Loss Aversion Bias or the Fear of Missing Out: A Behavioural Economics Analysis of Compensation in Investor State Dispute Settlement

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ABSTRACT: This article considers the application of the behavioural economics theory of loss aversion bias as an explanation for observed approaches to monetary compensation in Investor-State Dispute Settlement (ISDS). Beginning with a critique of the assessment that damages for breach of contract in the common law (both the reliance and expectation measures) embody the ethos of loss aversion bias, this article suggests that the dominant approach to compensation in ISDS is primarily forward-looking and profit-focused. Instances of loss-based compensation may be explained by rational means rather than through the heuristic of loss aversion bias. Compensation tied to loss may more accurately reflect full market value and often denote a lower quantum justified on the basis of lawfulness (as in expropriation). Most notably compensation based on actual losses serves the objective of certainty. The article concludes by suggesting that the dominant tendency of ISDS tribunals to award profit-oriented compensation may itself have a basis in a heuristic bias, namely the human tendency to seek to avoid missing out on future opportunities.

I. Introduction

Behavioural economists have observed that some systems of law, notably damages for breach of contract under the common law, may be explained by the tendency in humans to seek to avoid the pain of loss even where more suitable remedies are available.[1] This article will argue that this bias, known as "loss aversion," cannot explain the quantum of damages normally available to injured parties in a particular legal setting: awards by international investment tribunals adjudicating claims under international investment agreements (IIAs) which are brought by investors against host states in investor-state dispute settlement (ISDS). It will attempt to show, rather, that there may be alternative, rational explanations for arbitral awards which in some circumstances are based on loss to investors, noting that arbitrators often seek to differentiate between lawful and unlawful acts of state and to avoid undue speculation

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[1] E Zamir, "Law's Loss Aversion" in E Zamir and D Teichman eds. *The Oxford Handbook of Behavioral Economics and the Law* (Oxford University Press, 2014) at 282-283.

concerning an asset's genuine value. Establishing that investment arbitrators readily assess compensation on the basis of foregone profits (often in addition to losses), an approach which points to an absence of loss aversion bias, the article contemplates whether behavioural economics' emphasis on faulty, emotionally-charged decision-making may yet have a role to play in accounting for trends in investment arbitral reasoning. More specifically, compensation tied to lost profits may reflect another irrational (in the sense of deviation from the norm of logical thinking) bias in operation – the human tendency to regret missing out on future opportunities, which this article terms the "fear of missing out." These claims will be supported through an examination of remedial principles of international investment law as well as trends in compensation in international investment arbitration decisions. It should be noted from the outset that the article does not make any normative claims concerning whether or not biased judicial decision-making grounded in either loss aversion bias or the fear of missing out should be viewed as positive or negative adjuncts to adjudicators' discretion within this sphere of dispute settlement in international law. Nor does it make any recommendations on how such tendencies may be circumvented.

This article will proceed as follows: Having introduced the main thesis in Part I, Part II will go on to outline the mechanism of investor-state dispute settlement and its compensatory aim. Part III will introduce the notion of loss aversion bias and illustrate how it has been used as an explanatory theory for compensation by courts. This section will also critique the view that loss aversion bias captures the dominant measure of compensation for breach of contract, the expectation remedy. Part IV will return to investment arbitration, illustrating the leading approaches to compensation by states for breach of international investment treaties, noting that these are often forward-looking and gain-based, rather than loss-focused. In Part V, instances of loss-oriented compensation in investor-state arbitration will be presented as evincing discrete remedial purposes rather than as an embodiment of a general sense of loss aversion bias. Part VI attempts to explain the trend of future-oriented, profit-based compensation in investor-state arbitration through a different heuristic bias, which may be captured by the fear of missing out. Part VII concludes with a caution against attempts to de-bias judicial decision-makers in investment arbitration.

II. Investor-State Dispute Settlement and Compensation

International investment law is the body of international law which protects foreign investors against excessive interference by host state governments in the form of regulations which in

some case escalate to an expropriation of the investor's assets. The legal protections available to foreign investors are now primarily contained in bilateral and regional trade and investment treaties (collectively referred to as IIAs) of which there are now more than three thousand in effect worldwide.[2] Under this legal regime, a finding of illegitimate interference by host states entitles the investor to monetary compensation. Investor-state dispute settlement (often abbreviated as ISDS) refers to the capacity enshrined in most IIAs for foreign investors to pursue claims directly against host state in specialized international arbitration tribunals to secure such compensation. There have been several hundred of these arbitration cases in the last few decades brought through tribunals such as those of the International Centre for the Settlement of Investment Disputes (ICSID) and through ad hoc procedures like the arbitration rules promulgated by the United Nations Commission on International Trade Law (UNCITRAL). Awards of these tribunals regularly reach the tens of millions of dollars and in some instances have exceeded one billion dollars.[3]

The manner in which compensation is assessed for breach of international investment law is controversial and regularly the source of much deliberation by ISDS tribunals. While the awards in ISDS are lengthy, the actual legal reasoning had occasionally been criticized for its brevity and opacity, compared for example to decisions of the World Trade Organization panels and Appellate Body.[4] Indeed the asserted brevity and opacity of arbitral decisions (along with their inconsistency) still underlies much of the derision levied by some critics at the regime itself.[5] Investment tribunals did not always clearly articulate how they reached their decisions through the application of law to facts. Tribunals have become much more sophisticated in dealing with issues such as compensation in the past decade. Still, to the extent that tribunals do explain how they reach their decisions on compensation, they never explicitly acknowledge the role of irrational impulses such as heuristic biases which operate beyond the threshold of consciousness.

III. Loss Aversion Bias

[2] World Investment Report 2015, UNCTAD (United Nations, 2015) at xi.
[3] S Franck and L Wylie, "Predicting Outcomes in Investment Treaty Arbitration" 65 Duke Law Journal 459 (2015).
[4] E.g. C Henckels, *Proportionality and Deference in Investor-State Arbitration* (Cambridge University Press, 2015) at 91.
[5] E.g. G van Harten, *Investment Treaty Arbitration and Public Law* (Oxford University Press, 2007).

a) Introduction

Experts within the rapidly growing yet still largely inchoate field of behavioural economics have identified the human capacity to make decisions not based on rationality (traditional cost-benefit type analysis) but rather in response to their human frailties – distorted perceptions which are tied to our emotional shortcomings as well as our resistance to strenuous rumination when our intuition gives easier and seemingly more satisfactory answers. These "heuristic biases" are essentially shortcuts which underpin our choices in a manner that does not strictly reflect the logic of costs versus benefits nor legitimate assessments of probability or risk.[6]

Among the many biases which have been convincingly identified by experts is that of "loss aversion." This reflexive thought pattern embodies the human preference for avoiding losses rather than achieving gains even where this leads to a decrease in utility. Loss aversion is correctly termed a bias because such decision-making behaviour is often irrational – humans will occasionally prefer to avoid much smaller deprivations than secure substantial benefits. Some studies suggest that there may be an evolutionary purpose for loss aversion bias among early humans; there was a survival advantage in expending greater amounts of energy protecting one's existing resources than in taking away those of a competitor or seeking new ones, the value of which may be unknown.[7] Experts have further suggested that human actions are dictated not by rationality but by their perception of outcomes as gains or losses relative to some reference point. This is typically the status quo, although there may be other reference points, such as the gains or losses experienced by others, especially peers.[8] The preference for avoiding loss is closely associated with what is sometimes described as "status quo bias" meaning that humans seek outcomes which manifest the least change. This phenomenon is also linked to the "endowment effect" wherein people tend irrationally to demand more to give up an object which they already possess than they would be willing to pay to acquire it.[9] Loss aversion bias and related biases have been studied extensively through tests involving both human (as well as primate) subjects and has been applied as an explanatory theory to a wide range of disciplines including consumer behaviour and investing in stock markets.[10]

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[6] E.g. D Kahneman, *Thinking Fast and Slow* (Penguin, 2011) and R Thaler and C Sunstein, *Nudge* (Yale University Press, 2008).

[7] O Jones and SF Brosnan, "Law, Biology and Property: A New Theory of the Endowment Effect" 49: William and Mary Law Review 1935-90 (2008).

[8] D Kahneman and A Tversky, "Prospect Theory: An Analysis of Decision under Risk" 47 Econometrica 263 (1979).

[9] D Kahneman; J Knetsch, R Thaler, "Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias" 5:1 The Journal of Economic Perspectives (American Economic Association) 193 (1991).

[10] See further E Zamir, *Law, Psychology and Morality* (Oxford University Press, 2015).

b) Legal Applications and Theories of Compensation

As human behavioural traits informing choice, loss aversion bias and its related phenomena should apply to legal, or more specifically, judicial as well as legislative reasoning. Loss aversion bias's notion that "losses loom larger" than gains in the human psyche has been thoughtfully articulated in various legal contexts by Eyal Zamir. For example, Zamir points to human rights law which he argues more strongly protects civil and political rights (the right to life, freedom of speech and religion) than it does social and economic rights (housing, medical services and education). The former category may be portrayed as safeguarding and individual from harm or loss whereas the latter may be described as giving people something they do not have.[11]

Crucial for the purposes of applying loss aversion to compensation to this article's particular context of ISDS is Zamir's emphasis on the role of loss aversion in ascribing remedies in private law, particularly for breach of contract.[12] The common law of contract focuses on remedies which are based on the loss suffered by the victim of the breach rather than the benefits to the breaching party. Damages are awarded with an objective of placing the injured party in the position they would have been had the contract had been performed; in other words restoring their loss.[13] This captures the so-called expectation interest, distinguished from the reliance interest (return to the claimant's pre-contractual position) and the restitutionary[14] interest (the defendant's unjust gain from the breach) as famously categorized by Fuller and Purdue.[15] The pre-eminence of the expectation interest in the award of damages for breach of contract is now well established in the common law. Money should be awarded which approximates the claimant's right to receive that which was promised to them by the party in breach.[16] Anglo-American contract law establishes that the aim of damages is to put the claimant in the same position as if the contract had been performed, in other words, to give the victim of breach the monetary equivalent of what they expected.[17] In contrast, the reliance

[11] Zamir, above n 1 at 282-283. This characterization of human rights rests on the somewhat artificial distinction between giving up an existing entitlement, (the right to life is an almost in inalienable right which all humans possess), and receiving a benefit (people are uneducated until someone actively educates them). In other words, the theory of loss aversion may be justified by labelling something as loss where it may be plausibly described as a gain.
[12] Ibid at 282.
[13] M Chen-Wishart, *Contract Law* (Oxford University Press, 2015) at 504-505.
[14] Not to be confused with the concept of "restitution" discussed below in relation to the Articles on Responsibility of States for International Wrongful Acts which focusses on making the victim whole.
[15] L Fuller and W Perdue, "The Reliance Interest in Contract Damages" 46 Yale Law Journal 52 (1937).
[16] D Friedmann, "The Performance Interest in Contract Damages" 111 Law Quarterly Review 628 (1995)
[17] Robinson v Harman, (1848) 1 Ex Rep 850.

interest should only be available in extraordinary circumstances, such as where an award of lost profits (missed expectations) is too uncertain to assess adequately because of premature breach or other circumstances which would render profits too speculative.[18] There are even fewer situations in which common law courts will award damages based on the gain unjustly received as a consequence of another party's conduct. "Restitution" is a common theory underlying the use of a wrongdoer's cost of borrowings as the basis for payment by the wrongdoer of interest in a damages sum. The idea is that the taking by the wrongdoer of the principle sum properly owing to the injured party constitutes a forced loan which the wrongdoer uses for its own purposes. But for the forced loan, the wrongdoer would have had to borrow the sum in the market at the prevailing rate. Restitution or "unjust enrichment" as it is sometimes known, is remarkably narrow – only in very special circumstances will wrongful parties be required to disgorge their benefit to their victims.[19] It may be possible for restitutionary compensation to be awarded, for example, when there is a public interest in the defendant disgorging their wrongful gains.[20]

Despite this feature of the law of contract, Zamir persuasively asserts that there is no clear reason why compensation should not be linked to the amount which the party in breached benefitted from their action, either on efficiency or moral grounds.[21] Rather, he suggests that "loss aversion seems to provide a particularly strong explanation for [this] puzzle."[22] He urges that the dominance of loss-based remedies in contract may be the consequence of human claimant's need to have this particular form of suffering rectified. Since loss aversion theorizes that people perceive losses as much more painful than un-obtained gains, then claimants should be more inclined to sue for losses than for un-obtained gains. Furthermore, he reasons, as un-obtained gains are less likely to produce disutility that is large enough to justify legal action (which typically entails high cost), it follows that considerably fewer disputes should be expected to address claims of un-obtained gains. As jurisprudence develops through disputes, it makes sense that compensation based on foregone benefits should be less developed than that tied to loss.[23]

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[18] E.g. Anglia Television Ltd v Reed, [1972] 1 QB 60 and McRae v Commonwealth Disposals Commission, (1950) 84 CLR 377 (Australia).
[19] E Zamir, "Loss Aversion and the Law" 65 Vanderbilt Law Review 829 at 852-860.
[20] As in Attorney General v Blake, [2000] UKHL 45.
[21] E Zamir, Law, *Psychology and Morality: The Role of Loss Aversion* (Oxford University Press, 2015) at 130-132 (noting that disgorgement need not necessarily deter efficient breach and moral concerns would be precluded by allowing the injured party the choice between disgorgement or expectation).
[22] Zamir, above n 1 at 282.
[23] Ibid at 285.

Unfortunately Zamir's application of loss aversion to judicial remedies in contract is incomplete, dwelling on the wrong distinction (contract versus restitutionary remedies) while artificially creating another one (reliance versus expectation remedies). In particular, Zamir's focus on the difference between contract and restitutionary damages in order to support his theory of contract law's loss aversion bias does not capture the more accurate and ultimately illuminating remedial categorical distinction which exists both in the Anglo American private law and (as will be shown below) in international investment law: (actual) costs versus (foregone) profits, essentially reliance versus expectation.

Whereas Zamir rightly suggests that cost-based remedies in contract connote rectification of loss, his assertion that profit-based ones are also loss-focused is spurious and therefore problematic in terms of its explanatory logic. He states: "[T]he law readily compensates the injured party for its losses through either expectation or reliance damages."[24] But of course the expectation interest concerns an award of future profits, which contemplates in part gains which have not yet crystallized,[25] whereas the reliance measure concerns wasted expenses, or more accurately actual losses which have already occurred. These reflect profoundly different approaches to compensation. The difference between the two concepts as presented by Zamir is essentially a semantic one employing an unworkably broad understanding of "loss." Indeed, the expectation interest (again the dominant remedy for breach of contract in the Anglo-American common law) is perhaps more appropriately described as the "performance interest" because it protects the injured party's entitlement to receive performance of the contract as bargained, or at least the monetary equivalent. This is quite distinct from compensating them for losses caused by non-performance, which may be more accurately described as the "compensation interest" and which some courts have been prepared to award, typically in addition to the performance interest rather than in alternative to it and sometimes under the label "consequential losses" as distinct from direct ones.[26] In contract law the claimant's primary right to performance may be satisfied through an order of specific performance (rarely awarded by common law courts) or through the monetary equivalent (the standard remedy for breach, again in common law systems). In the insightful words of one commentator "it is only the compensatory interest that should properly be regarded as being

[24] Zamir, above n 1 at 284

[25] The selling price of an asset such as a company will incorporate expectations about future performance – this is part of "market value" see discussion below.

[26] C Webb "Performance and Compensation: An Analysis of Contract Damages and Contractual Obligation" 26 Oxford Journal of Legal Studies 41 (2006) at 53 referring for example to Farley v Skinner [2001] WLR 899

concerned with the issue of loss"[27] and further that "when a claimant asserts his performance interest the notion of loss is superfluous."[28]

To be sure, as an empirically tested phenomenon it is clear that many people do take as a reference point their position had the contract been performed rather than their pre-contractual position. Clearly people do feel that they have "lost" something that they should have received when contracts are breached.[29] But it is trivial to assert that lost profits from untendered performance are truly an element of loss, which of course they are, but only because they represent value that is not yet held in possession but which is only contingent on the future unfolding as planned. As lost profits are yet to be received benefits, they seem to conceptually fall outside loss aversion bias which concentrates on avoiding the pain of losing something which someone already has. It is true that something's value includes the profit stream which it may generate in the future – this is very much part of what judges (and as we will see below, investment tribunals) understand "market value" to be – purchasers care more about an asset's future prospects than on past performance when negotiating prices. Lost future earnings are still losses but they do not capture the spirit of loss aversion bias which focuses on what is actually held in possession. In this sense it may be more appropriate to describe the phenomenon as "possession bias" rather than "loss aversion bias." This is linked to "status-quo bias" which posits that any change from the baseline of the current position is perceived as a loss.[30] This is not to suggest that loss aversion bias has no relevance as an explanatory model for legal reasoning. It may well do in certain contexts. However the theory that "losses loom large" does not correspond to contract remedies nor more importantly for the purposes of this article, to those of international investment law where reliance based compensation is also secondary to that of expectation. Moreover, as will be illustrated in a moment, instances of loss-based compensation in ISDS may be adequately explained by rational means rather than through the bias of loss aversion. In other words, there are situation-specific objectives that loss-based remedies address.

IV. Compensation by Investment Arbitration Tribunals

[27] Ibid at 53.
[28] Ibid at 54.
[29] Y Feldman, A Schurr and D Teichman, 'Reference Points and Contractual Choices: An Experimental Examination' 10:3 Journal of Empirical Legal Studies 512 (2013).
[30] D Kahneman, J Knetsch and R Thaler, 'The Endowment Effect, Loss Aversion and Status Quo Bias' 5:1 Journal of Economic Perspectives 193 (1991).

This article will consider whether loss aversion bias, as an explanation of legal reasoning, may resonate beyond contract into the related field of international investment law.[31] In so doing it must first be conceded that Zamir's application of loss aversion bias to contract-law remedies focusses on common law approaches towards monetary remedies for contract breaches. Reliance-based compensation plays a much larger role in many civil law systems. This is a crucial point because international investment law, like much of public international law, crosses between civil and common law approaches. International investment law, including rules on compensation, the process of arbitration as well as treaty drafting, has unquestionably developed in a cross-cultural context informed by many legal systems.

In order to demonstrate the disjunction between the empirical phenomenon of loss aversion and legal outcomes in ISDS, it is necessary to consider the principles of compensation in international investment law, drawing on those found in general international law, the text of IIAs and investment arbitration precedent. In so doing this section will illustrate the regime's preference for compensation tied to un-obtained gains in some cases on top of actual losses. It should be noted that lost profits in international law, sometimes described by the Latin phrase *lucrum cessans,* are closely aligned to the expectation interest of Anglo-American contract law, described above. The value of the investment itself (distinct from its capacity to generate profits going forward) is often labelled in international law by the Latin *damnum emergens*, which bears a close resemblance to the reliance interest, also discussed above, and which embodies the principle of seeking to put in the injured party in the position that would have existed if the investment had never been made, which in recalls the concept loss aversion.

a) Principles of Compensation

Generally speaking, the international law on remedies appears to consider that the injured party's loss is but one component of compensation for a wrongful action by a state. The well-known *Chorzow Factory* case of the Permanent Court of International Justice (PCIJ) of 1928 (forerunner of the modern International Court of Justice) is regularly cited as the classic statement of compensation for wrongful acts by states under international law:

> The essential principle contained in the actual notion of an illegal act - a principle which seems to be established by international practice and in particular by the decisions of arbitral tribunals - is that reparation must, as far as possible, wipe out all the consequences of an illegal act re-

[31] For the conceptual link between international investment law see further S Puig, "No Right without a Remedy: Foundations of Investor-State Arbitration" in Z Douglas, J Pauwelyn and J Vinuales eds. *The Foundations of International Investment Law: Bringing Theory into Practice* (Oxford University Press, 2014).

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 kid would bear; the award, if need be, of damages for loss sustained which would not be covered by restitution in kind or compensation for an act contrary to international law.[32]

The *Chorzow* court speaks of "re-establishing the situation which would…have existed if the act had not been committed." In one sense this method corresponds to that of the expectation interest for breach of contract. Injured parties should be returned in the same position as if the state had fulfilled its obligations under customary international law or treaty. That is to say the properly compensated victim should be indifferent between the event having never occurred and the money they receive as its consequence. In international investment law where firms enter foreign countries for the purpose of conducting business, states promise to extend various protections to the investor. The wrongful act constitutes a state's failure to fulfil these obligations, undermining the generation of profits going forward. This rationale relies on the understanding that most foreign investments intend to yield revenue, much as most contracts seek to elevate the parties to a position of greater utility than their pre-contractual positions.

To be clear – *Chorzow* does not refer to the award of lost profits expressly. This may explain why in another, perhaps more obvious sense *Chorzow*'s reference to "full reparation" could be conceived as engaging the reliance interest. If the state actively harms the investor (perhaps by taking their assets) then the investor would prefer if the taking had never occurred at all; the injured party will be returned to the position it was in before the damage occurs and, if they cannot reacquire the taken asset, they will be entitled to its monetary equivalent. Still, *Chorzow*'s formula of "loss sustained," should not be taken to connote merely the replacement of the value of lost items to the exclusion of their forward-looking, revenue-generating potential. In other words, the reference to "loss" could be either actual injuries or a missed opportunity to secure gains. The gains available are an intrinsic aspect of what makes the taken commodity valuable. In fact *Chorzow* is thought by some to stand for the notion that lost profits can be included as an aspect of compensation for illegal acts of state, with the term "damages" usually reserved for those acts which were not lawful rather than "compensation."[33]

Focusing closely on the language of "loss", the PCIJ in the earlier *Lusitania* cases clarified the concept of "damages" for wrongs under public international law: "The

[32] Factory at Chorzow (Germany v Poland) PCIJ Rep (1928) Series A, No 13 at 47.
[33] M Sornarajah, *The International Law on Foreign Investment* (Cambridge University Press, 2010) at 438. Sornarajah's view on this distinction is not universally held, see e.g. B Sabahi, *Compensation and Restitution in Investor-State Arbitration* (Oxford University Press, 2011) Chapter 5.

fundamental concept of 'damage' is […] reparation for a loss suffered; ... The remedy should be commensurate with the loss, so that the injured party may be made whole."[34] But again, with a view to "making whole", "loss" here could equally refer to that which the injured party was denied the ability to obtain in the future, not simply that with which they were actually dispossessed. This logic is revealed by the manner in which the injury was assessed by the court. As *Lusitania* dealt with the loss of life due to the sinking of a ship rather than a commercial venture which was not able to realize financial gain, it is illustrative to observe that when placing a monetary value on the lost life, the court considered the life *expectancy* of the individuals who were killed during the sinking of the vessel. Compensation was awarded based on the lost opportunity to enjoy what would have remained of each deceased individual's life. The court specified that the compensation awarded would include "the amounts which the decedent, had he not been killed, would probably have contributed to the claimant" as well as "the probable duration of life."[35] This is not strictly speaking compensation for what was lost, rather for the tragedy of life that would never be lived. In cold calculation, the more years left to live, the worse the injury.

Greater clarity with regards to the restoration of loss versus the award of un-earned gains may be found in the International Law Commissions Articles on State Responsibility, which are often thought to codify customary international law. Echoing *Chorzow*, the Articles declare: "The responsible State is under an obligation to make full reparation for the injury caused by the internationally wrongful act."[36] More importantly, the Articles elaborate that a state which is held responsible for an internationally wrongful act is "under an obligation to compensate for the damage caused …in so far as damage is not made good by restitution" and that "compensation shall cover any financially assessable damage including loss of profits."[37] This is among the clearest acknowledgements that the chance of missing out on future expected benefits should feature in the monetary package granted to victims of a state's breach of international law.

Emphasis in international law on remedies tied to the injured party's future profits rather than their loss of an existing asset is further expressed in the UNIDROIT Principles of International Commercial Contracts, which are applicable to harms suffered as a consequence of certain breached contractual obligations. These principles state: "the aggrieved party is

[34] See Opinion in the Lusitania Cases, Vol VII (1 November 1923).
[35] Ibid at 35.
[36] Art 31(1).
[37] Art 36.

entitled to full compensation for harm sustained as a result of non-performance. Such harm includes both any loss which it suffered and any gain of which it was deprived…"[38] The phrase "any gain from which it was deprived" is segregated from and additive to "loss," but it is not simply "loss" but "*any* loss" evoking a purposefully broad categorical division between these two remedial concepts. As a wholly separate concept of injury, deprived gains are not truly losses at all but rather missed opportunities. As such it is exceedingly difficult to ascribe the motivation of loss aversion bias to them. In situations where profits are expected, losses do not loom large at all, they are simply an alternative way of conceiving harm.

Finally, the United Nations Convention on Contracts for the International Sale of Goods states that "damages for breach of contract by one party consist of a sum equal to the loss, including the loss of profit, suffered by the other party as a consequence of the breach."[39] Through use of an illustrative list, this pronouncement appears to suggest that foregone gains are encompassed by the wide category of "loss", i.e. that lost profits are themselves a kind of loss. But it is difficult to resist the conclusion that this principle of compensation is framed with a view to semantic convenience rather than with an emphasis on the primacy of particular category of injury over another one. "Loss" is simply the word that was chosen by the drafters as indicative of an umbrella concept of detriment which can be suffered, of which there are numerous sub-groups of equal validity.

b) Investment Treaty Standards

With un-obtained gains established as a central principle of compensation in general international law, it is instructive to turn to the principles of compensation found in the IIAs from which many of the ISDS tribunals derive their jurisdiction. As noted earlier, IIAs are the chief source of obligations upon which claims are based in international investment law.

While it is well-established that the remedial focus in international investment law is on *ex post* pecuniary compensation rather than on primary or preventative measures[40], there remains extensive debate regarding the appropriate measure of compensation in ISDS based on breaches of IIAs or, less commonly, investment contracts. In particular there is much controversy regarding the difference between damages for wrongful acts and compensation for

[38] Art 7.4.2 (1) UNIDROIT Principles of International Commercial Contracts (2010).
[39] Art 74 (11 April 1980).
[40] A van Aken, "Primary and Secondary Remedies in International Investment Law and National State Liability: A Functional and Comparative View" in S Schill ed. *International Investment Law and Comparative Public Law* (Oxford University Press, 2010).

expropriation.[41] It is not the place to attempt to explore these matters comprehensively here, however it is worth observing that the ICSID Convention says nothing about how compensation should be assessed, noting only that convention parties must enforce pecuniary obligations within awards as if they were final judgments of their courts.[42]

The IIAs themselves offer limited guidance in this matter either, with reasonably clear principles established only in relation to expropriation, which is but one variety of harm which can befall a foreign investor. Focusing for the moment on expropriation, it is important to recognize that IIAs do not prohibit expropriation but rather specify that an expropriation must be accompanied by the payment of compensation. The primary measure of monetary compensation for expropriations under most IIAs is the well-known "prompt, adequate and effective." For example, the Australia-Korea FTA specifies:

> [the host state] shall provide the investor with restitution, compensation, or both as appropriate, for such loss. In the event of providing both restitution and compensation, their combined value shall not exceed the loss suffered. Any compensation shall be prompt, adequate, and effective …[43]

The phrase "prompt, adequate and effective" is a term of art widely known to encompass market value, which, as suggested earlier typically incorporates future prospects. While there is no reference to lost profits in this text, expropriation itself is clearly framed as a "loss." This is surely a sensible descriptor for expropriation: the investor possessed an asset at one moment and in a subsequent moment it no longer does. A more precise understanding "of prompt, adequate and effective" can be found, for example, in the Canada Model BIT which indicates that compensation (again for expropriations) must be:

> be equivalent to the fair market value of the expropriated investment immediately before the expropriation took place …, and shall not reflect any change in value occurring because the intended expropriation had become known earlier…[44]

[41] E.g. I Marboe, *Calculation of Compensation and Damages in International Investment Law* (Oxford University Press, 2009) and S Ripinsky and K Williams, *Damages in International Investment Law* (British Institute of International and Comparative Law, 2008).
[42] Art 54(1) (14 October 1966).
[43] Art 11.6(2) (8 April 2014).
[44] Art 13.2.

This language indicates that the injured parties' position prior to the infliction of the harm (in the case the loss of an asset) is the "natural reference point" in terms of setting appropriate compensation.[45] Most IIAs' expropriation provisions specify that compensation will be based on the full market value of the investment, *immediately before the expropriation took place.*[46] There is no express reference to either loss or profits, with the phrase "fair market value" left undefined in most treaties. Approximating an understanding of harm to the investor by reference to the market is therefore the tribunal's primary objective. Indeed "fair market value" is a term of art well known to accountants, economists and treaty negotiators.

Just as the measure of compensation for expropriation under IIAs far from certain, there is even less guidance in these instruments regarding compensation for violations of other treaty obligations. This ambiguity affords some discretion to tribunals based on the principles enunciated above under general public international law. While it is not appropriate to overgeneralize how ISDS tribunals approach the proper standard of compensation for internationally unlawful conduct, their assessment is often premised on analogies to the reasoning found in the expropriation cases and focuses on the reconstruction of the full market value of the investment which was interfered with by the host state.[47] In other words, given the absence of definitive rules on establishing compensation in the treaties, the soundness and practicality of market-based calibrations of value can be determinative.

Some further illustration of compensation available for types of harm other than expropriation may be found in some modern treaties. For example, the new Trans Pacific Partnership (TPP), provides some resolution to the problem of quantifying harms suffered by investors who have been denied entry by states, such as through a violation of a pre-establishment national treatment commitment:

> for claims alleging the breach of an obligation under [non-discrimination] with respect to an attempt to make an investment, when an award is made in favour of the claimant, the only damages that may be awarded are those that the claimant has proven were sustained in the attempt to make the investment, provided that the claimant also proves that the breach was the proximate cause of those damages.[48]

[45] Zamir, above n 1 at 282.
[46] E.g. Canada Model BIT Art 13.2.
[47] PY Tschanz and J Vinuales, "Compensation for Non-Expropriatory Breaches of International Investment Law" (2009) 26:5 Journal of International Arbitration 729.
[48] Art 9.29(4) (4 February 2016).

This assessment of damage for a very specific variety of treaty breach clearly contemplates identifiable "losses" rather than unearned gains. The ability of tribunals to gauge damages arising from enterprises which have not yet come into fruition, as in this situation of pre-establishment denial of entry, is problematic. In some cases it can lead to questionable assertions of financial injury by putative investors.[49] As projections of un-obtained gains in by tribunals these circumstances will be very speculative, a focus on real losses has the quite rational advantage of certainty. Of course this objective may be to the exclusion of the principle of seeking to put the injured person back in the position as if the unlawful conduct had not occurred as well as the principle that an unlawful actor should not benefit from its unlawful conduct.

With limited guidance as to the methodology for establishing compensation in the text of IIAs, particularly in relation to matters other than expropriation and where states have acted unlawfully by abusing their public authority, ISDS tribunals are left with broad discretion to decide how much an injured investor deserves to receive. This often leads them to award amounts of money reflecting a mixture of both actual losses and foregone gains based on their perception of what constitutes full reparation. It is in situations of wide discretion that heuristic biases are believed to have the greatest influence on judicial decision-making.[50] But, as already alluded to above, arbitrators may be more rational than they seem.

V. Alternative Explanations for Loss-Based Compensation in ISDS

This section will explore whether the loss-focused approach to gauging compensation which can be observed in a minority of ISDS awards may be explained by something other than loss aversion bias, that is to say, it can be justified by rational means. In other words, there are situations which arise in ISDS which call for a loss-based rather than profit-based notion of compensation.

a) Achieving Full Market Value

[49] As in TransCanada Corporation v USA, Notice of Intent to Submit a Claim to Arbitration (under NAFTA) on 6 January 2016 in which Canadian investors claim over $15 billion in damages for the denial of an oil pipeline project by the US government.

[50] D Teichman and E Zamir, "Judicial Decision-Making: A Behavioral Perspective" in E Zamir and D Teichman eds. *The Oxford Handbook of Behavioral Economics and the Law* (Oxford University Press, 2015).

Reference to an investor's actual losses in an award of compensation may be less a manifestation of claimants' or arbitrator's irrational loss aversion bias than it is a recognition that the focus on loss more accurately reflects an injured investor's asset's genuine value. As noted above, the principle measure of compensation indicated in IIAs for lawful expropriation is that of "full market value", essentially meaning the amount that the assets which are lost or adversely affected could have been sold for in an arm's length unforced sale. A number of tribunals have followed this approach with respect to other types of treaty breach, including violations of the Fair and Equitable Treatment standard.[51]

Full market value based on actual losses rather than on projected income the entitlement to which has been denied may be appropriate in situations where the investment which was adversely affected is not a going concern with future prospects of profitability but rather is in liquidation.[52] That is to say, if the business has failed or is failing yet there is still value in its assets, then those assets should be liquidated rather than put to inefficient use. To the extent that such an investment may be distilled into individual assets the value of which may be gauged objectively based on available information, then actual loss may be the most suitable means of structuring compensation due to the investor. Future-oriented gains are inappropriate when the business clearly has no future.

One such way to capture full market value of an investment is through assessing the affected assets' "replacement value." In contrast to strict market value, which may not be practical because the actual market of the investor's assets no longer exists, replacement value is the amount of money that would be needed for the investor to buy the equivalent assets on the open market, as if such replacement assets hypothetically exist. The market is therefore used as a reference point, but it is a market of purchase not of sale. Replacement value method has been rarely used in investment arbitration but has been endorsed by a wide variety of courts and tribunals, including the International Court of Justice[53] and the Iran-US Claims Tribunal.[54] While various ICSID tribunals[55] have considered it there is no recorded case of an ICSID tribunal ever actually using replacement value. One of the problems with this method is that for a going concern, the business's "goodwill" is often an extremely valuable asset, however

[51] E.g. CMS v Argentina, ICSID Case no. ARB/01/8 (12 May 2005) at [410] and Enron v Argentina, ICSID Case no. ARB/01/3 (22 May 2007) at [369].
[52] Sabahi, above n 33 at 107.
[53] The Corfu Channel Case (UK v Albania) Merits, ICJ Reports 1949.
[54] Oil Fields of Texas v Iran, 12 Iran-US Claims Tribunal (1986) 308 at [44].
[55] Vivendi v Argentina, ICSID Case No. ARB/97/3 (20 August 2007) at [8.3.15].

there is no means to determine its replacement value since it is idiosyncratic to the particular enterprise.

Further demonstrating the marginality of loss aversion bias in favour of more deliberative reasoning, when ISDS tribunals have awarded cost-based compensation their objective is generally one of approximating genuine full market value, not value to the actual owner.[56] Idiosyncratic and often irrational, the value to the owner method of assessment would attempt to monetize the special esteem which the asset held to that particular owner or which reflect synergistic relationships with other assets. The average purchaser or seller would not acknowledge this premium. Compensation linked to the value of the investment to the real owner would hint at loss aversion bias because it would attempt to capture the psychological abhorrence associated with the deprivation as well as the desire of the affected person to escape the pain associated with their loss, which itself may embody the emotional element of attachment.[57] In contrast, the seemingly detached logic of market-oriented assessment as practiced by tribunals carries the assurance that what was lost can easily be replaced.

b) Lawfulness

Foregone gains may be omitted (or attenuated based on date of assessment) from awards by ISDS tribunals because the host state has acted lawfully, for example through an expropriation that was in the public interest and which was not done in a discriminatory manner. While states are entitled to expropriate as a principle of international law,[58] such lawful expropriation still carries the obligation to compensate the owner for the full market value of the asset. Generally speaking in international investment law compensation linked to lost profits (often in addition to actual costs) is associated with unlawful expropriation (sometimes termed "damages") whereas lawful expropriation tends to dealt with by reference to actual costs alone.[59] As indicated above, as these latter costs are assessed by reference to "full market value" there is naturally a component of future prospects incorporated into the value of the asset but these can also include future losses, resulting in awards well below invested capital.[60] In the case of

[56] Sabahi, above n 33 at 104.
[57] R Korobkin, "Wrestling with the Endowment Effect, or How to do Law and Economics without the Coase Theorem" in E Zamir and D Teichman eds. *Oxford Handbook of Behavioral Economics and the Law* (Oxford University Press, 2015) at 301-303.
[58] J Crawford, *Brownlie's Principles of Public International Law* (Oxford University Press, 2012) at 65
[59] Sornarajah, above n 33 at 447.
[60] Azurix v Argentina, ICSID Case No. ARB/01/12 (14 July 2006).

"unlawful" expropriations, full market value compensation can be adjusted by reference to award date rather than expropriation date to avoid unjust enrichment of the expropriating state.

The award of actual costs without any provision for foregone gains (or lesser provision based on date of assessment yielding a lower quantum) may be justified on the grounds that loss of future income (as distinct from actual loss) is inappropriate where the state has the sovereign right to terminate the investment project.[61] The investor should not be entitled to the income stream generated by an asset if the asset has fallen into public control by virtue of some public interest, as in the case of many nationalization projects pursued by governments around the world.

With this in mind, there appears furthermore to be a deontological component to the award of actual costs rather than foregone gains by ISDS tribunals. While it undermines the well-established notion of strict market value based compensation, it is arguable that where the state's conduct is fundamentally just (it fulfilled the duty to its citizens by regulating in the public interest and within its public authority) the amount it must pay to the injured investor *should* be of a lower overall quantum (only the value of the investment itself). Likewise where the state has breached international law, perhaps by failing to observe the standards of due process or where a taking does not serve a public purpose, it makes moral sense that the state *should* pay the higher quantum (profits going forward as well as the value of the investment itself). This is not punishment for wrongdoing (which is generally speaking outside the sphere of the international law on compensation[62]) but it may be cast as a useful incentive for lawful conduct. As one notable international jurist commented: "if there is not a softer valuation standard for lawful takings, and if the compensation will be the same, then there is no incentive for capital importing states to act lawfully: they might as well expropriate in a discriminatory fashion, for political objectives."[63] Rather than indicating that compensation for lawful expropriations should be decreased from full market value, this view suggests that

[61] Sornarajah at 447.

[62] Some tribunals have awarded moral damages where the state or the investor's conduct has been egregious: e.g. Desert Line v Yemen, ICSID Case No. ARB/05/17 (6 February 2008). When awarded to persons, including foreign investors, moral damages are compensatory in nature and compensate for injury not easily quantified. The ILC Draft Articles do not require that the conduct be egregious to justify awarding moral damages. As the commentary to the ILC Draft Articles 36 and 37 on State Responsibility notes, "[c]ompensable personal injury encompasses not only associated material losses . . . but also non-material damage . . . (sometimes, although not universally referred to as 'moral damage')." Put differently, "[m]aterial and moral damage resulting from an internationally wrongful act will normally be financially assessable and hence covered by the remedy of compensation." J Crawford, *The International Law Commission's Articles on State Responsibility* (Cambridge University Press, 2002) at 228 (commentary to Art 36).

[63] R Higgins, *Problems and Process: International Law and How We Use It* (Oxford University Press, 1995) at 145.

compensation for an unlawful expropriation should be increased above full market value at the date of taking. Just as the lower, cost-focused measure of compensation underlines the state's sovereign right to expropriate property within its territory when this is in the public interest, the higher, profit-based measure of compensation may help achieve what might be described as the deterrent effect of compensation awards in ISDS. Surely one of the principles behind compensation in international investment law must be to ensure compliance on the part of host states with their obligations under IIAs.

c) Certainty

Perhaps the most plausible alternative explanation for awards based on the amount of loss to the investor is the ISDS arbitrator's goal of accuracy. In their effort to achieve "full compensation" arbitrators seek to avoid over-compensating or under-compensating investors through the incorrect assessment of the harm they suffered. With this aim in mind, it is logical to assume that compensation awards are more susceptible to such errors where these assessments are speculative (anticipating the future) rather than based on actual data (reviewing the recorded past).[64] Indeed, authoritative commentary on the ILC's Articles on State Responsibility explains that lost profits may be awarded as compensation only where there is sufficient certainty, which may be established through contractual arrangements or a well-established history of dealings.[65]

While one might expect some degree of proportionality between the expenses incurred by an investor in establishing a business and the ultimate profits derived from that business (the more you put in, the more you get out), this cannot be assumed. Since future profits are difficult to predict for various reasons (such as volatile market conditions or lack of sufficient track record for the business), tribunals have been prepared cautiously to award compensation calculated on the costs of the investment already incurred. In *LG&E v Argentina*, for example, the tribunal concluded that compensation should be measured by the "actual loss" incurred by the claimants because of the uncertainty of lost profits.[66] The tribunal felt that that any attempt to calculate the amount of the future lost dividends would be a highly speculative exercise.[67]

[64] D Collins, "Reliance Remedies at the International Centre for the Settlement of Investment Disputes" (2009) 29 Northwestern Journal of International Law and Business 101-122.
[65] Crawford, above n 62 (commentary on Art 36).
[66] LG v Argentina, ICSID Case No. ARB/02/1 (25 July 2007) at [58] although the tribunal omitted compensation to the shareholder for existing but unmonetized capital gains which seems to fall short of the notion of "actual loss."
[67] Ibid at [90].

The tribunal in *CME v Czech Republic* likewise spoke of the need to have a clear track record of past operations in order to make use of the discounted cash flow method over a five year period.[68] In this regard, the tribunal in the recent *Quiborax v. Bolivia*[69] found that the claimants' two years of operation of the mine did not provide sufficient history to justify assessing future profits, preferring instead to look at the cost of the assets to the investor.

The emphasis on certainty underscores several common methodologies for asset valuation employed by arbitral tribunals. Declining to award lost profits because it felt that these were very unlikely to materialize, the tribunal in *Siemens v Argentina* assessed compensation on the basis the investment's book value adjusted to the date of the award.[70] Book value was applied also in the *LIAMCO v Libya* oil nationalization case to assess the level of compensation required for the seizure of various physical assets such as the oil wells and tanker vessels.[71] Some ISDS tribunals use the "cost of the investment" (sometimes known as the "sunk costs" method) when gauging the extent of compensation for breaches of international investment law.[72] This method, which essentially looks at how much the investor spent purchasing the affected assets and setting up their operations, acknowledges the speculative nature of future-profit based compensation. In *Mobil v Venezuela*,[73] the tribunal awarded compensation in this manner rather than projecting lost profits because the oil project was in the developmental stage. The tribunal urged that to do otherwise could lead to an award of compensation that was either excessive or inadequate. Likewise, in *Metalclad v Mexico* the tribunal awarded compensation on the basis of the cost of the investment because the business had barely begun operations at the time the host state's interference took place.[74] A similar rationale underpinned the valuation in *Wena Hotels v Egypt.*[75]

As noted earlier, cost-based compensation methodology may be particularly suitable for breaches of pre-establishment guarantees in IIAs given that an unestablished investment would not have any record of profit in the host state and would be consequently very speculative. Of course this must depend on the nature of the particular investment. The assessment of reasonable certainty should be based on the facts of the particular investment. Moreover, if a host state refused to allow a foreign investor to enter its territory, compensation

[68] UNCITRAL, Partial Award, (13 September 2001) at [124].
[69] ICSID Case No. ARB/06/2 (16 September 2015).
[70] Siemens AG v Argentina, Award, ICSID Case No. ARB/02/8 (17 January 2007) at [379].
[71] Liamco v Libya, ad hoc, Award (12 April 1977) 20 ILM 1 (1981).
[72] As in Metalclad v Mexico, ICSID Case No. ARB(AF)/97/1 (30 August 2000) and Wena Hotels v Egypt, ICSID Case No. ARB/98/4 (8 December 2000).
[73] Mobil Corporation v Venezuela, ICSID Case No. ARB/07/27 (9 October 2014).
[74] ICSID Case No. ARB(AF)/97/1 (30 August 2000) at 120.
[75] Above n 72.

tied to lost profits would be unfair because this could lead to an award against a host state where no effort had been exerted by the foreign investor, other than the mere declaration that they had intended to commence business in their territory.[76] The difficulty of assessing compensation for investments which have not yet come to fruition is captured, for example in the TPP's emphasis on recovering expenses in situations of denial of entry, as noted above.

VI. The Profit-Focused Bias behind Compensation in ISDS

Having presented plausible alternative explanations for occasional instances of loss-based calculation of compensation grounded in rationality rather than in the heuristic bias of loss aversion, this section will consider whether behavioural economics may yet offer a justification for observed tendencies in compensation in international investment law. While compensation in ISDS may well reflect a reasoned understanding that the full market value of an asset includes its earning potential (including future losses) along with the recognition that unlawful acts of state justify higher damages, there may be a residual irrationality at play in the use of this form of compensation. This may be thought of as the "fear of missing out."

a) The Fear of Missing Out

It is an aphorism that the greatest regrets in life are the things that one did not do. Acts of omission appear often to weigh heavier in the mind (if not in the law) than those of commission. Relatedly, psychologists have identified the human propensity to want what one does not have. This behavioural pattern rests on the typically flawed perception that unattained goods have an exaggerated value which reflects the beholder's unrealistic expectations. Driven by the longing for a hopeful future which may often be little more than fantasy, this tendency shares traits with the "optimism bias" observed by behavioural economists in which people readily over-estimate the probability of a positive outcome.[77] Since we long for the grass on the other side of the fence, the fear of failing to seize an opportunity to improve our condition is a powerful a

[76] Of course it is common for an investor to expend considerable funds in the development phase of a project before government approvals are obtained, including design and engineering expenses as well as legal costs. While not on the same scale as the capital expenditures involved in actually building and operating a project after government approvals have been obtained, those development expenses can still constitute many millions of dollars.

[77] J Baron, *Thinking and Deciding* (Cambridge University Press, 1994) at 44.

motivating factor in decision-making, leading us to plan ahead on the expectation that the future will be better. This human capacity to defer consumption to optimize ultimate benefits may have an anthropological basis in the shift to agriculture from hunting gathering. There the rewards of labour in planting and cultivating were often not secured for several years and in some unfortunate cases, not at all.[78] The modern era of social media and the abundance of information on the internet has exacerbated our fear of missing opportunities, particularly among young adults, who struggle with the realization that there are many more experiences available to be enjoyed than can possibly be pursued.[79]

Put simply, for many of us it is worse to never obtain something with exceptional (if unrealistic) value than to lose something which had a lower (but genuine) value. This behaviour appears to embody precisely the opposite of the loss aversion bias identified by experts. Repulsed by the fear of missing out, it is the unsecured future benefits which "loom large" rather than revulsion to surrendering what is already in one's possession.

b) Awards of Lost Profits

Lost profits tend to be awarded by ISDS tribunals if the unlawful act by the state results in a deprivation of income, provided that such amounts are not speculative.[80] Indeed, foregone gains may accurately be described as the default remedy (captured in the full market value remedy for lawful expropriations specified in treaties) only to be defeated if there is insufficient certainty in quantifying the missed opportunity. Profit-based compensation was awarded for example in *Archer Daniels v Mexico*, where the claimant was adversely affected by Mexico's enactment of new tax legislation which led to a dramatic decrease in the investor's sales going forward.[81] Likewise in *Lemire v Ukraine* the tribunal held that the claimant had the right to damages which included *lucrum cessans*; the profit that it would have earned had the state fulfilled its obligations under a concession and allowed the investor to operate its business as planned.[82] Foregone gains featured in the compensation awarded in *Amoco v Indonesia*[83] where there had been an unlawfully and prematurely terminated contract. In the *ADC v Hungary* dispute the value of the investment had clearly appreciated between the date of the

[78] YN Harari, *Sapiens: A Brief History of Humankind* (Harper, 2015) at 100.
[79] A Przybylski et al "Motivational, Emotional, and Behavioral Correlates of Fear of Missing Out" 29:4 Computers in Human Behavior 1841 (2013).
[80] R Dolzer and C Schreuer, *Principles of International Investment Law* (Oxford University Press, 2012) at 295.
[81] Daniels Midland Company and Tate & Lyle v Mexico, ICSID Case No. ARB(AF)/04/05 Award (21 November 2007).
[82] Lemire v Ukraine, ICSID Case No. ARB/06/18 (14 January 2010).
[83] ICSID Case No. ARB/81/1 (20 April 1984).

expropriation and the date of the award itself. Benefiting in this instance from the certainty of hindsight without need for projection, the tribunal chose to award lost profits to the investor.[84] Similarly, in the recent, high profile *Yukos v Russia*[85] case the tribunal assessed compensation by the income which had actually accrued following the unlawful expropriation and which would likely have been paid out as dividends to the owners. Full market value was awarded for the expropriation along with foregone dividends as additional compensation for the unlawful nature of the expropriation.

It is worth noting that the profit-focused compensation awarded in *ADC* and *Yukos* (which was only awarded post-date of expropriation due to the fact in each case that the tribunal expressly found the expropriation to be unlawful) recall the uncommon restitutionary interest for breach of contract discussed earlier and presented by Zamir as the antithesis of the loss aversion bias. Since in these cases the respondent states took possession of the investors' respective assets unlawfully, the very real profits which were subsequently generated fell into the hands of the party in breach, namely the state itself. The awards based on these lost profits in both *Yukos* and *ADC* could therefore be depicted as a disgorgement of the host states' unjust enrichment at the claimants' expense.[86] Other tribunals have focused on the gains to the state rather than merely the deprivation to the investor when assessing whether or not an expropriation has occurred,[87] further illustrating that loss aversion bias fits poorly with this sphere of judicial reasoning.

In another sense, though, the fear of missing out might well be described as the reference point from which the aversion to loss is oriented. In other words it is itself a form of loss aversion. Tribunals set their awards on the basis that profits were expected, which may therefore be characterized as a loss or more specifically the loss of future gain. Awards of lost profits are not indicative of tribunals' or treaty-drafters' anti-state animus nor their recklessness in terms of their readings of investor's finances. Rather such cases represent a psychological

[84] ICSID Case No. ARB/03/16, Award (2 October 2006) at [107].
[85] PCA Case No. AA 227, Final Award (18 July 2014). The Yukos tribunal awarded full market value for the expropriation and the foregone dividends as additional compensation for the unlawful nature of the expropriation.
[86] One must be careful when labelling the state's interference "unjust" as many instances of compensation in ISDS deal with money payable pursuant to lawful expropriation. The applicability of the concept of unjust enrichment-based compensation to ISDS has been criticized on the basis that unjust enrichment is an equitable remedy which requires taking into account the whole of the relationship between the parties: Sornarajah, above n 29 at 419.
[87] E.g. Olguin v Paraguay, Award, ICSID Case No.ARB/98/5 (date). See further A Newcombe, "The Boundaries of Regulatory Expropriation in International Law" in P Kahn and TW Walde eds. *New Aspects of International Investment Law* (Martinus Nijoff, 2007) and his concept of "fruits of the property".

sensitivity to value that is not based on what was *lost* but which was *missed*.[88] Estimations of projected earnings rather than actual data feature prominently in these decisions, disclosing the tribunals' eagerness to recognize the profit-generating potential of assets where reasonably plausible. The preference for awards tied to lost profits is further reflected in the use of income rather than asset-based calculations of value by ISDS tribunals. These methods are grounded in the logic that the value of an investment at the time at which it was taken or damaged can be expressed by the future financial benefits that would have accrued discounted to reflect their value in the present time.[89] As suggested above, this approach has been supported by commentators who recognize that a "just price" for an expropriated asset must by necessity include lost profits because this is an inherent aspect of an asset's full market value. That is to say that the price that is offered for something by a willing buyer will embody the estimate of its ability to profits at some later date.[90]

The fear of losing out on subsequent gains permeates aspects of international investment law beyond remedies. Indeed remedies are intended to reflect the nature of the protection created in the IIA, rather than the protections reflecting the remedies. Emphasis on the protection of an investor's "legitimate expectations" as a component of the Fair and Equitable Treatment standard[91] implicitly denotes the importance placed on consistency over the duration of an investment's lifespan. Investors are entitled to rely on assurances from the state that the regulatory conditions under which they operate will not change unduly going forward.[92] This promise of legal stability is clearly intended to facilitate effective planning, maximizing the benefits of an investment to both the investor and the host state as part of their ongoing relationship. Moreover, the definition of "investment" regularly asserted by commentators is thought to hinge in part on the relevant project having a long term nature,[93] implying that it will make a meaningful contribution to the host state's economy. A series of

[88] An enlarged understanding of loss may well encompass the sense of missing something never held. Indeed it is not always easy to discern between multiple emotional states experienced at once. In that sense it is conceded that loss aversion still has a role to play in gain-based compensation, with fear of missing out adopting the status of a key reference point.
[89] M Kantor, *Valuation for Arbitration* (Kluwer Law International, 2008) at 10. Discounting of future gains acknowledges that money that will be earned at a later stage is perceived as less valuable than that which is currently held. This reflects the human tendency to prefer instant gains to those which are deferred to a later (and therefore potentially uncertain) point in the future, which arguably captures loss aversion bias.
[90] Higgins above n 63 at 144.
[91] M Potesta, "Legitimate Expectations in Investment Treaty Law: Understanding the Roots and Limits of a Controversial Concept" (2013) 28 ICSID Review 88.
[92] The doctrine of "legitimate expectations" is controversial. For recent US investment agreements such as NAFTA and subsequent investment agreements, the US has consistently take the position that the doctrine has no applicability.
[93] Dolzer and Schreuer above n 80 at 60.

transactions for the purpose of short-term gains are regarded as ineligible for protection by treaty drafters under IIAs and are denied this status regularly by tribunals invoking precedent.[94]

It must be asked, however, whether the fear of missing out as a plausible explanation for observed compensation patterns in ISDS should be described as a bias in the tradition of behavioural economists or merely a manifestation of the understanding of a fundamental principle upon which investment is founded. The propensity of ISDS arbitrators to award compensation on a future profit basis rather than risk the claimants "losing out" may be grounded in an appreciation for the role that forward planning necessarily plays in all forms of investment. It is important to recall that one of the central tenets of capitalism as an economic system (an indeed other forms of economic organization) is the perpetual requirement for productive resources to be re-invested, without which there can be no growth.[95] Likewise, the notion of "investment" contemplates productive, wealth-generating uses and in that sense it is an inherently prospective endeavour. The dictionary definition of the verb "invest" is "to commit (money) in order to earn a financial return" and "to make use of for future benefits or advantages."[96] As such, the logic of deferred gain is central to the commercial activity which underpins ISDS, as distinct from other types of commercial venture which are premised upon instantaneous and reciprocal exchanges. It is not difficult to infer the tendency among claimants to seek to realize these anticipated gains rather than letting them pass by and for tribunals and treaty drafters to be alert to this need.

With rewards arriving at a later stage, investing (especially in foreign states with unknown systems of governance and often unstable political regimes) is inherently risky activity. Investors and the tribunals who hear their claims (as well as the treaty drafters who establish the instruments on which claims are based) accept that loss is a natural element of what investors do, not something to be reflexively loathed, as loss aversion bias would suggest. Indeed, the element of risk is regularly cited as central component of the definition of investment in modern IIAs.[97] It might be expected that the actors within the ISDS system (parties, arbitrators and treaty drafters) should accordingly be less sensitive to loss than ordinary people. That is to say, loss aversion bias, which may operate as a robust explanatory

[94] E.g. Romak v Uzbekistan, PCA Case No. AA280 (26 November 2009) where sales contracts were held not to satisfy the definition of investment under the IIA.
[95] A Smith, *Wealth of Nations* (1776) referring to "circulating capital" (Start Publishing, 2012) at 365
[96]< http://www.merriam-webster.com/dictionary/invest>.
[97] E.g. US Model BIT 2012 Art 1: Assumption of risk is one of several alternative non-exhaustive characteristics of investment: "including such characteristics as the commitment of capital or other resources, the expectation of gain or profit, or the assumption of risk."

model in non-commercial contexts where risk is absent, such as human rights, is inappropriate for this inherently high-risk setting.

VII. Conclusion

The theory of loss aversion bias developed by behavioural economists has offered valuable insight into many facets of human decision-making including legal reasoning. As applied to the legal principles of compensation for breach of contract and by extension breach of international investment law, loss aversion bias rests upon the distinction between conventional contractual damages (recovering losses) and those contemplated by the law of restitution (disgorging gains) but it fails to capture the more subtle difference in remedial awards based on actual losses and lost profits. Loss aversion bias in the context of contract remedies construes the concept of loss too broadly, drawing in elements of compensation which may only semantically be described as "losses" but should more genuinely be characterized as missed opportunities perhaps necessitating a re-labelling of the phenomenon as "possession bias." While the former category of compensation may arguably be explained by the human desire to avoid loss, awards of the latter category appear to contradict this tendency, disclosing a bias in favour of options which acknowledge the need to actualize of future aspirations.

Compensation based on actual loss, while not unheard of in the important international forum of ISDS, may be explained not as the manifestation of a heuristic bias but instead as the result of rational decision-making by tribunals. Arbitrators seek to gauge full market value as closely as possible, to grant lower compensation where there has been no wrongdoing and to achieve reasonable certainty where possible while keeping within the bounds of precedent. With foregone opportunities as the dominant reference point from which harm is assessed and the human tendency to plan ahead as the focal urge, claimants in ISDS cases will be inclined to seek compensation from host states that is tied to what might have been rather than what was, a subtle but important difference from traditional loss aversion bias. Possibly in response to their own human bias against "missing out" arbitrators (as well as treaty drafters establishing the rules on compensation in IIAs) may be sympathetic to a profit-focused analysis when calibrating appropriate compensation and in so doing will be motivated to consider the revenue stream that may have been generated by affected assets going forward.

As a final thought, behavioural economists caution that efforts to "de-bias" legal reasoning, for example by providing decision-makers with more information[98] or taking more time to deliberate may end up creating further distortions, including obviously raising the costs of adjudication and treaty negotiation. Moreover, not all individuals are biased in the same way or to the same extent so such countermeasures may be misaligned.[99] Most importantly, that ISDS arbitrators' awards of compensation may be partially grounded in some form of irrationality should not be viewed as a source of unrest. It has long been recognized that adjudicators, as humans, often make highly subjective in some cases idiosyncratic decisions. This is an inescapable feature of judicial discretion, particularly in systems such as international investment law where there are few bright line rules. Whether motivated by loss aversion, the fear of missing out, or some other bias, such judgments will not necessarily lead to awards which are incorrect, meaning that they do not fully "wipe out" the consequences of harms which befall investors. If anything, recognition of the emotive element associated with breaches of international investment law, whether or not it fits neatly with identifiable loss or probable future outcomes on a balance sheet, may go some way in achieving the proper redress that international law strives to attain.

[98] T Ulen, "The Importance of Behavioral Law" in E Zamir and D Teichman eds. *The Oxford Handbook of Behavioral Economics and the Law* (Oxford University Press, 2015) at 105 (noting particular difficulties in understanding financial data).
[99] D Pi, F Parisi and B Luppi, "Biasing, Debiasing and the Law" in E Zamir and D Teichman eds. *The Oxford Handbook of Behavioral Economics and the Law* (Oxford University Press, 2015).