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# *Towards a Grand Unified Theory of International Economic Law*

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## ABSTRACT:

This article presents chaos, a theory drawn from the physical sciences, as an explanatory model for international economic law which for the purposes of this study will be taken to consist of the law of the WTO, international investment law, and the policies of the IMF and World Bank. The rules promulgated by these institutions as the central pillars of global economic governance are both indeterminate and susceptible to external influences, leading to unpredictable outcomes in the longer term, even if they appear deterministic on the small scale as applied to individual states or firms in particular instances. This article will attempt to illustrate that the observed chaotic nature of international economic law should be viewed as a benevolent feature of the system, as its inescapable unpredictability engenders flexibility and adaptability. These are traits which are valuable for both governments and firms seeking to prosper within the dynamic global economy. The utility of international economic law should therefore not be judged by reference to macroeconomic benchmarks or by its capacity to achieve predictable outcomes. The article concludes by suggesting that the shared, advantageous characteristic of chaos may be seen as means of conceptually unifying the four disciplines of international economic law.

## KEY WORDS:

International economic law, WTO, international investment law, international investment arbitration, IMF, World Bank

## **1. Introduction: International Economic Law and Chaos Theory**

This article applies a theory drawn from the physical sciences as a descriptive and explanatory model of international economic law. Chaos theory captures the essence of international economic law's complex unpredictability, reflected in the regime's reliance on highly indeterminate rules which are manifest in part by its lack of measurable impact on its domains of influence in the global economy. The article will attempt to argue that the disordered and unforeseeable nature of international economic law should not be construed as weaknesses. Indeed, as a chaotic system, international economic law cultivates several advantages that are inimical to legal certainty and predictability, which are sometimes conflated with legitimacy in

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legal systems.<sup>1</sup> These benefits include stimulating the long term adaptability and innovative capacity of firms and strengthening non-economic ties between nations.

The application of an explanatory theory from a wholly non-legal discipline responds to the growing body of academic literature which seeks to define the contours of international economic law, a pursuit which appears to be motivated by the need to refine ways of conceptualizing this body of law in a more holistic manner. While there remains much debate among scholars as to its precise content<sup>2</sup>, international economic law is often described as a sphere of public international law (the law governing relations between states) as it applies to economic activities. Traditionally this includes the law of the World Trade Organization (WTO); international investment agreements (IIA)s including dispute settlement through investment treaty arbitration; international monetary law focusing primarily on the domain of the International Monetary Fund (IMF); and finally international development law, concentrating on the role of the World Bank.<sup>3</sup> The so-called ‘three pillars’ of multilateral global economic governance may therefore be thought of as the Bretton Woods institutions of the WTO (as descended from the GATT), the IMF, the World Bank.<sup>4</sup> While it is without question that many aspects of international economic law exist apart from the established processes of these four organizations, notably customary international law and regional trade agreements, this article will adopt an institution-based approach<sup>5</sup> to focus on these four loci of rule-making power and authority. International economic law as promulgated by the work of these organizations aims to empower market forces through the elimination of excessive regulatory barriers to the flows of trade and capital while providing mechanisms for the inclusion of participants that would be otherwise unable to benefit from enhanced international commercial activity because of their developmental status. The institutions of economic governance have distinct responsibilities but share overlapping functions in their aim to cooperate through working relationships in order to effectuate their oversight of the global economy.

As the descriptive and analytical framework of this article, chaos theory originates from the fields of mathematics and physics but has been applied to a number of disciplines including

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<sup>1</sup> E.g. A Boyle and C Chinkin, *The Making of International Law* (Oxford University Press, 2007) at 302-303

<sup>2</sup> E.g. S Charnovitz, ‘What is International Economic Law’ 14 *Journal of International Economic Law* 3 (2011) and T Cottier, ‘Challenges Ahead in International Economic Law’ 12 *Journal of International Economic Law* 3 (2009)

<sup>3</sup> See e.g. A Qureshi and A Ziegler, *International Economic Law* (3<sup>rd</sup> edition, Sweet & Maxwell) at 6-7. Some have expanded it to include intellectual property, competition law and international commercial law generally: E.g. M Herdegen, *Principles of International Economic Law* (Oxford University Press, 2013) at 7-10

<sup>4</sup> Herdegen, *ibid* at 31

<sup>5</sup> E.g. R Scott, *Institutions and Organizations: Ideas and Interests* (Sage Publications, 2008)

engineering and biology. Heralded as one of the three great scientific theories of the 20th century<sup>6</sup>, a variant of chaos theory has been applied to social systems and has been used to explain issues such as criminality and poverty. There is an emerging scholarship that has applied chaos theory to public international law, including the law of the WTO<sup>7</sup> and international investment law.<sup>8</sup> Simply put, chaos theory postulates that complex systems exhibit features of order on the small scale – meaning that there are discernible, deterministic patterns – but on the macro level these lead to unforeseeable outcomes as a consequence of the latent randomness found in all complex systems. Highly sensitive to initial conditions, chaotic systems are necessarily disordered even if they do not superficially appear so, meaning in the longer term meaningful prediction is impossible.<sup>9</sup>

This article proposes that international economic law's status as a chaotic system explains its observed effects (or lack thereof) on the global economy. International economic law is deterministic in that it is based on pre-established set of rules, namely the laws contained variously in treaties and articles of agreement as supplemented by the principles of customary international law. Thus if there were no random elements in the process by which these law were applied, in theory outcomes could be determined in advance with absolute certainty. Yet because of the global economy's complexity and intrinsic randomness reflected for example in market and political fluctuations, combined with the indeterminacy of the law's principles as applied to varying factual contexts, the macro effects of international economic law are inevitably unforeseeable, particularly in the long-term. This article will expand upon the modelling of international economic law as a chaotic system by further suggesting that the chaotic nature of this system can and does generate positive outcomes. Accordingly, in addition to being illusory, legal certainty and with it the predictability of legal consequences has been unjustly idolized as signifying the legitimacy and effectiveness of a legal regime. While many if not all systems of law may exhibit some chaotic tendencies, it will be argued that this nature is particularly radical within and crucial to international economic law. The concept of predictability which is at the heart of this critique is both that which is associated

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<sup>6</sup> The other two being relativity and quantum mechanics: J Gleick, *Making New Science* (Random House, 1988) at 6

<sup>7</sup> These studies have considered a variant of chaos theory known as social entropy: See further, D Collins, 'The Chaos Machine: A Social Entropy Model of the World Trading System' (2014) 34:2 Oxford Journal of Legal Studies

<sup>8</sup> J Pauwelyn, 'At the Edge of Chaos: Foreign Investment Law as a Complex Adaptive System, How it Emerged and How it Can be Reformed' ICSID Review (advanced access, 4 April 2014)

<sup>9</sup> Gleick above n 6. The classic example of a chaotic system is weather, large patterns of which may be affected by minute fluctuations – the famous 'butterfly effect' coined by Edward Lorenz: 'Deterministic Non-Periodic Flow' 20:2 Journal of Atmospheric Sciences 130 (1963)

with how the law is applied to specific cases, as well as more generally with respect to law as a matter of policy in terms of its capacity to produce intended results.

Before embarking on the exploration of this model, it is necessary to raise the objection that the application of a method of analysis drawn from the physical sciences may be unsuitable for a legal setting. Predicated on social interactions, law is not a science<sup>10</sup> and therefore cannot not be subject to empirical examination with the expectation that outcomes will repeat with regularity. Clearly law is not conducive to the exclusion of quantifiable variables through repeated experimentation in order to test theories, even if judicial decisions and treaties superficially share some of these features. International economic law, as all spheres of law, is highly complex and imperfectly determinate relative to the systems studied in the physical sciences and mathematics. It is infused with human discretion and predicated upon changing facts and circumstances, all of which make genuine testable repetition in the scientific sense impossible.<sup>11</sup> As such, international economic laws' indeterminacy and sensitivity to external factors, and by extension its predictability is a question of degree.

This article will proceed as follows. The first two parts will demonstrate that international economic law's central pillars of governance and rule-making have demonstrated both indeterminacy in their foundational principles and marginality their effects on the global economy, features which can be explained by the regime's conformity with chaos theory. In other words, the WTO, international investment treaties, the IMF and the World Bank have achieved little in the way of promoting economic growth, and to the extent that they have, their effect is uneven and unpredictable, but this may be viewed as a feature endemic to complex, rules-based systems. The final part of this article suggests that the observed chaotic nature of international economic law should not necessarily be viewed with trepidation. Rather, international economic law's influences on the dynamic processes of globalization foster resilience and adaptation which is conducive to prosperity and growth over time.

## **2. Chaotic System: International Economic Law's Disorganized Rules**

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<sup>10</sup> But consider H Kelsen's theory of law as science: 'So far as science describes and explains human behaviour ..., and is defined as social science because it has the mutual behaviour of men as its object, such a social science cannot be considered essentially different from the natural sciences.': *The Pure Theory of Law* (University of California Press, 1967) at 75

<sup>11</sup> B Tamanaha, 'The Folly of the "Social-Scientific" Concept of Legal Pluralism', 20 *Journal of Law & Society* 192 (1993)

As will be shown in this section, the chaotic nature of international economic law is evident in the high degree of indeterminacy in many of its key principles, compromising the system's certainty and functionality as an instrument of predictability. The wide ranging nature of this analysis across a range of sub-disciplines necessitates a highly general approach in which concepts will be considered in brief rather than subject to comprehensive evaluation. It should be emphasized here that the purpose of this article is not to offer a substantive critique of the features of any of these legal regimes but rather to develop a theory by reference to broadly observable trends. In that sense it can be seen as a starting point for further discussion.

### *i) The Law of the WTO*

As one of the major pillars of international economic governance, the WTO is an international organization now composed of 160 member states. Its aim is to liberalize trade in goods and services in order to stimulate economic growth. Created in 1995 but existing as a stand-alone treaty (the General Agreement on Tariffs and Trade) since 1947, the WTO's primary method of achieving this goal is through the reduction of tariffs and the prevention of various forms of nationality-based discrimination, although more recently it has turned its attention to issues such as anti-dumping and technical barriers to trade. As an institution, the WTO is both a forum for the negotiation of further international trade liberalization as well as a mechanism for settling disputes between its members regarding the implementation of its many agreements.

The laws which comprise the various agreements of the WTO exhibit a lack of clarity which makes the assessment of their impact on future global trade flows problematic, much as pre-estimating their impact on parties to particular disputes can be difficult. A few examples of such concepts will be outlined briefly as indications of the randomness that characterizes much of WTO law – again, this article is not meant to offer a comprehensive critique of the contested features of the regime's rules. First, the concept of 'likeness' that is necessary to establish discrimination on the basis of national origin of a good as dictated by the national treatment standard of the GATT is so variable that it was famously described as an 'accordion' by the Appellate Body because of its capacity to morph depending on factual circumstances.<sup>12</sup> While there may be some objective criteria by which 'likeness' can be assessed, such as physical characteristics of products, the enigmatic nature of the test means that governments have little room beforehand to appreciate whether their regulatory initiatives will transgress

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<sup>12</sup> GATT Art I:1 as discussed in Japan—Alcoholic Beverages, WT/DS11/AB/R (4 October 1996)

WTO rules and therefore be susceptible to challenge through the system's dispute settlement procedure. For their part, traders are unsure as to whether any regulatory discrimination they may suffer is actionable because they will not know if differential treatment is justifiable based on often unknowable features of a particular market at a given time.

Similar vagaries exist in relation to the WTO's general exceptions, found in GATT Article XX and the General Agreement on Trade in Services (GATS) Article IV which authorize the departure from the agreements' core obligations, including non-discrimination. While the relevant public policy grounds that entitle a WTO Member to breach the GATT or GATS are listed in a highly discernable manner, the enumerated grounds are qualified by uneven connecting language (the ambiguous 'relating to' or 'necessary for') as well as by the so-called 'chapeau' which asks whether the specific measure is a disguised restriction on international trade – effectively meaning that it was enacted for a protectionist purpose.

Such language compels a value-laden balancing exercise which epitomizes the random nature of judicial decision-making at the WTO wherein panels and the Appellate Body must surmise not only the policy goal behind the relevant measure but also the manner in which it is enacted in the context of the specific national jurisdiction. The lack of predictability in how the law is applied through the WTO dispute settlement process is an unavoidable erratic given the opacity of regulators' genuine purpose, which is itself often redolent with political undertones. It also departs from the WTO's stated objective of consistency, even within a system that lacks *stare decisis*. The inherent unreliability of the assessment of the general exceptions, for example, has resulted in severe judicial risk aversion - WTO Members have been successful in using a general exception to defend a measure only once.<sup>13</sup> The systematization of the standing Appellate Body procedure, which hears appeals on points of law from the *ad hoc* panels, has undoubtedly contributed some jurisprudential coherence to the interpretation of WTO law. However WTO panellists and Appellate Body members tend to be former government officials, not lawyers, hinting at an overall objective of pragmatism in the resolution of disputes rather than predictable adherence to rules.<sup>14</sup>

The provisions covering 'safeguards' are among the most obscure features of the WTO's legal framework. Safeguard measures are one of the WTO's key economic emergency exceptions, allowing Members to impose trade barriers when an import surge causes or

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<sup>13</sup> In US – Shrimp, WT/DS58/AB/R (12 October 1998)

<sup>14</sup> L Johannesson and P Mavroidis, 'Black Cat, White Cat: The Identity of WTO Judges' European University Institute Working Papers, Robert Schuman Centre for Advanced Studies 2015/17

threatens to cause ‘serious injury to the domestic industry.’<sup>15</sup> As a consequence of their interference with normal trade relations between WTO members, their use requires a sudden, unforeseen increase in imported goods. The existence of such a situation will be determined by WTO panels, again, on the capricious case-by-case basis.<sup>16</sup> While there may be some certainty in the quantification of imports necessary to demonstrate an increase, suddenness and unforeseeability remain essentially qualitative judgements that defy functional pre-assessment. The Appellate Body’s refinement of ‘serious injury’ to denote a very high standard of economic harm<sup>17</sup> has done little to resolve the mutability of the test. More specifically, the causal connection between increased imports and injury to competing industries cannot ever be intelligibly demonstrated to the exclusion of other factors, requiring a significant inferential leap on the part of WTO adjudicators when considering the legitimacy of a safeguard measure.<sup>18</sup> Isolating what factors have caused harm to an industry is fraught with assumption and guesswork, doing so with respect to injuries that have not yet occurred is virtually impossible to perform with any degree of predictive accuracy.

In a similar fashion, the WTO’s approach to anti-dumping has attracted criticism for the high degree of interpretive latitude it accords to national governments, allowing Member states to impose these duties at their own behest on the basis of often parochial assessments. While conserving the integrity of WTO’s global governance by deferring to each member’s construction of its own methodology for evaluating and responding to dumping, this decentralized approach has been accused of conveying too much autonomy to Member states. The alleged result is a confusing environment for exporters around the world seeking to set competitive prices for their goods in foreign markets without fear of reprisal. For example, the EU’s aggressive anti-dumping actions against China have been condemned as largely politically motivated attacks linked to poor domestic competitiveness.<sup>19</sup> With these many issues in mind, it is difficult to see how the direction and magnitude of future trade flows can be anticipated with any degree of certainty.

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<sup>15</sup> Agreement on Safeguards Art 2(1)

<sup>16</sup> US – Steel Safeguards, WT/DS248/R at [351] (11 July 2003)

<sup>17</sup> US – Lamb, WT/DS178/AB/R (1 May 2001) at [124]

<sup>18</sup> A Sykes, ‘The Fundamental Deficiencies in the Agreement on Safeguards: A Reply to Professor Lee’ 40:5 *Journal of World Trade* 979 (2006)

<sup>19</sup> E.g. J Dunoff and M Moore, ‘Footlose and Duty-free? Restrictions on European Union Anti-Dumping Measures on Certain Footwear from China’ [2014] *World Trade Review* Vol. 13 149, noting also the capacity for countries to create their own anti-dumping rules in dealing with non-market economies.

## ii) *International Investment Law and Investor-State Arbitration*

The core substantive standards of international investment law, developed gradually from a variety of sources including treaty and custom and which incorporates concepts from fields as diverse as commercial law, human rights, and diplomatic protection have resulted in an inchoate discipline that defies reliable formulaic application. International investment law consists of a network several thousand bilateral and regional investment treaties, collectively known as international investment agreements (IIAs). While these are not created or supervised by one multilateral institution, there is broad uniformity within the network of IIAs, most of which include most favoured nation clauses allowing terms to be imported from one bilateral regime into many others. As such there is a kind of *de facto* multilateralism within international investment law.<sup>20</sup> IIAs tend to contain similar provisions, protecting already established investments from excessive interference by host states. International investment law also encompasses investor-state arbitration, conducted through a wide range of *ad hoc* tribunals as well as through institutions like the World Bank's widely used International Centre for the Settlement of Investment Disputes (ICSID). The framework of international investment law as an instrument by which investors' activities are protected from undue interference by host states is believed to increase the level of foreign direct investment (FDI), a stated purpose in the preamble to many IIAs.<sup>21</sup>

As with international trade law through the WTO, many of the key legal principles contained in IIAs are characterized by a high degree of uncertainty, diminishing their predictive utility for foreign investors and host countries alike. The indeterminate legal framework is magnified in investment law because the specific language used changes from treaty to treaty, much as the factual context in which the law is applied is itself variable. The attempt to derive a coherent *jurisprudence constante* from the body of treaties, customary international law and investment arbitration caselaw has accordingly become somewhat of a frustrating activity for academics and practitioners. With the recognition that it is difficult to make generalizations about the law governing foreign direct investment in mind, a few examples of the regime's unsettled legal principles will be noted briefly.

Perhaps the most notoriously ambiguous concept within international investment law is the standard of Fair and Equitable Treatment ('FET') which appears in almost all IIAs. The most widely claimed standard in investor-treaty arbitration, FET is rightly described as a catch-

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<sup>20</sup> S Schill, *The Multilateralization of International Investment Law* (Cambridge University Press, 2009) at 365

<sup>21</sup> E.g. Netherlands-United Arab Emirates BIT 'to stimulate the flow of capital' (signed 26 November 2013)

all provision because it fills in the gaps not covered by more precise standards such as national treatment (which itself is subject to the inherent indeterminacy of the ‘likeness’ question discussed above).<sup>22</sup> Rooted in the already fluid language of ‘fairness’ and ‘equity’, there is still no settled definition of FET, a factor which may explain its popularity among strategic claimants. As a consequence of its extreme variability, FET can be used to object to a wide range of governmental behaviour.

Another major obscurity in international investment law is the definition of expropriation, or more specifically measures that are ‘tantamount to expropriation’ as enacted by host states against foreign investors’ assets. Precisely what type of regulatory action is captured by this phrase is widely debated among scholars<sup>23</sup> and regularly deliberated by investment tribunals<sup>24</sup> as a consequence of the guarantee against expropriation without compensation found in most IIAs. The understanding of this concept is further muddled by the expansive understanding of ‘creeping expropriation’ in which a series of smaller regulatory burdens imposed by governments, when aggregated, may entitle the investor to compensation for their lost assets.<sup>25</sup> Additionally, the vast extent to which host states may potentially escape liability under these provisions by reference to various public policy justifications in IIAs is bewildering. Not only is there a tendency of IIAs not to include reference to a designated list of public policy objectives, even where various issues are specifically contemplated for by treaty there is no settled body of jurisprudence from which to derive clear tests by which to apply these measures in a uniform manner.<sup>26</sup>

Much like the laws which it applies, the process of international investment arbitration is highly discretionary and unpredictable. While domestic the dispute settlement system of the WTO is susceptible to randomness because of the inescapable foibles of human judgment among its largely diplomatically-trained judiciary, this peculiarity of adjudication is further aggravated in the context of investor-state arbitration because there is no consistency with respect to the identity of the arbitrators, as they are selected on an *ad hoc* basis for each dispute. Although there are a number of recognized experts in the field of investor-state arbitration who regularly appear as arbitrators, there remains a high degree of chance in the composition of an

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<sup>22</sup> N DiMascio and J Paulwelyn, ‘Nondiscrimination in Trade and Investment Treaties: Worlds Apart or Two Sides of the Same Coin’ (2008) 102 *American Journal of International Law* 48

<sup>23</sup> E.g. R Dolzer and C Schreuer, *Principles of International Investment Law* (2<sup>nd</sup> ed, Oxford University Press, 2012) at 101

<sup>24</sup> E.g. *Antoine Goetz and Others v Republic of Burundi*, ICSID Case No ARB/95/3, Award (10 February 1999)

<sup>25</sup> *Siemens v Argentina*, ICSID Case No. ARB/02/8, Award (6 February 2007)

<sup>26</sup> See e.g. A Newcombe, ‘General Exceptions in International Investment Agreements’ Draft Discussion Paper, British Institute of International and Comparative Law (13/14 May 2008) <[http://www.biiicl.org/files/3866\\_andrew\\_newcombe.pdf](http://www.biiicl.org/files/3866_andrew_newcombe.pdf)> at 2

arbitral tribunal. ICSID's annulment procedure is particularly problematic in this regard where arbitrators are initially chosen by the ICSID Chairman, seemingly at random.<sup>27</sup> The narrow grounds of annulment under ICSID have not always been followed faithfully, leading to further incoherence with regards to the power of annulment committees to alter the outcome of previous awards.<sup>28</sup> While the WTO's Appellate Body fosters at least the perception of coherence to the process of dispute settlement, there is no such mechanism for arbitration decisions, leaving the overall system highly fragmented.

One of the most notable inconstancies in investor-state dispute settlement is the lack of clarity with respect to its applicability to particular IIAs, depending on the effect of most favoured nation guarantees on procedural issues.<sup>29</sup> A similar debate exists in relation to umbrella clauses, provisions found in many IIAs which entitle investors to use investment arbitration for any type of breach committed by a host state, including those which may be more properly the sphere of private contract law.<sup>30</sup> The appropriate standard of review by an arbitration tribunal for a state's assessment of their own treaty obligations remains uncertain and fragmented, causing commentators to call for a more unified approach.<sup>31</sup> Lastly and perhaps most perniciously, tribunals regularly debate the appropriate way to measure the value of an asset that has been the subject of an unlawful interference by the host state. This is a subject of particular discord because it not only represents a disagreement within the community of arbitrators as legal experts within the field of international investment law, it exposes divisions within arbitrators' use of evidence even where the facts themselves are settled. Asset evaluation is effectively a second layer of interpretation added to the complexity of the adjudicative process, further destabilizing the functional predictability of the exercise as way of understanding investors' decisions on where and when to internationalize.

### *iii) The Law and Policy of the International Monetary Fund*

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<sup>27</sup> D Collins, 'ICSID Annulment Committee Appointments: Too Much Discretion for the Chairman?' 30:4 *Journal of International Arbitration* 333 (2013)

<sup>28</sup> D Kim, 'The Annulment Committee's Role in Multiplying Inconsistency in ICSID Arbitration: The Need to Move Away from an Annulment-Based System' 86 *New York University Law Review* 242 (2011)

<sup>29</sup> See contrasting decisions with respect to the application of the MFN clause to dispute settlement: *Maffezini v Spain*, ICSID Case No. ARB/97/7, Award (13 November 2000) and *Plama Consortium v Republic of Bulgaria*, ICSID Case No ARB/03/24, Award (27 August 2008)

<sup>30</sup> Dolzer and Schreuer above n 24 at 166

<sup>31</sup> J Arato, 'The Margin of Appreciation in International Investment Law' 54:3 *Virginia Journal of International Law* (1 August 2014)

The International Monetary Fund ('IMF') was created in the aftermath of World War II to ensure stability in the international monetary system and today has a membership of 188 countries worldwide. The IMF's objective is to extend short term loans, better known as the infamous 'bailouts' to countries experiencing balance of payment deficits triggered by national fiscal irresponsibility. The organization's rules are contained in its Articles of Agreement<sup>32</sup>, which also outline the IMF's purpose and conditions of membership, which focuses on the requirement of member states to maintain an orderly system of currency exchange.<sup>33</sup> This rule, coupled with the requirement to make currencies freely tradable<sup>34</sup> allows money to move across jurisdictions in order to facilitate commerce and ultimately stimulate economic growth. The organization itself has notoriously opaque governance, with very little guidance on precisely how decisions are made by bodies such as the Board of Governors and the Executive Board, especially in relation to the extension of sovereign loans to cope with sovereign debt crises.<sup>35</sup> This stifles the ability of governments as well as firms to pre-assess the organization's impact on both the national as well as the global economy.

There are several poorly defined concepts that can be found in the operational policies of the IMF, leading to much interpretive confusion and practical difficulties in terms of the organization's long term effects. A good example of the imprecision of the IMF's policies are the rules covering the use of its general resources, essentially governing to the conditions under which a member country may be extended a loan. These refer to the need to ensure that there are adequate 'safeguards' in place.<sup>36</sup> This rule implies that a member's eligibility for an IMF loan should be in part based on its capacity for repayment. Loans should therefore be contingent on the country's economic viability. However, IMF loan decisions do not appear to be based upon this criterion. The countries that are chosen to receive IMF loans tend not to be selected on the basis of the economic health of the member state but rather on their political and economic linkages to the US and Europe (the main vote-holders in the organization), as well as the country's own quota within the organization, essentially reflecting its geo-political power.<sup>37</sup> In this sense, the IMF's actions are strongly influenced by factors other than its own

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<sup>32</sup> Adopted at the United Nations Monetary and Financial Conference, Bretton Woods, New Hampshire, July 22, 1944. Entered into force December 27, 1945.

<sup>33</sup> Art IV

<sup>34</sup> Art VIII

<sup>35</sup> E.g. N Woods and A Narikar, 'Governance and the Limits of Accountability: The WTO, the IMF and the World Bank' 53:170 *International Social Science Journal* 569 (2002)

<sup>36</sup> Art III a)

<sup>37</sup> R Barro and JW Lee, 'IMF Programs: Who are Chosen and What are the Effects?' 52: 7 *Journal of Monetary Economics* 1245-1269 (2005)

laws, the vagueness of which facilitate debt more closely tied to the caprices of international politics.

Perhaps the most prominent of the IMF's ambiguous rules is the requirement that states maintain 'orderly' exchange rates, without an explanation as to precisely what this means, other than a prohibition on competitive currency devaluation.<sup>38</sup> The use of the word 'manipulate' (members shall not manipulate exchange rates for competitive advantage) is confusing because it is not clear what type of action constitutes manipulation or how this could be proved. Even if this concept were more certain, as a consequence of the organization's heavily politicized decision-making, it would be difficult for the IMF to dictate that a member state employed a monetary policy in a manner that was intended to damage the economic position of another country. It is therefore unsurprising that many countries have chosen to keep their currencies artificially low by quantitative easing or other means, allowing their manufactured goods to become less expensive on world markets.<sup>39</sup> Global currency wars have ensued as a consequence of the IMF's hesitancy to enforce its own tentative disapproval of currency devaluation. Thus it makes little sense to consider the policies of the IMF in order to get a sense of future trends in either currency exchange or in assessing the likelihood that certain states will receive IMF loans.

#### *iv) International Development: The World Bank*

The World Bank is an international organization that seeks to alleviate poverty in developing countries by stimulating foreign trade and investment through the provision of low interest loans primarily for infrastructure projects. Established in 1944 along with the IMF, the World Bank's membership is identical to that of the IMF, with each of its 188 members bound by the organization's Articles of Agreement. Rules are also in place for the World Bank's component organizations, including ICSID, the Multilateral Investment Guarantee Agency (MIGA) and the International Finance Corporation (IFC). Taken together these materials comprise what could be described as the developmental component of international economic law.<sup>40</sup>

As with its sister organization the IMF, the most glaring obscurity in the World Bank's rules, found in its Articles of Agreement, are those relating to the terms governing the extension

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<sup>38</sup> Articles of Agreement IV:1 iii):

<sup>39</sup> D Strauss, 'Currency Cold War is Starting to Heat Up' The Financial Times (London), 16 May 2014

<sup>40</sup> The WTO has several developmental focused provisions, e.g. Part IV of the GATT and the Enabling Clause incorporated into GATT 1994.

of its loans. These state that the Bank shall pay due regard to the prospects that the borrower will be in a position to meet its obligations under the loan and that the bank shall act ‘prudently’ without outlining what this entails.<sup>41</sup> Disregarding that these instructions are ambiguous and as such afford wide latitude for bank decision-makers to impose their own discretion, there is little evidence that this rule is followed in practice. As with the IMF, geopolitical influence appears to be one of the strongest determinants in whether or not a country enjoys loan support from the World Bank, not economic suitability or the capacity to repay loans, as indicated by the organization’s rules. Instead, political allegiances strongly influenced the number of World Bank-funded projects that a given country received, even after accounting for domestic economic factors.<sup>42</sup>

Like the IMF, the World Bank’s internal operational procedures in terms of its decision-making lack transparency. The disorganized current management of the World Bank has been accused of instituting unnecessary re-structuring, instigating excessive budget cuts and engaging in wasteful expenditures on initiatives such as external consultants.<sup>43</sup> Commentators have observed that the functional capacity of the organization’s various organs of government, including its Board of Directors and Executive Directors and Advisory Council is not systematic.<sup>44</sup> This makes pragmatic criticism, let alone anticipation of outcomes of World Bank funded projects challenging if not impossible.

To conclude this section, it has been suggested that the main institutions of international economic law operate on the basis of highly ambiguous rules. Rather than providing and enforcing clear, authoritative direction, the WTO, international investment law, the IMF and the World Bank seem to be steered by the frailties of political economy. The ‘case-by-case’ form of adjudication, while offering flexibility to the relevant parties at that time, further compromises the long term predictability of international economic law, resulting in a general sense of disorder with regards to the ultimate effects that result from the application of legal principles in practice

### **3. Chaotic Results: International Economic Law’s Sensitivity to Initial Conditions**

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<sup>41</sup> Articles of Agreement s.4.v

<sup>42</sup> A Dreher, JE Sturm and JR Vreeland, ‘Developmental Aid and International Politics: Does Membership on the UN Security Council Influence World Bank Decisions?’ 88:1 *Journal of Developmental Economics* 1 (2009)

<sup>43</sup> R Harding, ‘World Bank: Man on a Mission’ *Financial Times* (London) 7 April 2014

<sup>44</sup> Qureshi and Ziegler, above n 3 at 649

Chaos theory states that complex systems are sensitive to initial conditions. These conditions are often imperceptible at the outset, making prediction of ultimate outcomes practically impossible and indeed creating a sense of overall randomness.<sup>45</sup> In international economic law this is suggested to mean that the circumstances in which laws are developed and applied play a greater role in global economic relations than the operations of the laws themselves. These conditions include factors such as pre-existing levels of economic development, political and lobbying culture within each country, democratic variables such as the independence of courts and even cultural biases. True to their shared nature as chaotic systems, there are strong indications that the four regimes of international economic law have had a marginal impact on the relevant measurable macro level features of the global economy. This assertion will be justified through the consideration of the views of some experts which have challenged the effectiveness of the WTO, IIAs and investor-state arbitration, the IMF and the World Bank. To be clear, the suggestion that the laws of these institutions have played an uncertain role in the achievement of their stated goals is not causally linked to the inherent indeterminacy of these laws as discussed above. Sensitivity to initial conditions is a separate characteristic of the discipline of international economic law that independently exposes its chaotic nature.

*i) International Trade: The World Trade Organization*

The Marrakesh Agreement establishing the WTO states that one of the objectives of the organization is to expand ‘the production of and trade in goods and services.’<sup>46</sup> While the total volume of world trade has increased since the creation of the WTO more than 20 years ago<sup>47</sup>, the role played by the WTO in increasing the level of world trade is far from established. Indeed, some authors suggest that the impact of the WTO on international trade has been minimal if not negative. One well-known study concluded that countries belonging to the GATT/WTO do not have significantly different levels of trade from non-members,<sup>48</sup> suggesting that membership in the international trading community of the WTO is largely irrelevant, at least from a trade-impact perspective. Of course, given that one purpose of the WTO be the prevention of rising protectionism, one might not expect there to be international trade increases as long as there are no decreases – representing the preservation of the status

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<sup>45</sup> Gleick, above n 6

<sup>46</sup> Preamble, paragraph 1

<sup>47</sup> Source: UNCTAD Stat, Exports and Imports of Goods and Services, annual, 1980-2011  
<<http://unctadstat.unctad.org/TableViewer/tableView.aspx?ReportId=25116>> (last accessed September 2012).  
Volume for this measure dropped in 2009 and 2010 but had recovered by 2011.

<sup>48</sup> A Rose, ‘Do We Really Know that the WTO Increases Trade’ (NBER Working Paper No. 9273, 2004)

quo. However, other studies have demonstrated that while WTO membership may have a positive effect on trade, this effect is uneven. Large industrialized nations have enjoyed increases in trade upon joining the WTO, whereas developing countries have in many cases seen their levels of trade decline.<sup>49</sup> Indeed it appears as though global inequality has actually increased during the era of the GATT/WTO trade liberalization.<sup>50</sup> This is problematic given the WTO's stated mission to make 'positive efforts designed to ensure that developing countries, and especially the least developed among them, secure a share in the growth in international trade.'<sup>51</sup> In its 2014 Trade and Development Report, the United Nations Conference on Trade and Development urged that free trade does not lead to growth, advising that developing countries should avoid multilateral as well as bilateral trade agreements, focusing instead on domestic policies that stimulate demand.<sup>52</sup>

It would seem as though the WTO has not prevented the escalation of trade protectionism, especially in recent years and in its more latent forms, such as subsidies and preferential government procurement policies. The organization Global Trade Alert reports that more than 2500 protectionist measures have been enacted globally since the financial crisis of 2008.<sup>53</sup> Even if it is plausible that this situation would have been worse without the multilateral efforts of the WTO, trade protectionism is thought to be responsible for only 20 per cent of the observed decline in worldwide trade flows.<sup>54</sup> The much more important contributors to the decline of global trade have little to do with international law or the regulatory oversight of the WTO. Rather this trend can be ascribed to greater competitive parity between nations (for example the rising wages in China's manufacturing sector) and the more general economic slowdown in emerging markets.<sup>55</sup> Initial or extraneous conditions, namely the economic development of trading partners, dictate the global trading system's outcomes more so than the rules of international economic law.

It is often asserted that international economic organizations such as the WTO should be acknowledged for their role in radically reducing the extent of poverty in the developing world since the 1990s. But more recently some experts have argued that the definition of extreme poverty used to assess policy impacts has been manipulated to yield artificial results.

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<sup>49</sup> A Subramanian and S Wei, 'The WTO Promotes Trade, Strongly But Unevenly' 72 *Journal of International Economics* 151 (2007)

<sup>50</sup> M Trebilcock, *Understanding Trade Law* (Edward Elgar, 2011) at 178-184

<sup>51</sup> Agreement Establishing the World Trade Organization, preamble, paragraph 2

<sup>52</sup> United Nations, New York and Geneva, 11 September 2014 at v  
<[http://unctad.org/en/PublicationsLibrary/tdr2014\\_en.pdf](http://unctad.org/en/PublicationsLibrary/tdr2014_en.pdf)

<sup>53</sup> Global Trade Alert, centre of Economic Policy Research <[www.globaltradealert.org](http://www.globaltradealert.org)>

<sup>54</sup> 'What Ever Happened to Globalisation?' E Lascelles, *The Financial Times* (London) 29 August 2014

<sup>55</sup> *Ibid.*

The Asian Development Bank observed recently that the figure of US \$1.25 per day, the level of daily income below which is considered extreme poverty, is too low and needs to be readjusted. This means that many millions more people live in poverty than is actually appreciated.<sup>56</sup> Rather than eradicating extreme poverty by eliminating barriers to international trade, the achievements for which the WTO often takes credit may actually reflect carefully constructed data.

Lastly, the marginality of the WTO as an instrument of international trade is evident in its weak enforcement mechanism, making rulings of its dispute settlement bodies often operatively useless. Under the WTO rules, if a Member fails to comply with a final ruling in a dispute, the winning party may retaliate by suspending trade concessions in favour of the offending member.<sup>57</sup> But the retaliation remedy is too feeble to be effective, particularly in disputes between countries of asymmetrical size. If a small country suspends concessions against another larger country, it is more likely to harm its own economy than that of the offending state. Suspending trade concessions in this manner can also be injurious to firms that whose products will be subjected to higher tariffs.<sup>58</sup> Moreover, approximately one third of WTO disputes to date have resulted in non-compliance to some degree.<sup>59</sup> This may itself be the result of the WTO's lack of a genuine enforcement mechanism, relying as it does on reputational sanction, the effect of which is difficult to monitor because of fluctuations in international relations.<sup>60</sup>

## *ii) Foreign Direct Investment: Bilateral Investment Treaties and Investor-State Dispute Settlement*

Commentators have described international investment law as a complex system which is highly sensitive to initial conditions in that it evolves as it adapts to de-stabilizing events which may be either major or minor in nature.<sup>61</sup> International investment law's sensitivity to initial conditions is seen in data on the effectiveness of IIAs in increasing FDI flows between

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<sup>56</sup> 'Key Indicators for Asia and the Pacific 2014' Asian Development Bank, August 2014, Part I at 5. A more appropriate daily figure should be \$1.51, which indicates that extreme poverty has actually risen over the period.

<sup>57</sup> Art 22

<sup>58</sup> This issue was considered by the Arbitrators in EC-Bananas III (Ecuador) WT/DS27/ARB/ECU (24 March 2000)

<sup>59</sup> G Horlick and J Coleman, 'A Comment on Compliance with WTO Dispute Settlement Decisions' *WTO Governance, Dispute Settlement and Developing Countries* (Juris, 2008), finding rates of 67% for full compliance, 24% for partial compliance and 9% for total non-compliance) at 771

<sup>60</sup> M Turk, 'Why Does the Complainant Always Win at the WTO? A Reputation-Based Theory of Litigation at the World Trade Organization' 31 *Northwestern Journal of Law and Business* 385 (2011)

<sup>61</sup> Pauwelyn, above n 8. Major events include the withdrawal of some states from ICSID and the failure to ratify a multilateral agreement on investment and minor events include the continuous fine-tuning of IIAs, at 6

signatory states. A wide range of studies isolating the role of IIAs has revealed varied responses to this vital question.<sup>62</sup> Shockingly for some, a number of studies have observed no positive correlation on IIA signage and FDI flows whatsoever,<sup>63</sup> a troubling indictment of the utility of international investment law. Others revealed that to the extent that IIAs do encourage inward FDI, this tends to occur only when the host state already has a stable business environment and reasonably strong domestic institutions.<sup>64</sup> This suggests that it is extraneous factors which actually influence firms' decisions to internationalize, such as natural resource endowments and the cost of other inputs such as labour, and not the presence of an IIA.

The quality of political relations between the home and host state, not IIAs, appears to be the most important determinant for FDI inflows.<sup>65</sup> With diplomatic pressures acting as a crucial factor in the locational decision of a multinational enterprise, the patterns of FDI remain subject to the permutations of domestic economies and international relations, rather than the theoretically stable legal framework of international economic law. The risk of excessive intervention by host states with the economic affairs of foreign investors is therefore best viewed as idiosyncratic rather than systematic or controllable through legal sanction. Host states will choose to interfere with foreign investors based not on the absence of an IIA with strong investor protections, but as a consequence of the quality of relations with the home country.

To the extent that IIAs do offer investors some comfort against excessive governmental interference by host states, this is also susceptible to the vagaries of domestic law – the initial conditions that act in concert with investment law at the international level. This situation is captured not only by the fact that states can tailor their consent to arbitration, excluding types of disputes that they consider to be too sensitive or requiring the prior exhaustion of local remedies – is also well-demonstrated by the imperfect enforceability of investor-state arbitration for which consent was validly granted. Under *ad hoc* arbitration systems, other treaty based enforcement mechanisms such as the New York Convention are required for awards to be fully enforceable by domestic courts. Yet there is still the possibility that an arbitration award will be nullified if there were procedural irregularities as determined by

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<sup>62</sup> See generally K Sauvart and L Sachs eds., *The Effect of Treaties on Foreign Direct Investment: Bilateral Investment Treaties, Double Taxation Treaties and Investment Flows* (Oxford University Press, 2009)

<sup>63</sup> 'The Impact on Foreign Direct Investment of BITs' UNCTAD, *ibid* at 323, J Yackee, 'Do BITs Really Work? Revisiting the Empirical Link between Investment Treaties and Foreign Direct Investment' *ibid* at 379

<sup>64</sup> M Hallward-Driemeir, 'Do Bilateral Investment Treaties Attract FDI? Only a Bit... And They Could Bite' *ibid* at 349

<sup>65</sup> R Desbordes and V Vicar, 'Foreign Direct Investment and Bilateral Investment Treaties: An International Political Perspective.' (2009) *Journal of Comparative Economics* 27 at 382

domestic tribunals. Furthermore, under ICSID awards issued by international arbitration tribunals are self-enforcing, meaning that the winning party does not have to pursue separate legal action in domestic courts in order to compel the loser to comply.<sup>66</sup> But the presumption that ICSID awards will always be automatically enforced in all jurisdictions is not always accurate. A number of countries, among them China, still insist upon separate authorization by a domestic court in order to guarantee enforcement of foreign arbitral awards – including those of ICSID.<sup>67</sup> Thus resolution even through the World Bank’s ICSID must not be regarded as an absolute certainty.

Even in the absence of the need to seek separate enforcement procedures in some jurisdictions, there is nothing that investor-state arbitration alone can do to compel a losing party to pay should it refuse to do so. While generally compliance with ICSID awards has been good<sup>68</sup>, the reality of non-enforcement has been exposed in relation to a series of awards levied against Argentina as a result of measures it took during its financial crisis.<sup>69</sup> Argentina has yet to pay any of these amounts owed to aggrieved investors. Likewise, Russia appears to be resisting an arbitral tribunal’s order to pay billions of dollars in damages to the shareholders of Yukos for its unlawful interference with that company’s operations.<sup>70</sup> It may well be that none of these awards will ever be paid. The World Bank has indicated that where a member country fails to comply with the award of an ICSID tribunal it may be denied access to further loans,<sup>71</sup> but this kind of pressure (which has never been used) is ineffectual in situations where the country cannot rather than will not pay. It also has limited relevance to non-complying developed countries that are unlikely to seek the World Bank’s assistance. Lastly of course, investors themselves cannot have claims brought against them by host states unless they have given specific consent for such actions in a contract, a situation which renders the notion of

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<sup>66</sup> ICSID Convention Art 53(1) and 54 (1)

<sup>67</sup> J Barratt and M Michael, ‘The “Automatic Enforcement” of ICSID Awards: The Elephant in the Room’ *The European, Middle Eastern and African Arbitration Review* 2014  
<<http://globalarbitrationreview.com/reviews/58/sections/202/chapters/2274/>>

<sup>68</sup> A Parra, ‘The Enforcement of ICSID Arbitral Awards’ 24 Joint Colloquium on International Arbitration, Paris, November 2007 at 9 <[http://www.arbitration-icca.org/media/0/12144885278400/enforcement\\_of\\_icsid\\_awards.pdf](http://www.arbitration-icca.org/media/0/12144885278400/enforcement_of_icsid_awards.pdf)>

<sup>69</sup> *CMS Gas Transmission Co. v Argentina*, ICSID Case No. ARB/01/8 (Decision on Annulment) (24 September 2007); *Enron Creditors Recovery Corporation (formerly Enron Corporation) and Ponderosa Assets, L.P. v. Argentine Republic*, ICSID Case No. ARB/01/3, Decision on the Application for Annulment of the Argentine Republic, 30 July 2010; *LG&E v Argentina* ICSID Case No. ARB/02/1 (Decision on Liability) (3 October 2006)

<sup>70</sup> ‘Mega-Arbitration: Court Orders Russia to Pay \$50 BN in Yukos Case’ *Russia Today*, 28 July 2014: <<http://rt.com/business/176064-yukos-russia-50bn-damages/>> referring to the case *Yukos Universal Limited (Isle of Man) v. The Russian Federation*, UNCITRAL, PCA Case No. AA 227 (18 July 2014)

<sup>71</sup> World Bank OP 7.40, Disputes Over Defaults on External Debt, Expropriation and Breach of Contract <[www.worldbank.org](http://www.worldbank.org)>

effective dispute settlement under international investment law at best imbalanced and at worst illusory.

*iii) Sovereign Debt Relief and Monetary Relations: The International Monetary Fund*

As suggested in relation to the WTO and IIAs, the IMF has evidently played a negligible role in the global economy. It too is susceptible to the initial conditions that interact with the application of its laws. Several commentators, including the former Chief Economist of the World Bank, argue that the IMF failed to help a many of the countries to which it extended loans, in part due to its inability to tailor its policies to suit individual country circumstances.<sup>72</sup> Drawing evidence from a number of countries throughout the world, economists have demonstrated that IMF loan programs do not stimulate growth and in some cases actually reduce economic viability in the participant country.<sup>73</sup> Moreover, to the extent that the IMF aims to complement the efforts of IIAs in improving the conditions for firm internationalization, IMF loans have marginal effects on the level of inward foreign investment.<sup>74</sup>

The IMF has been ineffectual in responding to currency manipulation tactics pursued by a number of countries in modern times, including China and the US.<sup>75</sup> This has relegated what was intended to be some form of multilateral monetary policy to the hands of national regulators, such as the US Federal Reserve and the Bank of China, even where these decisions have global implications. Again, re-existing economic and political conditions within these countries, including unanticipated economic shocks, play a greater role in the world economy than international economic law.

As with the WTO and international investment law, the IMF suffers from weak enforcement, stifling its objectives. In order to impose its rules on its constituent members, the IMF may rely on its powers of surveillance, which consists of evaluating economic data and preparing annual reports on a member's economic status and financial stability.<sup>76</sup> Clearly the surveillance program has not succeeded in ensuring that IMF members fulfil their obligations.<sup>77</sup> This is because, as noted above, the organization is effectively controlled by the strongest

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<sup>72</sup> J Stiglitz, *Globalization and its Discontents* (Penguin, 2002)

<sup>73</sup> W Easterly, 'What Did Structural Adjustment Adjust? The Association of Policies and Growth With Repeated IMF and World Bank Adjustment Loans' 76:1 *Journal of Developmental Economics* 1 (2005)

<sup>74</sup> Barro and Lee, above n 38

<sup>75</sup> Strauss above n 40

<sup>76</sup> Art IV:3 of the IMF Articles of Agreement

<sup>77</sup> E.g. A Lowenfeld, *International Economic Law* (Oxford University Press, 2008) at 667

nations, especially the US which has the capacity to block any reports that disclose negative information. The US' sway over the IMF is not simply a symbolic affront to the major emerging markets – political intransigence in the US Congress recently prevented the authorization of a major increase in the IMF's capitalization, further diminishing the organization's capacity to fulfil its mandate. Rather than embodying the rules of universal application as would connote an orderly system, the IMF's capacity to institute meaningful change are largely dictated by geopolitical influence.

*iv) International Development: The World Bank*

Like the WTO and the IMF, the laws of the World Bank have had an inconsequential impact on the global economy. This is in large part the consequence of the greater role played by extraneous factors, such as political allegiances and domestic institutional conditions. One of the World Bank's main attempted contributions to development has been through its efforts to increase FDI to high-risk countries by offsetting some of the dangers associated with political upheavals and unstable governments. Created in 1988, the World Bank's MIGA offers political risk insurance (PRI) to eligible investment projects undertaken in the developing world. But PRI remains poorly used by firms.<sup>78</sup> It is true that FDI inflows into developing countries tend to be somewhat more heavily backed by PRI schemes such as those of MIGA, but at only 30 per cent uptake, PRI is accurately described as boutique financial product.<sup>79</sup> Similarly, the World Bank's International Finance Corporation (IFC) lends money directly to investors pursuing commercial projects in the developing world. While it has financed a number of infrastructure-oriented works, this is far less than either private banks or national funding regimes like export credit agencies.<sup>80</sup> Whether it is because the World Bank imposes onerous conditions on firms or because its services are poorly understood, it is clear that firms engaging in business in developing states are not making beneficial use of the Bank's resources.

More importantly, where developmental loans have been extended by the World Bank to fund infrastructure projects, these loans have not had a measurable impact on the beneficiary states. Indeed, there has been widespread dissatisfaction regarding the outcome of World Bank

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<sup>78</sup> P N Satyanad, 'How BRIC MNEs Deal with International Political Risk', Columbia FDI Perspectives no. 22, Vale Columbia Center on International Sustainable Investment (5 May 2010)

<sup>79</sup> K Nadakavukaren Schefer, *International Investment Law: Text, Cases and Materials* (Edward Elgar, 2013) at 531

<sup>80</sup> For example, the United Kingdom's export finance program, UK Export Finance alone offered more than \$US 6 billion in funding in 2012-13: UK Export Finance: Annual Reports and Accounts 2013-14 (17 June 2014) at 5

funded projects in the developing world for some time. The IFC conceded that only half of its initiatives have succeeded in attaining the desired developmental goals, with the success rate of the Bank itself gauged at roughly 40 per cent. These results have been variously ascribed to poor project design, inadequate management and weak coordination among participants.<sup>81</sup> The application of the organization's rules has resulted in uneven outcomes.

Circumstances outside the bank's control, such as the institutional capacity of target states, appear to exert a strong influence on the outcome of loan projects. A recent study examined the effectiveness of several thousand World Bank sponsored projects over a period of almost 30 years, concluding that country-level characteristics had a significant impact on the success of the individual project. These so-called macro level features, essentially institutional integrity at the national level rather than the management of the project by the Bank itself, are the clearest determinants of the outcomes of individual World Bank initiatives. Generally speaking intrinsically bad developmental projects undertaken in environments with weak institutional infrastructure cannot be saved through greater supervision and intervention at the international level by the Bank.<sup>82</sup> In other words, World Bank funded projects tend to work best in countries where domestic governance is already strong.<sup>83</sup> Loans extended by the World Bank in conjunction with assistance from the IMF performed no better, with no evidence of economic growth observed among many sample countries in conjunction with these programs. The laws of the World Bank have had little impact upon the organization's observed effects on the world's developing countries.

To conclude this section, measurable outcomes observed in international trade, foreign investment, monetary relations and development finance are exogenous relative to the institutions of international economic law. They cannot be explained by reference to the workings of these institutions as dictated by the laws through which they operate but are manifestations of initial conditions such as geopolitical relations, economic development and institutional factors at the national level, a clear iteration of chaos theory.

#### **4. Benevolent Chaos: The Unexpected Benefits of International Economic Law**

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<sup>81</sup> LA Ika, A Diallo, D Thuillier, 'Critical Success Factors for World Bank Projects: An Empirical Investigation' 30:1 International Journal of Project Management 105 (2012)

<sup>82</sup> Ibid at 302

<sup>83</sup> C Denizer, D Kaufmann and A Kray, 'Good Countries or Good Projects? Macro and Micro Correlates of World Bank Project Performance' 105 Journal of Development Economics 288 (2013)

Some systems are believed to improve due to stress or testing.<sup>84</sup> Likewise, chaotic systems can foster adaptability, innovation and creativity. As these qualities are essential to successful firms and responsible governments, the indeterminacy and sensitivity to initial conditions evident in international economic law must not be reflexively cast in a negative light. To the extent that the failure of the laws of the WTO, IIAs, the IMF and the World Bank to fulfil their stated mandates can be explained by their nature as a chaotic system, international economic law also appears to offer certain unintended beneficial outcomes. This section will suggest how some of the chaotic features described above may be regarded as desirable.

Before exploring this proposition of benevolent chaos it is essential to question the assumption that certainty and predictability within a legal system must be seen as virtues or as essential ingredients of legitimacy. While often fetishized by legal theorists<sup>85</sup>, certainty and predictability remain subordinate to the needs and aspirations of the international community,<sup>86</sup> for whom these values may be immaterial or even antithetical. In the context of the global economy, such other goals may be founded upon resilience in the face of change and the capacity for transformation. The narrow pursuit of a system's capacity to produce static outcomes that can be anticipated by its participating actors at the expense of other needs may therefore be myopic and potentially harmful. Furthermore, as noted above an excessive emphasis on the foreseeability of the results of judicial or legislative decision-making presents an artificial understanding of the way legal institutions, like international courts, operate. Such systems are highly dependent upon the factual context in which they operate, namely the nature of relationships between states and the natural dynamism of markets. Some unexpected advantages offered by the four chief fields of international economic law as a consequence of their chaotic nature will now be considered.

### *i) International Trade*

The uneven effects of the WTO on world trade coupled with the unpredictable consequences of its dispute settlement system do not diminish the WTO's value to the global economy, even if there are no measurable increases in trade flows or in the GDP of its member states. First, accession to the WTO has become a major symbolic exercise that has helped to bring cohesion

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<sup>84</sup> Most notably N Taleb, *Antifragile: Things that Gain from Disorder* (Penguin, 2012), citing the example of the effect of exercise on the human body.

<sup>85</sup> E.g. Boyle and Chinkin, above n 1 at 302-303

<sup>86</sup> E.g. R Higgins, 'Speech by HE Judge Rosalyn Higgins, President of the International Court of Justice, at the solemn sitting on the occasion of the sixtieth anniversary of the inaugural sitting of the Court' Press Release (12 April 2006)

to the international community. China's accession to the WTO in 2001 has been among the most significant geopolitical event of the 21st Century, signifying China's long-awaited engagement in world affairs and unlocking its potential for massive 'soft law.' Secondly, the WTO's dispute settlement system may not provide the legal certainty desired by governments, but it does offer political advantages. In using the dispute settlement system, politicians are able to 'save face' by deferring to the requirements of the WTO's exclusive jurisdiction in order to relinquish the pursuit of various domestic policies of interest to vocal groups through other fora. The WTO dispute settlement system also de-politicizes trade disputes, preventing them from escalating tensions between states.

While many of its laws are highly ambiguous, the WTO regime's built-in flexibility has allowed it to conserve member states' keen regard for preserving their own sovereignty within an international organization. This capacity is seen notably in the individualized approach the WTO takes to the regulation of anti-dumping, allowing member states to craft their own procedures for investigating and imposing these duties. From the perspective of firms, since anti-dumping duties can negate competitive advantages in labour in places like China, firms from these countries facing uncertain levies will need to seek other commercial strategies to survive. It is believed that the pressures of unpredictable anti-dumping duties may inspire the development of Chinese brands or shift the emphasis towards higher value goods, which may be of interest to the domestic workforce.<sup>87</sup> These types of innovations might not occur were the WTO's oversight of anti-dumping duties more organized.

The incoherence of WTO law and its unbalanced effects on the growth in world trade has realigned policy experts' attention to the importance of domestic trade policies and away from international, or at least multilateral rule-making. To an extent this is reflected in the impasse in Doha Round negotiations through the WTO. Recognizing the lesser role of international and bilateral trade policy in economic growth, UNCTAD has recently suggested that world trade can only be stimulated by an increase in demand, which requires action at the national level. This contemplates not protectionism, but macroeconomic policies aimed at expanding domestic consumption and improving capacity of underperforming industries.<sup>88</sup> In this sense, the failure of the WTO to make a measureable contribution to growth in international trade has called attention to the need for policy-makers to focus more on local matters, possibly such as taxes and wages, where the fruits of their labour may be more demonstrably felt.

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<sup>87</sup> E Lastrade, 'Market Protection in Europe and Anti-Dumping Law' [2006]  
<<http://ssrn.com/abstract=9171187>>

<sup>88</sup> UNCTAD World Trade and Development Report 2014 at v

The WTO has shown the capacity to respond to its chaotic nature, not only reducing but actually exploiting these features for the betterment of its global constituents. For example, it is understood that the unpredictability of legal outcomes can lead to distorted share valuations as markets attempt to price litigation risks. The accuracy of such pricings rises in proportion to the certainty of the outcome as well as the availability of information. Thus, highly unpredictable outcomes (such as those of WTO disputes) should be expected to result in inaccurate or randomized market pricings, misleading investors and hindering the allocation of capital to productive uses. Instances of this occurring in the early days of WTO dispute settlement were well-documented, especially in relation to unanticipated challenges.<sup>89</sup> However, cognizant of the unreliable outcomes of its dispute settlement process, the WTO has mitigated some of the harmful consequences of such inaccurate market pricings first by augmenting the availability of available information on pending disputes, mostly through its accessible website, and also emphasizing the capricious diplomatic as opposed to legally certain nature of these proceedings (i.e. mandatory consultations, decisions as recommendations rather than judgments). This does not enhance the predictability of the system, rather it acknowledges its unpredictability. Markets are accordingly drawn away from litigation risk to more dependable sources of information for pricing signals. For their part, WTO member governments are able to bring claims secure in the knowledge that this will not result in harmful market fluctuations.

## *ii) Foreign Direct Investment*

Commentators have praised international investment law for its evolutionary ‘trial and error’ development in response to the shifting needs of the global economy, as distinct from a more top-down regime that was designed for purpose.<sup>90</sup> There is much merit to this claim, as there is little doubt that tailored IIAs along with investor-state arbitration remain popular. While evidence supporting increased FDI flows as a consequence of IIA signage remains elusive, each year states continue to demonstrate their willingness to commit to these obligations, even where the existence of systemic political risks seems tenuous (as in the pending Transatlantic Trade and Investment Partnership between the US and the EU). This may be explained by the

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<sup>89</sup> M Desai and J Hines, ‘Market Reactions to Export Subsidies’ December 2003: <<http://cep.lse.ac.uk/seminarpapers/21-01-04-HIN.pdf>> discussing share valuations following the EU’s 1997 challenge to the US export subsidy regime based on its tax treatment of foreign sales corporations: US-Tax Treatment of Foreign Sales Corporations, WT/DS108/2 (Request for Consultations) 28 November 1997

<sup>90</sup> Pauwelyn generally above n 8.

fact that there are other benefits associated with these treaties, regardless and in some cases because of uncertainty of many of the core legal concepts. Chief among these is their capacity for ‘signalling’ the openness of a country to foreign investors from around the world. Concluding an IIA sends a positive message to foreign investors from other countries, just as it makes a legal commitment to those investors from the party state.<sup>91</sup> In this sense, IIAs act as a promotional initiative for countries. This can be magnified by the widespread media attention that is now devoted to many of these instruments. Furthermore, even where there is no measureable increase in FDI whatsoever accompanying an IIA, concluding investment agreements is clearly a worthwhile diplomatic exercise. The ceremony attached to the formal signing of these instruments by governmental representatives can help cement political ties, even where long term economic benefits are uncertain. While highly indeterminate, the substantive standards of IIAs, developed organically from a variety of disparate sources over decades, commentators observe a tendency towards convergence rather than divergence in their meanings and application.<sup>92</sup> By this it is meant that while the precise implication of a given standard remains uncertain, this uncertainty is becoming one that is increasingly shared within a community of investment arbitrators, policy-makers and scholars, allowing firms to have a reasonable idea of whether or not a given claim is worth pursuing based on the plausible validity of their legal entitlements. Clearly uncertainty in the application of legal rules creates room for flexibility, but radical uncertainty has to the potential to so completely undercut the legal order that flexibility becomes meaningless. International investment arbitration may well have achieved an effective medium ground between the two extremes.

In addition to the gains associated with IIAs themselves, there are several potential advantages resulting from the chaotic nature of dispute settlement in international investment law. First, given the uncertainty associated with international arbitration as a means of resolving grievances in part due to the ambiguity of concepts like FET and indirect expropriation, host states may be compelled to overhaul their local laws to make them more appealing to firms, including their courts and administrative infrastructure even in the absence of an IIA which requires them to do so.<sup>93</sup> Improving one’s rankings in the World Bank’s Doing Business reports has become a vital objective of some countries.<sup>94</sup> In contrast to the dubious

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<sup>91</sup> E Neumayer and L Spess, ‘Do Bilateral Investment Treaties Increase Foreign Direct Investment to Developing Countries?’ in Sauvant and Sachs eds above n 60

<sup>92</sup> Pauwelyn above n 8 at 14

<sup>93</sup> S Schill, above n 21 at 372

<sup>94</sup> E.g. India: A Kazmin, ‘Narendra Modi Issues a “Made in India” Plea to Business’ The Financial Times (London) 25 Sept 2014

track record of the international institutions that are the focus of this article, domestic institutions like democratic governments and independent courts have been remarkably successful in stimulating economic growth, in part because of their relative predictability.<sup>95</sup> Second, with the prospect of victory largely unknowable, one of the often unappreciated purposes of investment arbitration is to trigger settlement by the parties.<sup>96</sup> The settlement-generating potential of arbitration is revealed by ICSID's caseload statistics in which 25 per cent of all awards rendered embodied a settlement agreement at the parties' request.<sup>97</sup> Many more settlements may occur in investor-state arbitration than are publicly reported. Settlement is so vital because foreign investors have a long term relationship with the host states that needs to be preserved where possible and this can be put at risk by the imposition of an arbitral award. A settlement allows for compromise and conciliation, both of which are conducive to a lasting relationship between investor and host country. Thirdly, investor-state arbitration remains attractive to parties because of the degree of control and customization that exists, particularly in relation to the choice of law as well as the identity of the tribunal members. This results in some degree of predictability with respect to the outcome of the particular dispute at hand. For broad trends in IIA interpretation to be predictable, some manner of genuine precedent as well as consistent choice of domestic law (as it interplays with treaty law) would need to be present and it is likely that this would undermine much of the flexibility that investors seek.

Furthermore, as noted above, even a final award in investment arbitration may fail to achieve full compensation for investors possibly because it may not be fully enforceable. As with the WTO's national approach to anti-dumping, paradoxically it is only because host states retain the capacity to deny the enforcement of arbitral awards that they are willing to participate in investor-state dispute settlement and IIAs *ab initio*. This approach is mirrored in the selective nature of commitments made in each individual IIA – with some countries, such as Australia, indicating that it will no longer include investor-state dispute settlement in its IIAs but importantly not terminating its IIA programme altogether.<sup>98</sup> For firms, the practical limitations on enforceability of arbitral awards force them to offset risks through diversification. Where the future of one project is insecure, shifting some resources to another sector or location reduces the firm's overall exposure. Such a strategy is commercially sound

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<sup>95</sup> See generally D Acemoglu and J Robinson, *Why Nations Fail* (Crown Business, 2012)

<sup>96</sup> Even though only investors can sue under IIAs, the prospect of claimants being compelled to pay the host state's costs if unsuccessful under the dominant 'loser pays' cost regime makes bringing illegitimate claims in order to pressure settlement unlikely.

<sup>97</sup> ICSID, 'ICSID Caseload – Statistics' (11 August 2014)

<sup>98</sup> Australian Government Productivity Commission, *Bilateral and Regional Trade Agreements*, November 2010: <<http://www.pc.gov.au/projects/study/trade-agreements/report>>

because it promotes resilience to severe market fluctuations and other economic shocks in a way that specialization does not. The chaotic nature of investment arbitration may indirectly spur innovative business activities that would have otherwise gone unexplored. The precarious legal environment in which foreign investors operate can nurture the classic ‘creative destruction’ upon which much economic growth relies.<sup>99</sup> The capacity of international investment law to adapt to changes in the global economic environment through adjustments to individual IIAs and context specific interpretations in arbitrations is a consequence of its decentralized, self-organizing nature through which it evolves organically through incremental changes on a dispute-by-dispute, treaty-by-treaty basis.<sup>100</sup> This must be contrasted with the situation that existed before the era of notionally rules-based investor-state arbitration, when powerful home states were willing to use force in order to protect the economic interests of their nationals abroad – an even more desultory system of enforcement that entailed the potential of physical harm as well as considerable expense.

Finally, there is a risk that lack of faith in a reliable global legal infrastructure may lead to internally-focused economic strategies by multinational firms and host states, ultimately hindering levels of FDI. Xenophobic decision-making may in turn divert capital away from speculative international projects to those that do not bear the risk of intervention by host states or arbitration claims by foreign firms. This is advantageous because the competitive advantage of 21<sup>st</sup> century firms and states depends more on harnessing technology and research and development than it does on expansion through the building of larger factories or digging of deeper mines in order to achieve efficiencies of scale. In other words, the risks associated with engaging in FDI in an environment of legal uncertainty may end up encouraging investment in the factors which are most conducive to long term prosperity. Such human capital is often more readily cultivated through domestic support and investment rather than absorbed through international influences.<sup>101</sup> This is not to say that innovation-focused strategies are without legal-risk, but that this type of investment engages legal risk at the national level (domestic intellectual property law and contract law for example) that is more knowable than that which is tied to the uneven interpretation of IIAs by arbitration tribunals.

### *iii) Sovereign Debt Relief, Monetary Relations and International Development*

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<sup>99</sup> J Schumpeter, *Capitalism, Socialism and Democracy* (Routledge Classics, 2010)

<sup>100</sup> Pauwelyn, above n 8 at 5

<sup>101</sup> S Rasekhi, S Anousheh et al. ‘Regional Spillover Research and Development Investment: A Geographically Weighted Regression Approach’ 7:33 *African Journal of Business Management* 3213 (2013)

The disordered laws upon which the International Monetary Fund and the World Bank are based as well as their irregular effects on monetary relations and international development respectively also engender various benefits. Both institutions will be considered together in this section.

First with respect to the IMF, sovereign assistance in the form of the notorious ‘bailouts’ has led to the problem of moral hazard. Excessive dependence on help from international institutions like the IMF has prevented governments from addressing systemic weaknesses in their own economies. It is hard to escape the conclusion that were the IMF’s lending policies clearer and the effects of its conditionality arrangements more universally positive, then the problem of moral hazard among borrowing states would be magnified. The political damage inflicted as a consequence of reliance on IMF assistance, including its strict conditionality measures, suggests that countries are not drawn to the IMF out of economic recklessness. It is precisely because IMF assistance is so chaotic that it remains a last choice for countries, prompting them instead to focus on fiscal responsibility.

The failure of the IMF to resolve competitive currency devaluation to benefit domestic manufacturers may not be as damaging to the global economy as is widely believed. The ability of countries to manipulate their currency without fear of meaningful reprisal by a centralized authority has arguably stimulated the development of wealth-generating global supply chains. This is a key component of globalization because international supply chains allow companies to source their inputs from countries where their home currency has more value. Firms are able to reduce their costs in this way during periods of strong currency. Indeed, the structure of global supply chains has shifted monumentally in recent years, meaning that a strong currency has less impact on exports now than in the past.<sup>102</sup> UNCTAD recently urged that the establishment of global supply chains is more important for developing countries than signing trade agreements.<sup>103</sup> Recent studies have shown that the prices of higher quality goods tend not to change in response to currency exchange rate fluctuations – obviating the need for competitive devaluation. This finding has significant implications for firms engaged in high technology manufacturing as well as in services, which are increasingly dominant components

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<sup>102</sup> A Kindergan, ‘A Stronger Sterling Doesn’t Mean Lower UK Growth’ The Financialist (Credit Suisse) 20 February 2014 <<http://www.thefinancialist.com/a-strong-sterling-doesnt-mean-a-weak-uk-economy>>. This trend could also imply that currencies should stabilize on their own in the absence of global oversight as multinationals source materials from a wider range of monetary jurisdictions

<sup>103</sup> World Trade and Development Report 2014 at v

of the economy in many developed and emerging economies.<sup>104</sup> A strong currency also allows sectors that rely more directly on consumer spending, like travel and food producers, to succeed, diversifying the economy away from manufacturing, even if manufacturers in other countries enjoy an artificial advantage. In other words, countries will be wary of devaluing their currencies because of the damage that it can inflict on their own economies, even in the absence of legal sanction.

The IMF's inconsistent policy approach (e.g. variously in favour and against capital controls) and their apparent lack of resolve with respect to continued sovereign debt relief programs (e.g. against then supportive of lending more money to the Ukraine) while potentially prudent in as much as these vacillations represent situation-specific strategies, has also justifiably left nation states sceptical about the value of following IMF advice without due regard for context. The IMF's focus on annual growth figures, especially in relation to GDP, pays insufficient regard to non-quantifiable issues of public policy which are vital to the proper functioning of societies. China, for example, has moved away from metrics such as GDP and the fixation with growth targets in effort to deal with acute social problems such as environmental degradation and urban sprawl.<sup>105</sup> This may be a case of the IMF perversely providing value to its member states by demonstrating what not to do. A better track record of success in assisting struggling economies might have made such reactions against IMF policy untenable.

For its part the World Bank may have done little to improve the economies of many of the countries in which it has sponsored infrastructure projects, but this does not mean that global developmental initiatives have suffered as a consequence. Indeed, the vacuum left by the ineffectual World Bank may have created precisely the conditions which have allowed other development-focused initiatives to flourish. Although its economic merits are unproven, microfinance lending to small businesses in the developing world has led to positive social outcomes in some countries, notably the empowerment of women.<sup>106</sup> National export credit agencies have been effective in stimulating trade to developing states, also strengthening political linkages between donor and beneficiary countries and stimulating knowledge transfer

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<sup>104</sup> E.g. N Chen and L Juvenal, 'The Prices of Higher Quality Goods Respond Less to Exchange Rate Movements' Vox EU (15 January 2015) <<http://www.voxeu.org/article/quality-goods-and-pass-through-puzzle>> (last accessed 17 March 2015)

<sup>105</sup> G Wildau, 'Shanghai Abandons GDP Target' Financial Times (London) 26 January 2015

<sup>106</sup> J Kim, C Watts et al. 'Understanding the Impact of a Microfinance-Based Intervention on Women's Empowerment and the Reduction of Intimate Partner Violence in South Africa' 97:10 American Journal of Public Health 1794 (2006)

that may have been absent from pure development bank lending.<sup>107</sup> Likewise, foreign direct investment by private firms has assisted in the development of many countries where development bank loans have not worked, also offering spill-overs like employment and as well as revenue streams from joint ownership of assets.<sup>108</sup> It is arguable that such gains would not have been realized had funding been provided on a heavily-bureaucratized World Bank-sponsored scheme. Rather than crowding-out the field of development, the World Bank's uneven policies appear to have allowed other complementary programs to flourish.

Since it appears that the World Bank and the IMF dispense sovereign loans on the basis of political allegiance rather than based on strict adherence to their rules, then nations seeking these loans will be pressured into forging greater political ties with the United States as well as other powerful Western nations that hold sway in these organizations. From a Western perspective then, the IMF and the World Bank have been instrumental in consolidating a global community unified under Washington Consensus values such as democracy and *laissez faire* capitalism. It is not the place to argue the merits or faults of this system or its alternatives here, but the fact that a second multilateral institution, the BRICS's New Development Bank, has been created should foster competition between the IMF/World Bank and regional development banks. It should lead to an overall increase in the number of projects that receive funding.<sup>109</sup> As long as there are alternative sources of sovereign loans available, possibly imposing different types of conditionality arrangements than those of the IMF/World Bank, then the decision to adhere to the Western system must not be viewed as coerced, but rather a choice based upon ranking of optimal alternatives. Again, the unsettled legal framework and disorganization of the IMF and the World Bank have allowed a healthier, competitive marketplace for loans that may be filled variously by the BRICS bank, other regional development banks and private financial institutions.

Finally, it must be recognized that regardless of their failure to achieve economic growth and irrespective of the ambiguity of many of their foundational legal principles, each of the WTO, IMF and World Bank have made a valuable contribution to global information collection and dissemination. The surveillance and advising functions of the chief institutions

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<sup>107</sup> S Griffith-Jones and AT Fuzzo de Lima, 'Alternative Loan Guarantee Mechanisms and Project Finance for Infrastructure in Developing Countries' Institute for Development Studies, University of Sussex, February 2004 at 6, <<http://www.globalclearinghouse.org/InfraDev/assets%5C10/documents/Griffith%20Jones%20-%20Alternative%20Loan%20Guarantee%20Mechanisms%20and%20Project%20Finance%20for%20Infrastructure%20%282004%29.pdf>> (last accessed 17 March 2015)

<sup>108</sup> G Blalock and P Gertler, 'Welfare Gains from Foreign Direct Investment Through Technology Transfer to Local Suppliers' 74:2 Journal of International Economics 402 (2008)

<sup>109</sup> D Pilling, 'The BRICS Bank is a Glimpse of the Future' The Financial Times (London) 30 July 2014

of global economic governance are often overlooked in light of their more high-profile and formalized rules-based governance. The accumulation and distribution of economic data on trade, FDI, GDP as well as general demographic and economic data contributes to a 'global good' of greater knowledge and transparency.<sup>110</sup> By centralizing information collection, governments, firms and citizens are able to respond to a critical collective action problem. Whether or not this information is put to productive use in terms of profit generation or economic growth is another question, but clearly the elimination of this critical transaction cost cannot be discounted, particularly in the case of small governments and SMEs. Access to information is one of the great facilitators of the global economy, allowing poorly resourced agents to participate more fully in global economic activity. Flawed though they may be, the IMF and World Bank should be celebrated for their role in divesting authority over monetary relations and development respectively from the hands of nation states, which are inescapably subject to the vagaries of a given government's current policy needs, and into the comparatively steadfast supervision of internationally-constituted goal-oriented bureaucracies.

## **6. Conclusion**

This article has proposed that the indeterminate rules and questionable long term effects associated with the main institutions of international economic governance may be explained by the framework of chaos theory. International economic law demonstrates stronger chaotic tendencies than is typical of legal orders and, while it exhibits a degree of consistency on the micro level, at the macro level it leads to inescapably unpredictable results. In other words, while it might be plausible to anticipate who wins or loses in a given dispute, or whether a certain institutional intervention will help a particular country, we can never know how international economic law will influence global economic trends.

There are unquestionably problems associated with the chaotic legal systems that underpin international trade, investment, monetary and development, notably difficulties in predicting the law's impact over time, and clearly some degree of certainty in any legal order is needed. However, where the indeterminate and partially ineffectual laws of the WTO, IIAs, IMF and World Bank have frustrated the fulfilment of these organization's stated mandates, they have succeeded in permitting geopolitical and market forces to wield their own dynamic pressures allowing firms and governments achieve other, often unexpected gains. In one sense

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<sup>110</sup> J Wouters and J Odermatt, 'Comparing the "Four Pillars" of Global Economic Governance: A Critical Analysis of the Institutional Design of the FSB, the IMF, World Bank and WTO' 17:1 *Journal of International Economic Law* 49 (2014) at 54

these results may be viewed as a contingent or serendipitous result of the lack of imposition of order by international economic law. In another, observed advantages have arisen as an affirmative consequence of the chaotic forces present in this regime. Whether by accident or design, international economic law is well-suited to the conditions of uncertainty under which governments and firms operate in the international arena. Although the chaotic nature of the laws promulgated variously by the WTO, IIAs, the IMF and the World Bank may in one sense frustrate their overt purpose of regulating the economic interrelatedness of states, the ensuing randomness allows other elements critical to the vitality of the global economy to flourish, including fortifying diplomatic relations, liberating resources to devote to human capital and spurring innovative market adaptations.

If the proposition of international economic law as a chaotic system envisioned by the physical sciences can be accepted, then chaos theory may further be thought of as a plausible unifying explanatory model by which the four chief disciplines within international economic law can be understood. At the risk of over-extending another, unrelated scientific concept, chaos may therefore come close to international economic law's 'grand unified theory' linking the discipline's sub fields of trade, investment, money and development in elegant coherence.<sup>111</sup> Somewhat less expansively, three ancillary conclusions may be drawn from this article. First, scholars of international economic law should question the assumption that near approximations of certainty and predictability are necessary conditions for the legitimacy or functionality of a legal system. The decisive absence of these features can and do foster useful flexibility and adaptability. Second, the political dimension of the global economy cannot be extricated from any study of international economic law or its effects, nor can the importance of natural endowments to economic growth be underestimated. Legal institutions should accordingly be assessed on their capacity to provide just outcomes in each circumstance rather than by reference to long term economic benchmarks. Finally and most generally, there is much to be gained by applying the analytical framework found in unconventional sources of knowledge, such as theoretical constructs of the physical sciences, when exploring social systems such as that of international economic law. It is hoped that this article may offer a glimpse into the potential for further fruitful studies of this nature.

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<sup>111</sup> The grand unified theory is taken from physics, specifically quantum mechanics. It attempts to treat as one the interactions between the three distinct non-gravitational forces that are present in the universe: the weak force (binding electrons to protons inside atoms); the strong force (holding the nuclei of atoms together); and the electromagnetic force (the attraction between particles of different electric charges seen most obviously with magnets and metal); D Halliday, R Resnick, and J Walker, *Fundamentals of Physics* (7<sup>th</sup> Edition, John Wiley & Sons, 2005) at 1236

