

# Investment disputes in the crossfire of War

## Part I: Insights from Crimean Arbitrations

Julian Delamer and Vladimir Tsimaylo<sup>1</sup>  
25 February 2025

The nationalisation of Crimean assets in 2014 led to a wave of investment treaty cases against Russia, raising complex valuation challenges for quantum experts. In the first of a series of articles, **Julian Delamer** and **Vladimir Tsimaylo** analyse publicly available awards from the Crimean cases. They identify five key challenges in assessing damages and argue that lessons from these disputes remain relevant for future investment claims arising from geopolitical conflicts.

### Series overview

In the new series “Investment Disputes in the Crossfire of War”, economists from Compass Lexecon’s International Arbitration practice will discuss challenges arising in the valuation of damages amidst Russian geopolitical shifts.

This first article provides a retrospective analysis of the first big wave of investment treaty cases related to assets in Crimea nationalised by the Russian Federation throughout 2014. Despite the unique setting of the disputes over the Crimean assets, these cases exposed valuation complexities that may repeat themselves in the future and therefore offer useful lessons for quantum experts and their instructing counsels. Economists Julian Delamer and Vladimir Tsimaylo, who were involved in three of the Crimean cases, provide their insights.

### Introduction

Following extensive nationalisation of assets in Crimea during 2014–2015, several investment treaty cases were brought against the Russian Federation (the “Crimean cases”), of which 11 are publicly known.<sup>2</sup> As the first of these arbitrations nears the 10-

year anniversary since the commencement of proceedings—and despite no ruling having been drawn in that first case—many lessons can be taken from this wave of arbitrations.

These various Investor-State Dispute Settlement (“ISDS”) claims against Russia have not only generated a sizeable body of case law but have also introduced new challenges in assessing the quantum of damages by quantum experts.

In this article we summarise the overarching issues discussed in publicly available awards from the Crimean cases and highlight the importance of five lessons for the future – and, in particular, the importance of knowing how to apply them in practice when facing these challenges in the complexity of real-world circumstances. Specifically, we examine:

- Challenge 1: the impact an **evolving geopolitical and macroeconomic landscape** can have on the valuation of damages;
- Challenge 2: the importance of establishing an appropriate **counterfactual scenario**;
- Challenge 3: methods for overcoming **data limitations**;

- Challenge 4: approaches for dealing with future uncertainties and **the unknown**; and
- Challenge 5: the critical role of close communication between legal and expert teams to accurately quantify damages that flow from specific **legal scenario**.

## The case and context of the disputes

The “Accession” of Crimea to the Russian Federation, formalised by a treaty signed between representatives of the Republic of Crimea (including Sevastopol) and the Russian Federation on 18 March 2014,<sup>3</sup> was followed by a phased nationalisation of hundreds of Ukrainian-owned properties.<sup>4</sup> These nationalisations led to Ukrainian investors raising claims under the 1998 Russia-Ukraine Bilateral Investment Treaty (“BIT”), which protects investments “in the territory” of Russia.<sup>5</sup> Tribunals that have determined that they have jurisdiction to rule on such claims have based their decisions on the interpretation that Russia exercises “effective control” over Crimea.<sup>6</sup> This interpretation of Russian control has also shaped the context for quantum assessment.

The Ukrainian properties were nationalised in four series of measures introduced between 2014 and 2015:

- On 2 April 2014 Russia introduced legislation requiring Ukrainian banks operating in Crimea to obtain a Russian banking licence by 1 January 2015 or face a termination of operations.<sup>7</sup> Coupled with the resolution of the National Bank of Ukraine (“NBU”) that made it illegal to render banking services in Crimea, this led all Ukrainian banks—including PrivatBank and Oschadbank (the State Savings Bank of Ukraine)—to cease operations and close their branches in Crimea by June 2014.<sup>8</sup>
- On 11 April 2014, the State Council of the Republic of Crimea nationalised the

natural gas assets of Krymgaz and Naftogaz Ukraine.<sup>9</sup>

- On 30 April 2014 the Crimean authorities enacted a law (often referred to as the “Nationalisation Decree” in arbitral awards) which enabled the nationalisation of any specified property.<sup>10</sup> It targeted primarily real estate, including petrol stations, residential properties and hospitality assets, but also led to the nationalisation of the electricity transmission grid in Autumn 2014 and the electricity distribution network on 21 January 2015.<sup>11</sup>
- On 16 June 2014 the Decree No. 1057-r transferred the right of “joint deployment” of the Belbek Airport to “Airport Sevastopol”, effectively preventing the owners from resuming operations and conducting an orderly transition from a Ukrainian enterprise to a Russian one.<sup>12</sup>

The nationalisations took place amidst the evolving political and macroeconomic situation in Crimea and Russia, which complicated the assessment of damages that should isolate the direct impact of nationalisation, and not of the effect of wider political and macroeconomic shifts.

- Prior to formal “Accession”, Crimea experienced a period of uncertainty, characterised by bank runs, early property seizures and border controls.
- Then the “Accession” treaty introduced a transition period until 1 January 2015 (“Transition Period”) for Crimea to integrate into Russia’s economic, financial, credit and legal systems. Evidence from that early period shows that while real estate markets were frozen and supply chains were disrupted, some Ukrainian businesses were still considering maintaining operations in Crimea (e.g., some Ukrainian banks applied for a Russian banking licence before the NBU Resolution was issued); trade, prices of goods and services, and operating costs in Crimea remained

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dependent on and influenced by systemic risks in mainland Ukraine.

- As 2014 advanced, uncertainty lessened: by mid-year, Crimea adopted the ruble, the citizens saw significant increases in salaries and pensions, and Russia implemented an extensive programme of subsidies and infrastructure investments, which drove up prices of certain assets, such as residential real estate. However, the Transition Period also resulted in lost trade and economic and physical (logistical) separation from Ukraine and the EU, alongside double-digit inflation.<sup>13</sup>
- Additionally, beginning in March 2014, an escalating series of international sanctions restricted investments, trade and entire segments of the Russian and Crimean economies. As a result, the Crimean Peninsula was no longer served by international flights and most payment platforms.<sup>14</sup>

With hindsight, 10 years after the Transition Period Crimea is only partially integrated into the Russian economy. While physical connections were established (such as energy grids, air transport routes as well as trains and automotive access via the Kerch Bridge),<sup>15</sup> for nearly a decade major Russian banks, telecoms and retail chains refrained from expanding into Crimea, namely due to the risk of exposure to international sanctions specifically targeting the region.<sup>16</sup>

## Overview of disputes and awards

Over the past decade, 11 investor-state arbitrations related to Crimea have surfaced in the public domain, all administered by the Permanent Court of Arbitration (“PCA”) under the UNCITRAL Arbitration Rules 1976, pursuant to the Russia-Ukraine BIT. Although these cases were promptly initiated following the various waves of nationalisations in the region, not all have proceeded to the award phase, and even fewer have reached the enforcement stage. That there were protracted procedures is to some extent due to Russia’s initial approach of refusing to participate in the arbitration proceedings—a stance that shifted in 2019 when Russia got involved in the proceedings and pursued a strategy of procedural challenges and appeals against rendered awards.<sup>17</sup>

In Table 1 below we provide a summary of the known matters.

**Table 1: Summary of Crimean Cases**

PCA Case No.	Start Date	Claimant	Assets	Claim, USD million	Award
2015-07	January 2015	Aeroporto Belbek LLC and Mr. Kolomoisky	Commercial passenger terminal	15-20	Favourable liability award (2019); quantum phase pending
2015-21	April 2015	JSC CB PrivatBank	Loan portfolio and other banking assets	1,000	Favourable liability award (2019); quantum phase ongoing
2015-29	May 2015	Lugzor LLC and others	Hospitality assets	Not public	October 2022 <sup>1</sup> : undisclosed amount
2015-34*	June 2015	PJSC Ukrnafta	Petrol stations	50.3	April 2019 (“Ukrnafta Award”): USD 44.5 million (+ interest)
2015-35*	June 2015	Stabil LLC and others	Petrol stations	47.4	April 2019 (“Stabil Award”) <sup>2</sup> : USD 34.6 million (compounded at 3-month LIBOR or SOFR + 1.0%)
2015-36*	June 2015	Everest Estate LLC et al.	Residential real estate	230	May 2018 (“Everest Award”): USD 130 million (and 12-month LIBOR + 1.0%)
2016-14*	January 2016	PJSC Oschadbank	Banking assets and future profits	1,100-1,400	November 2018 (“Oschadbank Award”) <sup>3</sup> : USD 1.1 billion (compounded at 6-month LIBOR rate + 2.0%)
2017-16	October 2016	NJSC Naftogaz of Ukraine and others	Oil and gas	5,100	April 2023 (“Naftogaz Award”) <sup>4</sup> : USD 4.2 billion (compounded at 6-month LIBOR rate + 2.0%)
2018-41	September 2017	PJSC DTEK Krymenergo	Electricity distribution network	421.2	November 2023 (“DTEK Krymenergo award”) <sup>5</sup> : USD 207.8 million (compounded at 3-month LIBOR + 1.0%)
2019-34	February 2019	Rinat Akhmetov and Investio LLC	Unknown	Not public	Partial award (2022) – not public
2020-17	August 2019	Ukrenergo	Electricity transmission network	491.9	Favourable award on Jurisdiction (August 2024), merits hearing pending.

Note: \* the tribunal has not been afforded the benefit of any submissions on behalf of the respondent. <sup>1</sup>[PCA Press Release](#). <sup>2</sup>[Italaw](#). <sup>3</sup>[Italaw](#). <sup>4</sup>[Italaw](#). <sup>5</sup>[Italaw](#). Source: PCA, *Global Arbitration Review*, *IAReporter*, *italaw*.

As shown, the arbitration cases filed over a five-year period following the “Accession” have little in common beyond the location and nationalisation of the disputed assets. The claims span a variety of industries and measures, and were brought by various parties:

- Four claims were filed by state-owned companies.<sup>18</sup>
- DTEK Krymenergo was part of DTEK, Ukraine’s largest private energy group

indirectly 100% owned by billionaire businessman Rinat Akhmetov.

- The remaining claims were linked directly or indirectly to billionaire businessmen Ihor Kolomoyskyi and Gennadiy Bogolyubov, who also owned 42% of the state-controlled Ukrnafta.

Four cases (marked with an asterisk in Table 1) concluded with final awards in the absence of participation from the Russian Federation (these were subsequently enforced in Ukrainian and US courts). The final awarded

amounts averaged between 49% and 89% of the claimed amount, with Everest Estate receiving the lowest (57%) in a proceeding without the respondent's presence, and DTEK Krymenergo receiving 49% with the respondent's counsel and expert team in place.

The 1998 Russia-Ukraine BIT envisages the market value (or fair market value, "FMV") as a compensation standard in the event of expropriation.<sup>19</sup> To estimate the FMV of an asset—be it a physical asset, a business or an equity stake—quantum experts typically combine or select from one of the three main valuation approaches: income, market or cost.<sup>20</sup> All three were present in expert opinions and awards in the Crimean cases and can be broadly summarised as follows:

- The **income approach** (such as the discounted cash flow approach, or "DCF") relies on forecasting cash flows or income streams and discounting them to a specific point in time using a rate that reflects the time value of money and the associated risk level. This approach was used in the *Stabil*, *Oschadbank*, *Naftogaz* and *Krymenergo* cases.
- The **market approach** assesses the value of an asset or business by comparing it to the relative value of "comparables", i.e. assets or businesses of similar earning potential and risk profile, that are either publicly traded or have been recently involved in transactions. This approach was used in the *Everest* and *Stabil* cases.
- The **cost approach** provides an indication of value based on the historical or replacement cost of an asset, typically factoring in physical deterioration and technological obsolescence. This approach was applied in the *Krymenergo* case, where such regulation was present.

In the following sections we will discuss in greater detail the challenges faced by quantum experts, tribunals and tribunal-appointed experts that were common across

these cases, as well as some claim-specific issues.

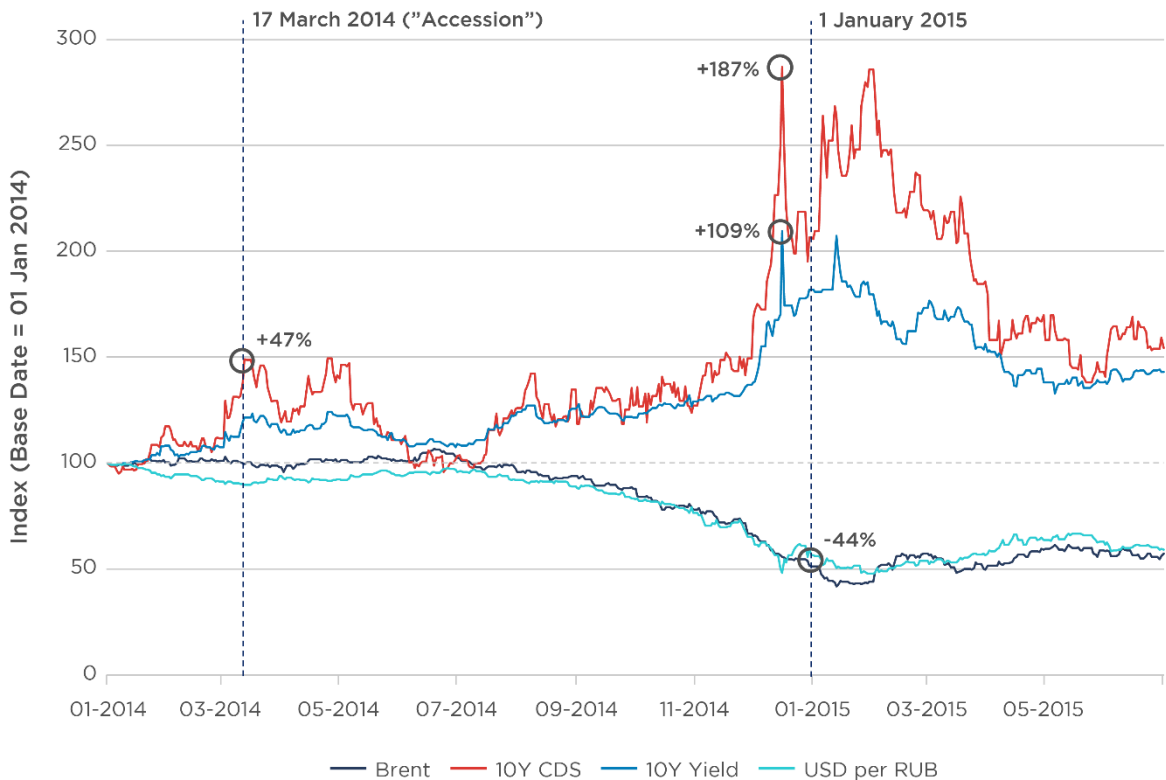
## Challenge 1: evolving macroeconomics landscape

In evaluating damages, a key assumption is the selection of the valuation date, and—relatedly—the use (or lack thereof) of hindsight. That is, whether the assessment is based solely on information available as of the valuation date (*ex-ante* approach) or incorporates knowledge of the subsequent events (*ex-post* approach). While this is generally a legal matter, the selected valuation date has several practical implications on the analysis of *ex-ante* expectations used to estimate the FMV.<sup>21</sup>

While the assets at issue in the Crimean cases were nationalised within a single year, the macroeconomic conditions and market sentiment varied significantly between the "Accession" in March 2014 and January 2015, when the nationalisation of the last asset in the Crimean cases occurred. On the one hand, in the immediate aftermath of the "Accession," the extent of the economic integration envisaged by the Transition Period was unclear. On the other hand, the Russian economy itself was greatly affected by major global macroeconomic developments—for instance, the sudden and sharp decline in commodity prices in the latter half of 2014 weakened the economy, as reported by major credit agencies at the time.<sup>22</sup>

In Figure 1 below we illustrate the relative dynamics of Brent oil prices (black line) and the Russian ruble exchange rate against the US dollar (yellow line) throughout 2014, using 1 January 2014 as the baseline. Both had a substantial impact on perception of risk in Russia and resulted in increased premia demanded by investors, which can be traced implicitly via sovereign yields (i.e., the cost to the state for raising debt) and the cost of

**Figure 1: Evolution of key indices during Transition Period**



Source: CL analysis.

insurance against the financial system default (measured through the so-called CDS spreads).<sup>23</sup> We plot these with the red and green lines.

As both the oil price and ruble remained relatively stable during the first half of 2014, the initial spike in risk following the "Accession" flattened out by mid-year, despite heightened geopolitical risk and sanctions. The subsequent collapse of oil prices and almost 50% depreciation of ruble—coupled with four Central Bank interventions and additional credit rating downgrades—had a more significant and enduring impact. In fact, the Russian country risk premium<sup>24</sup> increased from 2.6% at the beginning of 2014 to 8.0% by year-end.<sup>25</sup>

Under the FMV framework, it is reasonable to consider that hypothetical willing buyers and sellers considering the transaction of assets or businesses in Crimea would have accounted for the uncertainties related to the Crimean market (and the Russian economy into which it was integrating). Indeed, the

quantum experts in the Crimean cases have attempted to incorporate such uncertainties into their FMV assessments.

For instance, in the *Stabil* case, the tribunal-appointed expert challenged the claimant's DCF analysis, which relied on projected cash flows from petrol sales in Russia. The expert noted that "*proposed growth rate of 3.02% used to calculate the terminal value in the DCF analysis was unreasonably high in light of prevailing macroeconomic conditions and data on historical petrol consumption in Russia*", asserting that deteriorating market conditions "*would be a major constraint on the steady growth potential of the petrol distribution and retail market.*"<sup>26</sup> The tribunal ultimately sided with their appointed expert's assessment.<sup>27</sup>

This leads to **Lesson #1**:

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A highly uncertain and rapidly changing geopolitical and macroeconomic environment can significantly affect an *ex-ante* damages valuation. What makes a quantum expert opinion robust and useful to the Tribunal is applying the highest standard of diligence and transparency when distinguishing historical and contemporaneous data from *ex-post* evidence that would not have been available at the time of valuation.

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## Challenge 2: Establishing an appropriate counterfactual scenario

Under most analytical frameworks, damages are derived from the difference between the “actual” scenario and the “but-for”—or counterfactual—scenario (i.e., absent the measures). While the choice of the counterfactual scenario is a legal decision, it is the responsibility of quantum experts to properly implement these legal instructions in their analyses, making sure that the difference in value between the scenarios derives exclusively from the claimed measures.

In the Crimean cases, a critical factor to consider was the economic impact of the “Accession” itself: the nationalisations occurred against the backdrop of the Transition Period and its consequent repercussions. As the “Accession” itself was not challenged as a claimed measure under the BIT, the assessment of damages involved disentangling the economic impact from the “Accession” (which should be present in both actual and counterfactual scenarios) and that of the claimed measures. In other words, any reductions of the investments’ value (if any) caused by the uncertainty before or during the Transition Period present at the time of nationalisation would be part of the counterfactual scenario, and hence not recoverable as damages.

In some instances, however, legal counsel instructed their experts to assume a counterfactual scenario excluding the “Accession”, which means for example that the damages assessment would assume currency, country risks and industry-specific regulations would remain Ukrainian. In *Oschadbank*, the claimant’s expert considered 28 February 2014 as an alternative valuation date, on account of it being the last day unaffected by the Russian parliament approval of the use of armed forces in the Crimean Peninsula, authorised on 1 March 2014.<sup>28</sup> The 28 February 2014 valuation date was, however, rejected by the tribunal, who concluded that under such scenario a Ukrainian investor could not be considered as holding an investment in the respondent’s territory prior to the “Accession” under the terms of the BIT.<sup>29</sup>

Additionally, in some of the Crimean cases the parties disputed whether during the Transition Period a “willing buyer” would assume the governing law to be Ukrainian or Russian. For example, in *Naftogaz*, this question had a USD 375 million impact on damages,<sup>30</sup> with the tribunal ruling by majority decision in favour of assuming that the governing law was Russian, on the grounds that the arbitration was bound by the BIT: “*applying Ukrainian law would contradict the BIT, since the Claimants’ case presupposes the investments to have been made in the Russian Federation.*”<sup>31</sup>

**Lesson #2** that can be derived from above:

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It is the responsibility of quantum experts to isolate the impact of the claimed measures (under the legal instructions) from other factors which affect value but are not directly caused by such measures. The skill of a quantum expert manifests in translating, within what can be an intricate factual background, the legal claims into sound actual and counterfactual scenarios which properly encapsulate the impact of the claimed measures.

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### Challenge 3: overcoming data limitations

Several of the Crimean cases involved assets which could be considered either unique or niche as well as businesses with no operating track record. The presence of such assets posed challenges to quantum experts assessing FMV using both the market and income approaches.

Despite Crimea's significant population, its economy was relatively small and many industries were highly concentrated.<sup>32</sup> Consequently, most businesses in Crimea affected by the Transition Period lacked reasonably close comparables, making the application of the market approach practically impossible for going concern businesses.<sup>33</sup> The Transition Period also affected sectors traditionally rich in comparables, as assets were not transacted due to markets being frozen or ownership moving to new registers. For example, the Crimean real estate market dried up in 2014, with market participants hesitant to finalise transactions.<sup>34</sup>

Against this background, market valuation approaches faced data limitations. As noted in the *Everest* award, the "Comparable Property Approach" (a type of market approach) "*depends for its credibility, inter alia, upon both a large group of variables and a low distribution of price. Otherwise, especially when a small group of variables is being considered, the addition of one extreme variable, whether of a very high or very low value, can drastically change the average.*"<sup>35</sup> The tribunal noted that "[a]n average is a statistical tool susceptible to distortion through the addition of high values" and this distortion "*infected a number of the valuations submitted, leading the Tribunal to select some alternative comparators.*"<sup>36</sup> Due to the "*limited ability of the average thus derived to produce a credible fair market value for another property*", the tribunal accepted an average price of comparables, as long as it was based on at least three properties (excluding gross outliers), and permitted the claimants to deduct 10% to estimate the probable sale price (but not for listings that

had been published for an extended period).<sup>37</sup> After a detailed analysis, the tribunal awarded an amount that was 43% below the original claim.

Such a lack of data also affected the application of income approaches that require modelling of future cash flows. Tribunals sometimes reject the income approach when the investment at stake is at a pre-operational stage and does not have a track record of profitability. Claimants in some of the Crimean cases had a limited record of financial performance, not because the claims concerned new businesses (most had existed since the Soviet era), but because the businesses' financial accounts could either no longer be physically retrieved by the claimants or did not exist due to the company having been recently privatised.

The computation of damages in some of the Crimean cases therefore relied on data proxies. For instance, in the *Stabil* case, the claimants could not access their financial records which were lost following the seizure of business headquarters. Instead, in building the DCF model for a network of petrol stations, the quantum expert relied on data provided by a Ukrainian centralised service company that tracked market data and had developed pricing strategies for the claimants in the past.<sup>38</sup> The data was not challenged by the tribunal-appointed expert and the tribunal considered these re-created financial statements to be sufficient to meet the Claimants' burden of proof on the basis of them being very detailed, provided in the normal course of operations and representing contemporaneous evidence.<sup>39</sup>



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From this, we arrive at **Lesson #3**:

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Quantum experts should not be discouraged by the lack of data and instead deploy the entire cache of indirect and market evidence to provide the damages estimation to the best of their ability, so as to better aid the Tribunal in case it finds liability. It is critical to be transparent about the strengths and limitations of the approach taken.

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#### Challenge 4: dealing with the unknown

In some cases, even with readily available data on historical financial performance, there were some key unknowns stemming from the Transition Period which significantly affected the prospective earning potential of certain assets, in particular, due to uncertainty over the applicable regulation in the hypothetical counterfactual scenario.

In the *DTEK Krymenergo* case, for example, the income-based valuation produced significantly different results depending on the assumptions on electricity tariffs that would have been prevalent in Crimea absent the nationalisation of the electricity distribution network. While the tariff methodology which ultimately applied was known in hindsight, there was no consensus among the regulatory experts as to the *ex-ante* approach—that is, what the market's expectation was at the time of nationalisation.

An alternative valuation methodology was therefore proposed by the respondent's quantum experts, who suggested using the asset's privatisation price. This approach was considered by the tribunal despite certain concerns regarding the auction process.<sup>40</sup> In particular, in May 2012 (less than three years prior to the nationalisation), a 45% stake in Krymenergo's capital was privatised for USD 256 million, which could be regarded as the FMV as of May 2012. The quantum experts proposed to update this indication of value by making adjustments for ownership share, debt, an arm's length transaction discount and the passage of time.<sup>41</sup> The tribunal fully endorsed this methodology.<sup>42</sup>

The *Krymenergo* award is also notable for its acceptance of various value indicators when determining damages. As shown in Table 2 below, the damages were estimated as the weighted average of valuations under five different methodologies, with one of the members of the tribunal having dissented from the majority regarding the applicable weights.<sup>43</sup>

**Table 2: Weighted average approach to damages in DTEK Krymenergo**

Methodology	Value, USD million	Weight (Tribunal Majority)	Weight (Rowley's Opinion)
DRC (replacement cost)	421.1	10%	40%
Book value	164.6	30%	20%
Adjusted Auction Price	176.4	30%	20%
Listed share price	114.0	10%	5%
DCF	259.9	20%	15%

Source: DTEK Krymenergo award, J. William Rowley KC – Separate Opinion on Quantum.

This brings us to **Lesson #4:**

When faced with uncertainty, a way for quantum experts to assist the Tribunal may be to provide multiple valuation approaches, clearly laying out their implications and potential limitations. Not only will this help a Tribunal make an informed decision but also offer flexibility and reduce the risk of computational errors in awards.

### Challenge 5: understanding and internalising legal scenarios

In some of the Crimean cases, issues of jurisdiction and admissibility were resolved in interim or partial awards, while in others they were considered together with the quantum issues. This resulted in ongoing debates over the subject of the dispute, as the scope of the claims remained contentious. Consequently, in some instances quantum experts provided alternative valuations based on different legal instructions.

For instance, in the *Oschadbank* case, the claimant (a successor to the Ukrainian Operations of the Savings Bank of the Soviet Union) operated 294 outlets and a local headquarters in Crimea, which were not a

separate legal entity under Ukrainian law, but constituted a “Crimean branch”.<sup>44</sup> In these circumstances, under the claimant’s legal framework, the “most equitable valuation” was to consider both the balance sheet assets and the potential “to generate profits in the future (essentially goodwill).”<sup>45</sup> The claimant’s quantum expert therefore carried out the valuation of lost assets (on the basis of the claimant’s management accounts) and the capitalised value of lost future income streams (on the basis of a DCF model). In the absence of any respondent’s submissions, the quantum expert was questioned by the tribunal on the reasons for taking the approach of potential double-counting, i.e. “adding to the discounted cash flow of the value of the business that has disappeared the value of the assets that would have produced that income.”<sup>46</sup> The tribunal ultimately accepted the valuation framework as soundly based and appropriate in the case of the Crimean branch of Oschadbank.<sup>47</sup>

Another point of contention related to the so-called “temporal requirement”, as Article 12 of the BIT provided that it would apply to the investments made on or after 1 January 1992. In reality, most of the assets subject to the disputes, aside from some real estate properties, had existed since before the dissolution of the Soviet Union in 1991, long

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before the BIT protections came into effect in 1998, and were privatised or acquired at different moments in time.

In particular, this issue was addressed in the *DTEK Krymenergo* case. DTEK Krymenergo owned electricity distribution networks in Crimea, a significant portion of which had been constructed or became operational between 1960 and 1990, when both Ukraine and Russia were part of the Soviet Union.<sup>48</sup> Under legal instruction, the respondent's experts provided valuations for both the entire company assets and the specific portions that, according to their instructing counsel, were under the tribunal's jurisdiction (i.e., those deployed after 1 January 1992).<sup>49</sup>

This points us towards **Lesson #5**:

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The quantification of damages can be affected by legal matters outside the expertise of quantum experts. It is critical for quantum to coordinate between legal and economist teams to ensure the quantum analysis truly reflects the desired legal scenarios, so as to be useful to the Tribunal when resolving complex legal issues.

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## Conclusion

The Crimean cases have posed significant challenges for quantum experts when assessing assets' FMV, requiring in-depth analysis and determination of investor expectations during uncertain and rapidly changing political, economic and legal landscapes, careful consideration of legal instructions and detailed industry knowledge.

Although in some ways such challenges are unique to the Crimean cases—insofar as they concern the implications of the Transition Period—these challenges reappear in damages valuations following the escalation of the Russo-Ukrainian war in 2022. In particular, quantum experts again have to contend with a dynamic macroeconomic environment, increased uncertainty, evolving state and corporate sanctions as well as the physical destruction of assets and evidence. Therefore, all five lessons discussed in this article may be equally applicable to current and potential cases stemming from the current conflict.

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1 Julian Delamer is an Executive Vice President and Vladimir Tsimaylo is a Senior Economist at Compass Lexecon. The views expressed in this article are the views of the author only and do not necessarily represent the views of Compass Lexecon, its management, its subsidiaries, its affiliates, its employees or its clients.

2 Following the terminology adopted in these arbitrations, we use the terms “Crimea”, “the Republic of Crimea” and “Crimean Peninsula” interchangeably and for descriptive purposes only, without expressing any view about their legal status. The scope of the expert opinions excluded the issues related to the political status of Crimea and sovereign jurisdiction over the Peninsula.

3 See “The Treaty between the Russian Federation and the Republic of Crimea on the acceptance of the Republic of Crimea into Russian Federation and creation of new subjects of the Russian Federation”, 18 March 2014.

4 We refer to the change that occurred in the status of the Crimean Peninsula in February-March 2014 as “Accession” without prejudice to any determination of its lawfulness or unlawfulness under international law. We note that this term was used in the legal proceedings alongside the terms “Incorporation”, “Annexation” and “Reunification”.

5 See Agreement between the Government of the Russian Federation and Cabinet of Ministers of Ukraine on encouragement and mutual protection of investments (November 27, 1998), Art. 1.

6 See, for example, DTEK Krymenergo Award, paragraphs 297-299.

7 See Federal Law no. 37-FZ of 2 April 2014 “On the peculiarities of the functioning of the financial system of the Republic of Crimea and the Federal City of Sevastopol for the transitional period.”

8 In early May 2014 the National Bank of Ukraine which had effectively lost regulatory power over the Crimean Peninsula, issued a resolution (“NBU Resolution”) prohibiting Ukrainian banks from conducting banking activities in Crimea as of 6 June 2014. See Resolution of the Board of the National Bank of Ukraine No. 260 “On the Revocation and Cancellation of Bank Licenses and General Licenses for Carrying Out Currency Operations of Certain Banks and the Closure by Banks of Separated Units Located on the Territory of the Autonomous Republic of Crimea and City of Sevastopol”, 6 May 2014, sections 3–5.

9 See, Resolution No. 2032-6/14 by the State Council of the Republic of Crimea, 11 April 2014.

10 The “Nationalisation Decree” stipulated, among other things, that “*all state property (of the State of Ukraine) and all abandoned property located in the Republic of Crimea shall be considered the property of the Republic of Crimea. This decree was expanded on 3 September 2014 to include the phrase “as well as the property listed in the [Annex] to this Decree”—with the list itself extended several times over subsequent months and years. See Decree No. 2085-6/14 of the State Council of the Republic of Crimea “On Matters of Management and Administration of Property of the Republic of Crimea.” See also Decree No. 2474-6/14 of the State Council of the Republic of Crimea “On modifications to the Decree No. 2085-6/14 of the State Council of the Republic of Crimea “On Matters of Management and Administration of Property of the Republic of Crimea.”*”

11 In separate cases before the European Court of Human Rights, the judges, focusing on the protection of peaceful enjoyment of property, found conclusive evidence of “*a systemic campaign of large-scale expropriation/nationalisation of the property of civilians and private enterprises in Crimea, which entailed a conclusive transfer of ownership.*” The ECtHR notably referred to a list compiled by Crimean/Russian authorities that enumerated over 4,500 “nationalised” public and private assets as of September 2017, the existence of which was undisputed by Russia. See IAREporter. 26 June 2014. Analysis: European Court of Human Rights looks at international humanitarian law to rule on Russia’s conduct in Crimea, finding breach of fair trial guarantees, large-scale expropriations, and discriminatory conduct.

12 See Decree No. 1057-r of the Government of Russian Federation, 16 June 2014.

13 In particular, Crimea consumption of food, potable water and electricity was significantly reliant on supply from Ukraine. Moreover, since about half of Crimea’s exports were to Europe and the Americas, and almost all of Crimea’s imports were from Europe, the sanctions restricting trade with these regions had an impact on the region’s trade balance. During this period, “*industrial production slid by 9 per cent; capital investment dropped by 77 per cent; and cargo transport decreased by almost 30 per cent compared with the same period last year [i.e., 2013]*”. See Financial Times. 3 July 2014. “Crimea tourism woes add to economic challenge.” See also The Department of Socio-economic Development Analysis of the Ministry of Economic Development of the Republic of Crimea. 4 June 2016. “The Results of Socio-economic Development of the Republic of Crimea in 2014”.

14 See Forbes Russia. 26 May 2014. “On the ruins: how the banking system disappeared in Crimea.” See also  
 15 Radio Svoboda. 3 April 2014. “Airport Simferopol loses its international status.”  
 16 See Kommersant. 24 March 2024. “10 years of integration. How Crimea changed as part of Russia.”  
 17 For instance, Sberbank opened its first branch in Crimea only in 2023 after being sanctioned in February 2022.  
 18 None of the Russian federal supermarket chains still operates in Crimea. Russian telecom companies do not  
 19 own cell towers and their clients are subject to roaming charges on the territory of Crimea.  
 20 See GAR. 6 June 2019. “Russia challenges Crimea awards and changes strategy”.  
 21 Oschadbank (100% owned by the Government of Ukraine), Ukrenergo and Naftogaz (100% owned by the  
 22 Ministry of Energy of Ukraine) and Ukrnafta (then 50%+1 owned by Naftogaz).  
 23 *“The compensation shall correspond to the market value of the expropriated investments, prevailing  
 24 immediately before the date of expropriation or when the fact of expropriation has become officially known.”*  
 25 See Agreement between the Government of the Russian Federation and Cabinet of Ministers of Ukraine on  
 26 encouragement and mutual protection of investments (November 27, 1998), Article 5.2.  
 27 Market value, or fair market value, is generally understood as *“the price at which property would change hands  
 28 between a hypothetical willing and able buyer and a hypothetical willing and able seller, absent compulsion to  
 29 buy or sell, and having the parties’ reasonable knowledge of the facts, all of it in an open and unrestricted  
 30 market.”* See, e.g., Enron Creditors Recovery Corporation (formerly Enron Corporation) and Ponderosa  
 31 Assets, L.P. v. Argentine Republic, ICSID Case No. ARB/01/3, Award of 22 May 2007, paragraph 361.  
 32 In the context of income valuation methods discussed in the previous Section, these expectations should  
 33 reflect the asset’s cash flow generating potential (i.e., expected growth prospects and profitability) and the  
 34 associated risks.  
 35 S&P put Russia on a “negative watch” citing their “assessment of Russia’s monetary flexibility and the impact  
 36 of the weakening economy on its financial system”, which was followed by a downgrade of foreign currency  
 37 sovereign credit rating from “BB+/B” to “BBB-/A-3”, i.e. below investment grade, a month later. Moody’s first  
 38 downgraded Russia from “Baa2” to “Baa1” in October 2014, followed by two more downgrades in January and  
 39 February 2015 (to junk level). This was motivated by the ongoing erosion of Russia’s foreign exchange buffers  
 due to low oil prices and exchange rate shock as well as Russian borrowers’ restricted access to international  
 markets. See CNBC (23 December 2024) “S&P places Russia on CreditWatch Negative”, CNBC (17 October  
 2014) “Moody’s downgrades Russia to Baa2”, Business Insider (16 January, 2025) “Moody’s Just Downgraded  
 Russia”.  
 10-year sovereign yield represents the long-term risk-free rate of investing into a country, while a Credit Default  
 Swap (CDS) is a financial derivative that allows an investor to swap or offset their credit risk and therefore its  
 spread reflects the credit premium over the risk-free rate.  
 I.e., the additional return an investor would require for investing in Russia compared to a AAA-rated country.  
 See Damodaran Online, “Risk Premiums for Other Markets” (January 2014 and January 2015).  
 See Stabil Award, paragraphs 303-304.  
 See Stabil Award, paragraphs 394-395.  
 See Oschadbank Award, paragraph 165.  
 See Oschadbank Award, paragraph 373.  
 See Naftogaz Award, paragraph 290.  
 See Naftogaz Award, paragraph 367, 370.  
 For example, Oschadbank and Privatbank together controlled 45% of branches and over 70% of the deposits  
 on the peninsula (with over 40 smaller entities sharing the rest of the market). In the energy sector, DTEK  
 Krymenergo and Naftogaz respectively dominated the distribution network for electricity and gas. Accounting  
 for more than 5.2% of Ukrainian population, the economic contribution of Crimean economy was lower:  
 according to Ukrstat, the per capita gross regional product of Autonomous Republic of Crimea and Sevastopol  
 was on average 30% below the Ukrainian average in 2005 – 2013.  
 One notable exception was the valuation of petrol stations in the Stabil case, where the valuation was  
 composed of 85% based on the DCF method and 15% on Ukrainian and Slovenian comparables. This  
 approach was non challenged by the tribunal-appointed expert and was accepted by the tribunal. See Stabil  
 Award, paragraphs 292-294.  
 This was partially due to legal constrains to legally approve the transactions during the Transition Period.  
 See Everest Award, paragraph 270.  
 See Everest Award, paragraphs 270 and 280.  
 See Everest Award, paragraph 280.  
 See Stabil Award, paragraph 274.  
 See Stabil Award, paragraph 336.

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40 See DTEK Krymenergo Award, Section VI.6.  
41 It is important to note that the privatisation price approach would not be applicable in every case. Legal and  
procedural issues aside, some auctions occurred long before the Dates of Valuation and before or during  
42 periods of hyperinflation in Russia and Ukraine, making the necessary updating adjustments more speculative.  
See DTEK Krymenergo Award, Section VII – 4.4.  
43 See DTEK Krymenergo Award, paragraph 951.  
44 See Oschadbank Award, paragraph 63.  
45 See Oschadbank Award, paragraph 166.  
46 See Oschadbank Award, paragraphs 171, 362.  
47 See Oschadbank Award, paragraph 366.  
48 See DTEK Krymenergo Award, paragraph 349.  
49 In the tribunal's unanimous opinion, to benefit from BIT protection, Krymenergo must have acquired its  
Crimean assets after 1 January 1992, which was not disputed by the parties (according to Claimant, the  
acquisition happened in 1995, and according to respondent in 2012). See DTEK Krymenergo award,  
paragraph 369.