is diversifiable, several practitioners argue that investors are not sufficiently diversified across countries. They contend that it may be difficult to diversify away country risk because it tends to be highly correlated across countries. Importantly, adjusting the discount rate for country risk is more practical because adjusting the cash flows is often difficult in practice.

Damages and valuation experts often apply a country risk premium equal to the sovereign spread. The sovereign spread measures the difference between the yield to maturity on government bonds issued by the host country of the investment and the yield to maturity of government bonds in a highly rated country that is considered risk-free, typically the United States or Germany. An alternative approach estimates the risk-free rate directly on the yields of the host country’s government bonds, therefore including the risk of default of the host country in the risk-free rate. The latter approach was accepted by the tribunal in *CC/Devas v. India* (2012), where the tribunal concluded that the rate on a 30-year Indian government bond ‘must be considered as including both the risk-free nominal rate and the country-risk premium for India’.³⁵

But the application of the sovereign spread to the discount rate may provide a poor approximation of the effect of country risk on an asset’s value. While country risk and sovereign risk are related, they are clearly not the same. For example, the

35 *id.*, para. 579.

government may default on its debt, leaving an exporting business unaffected. Conversely, issues of social unrest may adversely affect a telecoms company's operations but not the government's ability to pay its debts.

To overcome the limitations of the sovereign spread approach, some practitioners have suggested an alternative method. This alternative relies on the methodology developed by Bekaert et al.³⁶ to estimate the fraction of the sovereign spread that is attributable to what the authors call 'political risk' – that is, the relevant country risk to which assets are exposed. The approach consists of breaking down the sovereign spread into several components to isolate the fraction attributable to political risk – the political risk spread. The political risk spread may then be turned into a political risk probability, which can be used to adjust the asset's cash flows. The advantage of using this method is that it correctly adjusts the cash flows rather than modifying the discount rate, which is in line with evidence that suggests that political risk is largely diversifiable. The method also avoids double-counting risks or including risks that are not relevant to the valuation of the asset in question. The approach thus provides a technically superior alternative to the sovereign spread method.

Business risk and network modelling

DCF analysis of telecommunications assets is largely based on traditional methods. However, the need to develop a coherent technical model that factors in the risks associated with long-lived capital assets and continual technological progress – and the inherent risk in demand take-up – impose a degree of complexity that is not common in other industries.

As previously mentioned, investors commonly rely on detailed bottom-up models to value telecoms assets in the context of investor due diligence. These models often become the starting point for the quantification of damages by experts. However, the mechanical update of these models to the valuation date is not always feasible due to intervening changes to market conditions, which invalidate some of the model's underlying assumptions. In these instances, the damages experts will need to update or adjust the model to best reflect the impact of such developments.

Model adjustments may involve 'simple' economic parameters such as inflation, growth rates and costs. But they could also involve highly technical issues, such as the cell site configuration of the network – affecting both the throughput

36 Geert Bekaert, Campbell R Harvey, Christian T Lundblad and Stephan Siegel, 'Political risk and international valuation', *Journal of Corporate Finance*, 37 (2016), p. 5.

capacity of an individual site and the capital expenditures required for each cell – or the mandated quality of the network. The latter is reflected in a network model in parameters such as the oversubscription ratio, which represents the ratio between the maximum hypothetical demand of users divided by the maximum network capacity. Such changes will dramatically affect the required capital expenditures, which could potentially warrant further adjustments to pricing and ultimately demand take-up.

Spectrum valuation

A final issue to consider relates to the relevant approach to valuing spectrum and spectrum licences. As explained above, many investment treaty disputes have involved the early termination, revocation or denied renewal of a spectrum licence. Furthermore, as more and more 2G and 3G licences assigned over a decade ago are about to expire, it is highly likely that additional disputes will arise in the next few years.

Although the value of spectrum ultimately depends on the incremental cash flows that the spectrum asset may be expected to generate, the broad availability of public auction data permits the valuation of spectrum based on a market approach by considering the value implied by the winning bids for comparable spectrum auctions. The market approach values the rights to use spectrum instead of the business that they are used in and represents the most practical approach to valuing spectrum when comparable transactions are available.

However, to properly infer the value of spectrum from comparable spectrum auctions, one should consider whether differences in the licence terms and the spectrum propagation properties require further adjustments. For example, licences may differ because of duration or roll-out obligations imposed by the regulator. Also, different spectrum bands have different propagation properties, which may imply different needs in terms of network coverage and capacity cells. In general, carriers can achieve the same level of coverage using different bands but the costs of deployment will be different. Such differences demand careful analysis and tractable adjustments to the relevant comparable value where necessary.

Conclusion

An increasing number of investment treaty arbitrations have involved foreign investments in telecommunications, particularly in the mobile sector. Claimants in these arbitrations have generally complained that the host state has deliberately taken unreasonable measures to deprive the investor of the value of its investment, resulting in direct or indirect expropriation without full and proper compensation or in a breach of the host state's obligation to fair and equitable

treatment. Claims generally have involved disputes about a licence or concession, the levy of taxes and licence fees, criminal investigations or political interference, and foreign ownership and control restrictions. Telecoms-related investor treaty arbitrations are likely to increase during the next few years as more and more spectrum licences expire.

Damages have been awarded in a number of cases, generally based on DCF estimates. BIT tribunals, however, have accepted the use of detailed bottom-up DCF models with caution, particularly in the case of immature businesses. Nevertheless, even in these cases, tribunals have tended to prefer the DCF method over alternatives, such as the net book or liquidation value methods.

Common issues of dispute between parties involve the ways to account for regulatory, country and business risks. Regulatory and country risk should be carefully accounted for in the expected cash flows and the determination of the appropriate but-for world, absent the host state's unlawful conduct. Country risk can differ from the commonly used sovereign spread approach and requires careful consideration. Accounting for business risk in a coherent technical model that factors in the risks associated with long-lived capital assets and continual technological progress further imposes a degree of complexity that is not common in other industries.

Finally, the market approach represents the most practical approach to valuing spectrum when comparable transactions are available. However, a number of adjustments to the comparable value may be warranted to account for differences in the licence terms and spectrum bands.

Few clients seek arbitration counsel as often as those in telecoms, or have such high-stakes disputes when they do. And yet, to date, there has been no definitive book for either counsel or client on this fascinating genre of work.

Global Arbitration Review's *The Guide to Telecoms Arbitrations* aims to change that. Written by some of the world's leading names, it covers the most pressing conceptual and practical aspects of telecoms arbitrations, from questions of arbitrability to topics such as the idiosyncrasies of space and satellite disputes, problems of performance caused by sanctions regimes, and how to deal with armed conflict. It concludes with a regional overview.

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