Secretariat

Valuation of Damages in International Arbitration Cases

October 2025

Experience Above All

Agenda

- Introduction
- Legal Framework for Damages
- Mining Valuation Approaches
- Select Mining Arbitration Awards

Legal Framework for Damages

The Legal Framework …

LAWFUL EXPROPRIATION

Primary Remedy - payment of prompt, adequate and effective compensation

Principle - compensation shall be the Fair Market Value (FMV) of the expropriated business or assets

Date of Assessment - the time when the expropriation was publicly announced or when the expropriation occurred, whichever is earlier

UNLAWFUL EXPROPRIATION

Primary Remedy - restitution, not compensation. As restitution (in kind or payment) is often not possible, the majority view is that an investor may be entitled to the increased value of the investments as at the award date.

Principle - Full Reparation as per the Chorzów Factory 1927 case (The Permanent Court of International Justice) or Draft ILC Articles 35, 36

Date of Assessment - plays a significant role because the value of the expropriated asset changes constantly over time. The injured party has the option to choose higher of the value at the date of breach or the value at a later date (up to the date of award)

Draft ILC Articles 35, 36 – "Responsibility of States for Internationally Wrongful Acts"
"The State responsible for an internationally wrongful act is under an obligation to make restitution, that is, to re-establish the situation which existed before the wrongful act was committed … [to] compensate for the damage caused thereby, insofar as such damage is no made good by restitution. The compensation shall cover any financially assessable damage including loss of profits insofar as it is established."

Full Reparation as per the Chorzów standard, 1927 (The Permanent Court of International Justice)
"… reparation must, as far as possible, wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed…. Restitution in kind, or, if this is not possible, payment of a sum corresponding to the value which a restitution in kind would bear; the award, if need be, of damages for loss sustained which would not be covered by restitution in kind or payment in place of it."

Economic and Financial Implications of the FMV Standard versus the principle of Full Reparation

Compensation as per the Fair Market Value Standard

The International Glossary of Business Valuation Standards:

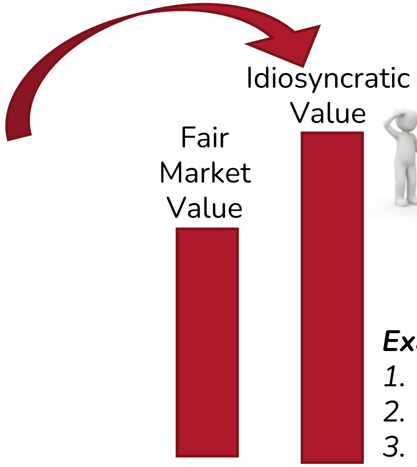
“the price, expressed in terms of cash equivalents, at which property would change hands between:

1. *a hypothetical willing and able buyer and a hypothetical willing and able seller*
2. *acting at arm’s length in an open and unrestricted market*
3. *when neither is under compulsion to buy or sell and*
4. *when both have reasonable knowledge of the relevant facts.”*

Compensation as per the Principle of Full Reparation

1. If the Claimant is claiming an unlawful expropriation, it may claim that the standard of value is subject to the over-riding principle of “full reparations” which must wipe out all the consequences of the unlawful act(s) (i.e., under the principles of the Chorzow Factory case).
2. There may be instances where FMV will not achieve full reparations or place the Claimant in the economic position it would have been in absent the alleged unlawful act(s).
3. In such instances, the specifics of the Claimant need to be fully considered, to reflect the damages which they have sustained, only then can the amounts be quantified to achieve full reparations.
4. **Idiosyncratic Value** is the value of an asset to a particular owner or prospective owner for individual investment or operational objectives.

Source: Britannica.com



Example:
1. *the value of a tropical island to a High-Net-Worth individual who wants to build a vacation home, versus*
2. *the value to the Developer who wants to build a luxurious resort or villas for sale, versus*
3. *the value to the Government who wants to construct housing units on this island for its employees or citizens.*

Mining Valuation Approaches

International Valuation Standards/Guidelines

- **CIMVAL**: The Standards and Guidelines for Valuation of Mineral Properties prepared by the Special Committee of the Canadian Institute of Mining, Metallurgy and Petroleum;

- **VALMIN**: The Australasian Code for the Public Reporting of Technical Assessments and Valuations of Mineral Assets is prepared by the VALMIN Committee and regulates the public reporting of mineral asset valuation in Australasia;

- **SAMVAL**: The South African Mineral Asset Valuation Working Group's SAMVAL Code sets out minimum standards and guidelines for public reporting of mineral asset valuation in South Africa;

- **SME**: The Society for Mining Metallurgy and Exploration Standards and Guidelines for Valuation of Mineral Properties, which is a set of standards for the appraisal of the value of mineral property assets in the United States; and,

- **IMVAL**: The International Mineral Property Valuation Standards Template, which is a standards and guidelines template created for the harmonization of International Mining Codes and Standards by an international committee

Valuation Approaches

- **Income approach**
  - Discounted cash flow (DCF)
  - Monte Carlo
  - Option pricing

- **Market based approach**
  - Comparable transactions
  - Comparable public company trading data
  - Public/Private offerings
  - Market capitalization

- **Cost/Asset based approach**
  - Appraised value
    - Value in use/replacement value
    - Liquidation value
  - Exploration cost multiple

Mineral Valuation Approaches

- In the valuation of a mineral project, the valuation approach(es) selected by the valuator depends on the stage of exploration or development of the subject Mineral Property, as well as the type and quality of information that is available upon which a valuation conclusion may be based. Multiple approaches are typically applied and compared.
- According to CIMVAL, certain valuation approaches are only appropriate for certain categories of Mineral Properties. CIMVAL recommends the following valuation approaches based on the Project's stage of development:

Valuation Approach	Exploration Properties	Mining Resource Properties	Development Properties	Production Properties
Income Approach	No	In some cases	Yes	Yes
Market Approach	Yes	Yes	Yes	Yes
Cost Approach	Yes	In some cases	No	No

DCF Methodology Considerations

- Technical issues:
  - Extent and quality of Reserves and Resources
  - Timeline to explore, conduct feasibility studies, obtain financing, and construct the mine
  - The rate of extraction and recoveries
  - Operating expenditures
  - Capital expenditure required to develop/ maintain the mines
  - Remediation costs
- Financial issues:
  - Future commodity prices – spot prices and long-term prices
  - The mix of sales under spot market or hedging
  - Financing structure (Debt, Equity, Streaming, etc.)
  - Foreign exchange exposure
  - Royalties (government, Net Smelter Return or NSR royalties), taxes, and duties
  - Appropriate discount rate to convert future cash flows to a present value.
  - Sensitivity of conclusions to variations in key variables (price, discount rate, opex, schedule, etc.)
- Legal issues:
  - Terms of the extraction license
  - Inclusion of baseline expropriation risk

DCF Methodology Considerations – Use of Reserves and Resources

- All Mineral Reserves and Mineral Resources on a Mineral Property should be considered in the Valuation of the Mineral Property.
- Mineral Reserves and Mineral Resources used in the Valuation should be estimated or confirmed by a Qualified Person and should be current and in accordance with the CIM Definition Standards or National Reporting Standards.
- Reserves: It is generally acceptable to use all Mineral Reserves in a DCF.
- Non-Reserves: It may or may not be acceptable include non-Reserves in a DCF:
  - It is generally acceptable to use Resources if Reserves are also present and if mined ahead of the Resources in the model.
  - Where Mineral Reserves are not present, it is generally acceptable to use Mineral Resources in the Income Approach but the higher risk or uncertainty must be recognized by some means (probability adjustment, higher discount rate).
  - Inferred Mineral Resources should, if included in the Income Approach, be used with great caution and care. Where Inferred Mineral Resources are used in the Income Approach, it is recommended that the reason for using them be explained, and that the higher risk or uncertainty be recognized.
  - It is generally **not acceptable** to use in a Valuation any mineralization categories that do not conform to the definitions of Mineral Reserves and Mineral Resources. "If such categories of mineralization are mentioned in a Valuation Report, it must be stated that they are not Mineral Reserves or Mineral Resources and cannot be relied upon."

Examples of the use of DCF in Investment treaty awards

DCF accepted

- *Tethyan v Pakistan* - Modern DCF was used
- *CMS v Argentina* - Investment was a going concern
- *P&ID v Nigeria* - Sound business plan, not built
- *Hydro SRL v Albania* - Sound business plan, loss-making
- *Al-Kharafi v Libya* - Sound business plan [award set aside]

DCF rejected

- *Bear Creek – early stage, social licence issues, no govt permits, no track record (operations)*
- *Wena Hotels v Egypt* - Only 18 months of operation
- *Metalclad v Mexico* - Site was never operational
- *Bahgat v Egypt* - Never operational, technical challenges

Example of criteria for the use of a DCF methodology

[*Rusoro v Venezuela* award (2016), para 759]

1. Established historical record of financial performance
2. Reliable, independently verified projections
3. Future prices are reasonably certain
4. Financing is available
5. WACC and Country Risk Premium can be calculated reliably
6. Low or predictable regulatory environment

Market Approach Considerations

- Courts/Tribunals generally prefer objective market-based information over theoretical or academic analyses
- All available market-based sources should be reviewed in detail as they all inform the market:
  - Transactions involving the subject company's shares or the asset itself
  - Comparable transactions
  - Trading data for comparable public companies
  - Analyst reports on the subject property or company
- Comparable transactions must be analyzed carefully to assess the level of comparability
  - Transaction date
  - Geographical location
  - Type of mineralization, deposit, mine type, ore grade, etc.
  - Stage of development
  - Relative levels of Reserves vs. Resources
  - Controlling position
  - Type of consideration (cash, shares vs. earn-in, options, future consideration)
- Market based valuation methods can also be used as secondary approaches to assess the reasonability of the primary valuation methodology.

Cost Approach Considerations

- Generally historical costs incurred are not reflective of prospective value and would not place the Claimant in the economic position they would have occupied absent a wrongful act.
- Costs incurred or invested may be relevant to a judge/tribunal to assess the implied return on investment with a given award and how committed/serious the company was in developing the asset.
- Cost approach to value for mineral properties:
  - The Cost Approach is based on the principle of contribution to value: For early-stage mineral projects, a buyer will consider exploration and development costs incurred by the owner as a measure of the value one would be willing to pay since those are costs that needed to be incurred to bring the asset into its present state.
  - There are two alternatives to quantify a range for estimated value based on costs:
    - Exploration costs incurred to advance the relevant project, adjusted for the period of time between the valuation date and the date the costs were incurred to consider inflation.
    - A cost multiple method that applies a likelihood of success factor to the costs incurred, that is related to the exploration potential based on assessments with respect to the level of prospectivity of each area

Select Mining Arbitration Awards

Mining Arbitration Awards (1)

Gold Reserve Inc. v. Venezuela

- Project: Las Brisas gold/copper project. (9Moz Au, 985Mlbs of Cu in Reserves)
- Claim: Breach of Canada-Venezuela BIT, denial of exploitation permit, FMV of investment prior to taking.
- Award Date: September 22, 2014,
- Project stage: Construction, permitting.
- Claimant Expert Approach: Primary DCF (reserves only), Secondary Market (market cap, comparable transactions)
  - Claimant Expert Conclusion: USD$1.4B
- Respondent Expert Approach: DCF only (and just a critique)
  - Respondent Expert Conclusion: USD$Nil (negative value)
- Tribunal Damages Approach: DCF of Claimant's expert less certain deductions.
  - Tribunal Award: USD$713M
- Comment: Tribunal accepted DCF (both experts agreed), subject to certain deductions, rejected comparable transactions method since comparables presented were deemed not sufficiently similar. Did not find Respondent's expert's negative valuation convincing.

Mining Arbitration Awards (2)

Crystallex International Corp v. Venezuela

- Project: Las Cristinas gold project. (27Moz of Resources, 16.9Moz Reserves)
- Claim: Breach of Canada-Venezuela BIT, expropriation, denial of exploitation permit, cited environmental issues and impact on indigenous people. Claimed FMV of investment prior to taking.
- Award Date: April 4, 2016
- Project Stage: Feasibility Study (contested by Respondent)
- Claimant Expert Approach: 4 methods: Net Asset Value, Enterprise Value/oz public comparables, stock price method and comparable transactions.
  - Claimant Expert Conclusion: USD$3.2B
- Respondent Expert Approach: Costs incurred
  - Respondent Expert Conclusion: No amount provided (said insufficient information provided).
- Tribunal Damages Approach: Average of “But-for” market capitalization approach and public market comps.
  - Tribunal Award: USD$1.2B
- Tribunal selected 2 of 4 methods advanced by Claimant, with adjustments (excluded control premium, and “permitting bump”). Neither expert did a conventional DCF.

Mining Arbitration Awards (3)

Bear Creek Mining Corporation v. Peru

- Project: Santa Ana silver project. (107Moz of Ag)
- Claim: Breach of Canada-Peru FTA, expropriation. Claimed FMV of investment prior to taking.
- Award Date: November 30, 2017
- Project Stage: Feasibility Study
- Claimant Expert Approach: DCF as primary, market methods as secondary
  - Claimant Expert Conclusion: USD$224M
- Respondent Expert Approach: Costs incurred
  - Respondent Expert Conclusion: USD$18M
- Tribunal Damages Approach: Costs incurred.
  - Tribunal Award: USD$18M
- Comment: Tribunal dismissed Claimant Expert’s DCF conclusions because it wasn't convinced the Claimant would have gotten a social license to operate and considered it was at an "early stage" and thus claimant had not established clearly that the investment would have been profitable. Tribunal moved directly to costs without considering other market measures of FMV.

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Mining Arbitration Awards (4)

South American Silver v. Bolivia

- Project: Malku Khota silver project (435Moz of Ag)
- Claim: Breach of UK-Bolivia BIT, expropriation. Claimed FMV of investment prior to taking.
- Award Date: November 22, 2018
- Project Stage: Mineral Resource Property, PEA study
- Claimant Expert Approach: Weighting of 3 approaches i) Comparable transactions USD$270M (50%), ii) Analyst NAVs USD$571M (25%), and iii) private placement transaction USD$307M (25%)
  - Claimant Expert Conclusion: USD$355M
- Respondent Expert Approach: Share price, costs incurred.
  - Respondent Expert Conclusion: USD$19M (costs) to USD$48M (share price)
- Tribunal Damages Approach: Costs incurred.
  - Tribunal Award: USD$19M
- Comment: Tribunal found there was no certainty that the new metallurgical process the Claimant had developed and planned to use would have worked. Tribunal did not accept the weightings Claimant's expert applied to the 3 methods it used and rejected all 3 as a result.

Mining Arbitration Awards (5)

Tethyan Copper Company Pty Limited v. Pakistan

- Project: Reko Diq gold/copper project (23Moz of Au and 23Mtonnes of Cu Reserves)
- Claim: Breach of Australia-Pakistan BIT, expropriation. Claimed FMV of investment prior to taking.
- Award Date: July 19, 2019
- Project Stage: Feasibility Study
- Claimant Expert Approach: "Modern DCF" (Monte Carlo/probabilistic DCF with risk free discount rate) – Reserves only.
  - Claimant Expert Conclusion: USD$8.5B
- Respondent Expert Approach: Prior transaction from 2006. Was asked not to look at anything else (expropriation was in 2011).
  - Respondent Expert Conclusion: USD$149M
- Tribunal Damages Approach: "Modern DCF" per Claimant's expert, less certain reductions.
  - Tribunal Award: USD$4.1B
- Comment: Tribunal found that Respondent breached FET of the Treaty with the effect of expropriation. Tribunal dismissed numerous issues and risks raised by Respondent that were not addressed by Claimant, accepted this academic method that is not used by market participants. May have partially been because Respondent's expert did not prepare a robust and complete independent analysis.

Mining Arbitration Awards (6)

The Lopez-Goyne Family Trust and others v. Nicaragua

- Project: Block in the Pacific Coast of Nicaragua
- Claim: FET, MFN and Expropriation under the CAFTA-DR
- Award Date: March 1, 2023
- Project Stage: Pre-operation
- Claimant Expert Approach: Primarily DCF valuation, alternatively “loss of opportunity”, or alternatively, “sunk costs”
  - Claimants’ Requested Damages: DCF: US$ 35.8 million; Three loss of opportunity scenarios: (a) US$ 198 million; (b) US$ 139.2 million, (c) US$ 61.6 million; Sunk costs: US$ 44.1 million
- Tribunal Damages Approach: All claims dismissed on the merits

Mining Arbitration Awards (7)

Westwater v. Turkey

- Project: Temrezli and Sefaatli uranium deposits
- Claim: Indirect expropriation under the Turkey-US BIT
- Award Date: March 3, 2023
- Project Stage: Pre-feasibility complete
- Claimant Expert Approach: Based on a DCF Methodology, with a market approach as a reasonableness test. Also presented costs analysis based on initial investment plus sunk costs.
    - Claimants' Requested Damages: $USD 31 million based on FMV; USD$ 22.4 million based costs.
- Tribunal Damages Approach: Sunk costs of USD$ 1.3 million
    - The tribunal found that the Claimant's real hurdle to the project's development would have been financing, and not the respondent's actions, and therefore decided that Turkey's BIT breaches had not caused the loss of profits.
    - The tribunal further decided that the Claimant was not entitled to compensation for their high-risk investment, and only considered the actual out-of-pocket expenses incurred to advance the project.

Mining Arbitration Awards (8)

Nachingwea U.K. Limited, et al v. Tanzania

- Project: Ntaka Hill
- Claim: FET, expropriation, unreasonable and discriminatory measures under Articles 5 and 2 of the Tanzania-UK BIT
- Award Date: July 14, 2023
- Project Stage: Pre-Operational
- Claimant Expert Approach: FMV, based on the cost approach, with an application of a PEM
    - Claimants’ Requested Damages: US$ 76.7 million
- Respondent Expert Approach: FMV, based on the cost approach
- Tribunal Damages Approach: FMV, based on a cost approach and applying a PEM of 1.6
    - Tribunal’s Awarded Damages: US$ 76.7 million
- Comment: Tribunal decided that all exploration costs should be considered, as a typical mining company seeking to replicate the Project would have to incur initial exploration costs of the larger project area, as the Claimants had, to narrow to the project area.

Mining Arbitration Awards (9)

Glencore Finance (Bermuda) Limited v. Bolivia

- Project: Colquiri Tin Mine, tin smelter, antimony smelter and tin stock
- Claim: Expropriation, Full Protection and Security, FET under the Bolivia-UK BIT
- Award Date: September 8, 2023
- Project Stage: Operational
- Claimant Expert Approach: Varied based on asset, included DCF and market-based approaches
  - Claimants' Requested Damages: US$ 439.6 million
- Respondent Expert Approach: Varied based on asset, included DCF and costs approach
- Tribunal Damages Approach: Varied based on asset, included DCF and FMV approaches
  - Damages Awarded: US$ 235.8 million for Colquiri Mine, US$ 16 million for Tin Smelter, US$ 0.7 million for Antimony Smelter, and US$ 1.1 million for Tin Stock

Mining Arbitration Awards (10)

Odyssey Marine Exploration v. Mexico

- Project: Don Diego Phosphate Project
- Claim: FET breach under NAFTA
- Award Date: September 17, 2024
- Project Stage: Prior to a Feasibility Study
- Claimant Expert Approach: DCF as primary methodology, and comparable transactions as secondary methodology
  - Claimant's Requested Damages: $2,467 million, plus compound interest
- Respondent Expert Approach: Market capitalization approach, and sunk costs approach as secondary
  - Respondent's Expert's Damages: Market Capitalization approach is US $43.2 million, Sunk Costs approach is $14.6 million
- Tribunal Damages Approach: Sunk Costs of US$ 37.1 million
  - The tribunal found that an income approach wasn't suitable given that the project had no operational track record and lacked a pre-feasibility study, and there were no similar projects to serve as a benchmark.
  - Further, the Tribunal noted that the most commonly used valuation method in investor-state arbitration cases involving pre-production mining projects was the sunk cost approach.

Mining Arbitration Awards (11)

Lupaka Gold Corp. v. Republic of Peru

- Project: Invicta Gold Project
- Claim: Expropriation, FET, and MFN, under Canada-Peru FTA
- Award Date: 30 June 2025
- Project Stage: Preliminary Economic Assessment Stage
- Claimant Expert Approach: DCF as primary methodology. Market capitalization, sunk costs, comparable transactions as other indicators of value
    - Claimant's Requested Damages: $31.5 million to $40.4 million, under DCF methodology. Adjusted for an additional risk premium to reflect the stage of the mine plan of 3.3% under one scenario, and 6.9% under the second scenario
- Respondent Expert Approach: DCF as primary methodology
    - Respondent's Requested Damages: $21.3 million to $23.2 million
- Tribunal Damages Approach: DCF approach
    - Awarded $40.4 million, plus interest at LIBOR + 4% to 30 June 2023, and UST + 5% onwards, plus costs

Thank you.

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