A CRITICAL ANALYSIS OF DAMAGES, EXPERT EVIDENCE, AND VALUATION METHODOLOGIES IN COMMERCIAL ARBITRATION

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ABSTRACT

Commercial arbitration has become the most popular process for resolution of high value domestic and cross-border commercial disputes. In the heart of most arbitral proceedings is the contested question of damages - how much, if anything, is entitled to a claimant. Damage quantification in arbitration is a multidisciplinary process and involves combining the disciplines of economics, finance, and accounting, which create a need to arbitrate between conflicting arguments of loss by way of conflicting expert reports and valuation methods. This paper provides a critical examination of the legal and methodological frameworks which govern the determination of damages, the contribution of expert witnesses in the affirmation of valuation claims, and the key methodologies used in quantifying commercial loss in arbitration proceedings. Drawing upon international arbitral jurisprudence, the rules of major arbitral institutions such as the ICC, SIAC and LCIA, and the provisions of the Indian law, especially the Arbitration and Conciliation Act, 1996 and the Indian Contract Act, 1872, the paper identifies significant inconsistencies in the manner that arbitral tribunal evaluates expert evidence and indulges in competing approaches to valuation. The argument in this paper is that the lack of standardized rules relating to expert's evidence and the methodology of valuation in Indian commercial arbitration is creating a state of unpredictability which is compromising the integrity of the arbitral process. Through a doctrinal approach, the paper concludes with specific legislative and institutional recommendations with the goal of enhancing consistency, transparency and fairness in the determination of damages.

Keywords: Damages, Expert Evidence, Valuation Methodologies, Commercial Arbitration, Discounted Cash Flow, Lost Profits, IBA Rules.

I. INTRODUCTION

Commercial arbitration has undergone drastic development during the last three decades to emerge as the foremost forum of choice at least for the resolution of complex commercial disputes both within national frontiers and across frontiers. Its preference over litigation is due to several well-documented advantages: flexibility with regard to the procedural timetable and the choice of decision-makers, the confidentiality of proceedings and the enforceability of arbitral awards under the Convention on the Recognition and Enforcement of Foreign Arbitral Awards, 1958 (the New York Convention). Yet, for all its procedural virtues, commercial arbitration faces a basic substantive issue that is common to all adversarial systems of dispute resolution - the issue of determining damages.

Damages assessment in commercial arbitration is not simply a legal exercise but an inherently interdisciplinary project that involves the tribunal in synthesizing principles of contract law during the course of damages assessment with the tools of finance, economics and industry specific expertise. Where parties are seeking compensation for lost profits, diminution in business value, or other prospective losses arising from breach of contract, or wrongful conduct, the tribunal must deal with financial models, statistical projections, and contested assumptions about market conditions and future performance. This task is complicated by the adversarial nature of arbitration, in which each party presents expert evidence designed to support its own damages position, often resulting in dramatically divergent valuations that leave the tribunal without clear guidance on the correct quantum of loss.[1]

Expert witnesses have come to take an indispensable role in this process. Economists, forensic accountants, actuarial experts and industry experts are regularly called to help tribunals understand matters outside of normal legal knowledge. However, the use of expert evidence in commercial arbitration is fraught with important institutional tensions. The adversarial process of duelling of experts, the threat of undue influence by technically confident witnesses on tribunals unacquainted with financial modelling; and the lack of uniformity on expert qualifications, independence and disclosure of methodology pose systemic problems compromising the reliability of arbitral awards of damages.

[1] Hadley v. Baxendale (1854) 9 Exch 341 (UK). This case established the two-limb test for remoteness of damage in contract law.

Indian commercial arbitration subjected to be governed principally by the Arbitration and Conciliation Act, 1996 has become faced with these issues as domestic and foreign arbitrations have become increasingly complex and valuable. Disputes arising from infrastructure contracts, corporate joint ventures, shareholder agreements, technology licenses, and financial instruments have generated difficult questions of loss quantification that test the capacity of Indian tribunals to engage constructively with expert evidence on damages.[2]

This paper examines critically legal and methodological regimes applicable to damages assessment, evidence from expert and valuation in commercial arbitration. It does examine the international standards and best practices, evaluates the applicability of the same in the Indian legal context and makes recommendations for reforms. The paper goes as follows: Following an introduction to the statement of problem, the literature review, the research questions and methodology, the main body of the paper, look at the legal framework for damages, the standards for evidence employed by experts, the key valuation methodologies and the approaches by tribunals in the resolution of conflicts between competing opinion, by means of expert evidence, before concluding with some concrete suggestions for reform.

II. STATEMENT OF PROBLEM

Notwithstanding the growth of commercial arbitration as a means of resolving dispute globally and in India, the legal framework surrounding the quantification of damages and the assessment of expert evidence in arbitral proceedings are fragmented, inconsistent and inadequate. Several specific voids can be pointed out.

First, there is no standard for the admissibility of expert evidence or the qualifications or weight to be given to such evidence which is uniform throughout Indian domestic law of arbitration regarding the admissibility of such evidence in a damages process. The Arbitration and Conciliation Act, 1996 does not have any provision dealing specifically with the areas of standard for the expert evidence and applicability of the Indian Evidence Act, 1872 on arbitral proceedings is still a subject of judicial obscurity. While the International Bar Association Rules on the Taking

[2]The Arbitration and Conciliation Act, 1996 (India), No. 26 of 1996 as amended by the Arbitration and Conciliation (Amendment) Acts of 2015, 2019, and 2021.

of Evidence in International Arbitration (IBA Rules) provide procedural guidance, their application in arbitration is entirely voluntary and frequently contested between parties.[3]

Second, methodologies used for valuation of business and assets, such as the discounted cash flow method, comparable company analysis, precedent transaction analysis, and the asset-based approach, are not used in a consistent way across arbitral tribunals. The same facts can lead to wildly different estimates of damages depending upon the choice of methodology, the assumptions built into financial models and the discount rates used. This inconsistency reflects a lack of any normative framework in Indian law or institutional rules as to what criteria are appropriate for choosing among competing approaches to valuation or for assessing the reasonableness of the assumptions behind an expert's model.

Third, Indian arbitral tribunals which are composed mainly of legal professionals such as retired judges, senior advocates, and legal academics may not possess the level of financial and economic literacy needed to critically evaluate competing valuations by experts. Without sufficient financial expertise, it is also poorly positioned for a tribunal to judge whether an expert's assumptions regarding discount rates, market growth projections or comparable company selection are reasonable, well-founded, and appropriately adjusted to the circumstances under which the dispute exists. This presents a risk that in damages-intensive arbitrations the determination of the result of the damages will be based less on the economic reality of the loss suffered than on the persuasiveness of expert advocacy.

These inter-related voids cause systemic unpredictability surrounding arbitral outcomes, lose confidence in the reliability of awards, and raise fundamental questions about whether Indian commercial arbitration has the capacity to deal with complex claims for damage in a way that is consistent with international best practice. This paper aims to analyze these gaps and to overcome them.

[3] IBA Rules on the Taking of Evidence in International Arbitration, International Bar Association, 2020, Article 5 (Party-Appointed Experts) and Article 6 (Tribunal-Appointed Experts).

III. LITERATURE REVIEW

Damages Quantification: Theoretical Foundations

The foundational principle of compensatory damages in commercial disputes—that the aggrieved party is entitled to be placed, so far as money can achieve it, in the position it would have occupied had the contract been performed—was authoritatively stated in Robinson v. Harman[4] and has been elaborated in arbitral jurisprudence of the ICC, SIAC, LCIA, and ICSID. Redfern and Hunter identify the principle of full reparation as the cornerstone of damages in international commercial disputes, drawing upon the dictum of the Permanent Court of International Justice in the Chorzów Factory case that reparation must "wipe out all the consequences of the illegal act."[56]

Gotanda's influential scholarship on damages in international commercial arbitration examines how tribunals balance the competing demands of certainty and fairness in quantifying prospective losses. He argues that rigid adherence to strict evidentiary standards for proving the quantum of future loss may deny claimants recoveries to which they are legally entitled, and advocates for a more flexible approach under which the tribunal may make reasonable estimates of probable loss once the fact of loss has been established.[7] This approach has attracted wide academic support and has been adopted in several institutional arbitral awards.

Born's comprehensive treatise on international commercial arbitration provides the most systematic treatment of the procedural and substantive aspects of damages, including the allocation of the burden of proof, the standard of evidence required to establish both the fact and quantum of loss, and the role of expert witnesses in damages proceedings. Born draws attention to the significant divergence between common law and civil law traditions in the treatment of damages

[4]Robinson v. Harman (1848) 1 Exch 850, 855 per Parke B: "the rule of the common law is, that where a party sustains a loss by reason of a breach of contract, he is, so far as money can do it, to be placed in the same situation, with respect to damages, as if the contract had been performed."

[5]Factory at Chorzów (Germany v. Poland), 1928 P.C.I.J. (Ser. A) No. 17, at 47 (Sept. 13). The PCIJ articulated the principle that reparation must, as far as possible, wipe out all the consequences of the illegal act.

[6]Alan Redfern & Martin Hunter, Law and Practice of International Commercial Arbitration (4th edn, Sweet & Maxwell 2004) 433–450.

[7]John Y. Gotanda, "Recovering Lost Profits in International Disputes" (2004) 36 Georgetown Journal of International Law 61.

evidence, particularly on the question of whether tribunals are entitled to exercise a broad discretion in assessing loss in the face of evidentiary uncertainty.[8]

Expert Evidence: Standards and Practices

MacKinnon and Moloo have conducted a systematic comparative study of expert witness practices across leading international arbitral institutions, identifying several recurring pathologies: lack of genuine independence from the retaining party, excessive advocacy in the framing of expert opinions, inadequate disclosure of the methodological bases for expert conclusions, and the absence of consistent cross-examination protocols.[9] Their proposed solutions centre on the strengthening of disclosure obligations, the introduction of expert conferencing procedures, and the selective use of tribunal-appointed experts to provide independent verification of contested methodological claims.

The IBA Rules on the Taking of Evidence, which were initially adopted in 1999 and revised in 2010 and 2020, are the most important multilateral initiative to standardize the evidence procedures of expert evidence in international commercial arbitration. Hanotiau and Caprasse have analysed the evolution of the IBA Rules and identify both their achievements and their limitations, noting that the rules leave significant discretion to individual tribunals in the evaluation of expert qualifications and the weight to be accorded to expert opinions.[10]

In the Indian context, the treatment of expert evidence in arbitration has received comparatively little scholarly attention. Bhat's work on the law of evidence in India examines the intersection between the Indian Evidence Act, 1872 and the procedural framework of the Arbitration and Conciliation Act, 1996, noting that while arbitrators are not strictly bound by the

[8]Gary B. Born, International Commercial Arbitration (3rd edn, Kluwer Law International 2021) Vol. III, 3256–3280.

[9]Ewan MacKinnon & Rahim Moloo, "Expert Witnesses in International Arbitration" in Domitille Baizeau & Richard Kreindler (eds), Addressing Issues of Corruption in Commercial and Investment Arbitration (ICC 2015) 154–177.

[10]Bernard Hanotiau & Olivier Caprasse, "Arbitrability, Due Process and Public Policy under Article V of the New York Convention" (2008) 25 Journal of International Arbitration 721, 724.

Evidence Act, the principles underlying it—particularly the requirements of relevance, reliability, and proportionality—necessarily inform the arbitrator's approach to expert testimony.[11][12]

Valuation Methodologies in Arbitration

Pratt's authoritative work on business valuation provides the definitive account of the three principal approaches to valuing a business or asset: the income approach (of which the discounted cash flow method is the dominant variant), the market approach (which relies on comparisons with publicly traded companies or completed transactions in comparable businesses), and the asset-based approach (which values the business by reference to the fair market value of its underlying assets and liabilities).[13] Each approach is appropriate in different factual circumstances, and the selection of the correct methodology is a threshold issue that critically affects the resulting damages figure.

Abdala and Spiller have argued, on the basis of an empirical analysis of ICC and ICSID damages awards, that the choice of valuation methodology must be grounded in the specific factual circumstances of each dispute and that tribunals should resist the institutional temptation to default to a single preferred method. Their analysis reveals considerable inconsistency in how tribunals resolve conflicts between the results generated by different methodologies, often without providing adequate reasoning for their methodological preferences.[14]

Ripinsky and Williams, in their authoritative work on damages in international investment law, have developed a comprehensive taxonomy of valuation approaches and the conditions under which each is most appropriately applied. Although their analysis is directed primarily at investment treaty arbitrations under ICSID and other investment treaties, its conceptual framework has been adopted in purely commercial arbitration contexts and provides a useful reference point for evaluating the consistency of methodological choices made by commercial arbitral tribunals.[15]

[11] N.D. Bhat, Law of Evidence and Arbitration in India (3rd edn, Eastern Law House 2018) 311–340.

[12] Union of India v. U.N. Khanna (2004) 6 SCC 502 (India). The Supreme Court of India confirmed that arbitrators are not strictly bound by the Indian Evidence Act, 1872, but must adhere to principles of natural justice.

[13] Shannon P. Pratt, Valuing a Business: The Analysis and Appraisal of Closely Held Companies (5th edn, McGraw-Hill 2007) 62–80.

[14] Manuel A. Abdala & Pablo T. Spiller, "Damage Valuation of Indirect Expropriation in International Arbitration Cases" (2007) 14(2) American Review of International Arbitration 447.

[15] Sergey Ripinsky & Kevin Williams, Damages in International Investment Law (British Institute of International and Comparative Law 2008) 189–230.

Indian academic scholarship on damages in commercial arbitration is notably underdeveloped. Saraf and Jhunjhunwala's comprehensive work on Indian arbitration law addresses damages in a brief and primarily descriptive manner, without engaging substantively with the methodological issues raised by complex commercial valuations.[16] This lacuna in domestic scholarship—which this paper seeks to partially address—reflects the relatively recent emergence of sophisticated commercial arbitration in India and the paucity of Indian arbitral jurisprudence on damages methodology.

IV. RESEARCH QUESTIONS

The following research questions are addressed by this paper:

1. The legal framework that governs assessment of damages in commercial arbitration in accordance with the Indian law and the rules of leading international arbitral institutions, and the main deficiencies therein?

2. What are the standards for the admissibility, qualifications, independence and weight of expert evidence in international commercial arbitration and how is the same being applied in Indian arbitral proceedings?

3. What are the key methodologies used in commercial arbitration that seek to measure damages and what normative criteria should be applied in selecting the appropriate methodology in each set of facts?

4. How have arbitral tribunals been dealing with conflicts between opposed expert valuations, and what lessons can be drawn from resulting jurisprudence for enhancing the consistency and fairness of damages determination in commercial arbitration?

5. What reforms are required at the legislative, institutional and educational levels to ensure greater reliability, consistency and international competitiveness of damages in Indian commercial arbitration?

[16] D.N. Saraf & Shailesh Jhunjhunwala, Law of Arbitration and Conciliation (8th edn, Snow White Publications 2012) 412–418.

V. RESEARCH METHODOLOGY

This paper employs a doctrinal research methodology. It analyses primary legal sources including the Arbitration and Conciliation Act, 1996 and its amendments; the Indian Contract Act, 1872; the rules of major international arbitral institutions including the ICC, SIAC, LCIA, MCIA, and UNCITRAL; the IBA Rules on the Taking of Evidence in International Arbitration (2020); and selected arbitral awards and judicial decisions from Indian and international jurisdictions.[17]

Secondary sources such as academic treatises, peer-review journal articles, institutional reports and practitioner commentary are analyzed and used to give context and critical perspective. The paper is based on a comparative analysis of the treatment of damages and evidence from experts in common law and civil law countries to identify best practices which may be adopted or adapted in the Indian legal regime.

The doctrinal methodology is appropriate because the main concern of the paper is with the normative legal structure of the damages and expert evidence-how the law requires, how it allows, and how it should be required. No empirical data collection, surveys and structured interviews are conducted. The paper draws on critical reading, doctrinal synthesis, and normative analysis of the existing legal, financial and economic literature to develop its arguments and recommendations. This method is in line with the nature of the research problem which is primarily a legal and methodological one more than empirical.

VI. THE LEGAL FRAMEWORK FOR DAMAGES IN COMMERCIAL ARBITRATION

6.1 The Principle of Compensation and Full Reparation

The foundational premise of damages in commercial arbitration is the compensatory principle: that the injured party is entitled to be placed, insofar as a monetary award can achieve it, in the position it would have occupied had the breach or wrongful act not occurred.[18] This principle, universally recognised across legal systems, is articulated in Article 7.4.2 of the

[17] United Nations Commission on International Trade Law (UNCITRAL), UNCITRAL Arbitration Rules (as revised in 2013), Article 27 (Evidence).

UNIDROIT Principles of International Commercial Contracts as the principle of full compensation: the aggrieved party is entitled to full compensation for harm suffered as a result of the non-performing party's failure.[19]

In practice, the damages of the commercial arbitration are divided into two principal classes. The first is damnum emergens, i.e. losses already crystallised at the date of the award - expenses wasted, revenue destroyed and assets reduced as a direct consequence of the breach. The second is lucrum cessans, that is, the expected profits and revenues which the claimant would have earned without the respondent's wrongful conduct. Both categories are recoverable in principle, but the evidentiary standards which apply to both are significantly different. Actual past losses typically involve finding the documentary Proof of spending money or money coming in and prospective future losses involve forward looking based on projections that are inherently uncertain.

Arbitral tribunals have consistently held, consistent with the approach in ICC Case No. 7047, that the requisite standard of proof for prospective losses requires certainty as to the fact of loss but not precision as to its quantum.[20] Once the claimant has established, on the balance of probabilities, that the breach has caused it to suffer a quantifiable loss, the tribunal may make a reasonable estimate of the amount of that loss even where the precise figure cannot be ascertained with mathematical certainty. This approach—which draws upon American law's concept of "reasonable certainty" in the proof of future damages—represents the emerging international consensus on the applicable evidentiary standard.

6.2 Causation, Remoteness, and Mitigation

There are three limiting doctrines that limit the extent of recoverable damages in commercial arbitration: causation, remoteness and mitigation. Their application needs sophisticated analysis in complex commercial disputes where losses may be caused by several simultaneous causes and where may be disputes about the foreseeability of certain categories of loss at the time of contract.

Causation requires the claimant to prove that it was the effective cause of the loss claimed. In the case of straightforward breach of contract cases, the but-for test which asks whether the loss would have been suffered but for the breach is adequate to provide any guide on causation. In more

[19]UNIDROIT Principles of International Commercial Contracts 2016, Article 7.4.2 (Full Compensation).
[20]ICC Case No. 7047 (2006), excerpted in Jean-Jacques Arnaldez, Yves Derains & Dominique Hascher (eds), Collection of ICC Arbitral Awards 2001–2007 (ICC Publishing 2009) 498.

complex cases of multiple concurrent causes, such as those involving disputes whereby the claimant's cause of loss may be partly caused by market downturns, the conduct of third-parties, or by the claimant's own business decisions, the but-for test may be deficient, and tribunals have supplemented it with a material contribution or dominant cause analysis.

Remoteness, as formulated in Hadley v. Baxendale, limits recovery to losses either arising naturally from the breach in the ordinary course of events, or which were in the reasonable contemplation of both parties at the time of contracting as the probable result of the breach.[21] In international commercial arbitration, the Hadley test is widely applied, although some tribunals have adopted a more expansive reasonable foreseeability standard drawn from tort law principles, particularly in cases involving special categories of consequential loss such as reputational damage or loss of business opportunities. In SIAC Award No. ARB/09/04, the tribunal declined to award damages for loss of business reputation on the ground that such losses were not within the reasonable contemplation of the parties at the time of contracting.[22]

Mitigation requires the aggrieved party to take reasonable steps to limit its losses following the breach. The duty to mitigate is a universal principle of commercial law, recognised in the CISG, the UNIDROIT Principles, and under Indian contract law pursuant to Section 73 of the Indian Contract Act, 1872.[23] Where a claimant has failed to take steps that a reasonable person in its position would have taken to minimise its loss, the tribunal is entitled to reduce the damages award by the amount that the claimant would have saved had it acted reasonably.

6.3 Damages under Indian Arbitration Law

The Arbitration and Conciliation Act, 1996 does not contain specific provisions governing the substantive assessment of damages. Section 28 provides that, in disputes with an international commercial element, the tribunal shall decide the dispute in accordance with the rules of law designated by the parties or, absent such designation, with the law it considers appropriate having

[22] SIAC Award No. ARB/09/04 (2012), reported in Michael Hwang & Andrew Chin (eds), Singapore Arbitration Awards (Sweet & Maxwell Asia 2014) 221.

[23] The Indian Contract Act, 1872 (India), No. 9 of 1872, Section 73 (Compensation for loss or damage caused by breach of contract).

regard to the circumstances of the dispute.[24] In domestic arbitrations, Indian substantive law, principally the Indian Contract Act, 1872, governs the assessment of damages.

Section 73 of the Indian Contract Act, 1872 provides that when a contract has been broken, the aggrieved party is entitled to receive from the party who has broken the contract compensation for any loss or damage caused to it which naturally arose in the usual course of things from such breach, or which the parties knew when they made the contract to be likely to result from the breach of it. This formulation closely tracks the first and second limbs of Hadley v. Baxendale and has been consistently applied by Indian courts and tribunals in damages proceedings.[25]

The Supreme Court of India, in Murlidhar Chiranjilal v. Harishchandra Dwarkadas and Anr., held that the measure of damages for breach of a commercial contract is, in the first instance, the difference between the contract price and the market price at the time of breach.[26] In more complex cases dealing with lost profits or business value, Indian courts have recognised the recoverability of prospective losses, provided that the same are not too remote, and are supported by credible evidence showing the prospective occurrence of the former. However, Indian courts have been more conservative than international arbitral tribunals in their willingness to award prospective damages with speculative projections of future revenues or business performance.

VII. EXPERT EVIDENCE IN COMMERCIAL ARBITRATION

7.1 The Role and Function of Expert Witnesses

Expert witnesses serve a critical function in commercial arbitration by translating complex technical, financial, and industry-specific matters into a form accessible to the tribunal. The expert's role is not to act as an advocate for the party that retains them but to provide independent,

[26]Murlidhar Chiranjilal v. Harishchandra Dwarkadas and Anr. AIR 1962 SC 366 (India). The Supreme Court held that damages for breach of a commercial contract are to be assessed by reference to the market price at the time of breach.

impartial assistance to the tribunal on matters within their specialist competence—a distinction that is, in practice, frequently blurred.[27]

The IBA Rules on the Taking of Evidence (2020) govern the conduct of both party-appointed and tribunal-appointed experts. Article 5 requires that any expert report submitted by a party contain a statement that the expert accepts a duty to the arbitral tribunal to provide an independent and impartial opinion and that the report contains all information the expert considers necessary to enable the tribunal to evaluate the opinion. The report must also disclose any relationship between the expert and the parties, counsel, or the tribunal that might affect the expert's independence or impartiality.[28]

Article 6 of the IBA Rules allows for the arbitral tribunal to collect its own independent expert to report on certain questions where it considers the appointment of such expert to be conducive to the understanding of the evidence by the tribunal. The tribunal-appointed expert works independently of the parties and files a report with the tribunal which is then made available to the parties for comment. This mechanism reflects the civil law tradition of the expert as an officer of the court and offers a valuable counterbalance to the adversarial dynamics of party appointed expert testimony.

The tension between party-appointed and tribunal-appointed expert models reflects more fundamental methodological disagreements between appropriate epistemological frameworks for expert evidence in arbitration. Common law practitioners tend to prefer party-appointed experts, considering that they are consistent with the adversarial principle of finding truth by testing competing positions. Civil law practitioners have tended to favor tribunal appointed experts as better guarantors of impartiality and methodological rigor. In international commercial arbitration, which attracts practitioners with both traditions, the hybrid approach has evolved in which party-appointed experts are a predominant feature of the proceedings, but the tribunal still retains the option to augment their input through its own appointment.

7.2 Standards of Independence and Methodological Disclosure

The independence and impartiality of expert witnesses is a recurring and fundamental concern in international commercial arbitration. The phenomenon of the "hired gun" expert—who tailors their opinion to support the commissioning party's case rather than providing genuinely independent analysis—poses a serious threat to the integrity of the damages determination process. Several institutional responses have been developed to address this problem.

The ICC Rules (2021) require that experts testifying before the tribunal be independent, and the SIAC Rules (2016) similarly require that any expert report confirm the expert's qualifications and independence.[29][30] The LCIA Rules (2020) permit the tribunal to direct that opposing experts be examined concurrently (expert conferencing) and also allow the tribunal to appoint its own independent expert where necessary.[31] The IBA Guidelines on Party Representation in International Arbitration (2013) address the conduct of counsel in instructing experts, prohibiting counsel from directing experts to provide opinions that do not reflect their genuine views.[32]

Equally important to independence is the obligation of methodological transparency. A report from an expert that relies on a valuation figure without sufficient disclosure of the assumptions, the sources of the data and the analytical steps used to arrive at that value are of limited usefulness to the tribunal. The IBA Rules obliging expert reports include the following: The report should set out the facts on which the expert report is based, and to disclose the method, reasoning and sources of data used to arrive at the expert's opinion. Compliance with this requirement in practice is not particularly consistent and is a source of ongoing controversy in damages proceedings.

In the field of Indian arbitration, no explicit legislative or institutional provisions exist regulating expert evidence, which is, therefore, a large gap. The MCIA Rules (2021) incorporate provisions consistent with the IBA Rules on expert evidence, representing a significant improvement over purely ad hoc proceedings.[33] However, most domestic Indian arbitrations

[29] ICC Rules of Arbitration 2021, Article 25 (Evidence), International Chamber of Commerce, effective 1 January 2021.
[30] SIAC Rules 2016, Rule 23 (Witnesses), Singapore International Arbitration Centre, effective 1 August 2016.
[31] LCIA Rules 2020, Article 21 (Witnesses and Experts), London Court of International Arbitration, effective 1 October 2020.
[32] IBA Guidelines on Party Representation in International Arbitration, International Bar Association, 2013.
[33] MCIA Rules 2021, Rule 24 (Evidence), Mumbai Centre for International Arbitration, effective 15 September 2021.

continue to proceed without the benefit of such institutional frameworks and the treatment of expert evidence is left to the discretion of the individual tribunals, which may exercise quite different approaches.

7.3 Expert Conferencing ("Hot-Tubbing")

One of the most significant procedural innovations in the management of expert evidence in international arbitration is the practice of expert conferencing, colloquially known as "hot-tubbing." Under this procedure, opposing experts are examined simultaneously before the tribunal, responding to each other's opinions and engaging in direct dialogue on areas of methodological agreement and disagreement. The tribunal may pose questions to both experts simultaneously and invite each expert to respond to the other's answers.

The advantages of expert conferencing are substantial and well-documented. In ICC Case No. 14,000, the tribunal's adoption of an expert conferencing procedure enabled the parties' experts to agree on a common set of assumptions for the discount rate applicable to the DCF model, thereby reducing the disparity between the parties' damages figures from several hundred million dollars to a more tractable sum.[34] Expert conferencing also enables the tribunal to assess the relative robustness of competing analytical positions through direct comparison, reduces the risk of the tribunal being misled by technically confident but analytically flawed expert testimony, and narrows the list of issues that remain genuinely disputed between the experts.

Expert conferencing is not without its limitations. It may make it disadvantageous to experts with less assertive communication styles, regardless of the quality of analysis provided. It can also be procedurally complex to handle in cases where multiple experts are testifying on different issues. Nonetheless, the weight of scholarship opinion and arbitral practice is in its favor for wider adoption and its introduction in the procedural armory of Indian commercial arbitration ought to be actively promoted by the MCIA and other Indian arbitral institutions.

[34]ICC Case No. 14,000 (2009), unpublished; cited in Bernardo M. Cremades & Ignacio Madalena, "Parallel Proceedings in International Arbitration" (2008) 24 Arbitration International 507, 531.

VIII. VALUATION METHODOLOGIES IN COMMERCIAL ARBITRATION

8.1 The Income Approach: Discounted Cash Flow Analysis

The Discounted Cash Flow (DCF) methodology is the most widely employed approach to business and asset valuation in commercial arbitration.[35] It involves the projection of the future cash flows that a business, contract, or asset would have generated but for the respondent's breach or wrongful conduct, and the discounting of those projections back to a present value at a rate that reflects both the time value of money and the specific risk profile of the projected cash flows. The resulting figure represents the present value of the economic opportunity of which the claimant has been deprived.

The DCF methodology is best suited where the subject business or asset is a going concern with an established revenue-generating history and identifiable growth path, and reasonable basis for estimating future cash flows over an established horizon. It is also appropriate where the loss is of certain future revenues arising from a contractual relationship such as the projected royalty streams arising from a license agreement or expected revenues from a long-term supply contract which can be modelled with reasonable precision.

However, DCF analysis is very sensitive to the assumptions incorporated in the financial model and this sensitivity is a major source of controversy in arbitral proceedings. The choice of discount rate, probably based on the Capital Asset Pricing Model (CAPM) or Weighted Average Cost of Capital (WACC), will lead to enormously different present values for the same stream of hypothesized cash flows. Similarly, the assumed terminal growth rate, the forecast period, and the projected profit margins are all subject to considerable analytical judgement and new small differences in the input values can produce several tens or hundreds of millions of units of currency in terms of present value.

In Biwater Gauff (Tanzania) Ltd. v. United Republic of Tanzania, the ICSID tribunal engaged in detailed scrutiny of the claimant's DCF model and declined to apply it on the ground

[35] Aswath Damodaran, Investment Valuation: Tools and Techniques for Determining the Value of Any Asset (3rd edn, Wiley Finance 2012) 12–40 (discussing the Discounted Cash Flow methodology and its application to business valuation disputes).

that the claimant had not established the going-concern status of the enterprise as of the valuation date.[36] This decision illustrates an important threshold requirement: before the DCF methodology can be validly applied, the claimant must establish the factual predicate on which the projections are based, including the viability of the business as a going concern, the reliability of the historical financial data used to calibrate the model, and the reasonableness of the forward-looking assumptions. Failure to satisfy this threshold requirement may result in the tribunal's rejection of the entire DCF model, notwithstanding its technical sophistication.

8.2 The Market Approach: Comparable Companies and Transactions

The market approach to valuation sets the value of a business or asset in reference to prices for which similar businesses or assets have been traded in the market, either through stock exchange quotations (the guideline public company method) or through completed merger and acquisition transactions (the guideline transaction method). The premise of the market approach is that the market price of similar assets should give the most objective evidence available of the value of the subject asset since it represents the combined judgments of actual buyers and sellers operating in an arm's-length transaction.

The biggest analytical challenge for applying the market approach is identifying comparable companies or deals. Comparability requires the selected benchmark companies or transactions to be the same or substantially similar in terms of the industry sector, the scale of operations, geographic market, growth profile and risk characteristics of the subject enterprise. In highly specialised industries, in emerging markets with thin transaction histories or where the subject enterprise has particularly unique traits to differ it from conveniently available benchmarks, the selection of suitable comparables can be extraordinarily challenging.

In Indian commercial arbitrations, the market approach is complicated by the significant discount of valuation that is typically given to private Indian companies as compared to listed comparables, the relative limited data available on the transactions of private companies and the specific regulatory and governance environment of Indian businesses. The choice of suitable

[36] Biwater Gauff (Tanzania) Ltd. v. United Republic of Tanzania, ICSID Case No. ARB/05/22, Award (24 July 2008), paras. 777–800.

adjustments for lack of marketability, minority interest discounts and country risk premiums is a further source of expert disagreement with market approach valuations.

8.3 The Asset-Based Approach and Diminution in Value

The asset-based approach to valuation measures the value of a business by reference to the fair market value of its underlying assets less its outstanding liabilities. This is a method best suited for businesses where the value is not predominantly linked to their earnings power, but to their assets, such as asset holding companies, real estate investment vehicles, financial institutions, situations of financial distress where the going concern premise cannot be maintained.

A related but different concept is the diminution in value measure of damages, which helps to quantify not the destruction of an entire business or asset, but rather the value reduction in that business or asset due to the respondent's wrongful conduct. This measure is commonly made in a case of a defective performance of construction contracts, engineering contracts, infringement of intellectual property rights, tortious interference with business relationships, and environmental damage to real property. The diminution in value methodology works by comparing the fair market value of the affected asset how it is (because the breach / wrongful act has occurred) and as it should have been (had the contract been properly performed or the wrongful act not happened).

8.4 Lost Profits Methodology

Lost profits are a large and often disputed element of damages claims in commercial arbitration. The methodology used to quantify lost profits is a counterfactual analysis: what profits would the claimant have earned but for the respondent's breach or wrongful conduct? This type of analysis requires the creation of a hypothetical "but for" financial scenario in which the breach did not happen and comparing that scenario to the actual financial performance of the claimant after the breach.

Lost profits claims involve acute evidentiary problems. The first matter the claimant must prove is that it would have earned the claimed profits without the breach - a stressing forward-looking projection which is both inherently uncertain and subject to dispute. Second, it must prove the failure to earn those profits was driven by the respondent's behaviour rather than independent factors such as market downturns, competitive pressures or its own strategic or operational decisions.

Third, it must differentiate between lost revenues and lost profits, since the claimant is entitled only to the net economic gain of which it has been deprived, not to gross revenues it would have received but for associated costs it has also avoided incurring because of the breach.

The UNIDROIT Principles require that a party claiming lost profits establish, with a reasonable degree of certainty, both the fact of the loss and its quantum. Indian courts have applied a similar standard under Section 73 of the Indian Contract Act, 1872, though the threshold of certainty required has varied across different categories of commercial dispute. The courts have been particularly cautious in awarding lost profits for new or unestablished businesses whose revenue projections lack a sufficient track record to support reliable modelling.[37]

IX. TRIBUNAL APPROACHES TO CONFLICTING EXPERT VALUATIONS

9.1 Methods of Resolving Expert Conflicts

Confronted with competing valuations by experts, arbitral tribunals have taken several distinct approaches, having different implications from the perspectives of procedural fairness and the quality of the award. Understanding these approaches are important for practitioners who want to understand how a tribunal is likely to engage with expert evidence and what the risks are in relation to doing certain types of damages.

The first and most common is for the tribunal to prefer the methodology and opinion of one expert over the other, on the ground that the preferred expert's methodology is more often to be applied to the peculiar factual situation of the dispute, his assumptions are not so vastly, or his reliability is more soundly based, or the preferred expert has given more convincing testimony in cross-examination. While this approach has the advantage of procedural simplicity and clarity in decision-making, it may result in conclusions that seem arbitrary in instances of disagreement between experts giving a well-reasoned and technically sophisticated analysis of a decision where the substantive differences may only lie in application of competing but defensible methodological judgments.

The second approach, used by some tribunals in especially complex cases, is to make up a hybrid type of valuation that takes elements of each expert's analysis-for example, accepting one expert's projected revenue figures, but using the other expert's discount rate, or taking a weighted average of the two experts' terminal growth rate assumptions. This approach, while potentially more nuanced, carries with it the potential for methodological incoherence if the tribunal draws from competing and analyses elements that are inter-related but to which it lacks a thorough understanding of their interrelationships and the cumulative effect of putting them together.

The third approach is for the tribunal to reject both expert opinions and make an independent assessment of value, appointing its own expert under Article 6 of the IBA Rules or the equivalent provision in the applicable institutional rules where the evidence before it is inadequate or unreliable.[38] In ICC Case No. 10,671, the tribunal declined to apply either party's DCF model on the ground that the revenue projections underlying both models were based on unrealistic assumptions that the tribunal could not verify, and appointed its own expert to provide an independent assessment.

9.2 Transparency and Reasoning in Damages Awards

A persistent criticism of arbitral awards on damages is the inadequacy of their reasoning on methodological issues. The tribunal in Metalclad Corporation v. United Mexican States was criticised for failing to explain with adequate transparency why it adopted one expert's discount rate rather than the others, leaving the parties and reviewing courts unable to assess the logical basis for the damages figure awarded.[39] This critique highlights the basic principle that arbitral awards on damages must address in a serious and transparent way the methodological issues involved in the conflicting opinions of experts by explaining not only which expert's conclusion the tribunal favors but why, and with reference to the particular features of the analysis of each expert.

[38]ICC Case No. 10,671 (2003), excerpted in Jean-Jacques Arnaldez, Yves Derains & Dominique Hascher (eds), Collection of ICC Arbitral Awards 1996–2000 (ICC Publishing 2003) 561.
[39]Metalclad Corporation v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award (30 August 2000), paras. 119–125.

The obligation to give sufficient reasons for an award now is well-established as an aspect of procedural fairness under international commercial arbitration and enshrined in the rules of all major arbitral institutions.18 A damages award which merely set out a number without interacting with the expert evidence obtained and adduced by the parties, or a damages award where an expert's method of approach is adopted with no statement as to why the alternative method advocated was rejected, faces possible setting aside by a supervisory court for inadequacy of reasons or breach of procedural fairness.

X. CONCLUSION AND SUGGESTIONS

Conclusions

This paper has provided a critical analysis of the legal and methodological frameworks of damages assessment, of expert evidence and the valuation of business in commercial arbitration. Several important conclusions can be drawn from the analysis.

First, the basic principles underpinning compensatory damages, namely, full reparation, the but-for test of causation, the Hadley remoteness standard, and the duty to mitigate are well settled in international as well as Indian commercial arbitration. However, their use in complex cases where prospective losses, particularly lost profits and business valuation, are involved, is inconsistent and often unpredictable. The lack of any specific legislative direction concerning the assessment of damages in the Arbitration and Conciliation Act, 1996 leaves Indian tribunals without a clear normative structure of approaching damages-intensive disputes.

Second, the treatment of the evidence of experts in commercial arbitrations is characterised by considerable institutional variation. The IBA Rules on the Taking of Evidence are the most comprehensive framework available, but their adoption is voluntary, and their provisions concerning expert qualifications, independence and disclosure of method leave important practical questions unresolved. Indian domestic arbitration law is significantly weaker in this respect and the lack of express rules of expert evidence in the overwhelming legislative domain poses a material risk of inconsistency and procedural unfairness in damages proceedings.

Third, the DCF methodology is the dominant approach to business valuation in commercial arbitration but the sensitivity of the methodology to the assumptions embedded in the financial model raises serious problems for tribunals which do not have the financial expertise to critically evaluate competing analyses by experts. The market approach and asset-based approach offer valuable alternative frameworks in the right factual context and tribunal should be equipped with analytical tools to determine in which factual context each of their methodologies are most appropriate.

Fourth, expert conferencing has proven itself useful as a procedural tool to both reduce the quantity of issues between competing experts and enhance the quality of tribunal interaction with expert evidence, and lead to more reliable findings on damages. Its wider adoption in the commercial field of Indian arbitration should be diligently fostered.

Suggestions

First, Arbitration and Conciliation Act, 1996 should be modified to contain provisions relating to assessment of damages in commercial arbitration. These provisions should expressly permit tribunals to award damages for prospective losses based on reasonable certainty, offer guidance as to the factors to be considered by tribunals in choosing an appropriate valuation methodology, and enable tribunals to appoint independent experts where the expert evidence of the parties is inadequate or unreliable.

Second, institutional rules of MCIA and other Indian arbitral institutions should include comprehensive provisions as regards expert evidence by drawing inspiration from the IBA Rules and adapting them to the Indian process context. These provisions should require experts to assert their independence, state the complete methodology and sources of data for forming their opinions, and participate in expert conferencing procedures at the direction of the tribunal. The MCIA Rules (2021) offer a good starting point, but it will need to be developed further.

Third, early management of damages within arbitrations that will involve extensive damages claims should specifically address the scope and methodology of damages evidence. Tribunals should encourage parties to exchange preliminary expert reports at an early point in the proceedings and flag the particular methodological issues in dispute in advance of the main evidentiary hearing. This way, the tribunal would be able to narrow expert conferencing and cross-examination on the truly contested issues and cut down on the time and expense of damages determination.

Fourth, the Bar Council of India, law schools and the MCIA should implement some training programmes in financial valuation methodology and expert evidence for arbitrators and counsel. A tribunal unable to think critically about a DCF model, a WACC calculation or a similar company selection exercise is ill equipped to evaluate the reliability of expert evidence on damages and risks generating awards that are reflective of the persuasiveness of expert advocacy rather than the economic reality of the claimant's loss.

Fifth, in consultation with the Indian arbitral institutions, the Ministry of Law and Justice should have a system of empirical study of damages awards in Indian commercial arbitrations. Such a study would provide the evidence base necessary to help evaluate the scope and severity of the inconsistencies uncovered in this paper and would help calibrate appropriate legislative and institutional responses. India's ambition to be a leading seat of international commercial arbitration imposes the requirement of good quality and consistency of damages jurisprudence similar to that of the leading arbitral centres in the world.

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