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Internationalization of Law: The "Complex" Case of Bank Regulation

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Abstract

International bank regulation has ramped to prominence over the past two decades, as nations and the global economy have lurched from one financial crisis to another. The current global financial crisis has brought unprecedented general attention to the subject. It is possible that we will witness fundamental changes in the way nations cooperate in the regulation of their financial institutions. Major reform efforts are underway. Yet international bank regulation has unusual characteristics and does not fit easily within the traditional framework of international law. The emerging system is also extremely fluid and complex—matching an extremely fluid and complex system of international finance. Interesting features have begun to emerge, suggesting that the time has come to recognize international banking regulation as an example of a complex adaptive system of the type that attracts the application of complexity theory. This paper outlines the features of the subject and the elements of complexity theory that seem helpful in elucidating the internationalization of international bank regulation.

I. Introduction

The Global Financial Crisis (GFC) has precipitated a slew of those "once in a lifetime" events that seem to be reshaping governance frameworks for the long term. Such is surely the situation for international banking regulation. After years of congenial quiescence, largely in the custodianship of economists, the subject has effervesced, out of one international financial crisis after another, fomenting pseudo-legal forms and exhibiting a level of complexity that would have delighted the most scholastic medieval mind. Heads of state profess involvement and powerful nations and regions, once able to impose their will on smaller nations, are learning to pay

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attention to the experience of other countries.[1] International regulatory organizations and public policy experts have been enjoying a field day diagnosing what went wrong and recommending what to do next.[2]

At the end of March 2009, during a summit of industrialized and developing countries known as the G-20, an analyst for the Financial Times wryly pondered whether the chaotic system of finance that has swept the globe over the past two decades could ever be controlled effectively, noting that numerous grand declarations of joint intent on the part of many nations have not been matched by significant concerted action.[3] The GFC has indeed brought forth a concentration of such pledges of concerted action such as is seldom seen. The G-20 summit is one such example. The European Commission (EU) has announced its own intent to restructure European bank regulation.[4] The G-8 finance ministers have also pledged themselves to a "set of common principles and standards governing the conduct of international business and finance"[5] despite deep disagreements of approach between Germany and France, on the one hand, and Britain and the United States, on the other.[6] And most recently President Obama has launched a

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[1] United States Department of the Treasury, BLUEPRINT FOR A MODERNIZED FINANCIAL REGULATORY STRUCTURE 143, 176-77 (March 2008) (recommending adoption of an objectives-based financial regulatory structure and federal financial services provider charter similar to those in the Australian system, as major components of an "optimal" financial regulatory structure for the United States).

[2] For major examples of "official" reports from government entities, see the International Monetary Fund, GLOBAL FINANCIAL STABILITY REPORT (SUMMARY VERSION) (Apr. 2009) (available at http://www.imf.org/External/Pubs/FT/GFSR/2009/01/pdf/text.pdf); Financial Services Authority (UK), THE TURNER REVIEW: A REGULATORY RESPONSE TO THE GLOBAL BANKING CRISIS (March 2009), (available at http://www.fsa.gov.uk/pubs/other/turner_review.pdf); The High-Level Group on Financial Supervision in the EU: REPORT (Feb. 25 2009) (available at http://ec.europa.eu/commission_barroso/president/pdf/statement_20090225_en.pdf).

For examples of high quality "independent" reports and recommendations, see Viral V. Acharaya & Matthew Richardson eds., RESTORING FINANCIAL STABILITY: HOW TO REPAIR A FAILED SYSTEM (2009); Committee on Capital Markets Regulation, THE GLOBAL FINANCIAL CRISIS: A PLAN FOR REGULATORY REFORM (May 2009); Robert E. Litan & Martin N. Baily, FIXING FINANCE: A ROADMAP FOR REFORM (Brookings Fixing Finance Series 2009-01 Feb. 17 2009) (available at http://www.brookings.edu/papers/2009/~/media/Files/rc/papers/2009/0217_finance_baily_litan/0217_finance_baily_litan.pdf); Markus Brunnermeier, Andrew Crockett, Charles Goodhart, Avinish D. Persaud & Hyun Shin, THE FUNDAMENTAL PRINCIPLES OF FINANCIAL REGULATION (Geneva Reports on the World Economy—Preliminary Conference Draft 11, Jan. 24 2009); Group of Thirty, FINANCIAL REFORM: A FRAMEWORK FOR FINANCIAL STABILITY (Jan. 15 2009).

[3] *See* Peter Thai Larsen, *Bank Regulation Needs Straightening Out*, Fin'l Times (Mar. 30 2009) (available at http://www.ft.com/cms/s/0/723612ce-1d42-11de-9eb3-00144feabdc0.html).

[4] *See* Press Release, Council of the European Union, 2948th Financial and Economic affairs Council Meeting (June 9, 2009) (available at http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ecofin/108392.pdf) (announcing the implementation of steps recommended by the High-Level Group on Financial Supervision). High Level Group on Financial Supervision in the EU report available at ____

[5] Lecce G8 finance ministers' communiqué, reported by Reuters June 15 2009 (available at http://www.reuters.com/article/GCA-CreditCrisis/idUSTRE55C0S920090615).

[6] *See* Nick Mathiason, G8 ministers endorse global financial regulation, Guardian Online (June 13 2009) (available at http://www.guardian.co.uk/world/2009/jun/13/lecce-framework-adopted-g8).

major set of proposals for financial regulatory reform that explicitly build on the G-20 declaration and that declare a commitment to use the United States' "leadership position in the international community to promote initiatives compatible with the [proposed] domestic regulatory reforms."[7] These proposals [the OBAMA PROPOSALS] would focus on four core issues: regulatory capital standards; oversight of global financial markets; supervision of internationally active financial firms; and crisis prevention and management.[8]

The "regime" of bank regulation has many layers of operation and application, from entry regulation to supervision to consumer and economic protection to enforcement. International bank regulation is deployed at various levels by numerous state actors, in service of a multitude of often-conflicting objectives. Regulation of some kind is justified by reference to the shortcomings of ordinary market discipline: in order to provide systemic stability where the actions of individual banks might have spillover effects; to protect depositors where consumers are unable to evaluate firm activity; to protect domestic insurance funds; to ensure orderly and equitable access to funds; and to maintain and promote public and economic confidence. All of these complicated elements and objectives have grown rapidly in importance as matters of public policy and general public awareness. Yet, despite its rise in importance and the level of attention the subject now attracts from lawyers, international banking regulation does not fit comfortably into the traditional archetypes of international law. It is a system that is structured by neither comprehensive textual frameworks nor coherent judicial decision making. There are no truly "governing" institutions, no comprehensive treaties, no international regulators. There are neither courts of general jurisdiction—and few of special jurisdiction—nor superregional enforcement jurisdictions. International banking regulation therefore provides an ideal example of law that is just "internationalizing" without any coherent central direction.

This paper will attempt to characterize the emerging pattern of international banking regulation, how some models and principles are emerging from the debris of the string of crises culminating to the GFC. The salient characteristics of this regulatory system will then be considered in order to emphasize its multi-layered and multi-stranded provenance. It will be suggested that we might better

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See also The Economist, *An EU fudge on bank reform*, Jun. 19 2009 (available at http://www.economist.com/daily/news/displaystory.cfm?story_id=13855041&fsrc=nwl) (describing the disagreements between Britain, on the one hand, and France and Germany, on the other).

[7] United States Department of the Treasury, FINANCIAL REGULATORY REFORM—A NEW FOUNDATION: REBUILDING FINANCIAL SUPERVISION AND REGULATION 8 (June 18 2009) (available at http://www.financialstability.gov/docs/regs/FinalReport_web.pdf) (hereinafter referred to as the OBAMA PROPOSALS); *see also* Timothy Geithner & Lawrence Summers, *A New Financial Foundation*, Wash. Post June 15 2009 (available at http://www.washingtonpost.com/wp-dyn/content/article/2009/06/14/AR2009061402443.html). Mr. Geithner is Treasury Secretary and Mr. Summers is Director of the National Economic Council.

[8] OBAMA PROPOSALS, *supra* note 7, at 9. For the detailed recommendations on reforms proposed at the international level, see *id.* at 80-88.

understand what is evolving by viewing international banking regulation as a truly complex "ecosystem" of the type celebrated by complexity theorists in the natural and social sciences. The paper will conclude by suggesting applications of complexity analysis to some important questions that are likely to remain relevant as the world inches toward a new stability in international finance.

II. The Dynamic Morphology of International Banking Regulation

A. Twisted Skeins of Institutional Development

The international reaction by economic leaders to the GFC over the past year provides a concentrated illustration of a process typical of the development of international banking regulation since at least 1930, when the Bank for International Settlements (BIS) was established in the wake of crisis, namely World War I.[9] The continuing path of evolution has been one that has followed different tracks of cooperation and emanated from different types of institutions.

1. Transnational Cooperation

On the one hand, meaningful international *cooperation* has been secured through *mores* developed by the "*G-Clubs*." Joint commitments and actions have repeatedly been developed and sponsored by the various, steadily enlarging economic clubs of powerful nations: the G-7, G-8, G-10 and G-20.[10]

On the other hand, important levels of concurrence have also been carved out through processes more familiar to international lawyers. Terms of trade in financial services have been *negotiated* by the creation of numerous formal global and regional treaties, commencing with Bretton Woods in 1944,[11] and illustrated, for example, by the treaty-based regimes of the General Agreement on Tariffs and Trade (GATT), World Trade Organization (WTO), European Union (EU), North American Free Trade Agreement (NAFTA) and AANZFTA (ASEAN-Australia-New Zealand Free Trade Area).

2. Transnational Organizations

These two entwining paths of consensus building have also generated various *organizations* that have become central to international banking regulation.

The first trail of organizations forming along the path of development is a group of what one might call *club lounges*. These are the products of informal action by the G-Clubs. The most prominent include the Basel Committee on Banking Supervision (Basel Committee) and the Financial Stability Board (FSB). The exact validity of

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[9] *See* Ahamed Liaquat, LORDS OF FINANCE 336 (2009) (describing the negotiations).
[10] *See infra* notes 33- 35 and accompanying text.
[11] *See infra* note 21 and accompanying text.

these institutions has been the subject of considerable debate in recent scholarly literature.[12]

The second set of institutions is more formal and familiar to lawyers. They are the formal product of the treaties already noted, as well as other institutions created by other treaties.[13] Most visible in the international banking regulation arena are the International Monetary Fund (IMF) and the International Bank for Reconstruction and Development (World Bank), both of which have assumed importance in the realm of international banking regulation in recent years.[14] Though regional in jurisdiction, a third, the European Commission (EC) has also acquired immense importance to international banking regulation in recent years.[15] Yet although these institutions are easier to analyze within the traditional frameworks of international law, their actions are heavily influenced by the consensus reached and principles developed by the informal "clubs" and their modes of conduct has many similarities—informality, consultation, moral suasion, and frequent changes.

3. Domestic Impacts

A third rack of scaffolding also plays an enormous influence on the patterns and shape of international banking regulation: domestic models and policies of bank regulation and domestic interpretations and enforcement of international requirements and standards. The principles of international banking regulation are themselves dependent for meaning on their application in more than a hundred jurisdictions, each of which differs substantially from the other in ways that defy harmonization and realistic aspirations to uniformity. Whole theories have attempted to delineate and explain the variables in this kaleidoscope of interpretation and enforcement.[16] A cynic might protest that any "system" of international banking regulation is an illusion for this reason alone.[17]

Certainly whatever "system" does exist can only be understood by considering the constant interaction of each of these streams of activity with each other. Banking regulation is internationalizing through a symbiosis of all three paths of development.[18]

B. Evolutionary Dynamics

[12] *See* discussion *infra* Part II.B.2.

[13] *See*, *e.g.*, Laurence Boulle, THE LAW OF GLOBALIZATION ch. 5 (2008) (describing the emergence and evolution of international economic organizations).

[14] *See infra* note 21 and accompanying text.

[15] "[T]he volume and scope of EU level regulation of financial services has increased dramatically in recent years." Caroline Bradley, *Consumers of Financial Services and Multi-Level Regulation in the European Union*, 31 Fordham Int'l L.J. 1212, 1213 (2008).

[16] *See infra* notes 135-39 and accompanying text.

[17] *See* discussion *infra* Part III.B.2.

[18] *See id.*

These interconnected institutions and their modalities of development have, as one might expect, taken diverse paths. Yet all of these paths have mutual influence on the others in meaningful ways that significantly shape how international banking is conducted and regulated.

1. Treaty Building

In earlier times, celebrated private bankers, such as JP Morgan, and individual central bankers "managed" the conditions for international finance directly.[19] The most important early formal initiatives toward international coordination began to emerge in the wake of World Wars. After the First World War the Bank for International Settlements (BIS) was established in 1930 by the United States, British, and French governments to act as agent in the reparations process flowing from the Treaty of Versailles under the Young Plan.[20] The International Monetary Fund (IMF) and the International Bank for Reconstruction and Development (World Bank) were created by agreements signed at the United Nations Monetary and Financial Conference (Bretton Woods) in 1944 in anticipation of the conclusion of World War II.[21]

Continuing in the more recognizable formal tradition were the establishment of other, regional treaty-based financial systems. Most familiar, of course, is the European Union (EU).[22] In late 1989 the Council of the European Communities (now EU) adopted the Second Banking Directive,[23] and began a process of enhancing transnational banking for the region by adopting the concept of mutual recognition and a "single passport" for banking by banks chartered in member nations. Yet new crises, in the form of the closing of BCCI in 1991[24] and the spectacular collapse of the

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[19] *See* Robert F. Bruner & Sean D. Carr, THE PANIC OF 1907: LESSONS LEARNED FROM THE MARKET'S PERFECT STORM (2007) (describing the role of JP Morgan as the United States' de facto central banker during the Panic of 1907 and before the Federal Reserve System had been created).

[20] *See* BIS HISTORY – OVERVIEW, http://www.bis.org/about/history.htm.

[21] *See* Boulle, *supra* note 13, 140-42 (on the World Bank), 143-44 (IMF). For a current assessment, *see* Richard N. Gardner, *The Bretton Woods-GATT System After Sixty-Five Years: A Balance Sheet of Success and Failure*, 47 Colum. J. Transnat'l L. 31 (2008).

[22] TREATY OF MAASTRICHT ON EUROPEAN UNION, Feb. 7, 1992, 1992 O.J. (C 191a0, available at http://eur-lex.europa.eu/en/treaties/dat/11992M/htm/11992M.html).

[23] SECOND BANKING COORDINATION DIRECTIVE, DEC. 15, 1989, ON THE COORDINATION OF LAWS, REGULATIONS AND ADMINISTRATIVE PROVISIONS RELATING TO THE TAKING UP AND PURSUIT OF THE BUSINESS OF CREDIT INSTITUTIONS AND AMENDING DIRECTIVE 77/780, 1989 O.J. (L. 386) 1 (Dec. 30, 1989). *See also* James Dermine, *Address at the Federal Reserve Bank of Chicago/World Bank Conference on Cross-Border Banking: Regulatory Challenges: European Banking Integration: Don't Put the Cart before the Horse*, October 6–7, 2005, available at http://www.chicagofed.org/news_and_conferences/conferences_and_events/2005_international_conference_agenda.cfm (discussing developments in European banking regulation since 1995 and predicting that home country regulation will prove insufficient for large international banks).

[24] *See* Raj Bhala, FOREIGN BANK REGULATION AFTER BCCI (1994) (extensively analyzing the impact of the collapse of this complex, multinational financial institution).

venerable Barings Bank as a result of reckless trading by a young trader in 1995,[25] led to a strengthening of the regulatory framework.[26]

The past three decades have also seen a proliferation of broader free trade agreements with important consequences for transnational banking. The most global, visible (and controversial) is the World Trade Organization (WTO),[27] which succeeded to the General Agreement on Tariffs and Trade (GATT) on January 1, 1995. Under the auspices of GATT the General Agreement on Trade in Services' Annex on Financial Services established a framework agreement of principles and practices for trade in financial services and a specific list of WTO member commitments to liberalize services.[28] Another high profile regional agreement, for example, is the North American Free Trade Agreement (NAFTA), signed by Canada, the US and Mexico in 1992.[29] And an Australian audience will of course also be well familiar with AANZFTA (ASEAN-Australia-New Zealand Free Trade Area), signed earlier this year as "an integral part of the region's response to the global financial crisis."[30]

These treaty-based structures provide a formal element to the scaffolding of international bank regulation. This edifice creates the formal impression of a statutory law framework, but it really plays a nuanced role that in its relevance fluctuates within the overall system while always being key to a full understanding of how international bank regulation works.

2. The "G-Club Network"

While institutions such as the IMF, World Bank, European Commission and WTO are familiar to traditional international lawyers and their activities are important to the regulation of international banking[31]—particularly in the case of the European Union—some of the most important practical elements of bank regulation have

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[25] *See generally* Stephen Fay, THE COLLAPSE OF BARINGS, (1997) (giving a humorous, yet in-depth description of collapse); Helga Drummond, THE DYNAMICS OF ORGANIZATIONAL COLLAPSE: THE CASE OF BARINGS BANK, (2008) (exploring the organizational and social-psychological dynamics of the Story).

[26] *See generally* Kern Alexander, Rahul Dhumale & John Eatwell, GLOBAL GOVERNANCE OF FINANCIAL SYSTEMS: THE INTERNATIONAL REGULATION OF SYSTEMIC RISK 1117-26 (Oxford 2006); Alfred Lewis & Gioia Pescetto, EU AND US BANKING IN THE 1990'S (1996) (describing the changes in the EU banking system throughout the nineties in comparison with changes in the US over the same period).

[27] *See generally* Boulle, *supra* note 13, at 145-56.

[28] *See generally* Alexander, Dhumale & Eatwell, *supra* note 26, at 100-17.

[29] http://www.nafta-sec-alena.org/. *See generally*, Alexander, Dhumale & Eatwell, *supra* note 26, at 126-31.

[30] http://www.aseansec.org/22255.htm. The agreement opens the markets of the ten participating parties to the free trade of financial services, allowing for host-state regulation subject to limitations on potentially protectionist measures, and encouraging greater transparency.

[31] For a general review of these organizations, *see* John H. Farrar, Louise Parsons & Pieter I. Joubert, *The Development of an Appropriate Regulatory Response to the Global Financial Crisis*, Bond L. Rev. (forthcoming).

been developed at the hands of institutions that lack formal status as the products of treaties among nations.[32]

Among the most important "parent" clubs are the Group of Eight (G-8)[33], Group of Ten (G-10),[34] and Group of Twenty (G-20).[35] The Bretton Woods Agreement had called in 1944 for the BIS to be disbanded, but as a result of resistance from the central bankers who now comprise the G-10 the BIS was kept alive as a useful vehicle for mutual cooperation. As the BIS itself puts it, the institution is "their [i.e. the central bankers'] institution, not an institution in the hands of governments."[36] Between the end of World War II and the 1970s, the BIS remained primarily engaged in defending the Bretton Woods system of international monetary cooperation. International bank regulation itself remained a fairly dormant concept and the regulation and supervision of banks tended to be highly informal and dominated by the gentlemen's agreements and moral suasion typical of the style of the central bankers of the times.

A major turning point was reached in 1974 when Bank Herstatt, a bank based in Cologne Germany collapsed, creating a situation in which a number of bank

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[32] *See generally* Timothy Meyer, *Soft Law as Delegat*ion, 32 Fordham Int'l L.J. 888, 2008-2009 (describing the advantages of soft law in facilitating international cooperation).

[33] The G-8 started out as the so-called "Library Group," the finance ministers of the G-5 countries (France, US, UK, Germany and Japan), which had been meeting since 1973. This group began a series of summits from 1975 (adding Italy to form the G-6) as an informal meeting of the heads of state and government for the then most advanced economies to discuss macroeconomic issues effecting global community. It became known as the G-7 in 1976 when Canada joined and then in 1998 Russia was extended full membership and the group of seven was expanded to become the G-8. *See* Peter J. Hajnal, THE G8 SYSTEM AND THE G20: EVOLUTION, ROLE AND DOCUMENTATION, 23-24 (2007). The G-8 has been criticized for its real or perceived lack of representativeness, lack of legitimacy and efficiency, and as being little more than a gentleman's club. *See generally* Charles P. Kindleberger, A FINANCIAL HISTORY OF EUROPE, (2006) (1984).

Whereas the G-10, much like the Basel Committee, exists as a forum dedicated primarily to international financial and banking issues, the G-8 has undergone significant structural expansion through the creation of numerous expert working groups and addresses a host of global macroeconomic and social issues.[33] Thus, despite gestures designed to include other nations, such as the G-8 initiative to create the G-20 (*See* Daniel Tarullo, BANKING ON BASEL: THE FUTURE OF INTERNATIONAL FINANCIAL REGULATION, (2008) at 45-84), the G-8 maintains its own direct influence upon changes in international cooperation on issues such as bank regulation.

[34] The G-10 consists of the eight central bank members of the IMF plus the central banks of Germany and Sweden, who all signed the General Agreement to Borrow in 1962, to facilitate the provision of credit via the IMF. In 1964 the addition of Switzerland, then not a member of the IMF, strengthened the group, but unlike the G-8, it maintained the title Group of Ten. *See* Horst Ungerer, A CONCISE HISTORY OF EUROPEAN MONETARY INTEGRATION: FROM EPU TO EMU 75-76, (1997).

[35] The G-20 was created at the initiative of the then G-7 in response to the economic crises of the late 1990's and growing recognition that key emerging-market countries were not adequately included in the core of global economic discussion and governance being undertaken by the other "G's". *See* http://www.g20.org/about_what_is_g20.aspx; Hajnal, *supra* note 33, at 151-157. Note that the G-20 too has borne other names, beginning as the G-22 in 1998 then at two subsequent meetings as the G-33 before finally limiting membership to a constant group of twenty states.

[36] http://www.bis.org/about/bretton_woods.htm

counterparties were not paid because of time zone differences.[37] The incident served as a dramatic reminder to central bankers of the settlement risk inherent in banking, particularly international banking, and so-called Herstatt Risk was the first major example of what we now refer to as systemic risk.[38] Later in the same year Franklin National Bank in New York collapsed, the largest bank failure ever to occur in the United States.[39] By the end of 1974 central bank governors of the G-10 were moved to create standing committee of the BIS that has come to be known as the Basel Committee on Banking Supervision (Basel Committee).[40]

The Basel Committee is a forum for cooperation on bank supervisory matters and it develops non-enforceable, supervisory standards, guidelines and recommendations, or best practices for bank regulation, which are then available for adoption by the central banks of member nations. The Basel Committee is not itself the product of "any formal supranational supervisory authority, and its conclusions do not, and were never intended to, have legal force."[41] And while legal attention has been increasing, the primary discussions and analyses of policy emanating from the Basel Committee have tended to be products of work by economists.

3. "Feedback Loops"

International bank regulation began to acquire new significance when the Basel Committee adopted a capital adequacy accord in 1988,[42] building on earlier bilateral action on the part of the United Kingdom and the United States and reacting to increasing central bank and political concerns about systemic risks flowing from such large financial failures as that of Continental Illinois (1984)[43] and Drexel Burnham Lambert (1986-90)[44] in the United States, the Savings and Loan Crisis (S&L Crisis) in the United States (1986-91),[45] and problems with Japanese banks

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[37] *See* Wojnilower, Albert M., *The Central Role of Credit Crunches in* RECENT FINANCIAL HISTORY, 277-339 (1980)

[38] *See*, *e.g*., Steven L. Schwarcz, Systemic Risk, 97 Georgetown L. J. 193 (providing an extensive review of the concept of systemic risk and its application to financial services); *see also* Alexander, Dhumale & Eatwell, *supra* note 26, at 14-33 (providing an overview of systemic risk as the rationale for international financial regulation).

[39] *See* Martin H. Wolfson, FINANCIAL CRISES: UNDERSTANDING THE POSTWAR U.S. EXPERIENCE 49-59, (1994); Wojnilower, *supra* note 37.

[40] *See generally* Alexander, Dhumale & Eatwell, *supra* note 26, at 36-55; Tarullo, *supra* note 33 (outlining the history of the Basel Capital Accords and assessing the implications of Basel II in light of the GFC). Note very much enlarged membership, of all central bankers and senior supervisors of the G-20 plus Hong Kong SAR and Singapore: http://www.bis.org/press/p090610.htm.

[41] http://www.bis.org/bcbs/history.htm.

[42] INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS (1988).

[43] *See* Martin H. Wolfson, FINANCIAL CRISES: UNDERSTANDING THE POSTWAR U.S. EXPERIENCE 94-97, (1994).

[44] *See id.* at 111-116.

[45] *See* Niall Ferguson, THE ASCENT OF MONEY: A FINANCIAL HISTORY OF THE WORLD 253-273 (Penguin Press 2008) (describing the Savings and Loan Crisis in the United States, focusing primarily

and their operations in Europe and the United States.[46] The influence of this Accord quickly became global[47] as central bankers in Europe and Japan agreed to its 8%, risk-adjusted capital adequacy requirement as a minimum for banks operating under their respective domestic jurisdictions, and the attention of domestic politicians was aroused by the spectacular collapse of and scandal relating to the global bank, BCCI, which was forcibly closed around the world in 1991.[48]

A second "revised framework" known as Basel II,[49] was subsequently developed in an attempt to refine the capital adequacy standard in a way that was designed to address the complexity of risk management in large modern banks—an effort that probably raised international banking regulation into the consciousness of domestic bankers more than any other.[50] The Basel II framework is built upon three mutually reinforcing elements or "pillars": the first addresses minimum capital requirements; the second addresses supervisory oversight; and the third addresses market discipline and public disclosure of information.[51] Most notably, under the third pillar of Basel II, large complex banking institutions would be allowed to rely more heavily on internal methods for determining risk.[52]

Domestic complexity within various key nations created an international feedback loop of its own, as the models of domestic bank regulation were adapted to the changing character of financial services, and domestic regulators that operated outside of umbrella of domestic central banks, such as the Comptroller of the Currency (OCC)[53] in the US and the Financial Services Authority (FSA)[54] in the UK, acquired their own informal representation on the Basel Committee and eventually more formal representation in a new body created by yet another club, the HALEY

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on Texas, and linking it to the Subprime Crisis of 2007). For a list of general books and articles regarding the S&L Crisis, *see* http://www.fdic.gov/bank/historical/s&l/slbib1.html.

[46] *See* Joe Peek & Eric S. Rosengren, *Collateral Damage: Effects of the Japanese Bank Crisis on Real Activity in the United States*, 90 The American Econ. Rev. 1, 30-45 (2000) (available at http://www.jstor.org/stable/117280) (describing the Japanese Bank Crisis and its effect on the US real estate market.

[47] And well beyond the original intent of being binding only within the G-10 countries: *see* Alexander, Dhumale & Eatwell, *supra* note 26, at 35-36.

[48] *See* Bhala, *supra* note 24; Tarullo *supra* note 33, at 91.

[49] http://www.bis.org/publ/bcbs118.htm.

[50] Litan & Baily, *supra* note 2 (describing the limitations of Basel II especially noting that its earlier implementation would not have averted the current crisis); *but see* Board of Governors of the Federal Reserve System, *Capital Standards for Banks: The Evolving Basel Accord*, 89 Fed. Res. Bull. 395 (2003) (describing the merits of Basel II and its benefits for US banks).

[51] *Id.* at 398 (2003).

[52] This has been referred to as either among the greatest strengths or the greatest weaknesses of Basel II. *See supra* note 42. The OBAMA PROPOSALS, *supra* note 7, envisages the modification and improvement of Basel II to address risk weighting and its pro-cyclicality problems. *Id*. at 16.

[53] The OCC, which precedes the creation of the Fed by more than 40 years, charters, regulates, and supervises all US national banks and the federal branches and agencies of foreign banks in the US. *See* http://www.occ.treas.gov/aboutocc.htm.

[54] The FSA is an independent non-governmental body given statutory powers by the Financial Services and Markets Act of 2000 that regulates all financial services in the UK. *See* http://www.fsa.gov.uk/Pages/About/Who/index.shtml.

GROUP or G-7, a meeting of the finance ministers of seven industrialized nations.[55] The new entity was called the Financial Stability Forum (FSF).[56]

The G-7 also established the Group of Twenty Finance Ministers and Central Bank Governors (G-20).[57] In April 2009 the FSF was expanded and upgraded by the G-20 and reconstituted as the Financial Stability Board (FSB).[58] Again, the FSB is the product of multinational consensus among government agencies, not an institution created by international or even bilateral treaty. So the informal components of the bank regulatory ecosphere continue to grow ever more complex.

The growing importance of international financial activity also had a feedback effect on the World Bank and IMF: these institutions jointly developed a wide-ranging program for reviewing the financial regulatory frameworks across the globe. They jointly launched a Financial Sector Assessment Program (FSAP) in 1999[59] and have jointly conducted reviews of as many as 109 domestic financial regulatory systems since then.[60] The FSAP has had the effect of creating a corpus or inventory of bank regulatory practices and standards around the globe, against which it might become possible to measure the relative progress and standing of national regulation within the context of the global community.

Most recently, meetings of the G-8 finance ministers have constituted a forum for considering concerted action among leading nations to develop a common approach to international banking regulation.[61] This move has had international repercussions.[62] This is not only because of the current financial climate, but also because although it is an informal group of nations not bound by treaty, the G-8 wields immense political capital among international institutions[63]

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[55] *See supra* note 33 for brief description.
[56] http://www.financialstabilityboard.org/about/history.htm.
[57] *See supra* note 35 for brief description.
[58] DECLARATION ON STRENGTHENING THE FINANCIAL SYSTEM – LONDON, 2 APRIL 2009; available at (http://www.g20.org/Documents/Fin_Deps_Fin_Reg_Annex_020409_-_1615_final.pdf). The term "financial" became more suitable because domestic reforms in the US, where the separations between commercial and investment banking, banking and insurance, and bank and commerce, created by the legislation in 1927 and 1933, was significantly weakened with the passage of the Gramm-Leach-Bliley Act of 1999.
[59] *See* the description and evaluation of the FSAP by the joint, Independent Evaluation Group, *Financial Sector Assessment Program: IEG Review of the Joint World Bank and IMF Initiative*, 2006 (available online at www.worldbank.org/ieg).
[60] The last holdout—the US—agreed to become a participant in the program late last year. *See The End of Exceptionalism? IMF to Examine US Financial System*, naked capitalism, June 27, 2008 (available online at www.nakedcapitalism.com/2008/06/end-of-exceptionalism-imf-to-examine-us.html); Gabor Steingart, *The Shrinking Influence of the US Federal Reserve*, Speigel Online, June 26 2008 (available online at www.soiegel.de/international/world/0,1518,druck-562291,00.html).
[61] http://www.g7finance.tesoro.it/export/sites/G8/en/2009ItalianPresidency/Meetings/June/Communiques/Documents/Comunicato_G8_Ministri_Finanziari__Lecce_13_giugno_2009.pdf.
[62] *See infra* text accompanying note 160.
[63] *See* Hajnal, *supra* note 33, at 85 (noting that members of the G-8 holds nearly one half of all votes in the IMF).

C. An Emerging Lingua Franca?

The GFC generated a multitude of public policy analyses and proposals on the part of government agencies, international bodies and prestigious commentators. One major focus has been upon the architecture of domestic and international banking regulation. Another has been on principles of regulation and supervision that seem indispensible for the attainment and maintenance of a framework for the conduct of domestic and international banking and finance that would be less risky than the one leading to the GFC.

1. Emerging Architectural Models

In the years running up to international awareness of systemic risk it seems clear that the only dominant model of regulatory architecture around the world was that of the *central bank*. True, the United States had a very different pattern, which is not surprising since the nascent development of a central bank was scotched in one of the nation's most formative moments, as far back as 1832[64] and something resembling a modern central bank only emerged through the creation of the Federal Reserve System in 1913. In the 70 to 80 years between a vast array of other regulators had emerged at both the national level (OCC) and state levels.[65] Yet more regulators were created in the wake of the Crash of 1929, which led in 1933 to the establishment of the FDIC, SEC, Home Loan Bank System, etc.[66] But the huge need for concerted international financial action had, by Bretton Woods, placed the US Fed firmly in the driver's seat as far as international bank regulation as understood in the US, if not the daily supervision of international banking activity, was concerned. Central banks in other developed nations were already in charge.

All of this began to change substantially as the importance of continuing supervision, as opposed to regulation, became evident with the 1974 collapses of Bank Herstatt and Franklin National Bank.[67] This recognition of the importance of effective ongoing supervision in turn placed questions regarding to the optimal form and structure of routine supervision of banks on the table. The past three decades have seen the evolution of different models of bank regulation and supervision that have become recognized as the main policy alternatives in any discussion of

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[64] *See* Jerry W. Markham, A FINANCIAL HISTORY OF THE UNITED STATES: VOLUME I 141-153 (M. E. Sharpe 2002) (describing the history of First and Second Banks of the United States and Andrew Jackson's war against them). On the great politics of the Jacksonian era, in which the Bank played a major role, *see* Jon Meacham, AMERICAN LION: ANDREW JACKSON IN THE WHITE HOUSE (2008).
[65] *See* Jerry W. Markham, A FINANCIAL HISTORY OF THE UNITED STATES: VOLUME II, 189-213 (2002)(giving a general history of the evolution of regulation in the United States).
[66] *Id.* at 309.
[67] *See supra* text accompanying notes 34-39.

regulatory reform. Four models are now considered to establish the patterns:[68] a "silo" model, which aligns regulators with each sub-sector within the financial services industry; a "peaks" model, which aligns regulators according to the distinct goals of regulation; a "unified" model in which regulatory responsibilities are consolidated under a single agency; and a ""hybrid" model embracing some combination of these approaches. The relative role of the central bank in each country is now recognized as a determining factor in which ultimate model a particular nation is likely to adopt. In the past two decades there has been a clear trend toward the adoption of the unified regulator model typified by the Financial Services Authority (FSA) in the United Kingdom,[69] though some commentators have blamed the creation of single supervisors divorced from central banks for some of the problems leading up to the GFC, and the FSA has been subjected to withering criticism for its own regulatory weakness and its failure to anticipate the impact of the looming crisis with respect to specific institutions.[70]

In the United States it is noteworthy that in its wide-ranging and influential *Blueprint* published last year the Treasury explicitly recommended regulatory consolidation and the adoption of an architectural model and system of regulation similar to the employed by the Australian Prudential Regulation Authority (APRA). This recommendation went nowhere as the GFC became more severe, but the Treasury *Blueprint* remains influential and its imprint can be detected, even if only in watermark, in the new, Presidential-level proposals just unveiled and submitted to Congress.[71] Events have overtaken the *Blueprint* proposals themselves, but there does seem to be agreement on the need for systemic, or macro-level regulation as well as wider and more comprehensive coverage of financial activities and the reduction in opportunities for regulatory arbitrage. While wholesale regulatory

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[68] *See* Donato Masciandaro & Marc Quintyn, *Reforming Financial Supervision and the Role of Central Banks: a Review of Global Trends, Causes and Effects* (1998-2998), IMF Policy Insight No. 30 (available at http://www.cepr.org/pubs/PolicyInsights/CEPR_Policy_Insight_030.asp).

[69] *See id.* For a detailed evaluation of the all-important single regulator model represented by the FSA in the UK, *see* Joseph J. Norton, *Global Financial Sector Reform: The Single Financial Regulator Model Based on the United Kingdom FSA Experience—A Critical Reevaluation*, 39 Int'l Law. 15 (2005).

[70] See, e.g., Christine Seib, The FSA Northern Rock report: the regulator that missed the collapse, The Times March 27 2008 (available at http://business.timesonline.co.uk/tol/business/industry_sectors/banking_and_finance/article3628701.ece?print=yes&randnum=1247841577951); Rowena Mason, *MPs blame 'impotent' FSA over Icelandic banks*, Telegraph Apr. 4 2009 (available at http://www.telegraph.co.uk/finance/newsbysector/banksandfinance/5102000/MPs-blame-impotent-FSA-over-Icelandic-banks.html).

[71] *See, e.g.,* Michael Corkery, *Obama's Regulatory Overhaul vs. the Paulsen Blueprint*, Wall St. J'nl (June 17 2009) ("Do you hear an echo in Washington? . . . it looks as if the Obama administration has largely picked up the torch"). The OBAMA PROPOSALS implicitly adopt the Australian-influenced model contained in the US Treasury's BLUEPRINT, *supra* note 1, in that they envisage separate regulatory entities for market stability or systemic regulation (the Federal Reserve System), prudential regulation (a new National Bank Supervisor), and business conduct regulation (a new Consumer Financial Product Commission).

consolidation, as recommended in the *Blueprint* is now extremely unlikely,[72] the stage has been set for an intense debate within the US and beyond concerning the proper architecture of financial regulation in the future. The replacement to the *Blueprint*, namely the OBAMA PROPOSALS,[73] has already been greeted with widespread controversy within the United States.[74]

Public policy debate is equally engaged in Europe where a parallel set of recommendations has emanated from the European Commission. The EU proposal would establish a two-level architecture for the separate focus on macro-prudential, systemic supervision, on the one hand, and domestic prudential supervision on the other.[75] Common pursuit of similar goals has been reinforced by very recent G-8 pledges[76] and an ensuing commitment by the Obama Administration to action in pursuit of this goal.[77]

2. Common Principles of Regulation and Supervision

A wide range of regulatory concepts has also emerged from the primeval soup, including one major conceptual bifurcation. Regulators perhaps universally regard systemic or "macro-prudential" risk (to use the internationally common term that has evolved from "Herstatt Risk") to be the most important area of focus for regulation across borders. The contagion that occurred or threatened to occur as financial institutions defaulted, or threatened default with the collapse of large entities such as Northern Rock, Lehman Brothers, Bear Sterns and, most notably, the American International Group (AIG), and even whole countries such as Iceland,[78] exposed the interconnected vulnerability of the international financial system and, in turn, many domestic economies. Regulators in Europe, the US and elsewhere are looking to frame their architectural reforms around a distinction between macro- and micro-prudential risk regulation and supervision, to the extent of even proposing separate institutional regulatory structures, or strengthening the power

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[72] OBAMA PROPOSALS, *supra* note 7, refrain from recommending more than the consolidation of the Office of Thrift Supervision (OTS) and the Office of the Comptroller of the Currency (OCC) into a new, National Bank Supervisor. *See id.* at 32. And new entities would also be created, including a major new agency, the Consumer Financial Protection Agency (*see id.*), a new Financial Services Oversight Council (see *id.* at 20-21) and a coordinating Office of National Insurance (*see id.* at 39).
[73] OBAMA PROPOSALS, *supra* note 7.
[74] For example, Sen. Charles Schumer, a powerful Senator in banking affairs, has severely criticized the OBAMA PROPOSALS for failing to consoidate the SEC and CFTC. *See* Silla Brush, *Financial Overhaul Plan Draws Many Critics*, The Hill June 17 2009 (available at http://thehill.com/leading-the-news/wall-street-plan-draws-many-critics-2009-06-17.html).
[75] *See* European Council, *Press Release 10737/09*, 8-18 (Provisional Version June 9 2009).
[76] *See supra* text accompanying notes 4-5.
[77] *See supra* text accompanying note 7.
[78] For an entertaining account, *see* Michael Lewis, *Frozen Assets: Wall Street on the Tundra*, Vanity Fair __ (Apr. 2009) (available at http://www.vanityfair.com/politics/features/2009/04/iceland200904?). The Financial Times carries an *In Depth* review of the various unfolding dimensions of the Icelandic crisis at www.ft.com/iceland. For a more formal assessment, *see* THE TURNER REVIEW: A REGULATORY RESPONSE TO THE GLOBAL BANKING CRISIS, *supra* note 2, at 38 (2009).

of central banks to regulate the former while placing micro-prudential supervision in the hands of unified regulators.[79] The architectural schemes are complex, but the language of reform rests on principles that are much more commonly understood now than they were forty years ago.

A number of other important regulatory concepts, ranging from home v. host state regulation to banking "passports" (and back again![80]) to a common need to provide adequate depositor protection and the associated risks of moral hazard,[81] have now also gained currency even where the solutions among nations have been very different. This is the result of transnational interactions that have taken place within and outside of the formal practices of international law and in the diverse forums already described above.

What all of this activity indicates is that the public policy issues relating to international banking regulation have been joined on a near-global scale. Structure and principles important to regulating international finance are commonly understood, albeit highly contested. The stage appears to be set for the formation of a systematic discipline of international banking regulation to match the enormous significance of modern international finance.

III. An "Ecosystem" of International Finance and Banking Regulation

So far in this review we have seen that the "system" of international banking regulation is one that has "grown" or "emerged" with no central direction and as a result of a multitude of forces, formal and informal, and in response to a series of crises rather than through the realization of coherent planning. As with many areas of law,[82] international banking regulation has largely formed around the already-established economic reality of "globalization."[83] This reality has provided the

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[79] The OBAMA PROPOSALS, *supra* note 7, would impose macro-prudential supervision over so-called Tier I financial holding companies that pose risks to the financial system. This supervision would be vested in the hands of the Fed, subject to consultation with a new Financial Services Oversight Council chaired by the Secretary of the Treasury and consisting of the heads of the major federal financial regulatory agencies. *Id.* at 21-27.

The EU would create a European Systemic Risk Board to work with a new European System of Financial Supervisors toward similar objectives. *See* European Council, *supra* note 75.

[80] *See infra* text accompanying notes 143-44.

[81] *See* Thomas F. Hellman, Kevin C. Murdock & Joseph E. Stiglitz, *Liberalization, Moral Hazard in Banking, and Prudential Regulation: Are Capital Requirements Enough? in* The American Econ. Rev. 147 (2000); *see also* William Buiter, *Self-Regulation Means No Regulation*, Financial Times, 10 April 2008. (available at http://blogs.ft.com/maverecon/2008/04/self-regulation-means-no-regulation/) (explaining the implicit moral hazard in self regulation and the need for prudential regulation).

[82] *See generally*, Werner F. Ebke, *Global Economy—Global Law*, in J. B. Attanasio & J.J. Norton, MULTILATERALISM V UNILATERALISM: POLICY CHOICES IN A GLOBAL SOCIETY 83 (2004) (describing the dimensions of the impact of "globalization" on the emergence of "global law" in various areas).

[83] According to the International Monetary Fund (IMF) financial globalization, measured by gross external assets and liabilities as a share of gross domestic product, has tripled since 1970. International Monetary Fund, *Reaping the Benefits of Internationalization* 8 (Research Paper, June

motivation for examining the premises and risks upon which this reality rests. We have been sharply reminded that financial interconnectedness, vital as it is to the modern world,[84] also carries enormous risks.[85] Arcane issues of international economic policy and financial regulation have been thrust into the public spotlight.[86]

Yet a paradox of our so-called "flat world"[87] is that although international finance flows rapidly and almost freely the *regulation* of this activity is often murky, informal and difficult to classify within the traditional categories of international law. The net effect is that we have architectures and processes of regulation that do not emanate from "authoritative" sources and are not enforced by orthodox means.

Perhaps even more perplexing for lawyers is that this system has emerged and continues to evolve almost entirely free from the beacons of judicial decision and interpretation: the "law," such as it is, of international banking regulation is not to be found in codes, statutes or case law. There are no authoritative rulings to which aggrieved denizens of the system might have recourse to vindicate their claims. Rather, this "law" is dependent on shifting principles of prudence, policy and local centers of power, such as the opinion and disposition of specific regulators or central banks.

To the extent that this normative edifice does not fit the orthodoxy of legal analysis, it generates controversies concerning its legitimacy and possesses a shadowy, even chaotic complexion. Many diagnoses of the causes of the GFC identify domestic and international "regulatory arbitrage" as one of the contributors.[88] Yet it seems that

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2007) (available at http://www.imf.org/external/np/res/docs/2007/0607.htm). Even low- and middle-income nations have experienced substantially increasing financial interconnectedness during this time. For a description of the methodology for measuring "financial globalization," *see id* at 6. A countervailing though likely temporary trend, flowing from the current financial collapse, is a substantial degree of "de-globalization" entailing what has been described as a "collapse" of financial cross-border flows driven by an increasing "home bias" of portfolios. *See* Christian Broda, Peiro Ghezzi & Eduardo Levy-Yeyati, *The New Global Balance: Financial "De-Globalisation," Savings Drain and the US Dollar*, Vox May 22 2009 (available online at http://www.voxeu.org/index.php?q=node/3596).

[84] International Monetary Fund, *Reaping the Benefits*, *supra* note 83, at 8-9.

[85] For a discussion of the mechanics of the spread of financial stress and its disproportionate impact on less developed economies within the context of the GFC, *see, e.g.*, Ravi Balakrishnan et al., *How financial stress spreads – A first comprehensive look at the current crisis*, Vox Apr. 27 2009 (http://www.voxeu.org/index.php?q=node/3500); *see also* IMF Staff, *Globalization: A Brief Overview* Issues Brief 08/02 (May 2008) (available at http://www.imf.org/external/np/exr/ib/2008/053008.htm).

[86] For a detailed review of the globalization phenomenon and its implication for legal analysis, *see*, *e.g.*, Boulle, *supra* note 13, at 1-43.

[87] Thomas L. Friedman, THE WORLD IS FLAT: A BRIEF HISTORY OF THE TWENTY-FIRST CENTURY (2007).

[88] Regulatory arbitrage refers to the "haven seeking" behavior of international financial institutions that seek to take advantage of more lenient jurisdictions and gaps or disconnects between regulatory systems in order to avoid some or all regulation and engage in activities that would otherwise be prohibited in a host jurisdiction. For a discussion of regulatory arbitrage as it applies to capital standards, *see* David Jones, *Emerging Problems with the Basel Capital Accord: Regulatory Capital*

we are short of a jurisprudence of international banking regulation at the very moment we also need it most.

It seems beneficial to draw on some of the insights of complexity theory for understanding the nature of the "ecosphere" within which international bank regulation is evolving.[89] This paper suggests that we can gain understanding by viewing international bank regulation through the interdisciplinary lenses of complexity theory, which would consider that this regulatory regime develops and functions as a complex web, a web that is constantly adapting within, and itself shaping, the amorphous financial "ecosphere" it purports to regulate, and that attempts to analyze the corpus of international banking regulation are themselves (often unwittingly) illustrating principles of complexity theory in a way that demonstrates why the theory is useful.

International banking and its normative framework appear to possess many of the elements considered by complexity theorists to characterize complex adaptive systems, namely nonlinearity, path dependency, "power laws," susceptibility to chaotic events, fractal dimensions, network architecture and emergence.[90]

A. Elements of Complexity Theory Relevant to an Understanding of International Bank Regulation

Although developed from the "hard" or natural sciences, complexity theory contains a host of concepts seemingly relevant to an understanding of international banking regulation (or any other legal regime for that matter).[91]

Arbitrage and Related Issues, 24 J. Banking & Fin. 35 (2000). Regulatory arbitrage was identified as an important contributing factor to the current crisis. *See, e.g.,* OBAMA REPORT, *supra* note 7, at 49.

[89] Although a young discipline, complexity theory has already developed a vast literature. For a very accessible, general introduction, *see* Melanie Mitchell, COMPLEXITY: A GUIDED TOUR (2009). For an application of the related science of systems theory to the realm of regulatory politics, *see* Colin Scott, *Regulation in the Age of Governance: The Rise of the Post-Regulatory State*, *in* Jacint Jordana & David Levi-Faur (eds.) THE POLITICS OF REGULATION, at 150-54 (2004) (outlining the legal theory of autopiesis, or self-producing systems of legal norms).

[90] This complexity resides at both the macro- and micro-levels, perhaps as illustration of the fractal qualities of the international banking ecosphere itself. On the fractal dimension of complexity theory, *see*, *e.g.*, Mitchell, *supra* note 89, at 103-06. For a discussion of complexity at the microlevel in financial services, *see, e.g.*, Steven L. Schwarcz, *Regulating Complexity in Financial Markets*, forthcoming 87 Wash. U. L. Rev., Issue 2 (2009-10).

[91] For a few of many examples of the application of complexity theory to legal issues, *see* Schwarcz, *supra* note 90; Jamie Murray, Complexity Theory & Socio-Legal Studies, 29 Liverpool Law Rev. 227 (2008) available online at: http://www.springerlink.com/content/r788668882p17415/fulltext.pdf); Charles K. Whitehead, *What's Your Sign?—International Norms, Signals, and Compliance*, 27 Mich. J. Int'l L 695 (2006); Donald T. Hornstein, *Complexity Theory, Adaptation, and Administrative Law*, 54 Duke L. J. 913 (2005); J.B Ruhl, *Regulation by Adaptive Management: Is It Possible?*, 7 Minn. J. L. Sci. & Tech. 21 (2005);Daniel A. Farber, *Probabilities Behaving Badly: Complexity theory and Environmental Uncertainty*, 37 U. Cal. Davis L. Rev. 145 (2003); J.B. Ruhl & James Salzman, *Mozart and the Red Queen: The Problem of Regulatory Accretion and the Administrative State*, 91 Geo. L.J. 757 (2003); J.B. Ruhl, *Complexity Theory as a Paradigm for the Dynamical Law-and-Society System: A Wake –Up Call for Legal Reductionism and the Modern Administrative State* 45 Duke L.J. 849 (1996) ; J. B. Ruhl, *Is*

1. Complexity

"Complex systems" have been defined in many ways. Michelle Mitchell offers this working definition:

> [A complex system is] a system in which large networks of components with no central control and simple rules of operation give rise to complex behavior, sophisticated information processing, and adaptation via learning or evolution.[92]

Complexity theorists point to economic markets as ones that possess such characteristics. Adam Smith's "unseen hand" mysteriously generating market efficiency is often cited as an example of the quality of "emergence" that one finds in truly complex systems.[93] Legal orders—perhaps most visibly the common law—also seem to illustrate the qualities of true complexity.

2. Nonlinearity

Linear systems can be understood by the sum of their parts, but "[a] nonlinear system is one in which the whole is different from the sum of its parts."[94] The chain reactions that proliferate in multiple directions to produce a compounding results, such as the system-wide freeze of credit markets in the wake of reactions to the failure of one key financial institution—for example Herstatt Bank or Lehman Brothers—provide the kind of nonlinear dynamic that illustrates why financial systems cannot be fully understood in linear terms.[95]

3. Path dependency

Path dependency is sometimes described as sensitivity to initial conditions.[96] In other words, small changes in input can have very large impact on output.[97] This

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Complexity Theory More than a Metaphor for Law, Jurisdynamics July 27,2006 (available at http://jurisdynamics.blogspot.com/2006/07/is-complexity-theory-more-than.html). For an extensive compilation of legal scholarship applying complexity theory, *see* J.B. Ruhl, *Complexity Theory in Legal Scholarship*, Jurisdynamics July 27,2006) (available at http://jurisdynamics.blogspot.com/2006/07/complexity-theory-in-legal-scholarship.html); and the citations in the recent article by Gregory Todd Jones, *Dynamical Jurisprudence: Law as a Complex System*, 24 Geo. St. U. L. Rev. 873 (2008).

[92] Mitchell, *supra* note 89, at 13. On "emergence," *see infra* text accompanying notes 116-21.

[93] *See* Mitchell, *supra* note 89, at 10.

[94] *Id.* at 23; *see also* Robert Axelrod & Michael D. Cohen, HARNESSING COMPLEXITY 14 (1999).

[95] On Bank Herstatt, *see supra* text accompanying notes 37-38. On Lehman, *see infra* text accompanying note 108.

[96] *See*, *e.g.*, Mark J. Roe, *Chaos and Evolution in Law and Economics*, 109 Harv. L. Rev. 641 (1996); Hornstein, *supra* note 91, at 913; J.B. Ruhl, *Complexity Theory as a Paradigm for the Dynamical Law-*

also makes it important to understand the path from which change emanates in order to understand otherwise seemingly irrational choices that emerge from policy decisions.[98] For example, Law and Economics theorists have argued that as in a Darwinian paradigm of survival of the fittest, we can assume that only the most efficient laws would survive over time. A complexity theorist, on the other hand, would argue that, instead of efficiency, legal forms of the present might reflect a culture's unique political and cultural institutions, chaotic chance events, or the fact that sunk costs make inefficient forms regrettable but not worth changing.[99]

4. "Power laws," fractals and the "edges of chaos"

Power laws and fractals have to be understood together. A fractal is generally defined as a "geometric shape that has 'fine structure at every scale,'"[100] meaning that there is a self-similarity in the fractal at both the higher (macro) and lower (micro) levels.[101] The complexity of a system is measured by its degree of "hierarchy," meaning that complex systems are composed of subsystems that in turn have their own subsystems.[102] This becomes very important in large scale systems because of the potential applicability of "metabolic scaling" theory,[103] the gist of which would imply, in the social arena of a legal system, that "abnormal," catastrophic events, "fat tails or "black swans,"[104] are the product of the fractal quality of social or economic organization, in which "power laws" are generated.[105] The "chaos" they create becomes understandable as one begins to appreciate the complex nature and architecture of such systems.[106]

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and-Society System: A Wake-Up Call for Legal Reductionism and the Modern Administrative State, 45 Duke L.J. 849, 916-26 (1996).

[97] *See* Hornstein, *supra* note 91, at 926 (2005).

[98] *Id.*

[99] *Id.* at 927. Strictly speaking, one should differentiate between *path* dependence (the path of prior outcomes is important), *state* dependence (a finite number of distinct, previous states can be isolated in relation to outcomes) and what Scott Page terms *phat* dependence (path events matter, but not the order of the vents): *see* Scott E. Page, *Path Dependence*, 1 Q. Jnl Pol. Sci. 87 (2006) for a much fuller elaboration of path dependence as a core complexity concept.

[100] Mitchell, *supra* note 89, at 103.

[101] It is tempting to suggest that the dual-layer structure being proposed for both transnational systemic risk supervision and systemic risk supervision at the domestic level (*see supra*, text accompanying notes 72-75) is an illustration of the fractal quality of regulatory structures emerging in international banking regulation.

[102] Mitchell, *supra* note 89, at 109 (quoting Herbert Simon, THE ARCHITECTURE OF COMPLEXITY (1962)).

[103] *Id.* at 264.

[104] Nassim Nicholas Taleb, THE BLACK SWAN: THE IMPACT OF THE HIGHLY IMPROBABLE (2007).

[105] *See*, *e.g.,* Michele Zanini, *Power Curves:" What Natural and Economic Disasters Have in Common*, McKinsey & Co. Online Journal (June 2009) (available at http://www.mckinseyquarterly.com/Power_curves_What_natural_and_economic_disasters_have_in_common_2376).

[106] *See* Mitchell, *supra* note 89, at 264-72.

It seems that legal systems of such complexity and interconnectedness as the one in which global banking exists are always on the "poised edge of chaos."[107] The recent collapse of Lehman Brothers provides a dramatic example. After being criticized for facilitating the acquisition by JP Morgan Chase of Bear Sterns in April 2009, instead of allowing Bear Sterns to fail, the US Fed and Treasury in October did permit Lehman Brothers to fail. This stunned the markets, causing financial institutions around the world to freeze credit, which in turn precipitated the GFC. The global reaction to the Lehman failure is a perfect example of a moment when power laws kicked in and plunged the global economy into the abyss of "chaos."[108] Stuart Kauffman's observations from a field of natural science seem equally apposite to this experience:

> In such a poised world, we must give up the pretense of long-term prediction. We cannot know the true consequences of our own best actions. All we players can do is be locally wise, not globally wise.[109]

5. Network architecture

Network science has rapidly matured since the emergence of the World Wide Web made the network phenomenon rather tangible to all of us.[110] Networks can be described at their simplest level as "a collection of *nodes* connected by *links*."[111] Network science looks not merely at the participants but at the *relationships* between participants in a network.[112] The science helps explain the dissemination of information across social architectures, the weaknesses of apparently large, robust networks such as power grids or, dare one say, credit default swap markets.[113] The whole notion of "systemic risk" depends on network thinking—the interconnectedness of economies, markets and market participants—for its meaning.[114] As we will see below, network thinking has become central to the understanding of international bank regulation.[115]

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[107] Stuart Kauffman, AT HOME IN THE UNIVERSE: THE SEARCH FOR THE LAWS OF SELF-ORGANIZATION AND COMPLEXITY, 28 (1995). Though only 15 years old, Kauffman's book has become a classic in the field of complexity theory and is an elegant introduction to our complex world of "dancing landscapes."

[108] For a description of the events, *see, e.g*., Gillian Tett, FOOL'S GOLD: HOW AN INGENIOUS TRIBE OF BANKERS REWROTE THE RULES OF FINANCE, MADE A FORTUNE AND SURVIVED A CATASTROPHE, (2009). The collapse of Northern Rock in the United Kingdom provides a similar example of a plunge into the abyss of liquidity chaos. *See, e.g.,* GLOBAL FINANCIAL STABILITY REPORT, *supra* note 2, at 4; TURNER REPORT, *supra* note 2, at 27.

[109] Kauffman, *supra* note 107, at 29.

[110] *See*, *e.g*., Albert-László Barabási, LINKED: THE NEW SCIENCE OF NETWORKS (2002); Mitchell, *supra* note 89, at Ch. 15 ("The Science of Networks").

[111] *See* Mitchell, *supra* note 89, at 234.

[112] *Id.* at 233.

[113] For an analysis of the "networked economy," *see* Barabási, *supra* note 110, ch. 14 ("The Fourteenth Link").

[114] *See* Schwarcz, *supra* note 90, at Parts II.C and III.

[115] *See* discussion *infra* Part III.B.2.

6. Emergence

George Henry Lewes classically defined emergence, an ancient notion, as follows:

> Every resultant is either a sum or a difference of the co-operant forces; their sum, when their directions are the same -- their difference, when their directions are contrary. Further, every resultant is clearly traceable in its components, because these are homogeneous and commensurable. It is otherwise with emergents, when, instead of adding measurable motion to measurable motion, or things of one kind to other individuals of their kind, there is a co-operation of things of unlike kinds. The emergent is unlike its components insofar as these are incommensurable, and it cannot be reduced to their sum or their difference.[116]

As it is often put, the "wetness" of water is an illustration of an emergent phenomenon that cannot be traced in a linear manner to the properties of its constituent molecules. So too with human consciousness.

The concept of emergence is notoriously controversial and has been criticized as offering "only smoke and mirrors, functioning merely to provide names for what we can't explain."[117] Yet emergence has become a central element of complexity theory and the idea, even when not so termed, has played a fundamental role in jurisprudence, from natural law to common law and the *jus commune* and *lex mercatoria*. Echoing Karl Von Savigny,[118] Friedrich Hayek recognized that legal orders should be recognized as the mixed product of a grown or "spontaneous" order (*nomos*) or the product of organizational design (*taxis*),[119] even in an age of legislation,[120] and private law regimes are vulnerable to similar attacks to their validity.[121] As will be proposed later in this paper, the regime of international bank regulation displays strong emergent properties.

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[116] Lewes, G. H., PROBLEMS OF LIFE AND MIND 359 (1891). The germinal modern classic on emergence is by (subsequent) Nobel Prize winning author, Phillip Anderson: *see* P. W. Anderson, *More is Different: Broken Symmetry and the Nature of the Hierarchical Structure of Science*, 177 Science No. 4047, 393 (1972) (describing the "broken symmetry" that emergence represents as a phenomenon).

[117] Mitchell, *supra* note 89, at 294 (quoting Deborah Gordon).

[118] *See* Friedrich Karl von Savigny, THE VOCATION OF OUR AGE FOR LEGISLATION AND JURISPRUDENCE 24-32 (2002)(describing law as an expression of the common consciousness or "Volksgeist" of the people governed by it). Stuart Kauffman provides the example of "British common law" to illustrate the application of "dancing landscapes" in the process of change and adaptation within a complex system. Kauffman, *supra* note 107, at 169.

[119] *See* F. A. Hayek, LAW, LEGISLATION & LIBERTY: VOL. I RULES AND ORDER 35-54 (1973) (discussing "grown" as opposed to "made" orders). Hayek's discussion reads like a textbook analysis of the complexity notion of *emergence* in modern law.

[120] *See generally* Guido Calabreisi, A COMMON LAW FOR AND AGE OF STATUTES (1977).

[121] *See, e.g.,* Nils Jansen & Ralf Michaels, *Private Law and the State: Comparative Perceptions and Historical Observations*, in Nils Jansen & Ralf Michaels (eds), BEYOND THE STATE: RETHINKING PRIVATE LAW 15 at 63-64 (2008); *see also* Jack Goldsmith & Daryl Levinson, *Law for States: International Law, Constitutional Law, Public Law*, 122 Harv. L. Rev. 1792 (2009) (demonstrating that

B. The International Banking "Ecosystem"

1. A Complex Adaptive System

There are many more examples of informal and formal international coordination in the realm of financial services, and "internationalization" has formed the focus for a prodigious quantity of research and policy debate across the whole field of financial services. From this outline alone one can see a host of government and quasi-government institutions that have emerged in response to the globalization of finance. This ecosystem displays characteristics of complexity,[122] emergence,[123] path dependency[124] and non-linearity.[125] It seems reasonable to suggest that a complex adaptive system has emerged, consisting of institutions, processes, practices, common terminology and even strong domestic awareness of and reaction to foreign policies and practices.

As described above, policy debates in many countries, including the US where little attention is traditionally paid—at least consciously, to foreign ideas—have become informed by concepts that have meaning across formal borders, and this development suggests a kind of emergence phenomenon in the idea of international bank regulation. Efforts to adopt and enforce accords have engaged domestic participants at the policy, regulatory and business levels. The financial systems and their regulatory structures of most nations are now subject to regularized scrutiny and report. Private "standards" organizations[126] are emerging alongside formal governmental ones.[127] Perhaps most intriguingly, the US is finding that it now has in common with many other nations a role as large equity holder in numerous financial institutions,[128] and even though any role in management is vigorously

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the question of whether the state is the *subject* of law, as opposed to the *source* of law, is common to both international and constitutional law yet we accept the validity of constitutional law while remaining skeptical of international law).

[122] *See* discussion *supra* Part III.A.1.

[123] *See* discussion *supra* Part III.A.6.

[124] *See* discussion *supra* Part III.A.3.

[125] *See* discussion *supra* Part III.A.2.

[126] For example the eStandards organization collects and disseminates publicly-available information on countries' compliance with international best practices for managing economies and financial systems. http://www.estandardsforum.org/jhtml/home/. For an extensive analysis of the phenomenon, objectives and legitimacy or private standards organizations, *see* Steven L. Schwarcz, *Private Ordering*, 97 Nw. U. L. Rev. 320 (2003).

[127] *See* the discussion of the FSAP conducted jointly by the IMF and World Bank, discussed *supra* at notes 59 and 60. *Cf.* Layna Mosley, *An End to Global Standards and Codes?*, 15 Global Governance 9, 13 (2009) ("One possibility for the postcrisis regulatory environment, then, is a renewed emphasis on standards, but with an attention to regulatory issues in mature markets"). *Contra* David Andrew Singer, *The Subprime Accountability Deficit and the Obstacles to international Standards Setting*, 15 Global Governance 23 (2009) (pinning hopes for international standards on the ability to consolidate regulators in the US—which is highly unlikely).

[128] *See, e.g.,* Lissa L. Broome, *Government Investment in Banks: Creeping Nationalization or Prudent Temporary Aid?*, unpublished manuscript on file with the author (describing the extensive debt and

disavowed at the official level, it seems inevitable that the US will join other nations in having to deal with how this "ownership" role is exercised over time. Taken as a whole, this complex flow of activity is starting to have practical consequences for how domestic financial institutions are structured and operate.

Path dependency is also evident, particularly in the architectural realm where seemingly logical reforms, such as the consolidation of financial regulators in the US where there are over 150 separate regulators,[129] are unlikely to occur.[130] The arguments for consolidation are powerful and conform to a clear international trend. They have even been supported in principle by the major US regulators. Yet it is unlikely that so "rational" a result will emerge.[131] As one commentator has suggested, the regulatory structure in the US can only be explained by the path dependency of institutional origins.[132]

Another element of complex systems, namely non-linearity, can lead to unexpected turns in regulatory regime: unexpected changes have occurred in the US during so-called "republican moments" in which the passions of voters and policymakers are aligned momentarily as a result of major technological, financial or security upheaval, creating sufficient momentum to break the glacial path.[133] There have been such examples in US financial regulation, one being the formalization of enforcement powers in the wake of the S & L Crisis and another being the repeal of

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equity investment in US banks under the "Bailout" of 2008-09, and considering the implications of major government investment in bank stocks).

[129] *See* Elizabeth Brown, *E Pluribus Unum—Out of Many, One: Why the United States Needs a Single Financial Services Agency*, 14 U. Miami Bus. L. Rev. 1, 28-39 (arguing that the US regulatory system is too costly and is unable to plan for future crises, and that this could be remedied by consolidating the 115 federal agencies into a single financial services regulator); Elizabeth F. Brown, *The Tyranny of the Multitude is a Multiplied Tyranny: Is the United States Financial Regulatory Structure Undermining U.S. Competitiveness?*, 2 Brook. J. Corp. Fin. & Com. L. 369, 371 (2008).

[130] Despite detailed study, analysis and recommendations by major government agencies, and rumors for months of a major structural reform proposal promised by the US Treasury, very little significant structural reform is even going to be proposed to Congress, let alone actually enacted. The OBAMA PROPOSALS, *supra* note 7, would actually *increase* the number of regulatory bodies. *See supra* note 70. For a detailed review of the complex structure of US financial regulation, including a vivid chart, and the convoluted process of US financial regulatory reform initiatives, *see* Brown, *supra* note 129, at 10-27

[131] Progressive US Treasury reform proposals were scaled back due to opposition to the proposals for reform of derivatives regulation, etc., *see* David Cho et al., *Goals Shift for Reform of Financial Regulation*, Wash. Post, June 10, 2009 (available at http://www.washingtonpost.com/wp-dyn/content/article/2009/06/09/AR2009060903604.html); *see also*, in relation to the OBAMA PROPOSALS, Simon Johnson, *The Defanging of Obama's Regulation Plan*, N.Y. Times June 18, 2009 (available at http://economix.blogs.nytimes.com/2009/06/18/the-defanging-of-obamas-regulation-plan/?hp) (describing how effective lobbying by financial institutions may be taking any lasting effect out of the proposal).

[132] *See*, *e.g.*, Eric J. Gouvin, *Banking in North America: The Triumph of Public Choice Over Public Policy*, 32 Cornell Int'l L.J. 1, 16 (1998) (describing why the OCC and Fed split regulatory responsibility).

[133] *See, e.g.,* Hornstein, *supra* note 91, at 932-33 (2005).

the iconic Glass-Steagall legislation[134] that had maintained a strict separation between commerce and banking, and between commercial and investment banking for over 65 years.[135]

2. Networks, Norms and Processes

From the point of view of lawyers used to some coherence in the systems they study and practice within, this evolving, sometimes even ephemeral, and multi-layered complex of bank regulation has long been perplexing. As recently as 1992 Professor Michael Malloy was able to employ a very plausible, "bumper cars" analogy to describe the chaotic state of development in agreed-upon standards among and between various states.[136] Professor Malloy's attempt to derive a theory from the apparent chaos looked to the behavior of states in reaching bilateral and multilateral treaties, or reacting to the treaty making conduct of other states, and he was able to demonstrate that international banking regulation seemed to comprise a series of reactions rather than any meaningful coherence as a body of law.[137]

An important advance came under the influence of network theory and a diversion of focus away from the *unitary* concept of state identity and toward the activities of discreet *components* within state governments. Building upon regime theory in the field of international relations, Anne-Marie Slaughter and others delineated the concept of transnational or transgovernmental networks (TRNs).[138] Through this

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[134] Although steadily eroding as a result of regulatory actions and judicial decisions, Congress had reached a stalemate regarding formal repeal of the Glass-Steagall Act. In 1998 Citigrup and Travelers stunned the world by announcing a megamerger that would have violated provisions of the Act forbidding the combination of the two businesses. This audacious *fait accompli*, which met with little resistance by the Fed, precipitated action by Congress and President Clinton leading to the enactment of the Gramm-Leach-Bliley Act of 1999, which repealed most of the provisions of Glass-Steagall. The Washington Post describes the event as follows: "When Citicorp and Travelers Group agreed on a historic merger in 1998, the heads of the two companies placed a courtesy call to inform the Treasury Department. Then they held a news conference to suggest that Congress change the law to allow their union. Congress soon complied." *See* Binyamin Appelbaum, *Citi's Long History of Overreach, Then Rescue* Wash. Post Mar. 11 2009, D01 (available at http://www.washingtonpost.com/wp-dyn/content/article/2009/03/10/AR2009031003391_pf.html). For a review of the ensuing disastrous merger, which had ultimately to be unraveled, *see, e.g.*, Eric Dash, *A Stormy Decade for Citi Since Travelers Merger* N.Y. Times Apr. 3 2008 (available at http://www.nytimes.com/2008/04/03/business/03citi.html?_r=1&pagewanted=all).

[135] A repeal which is itself suggested to have led to unexpected, nonlinear consequences. [See Obama Proposal on Clinton era repeal.] *See also* the OBAMA PROPOSALS, *supra* note 7, Part I.D.3 at 12 (2009) (calling for renewed separation of commerce and banking).

[136] Michael P. Malloy, *Bumper Cars: Themes of Convergence in International Regulation*, 60 Ford. L. Rev. 23 (1992).

[137] For a much more recent and detailed attempt to develop a theory on the relationship between law and politics in international financial regulation, *see* Stavros Gadinis, *The Politics of Competition in International Financial Regulation*, 49 Harv. Int'l L.J. 447 (2008).

[138] Anne-Marie Slaughter, A NEW WORLD ORDER (2004)*; see also* Kal Raustiala, *The Architecture of International Cooperation: Transgovernmental Networks and the Future of International Law*, 43 Va. J. Int'l L. 1 (2002); David Zaring, *International Law by Other Means: The Twilight Existence of*

lens one could view government participants in the international arena as *disaggregated elements* of the state, which interact in various forms, horizontal and vertical, and which accurately characterize what has been occurring, for example, in the realm of international bank regulation. The illustration of the Basel Committee and the influence of its capital accords provided a primary example.

For Slaughter and many others, this thinking illustrates a "new world order" by which is resolved the "globalization paradox," namely that "[w]e need more government on a global or regional scale, but we don't want the centralization of decision-making power and coercive authority so far from the people actually to be governed."[139] As Slaughter's predecessors in the discipline of international relations had observed,[140] the concept of "regulation by networks" had been emerging in Europe, where a commitment to economic integration had forced transnational and non-unilateral regulation to be taken seriously. Once one recognizes this evolution, TRNs of varying formality, status and effectiveness are to be found everywhere, particularly in the world of international finance.

A second advance in legal theorizing about international bank regulation has come from the perspective of administrative law, which shifted the focus from formal treaty negotiation and ratification and toward the agency *processes* that actually generate results. The processes by which transnational agreements have been reached has been characterized as an emerging form of "global administrative law," complete with such administrative law attributes as consultation, publicity of draft proposals for advance comment (notice and comment procedures) and ultimate promulgation and enforcement by administrative agencies in domestic contexts.[141]

Turning from process to *substance*, a literature that explains why states frequently favor informal agreements over formal treaties has highlighted the importance of so-called "soft law" in modern international law, particularly in such areas of rapid evolution as international banking.[142] Informality is desirable in situations where there is both uncertainty regarding future changes in circumstances, and domestic

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International Financial Regulatory Organizations, 33 Tex. Int'l L. J. 281 (1998); Pierre-Hugues Verdier, *Transnational Regulatory Networks and Their Limits*, 34 Yale J. Int'l L. 113 (2009) (who carefully reviews of the claims of the TRN supporters and their limitations). As has been noted, TRNs have been log in their evolution: *see, e.g.,* Alan Boyle & Christine Chinkin, THE MAKING OF INTERNATIONAL LAW 51 (2007).

[139] Slaughter, *supra* note 138, at 8.

[140] *See generally* Robert Koehane, *The Analysis of International Regimes: Towards a European-American Research Programme, in* Regime Theory and International Relations 23 (1995).

[141] Benedict Kingsbury, Nico Krisch & Richard B. Stewart, *The Emergence of Global Administrative Law*, 68 L. & C.P. 15 (2005); Michael S. Barr & Geoffrey P. Miller, *Global Administrative Law: The View from Basel*, 17 Eur. J. Int'l L. 15 (2006).

[142] *See* Alexander, Dhumane & Eatwell, *supra* note 26, at ch. 4 (*International Soft Law and the Formation of Binding International Financial Regulation*) (arguing that "soft law" is insufficient for efficient financial regulation); *see also* Boyle & Chinkin, *supra* note 138, at 211-29 (setting "soft law" within the overall context of international law).

adoption and enforcement, on the one hand, and a lack of political will or authority to make the commitment necessary for a formal treaty, on the other.[143]

Finally, the concept of *norm signaling* has been introduced into the analysis.[144] This is important because it helps to describe why regulators from nations with very diverse interests, regulators subjected to enormous countervailing forces at home, have been able to establish and maintain plausible degrees of consensus on the international plane, and why variations in the degree of adherence, compliance and enforcement as between countries do not undermine the claim to effectiveness of such accords as the Basel capital adequacy guidelines.

This increasingly sophisticated thinking about the multi-hierarchical elements of the regulatory ecosystem is enabling us to discuss and differentiate more clearly the policy choices with which we have been presented by the GFC, because it eschews reductionism and highlights the multi-layered and nuanced dimensions of the ecology that must be governed.

C. Potential Value of Complexity Analysis

As one tries to disentangle this web of international or transnational regulation, one is struck by its inconsistency with traditional models and concepts of law, formal legal structures, and the predictive certainty or stability with which we all feel comfortable. Despite the emerging common language of international banking regulation, differences of perspective and meaning abound. While there does seem to be a concerted international effort to harmonize regulatory and supervisory standards, deep disagreements remain over how such standards should be enforced. Furthermore, while a kind of convergence of principles is occurring at the international level, unilateralism is also returning in the form of momentum toward home state supervision and away from the dream of mutual recognition and the notion of international banking "passports." This is evident even within the EU, where in the UK, recently burned by the impact of the Icelandic disaster,[145] the FSA, is reported to be encouraging foreign banks to replace their branches with subsidiaries.[146]

These trends reflect inherent fluidity and represent a reaction to events that is typical in complex systems. It seems unrealistic to expect that formal legal

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[143] *See* Pierre-Hugues Verdier, *Transnational Regulatory Networks and Their Limits*, 34 Yale J. Int'l L. 113, 167-68 (2009); Kenneth W. Abbott & Duncan Snidal, *Hard and Soft Law in International Governance*, *in* LEGALIZATION AND WORLD POLITICS 37 (Judith L. Goldstein et al. eds., 2001); Charles Lipson, *Why Are Some International Agreements Informal?*, 45 INT'L ORG. 495 (1991).

[144] Charles K. Whitehead, *What's Your Sign?—International Norms, Signals and Compliance*, 27 Mich. J. Int'l L. 695 (2006).

[145] *See supra* note 78 for sources describing the Icelandic crisis.

[146] *See* Alistair MacDonald & Adam Bradberry, *U.K.'s 'Light Touch' About to Get Heavier*, Wall St. J. June 17 2009. The OBAMA PROPOSALS, *supra* note 7, are vaguer about what subsidiarity requirements would be imposed on foreign bank operations in host countries. *See id.* at 84-85.

frameworks might cabin the international financial system successfully, at least over time. One cannot effectively control complex systems, but one sometimes can effectively *harness* them. This should be the modus operandi of international banking regulation. There are various possible implications for public policy and legal analysis when one views international banking regulation through the more realistic complexity lens.

First, one cannot reduce causes and effects into simple linear or reductionist relationships. Regulation cannot be clear cut or stable over time; to view it as such, and to advocate public policy that presupposes frameworks that endure would be to embark upon an exercise that is doomed to failure because the environment changes so rapidly and too many other, new forces enter the arena.

Second, elements of dynamic game theory become important in order to understand the interactions of the regulators and the regulated.[147] The legendary hedge fund billionaire and global financier, George Soros, asserts that an important omission to our understanding of how markets work is the element of "reflexivity:" at the interpersonal level of daily human interaction, whether in the markets or otherwise, the meaning of actions is in part determined by the reaction of others to those actions. This reflexivity introduces inherent indeterminacy to the markets and, one might add, to the subject matter of regulation and regulation itself.[148] Explaining how what we would term "power laws" plunge markets into the chaos of booms and busts, Soros observes:

> Because financial markets do not tend towards equilibrium they cannot be left to their own devices. Periodic crises bring forth regulatory reforms. That is how central banking and the regulation of financial markets have evolved. . . .
>
> Misunderstandings by either side usually stay within reasonable bounds because market prices provide useful information which allows both sides to recognize and correct their mistakes, but occasionally mistakes prove to be self-validating, setting in motion vicious or virtuous circles. Such circles resemble boom-bust processes in the sense that they are initially self-reinforcing but eventually self defeating.[149]

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[147] Complexity theory is the basis for Robert Axelrod's classic analysis of the prisoner's dilemma and the application of game theory to effective outcomes. *See* Robert Axelrod, THE EVOLUTION OF COOPERATION: REVISED EDITION (2006); Robert Axelrod, THE COMPLEXITY OF COOPERATION: AGENT-BASED MODELS OF COMPETITION AND COLLABORATION (1997); *see also* Axelrod & Cohen, *supra* note 94.

[148] *See*, George Soros, THE NEW PARADIGM FOR FINANCIAL MARKETS: THE CREDIT CRISIS OF 2008 AND WHAT IT MEANS 25-50 (2008).

[149] *Id.* at 71.

These insights lend support for the exploration of regulatory regimes that are highly *adaptive* and *collaborative*. Adaptive in the sense that regulatory principles must be flexible—perhaps even the kind of "soft law" that so discomforts traditional international lawyers.[150] Regulatory structures must themselves be responsive to changing conditions—less *command and control* and more *sense and respond*.[151] Collaborative to the extent that a degree of collaboration between the regulators and regulated, far from leading simply to regulatory capture, can actually lead to good outcomes if the dynamics of game theory are fully understood.[152]

Third, when one takes into account the true complexity of international banking and the regulatory regime that must evolve with and adapt to it, it seems unlikely that one could successfully arm transnational regulators with powers that go beyond consultation and rise to the level of direct enforcement. An orthodox path for the internationalization of bank regulation would perhaps be toward a transnational regulator possessed of an accoutrement of examination and enforcement powers suitable for regulating and adequately supervising the numerous international, even global, financial institutions that now operate around the world (and in many cases pose risks to the global financial system). Such evolution would be recognized as more or less following the model of domestic bank supervision.

This is an approach attractive to some observers[153] and the leaders of some leading nations such as Germany and France.[154] Essentially the argument is that the global

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[150] *See supra* note 32 and accompanying text.

[151] *See e.g.,* Stephan H. Haeckel, ADAPTIVE ENTERPRISE: CREATING AND LEADING SENSE-AND-RESPOND ORGANIZATIONS (1999); *see also* recent developments at Cal Tech on event-driven architectures for managing complex systems (http://www.infospheres.caltech.edu/); *see also* Tony Porter, *Why International Institutions Matter in the Global Crisis*, 15 Global Governance 3 (2009) ("Faced with extraordinary complexity, including the need to manage the negative effects of fast-paced global markets, public authorities have increasingly shifted from centralized 'command and control' to rely more on hybrid mixes of decentralized public and private regulation, a phenomenon that has been called "regulatory capitalism") (quoting David Levi-Faur and Jacint Jordana, eds., *The Rise of Regulatory Capitalism: The Global Diffusion of a New Order*, Annals of the American Academy of Political and Social Science, 598 (March 2005)); Scott, *supra* note 89, at 157-60 (describing the theory of "responsive regulation" that "attempt[s] to keep regulatory intervention to the minimum level necessary to secure the desired outcomes, while retaining the capacity to intervene more (in terms of more stringent enforcement or the introduction of a more interventionist regime)"). *See generally* Ian Ayres & John Braithwaite, RESPONSIVE REGULATION: TRANSCENDING THE DEREGULATION DEBATE (1992).

[152] *See* Hornstein, *supra* note 91, at 949-60 (applying game theory and discussing the controversy surrounding reliance on collaborative regulation to demonstrate that a sophisticated approach may lead to much more realistic regulation than is produced by a more traditional, command-and-control model).

[153] *See, e.g.*, Emilios Avgouleas, *The Global Financial Crisis, Behavioural Finance and Financial Regulation: In Search of a New Orthodoxy*, 9 Jo. Corp. L. Stud. 121, (2009) (proposing various reforms to the system of international bank regulation and the more limited case for establishing a global licensing and supervisory regime for transnational investment funds having systemic importance); see also Schwarcz, *supra* note 38, at 244-45 (exploring the notion of a single regulatory approach to managing systemic risk).

economy is heavily interdependent; many financial institutions are able to operate easily and quickly across borders, and their activities, and risk assumptions, while desirable, even essential, in today's world, are capable of causing great damage to economies well beyond those of their home states. Regulatory arbitrage has become a major problem and a need has developed to ensure that such institutions are subjected to consistent, coordinated and even unitary oversight.

Of course we have seen spectacular examples of the kinds of institutions such advocates have in mind: AIG, Citigroup, Lehman Brothers, Northern Rock, and so on.[155] Moreover, it is hard to deny the impression that we might have witnessed less damage to the world economic system had regulators in various countries been able to take a unitary view of the risks imposed by such institutions and act in greater concert to preempt the damage. Instead, some particularly risky activities virtually escaped regulation altogether, as a result of a combination of jurisdictional divisions, differing regulatory scope and product definitions, poor coordination, and so on.[156] AIG, a global entity subject to more than 400 regulators (!), provides a good example.[157]

On the other hand, and despite the rhetoric of some political leaders during the early stages of the financial crisis,[158] it is very hard to see how such a global or

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[154] Both the French President, Nicholas Sarkozy, and the German Chancellor, Angela Merkl, have favored more hawkish action than the "light touch" approach espoused by UK leaders, sometimes suggesting that some kind of transnationally-enforceable global supervision is essential. *See, e.g.,* Ben Hall, Sarkozy and Merkel warn on finance regulation, Fin. Times (Jan. 8 2009) (available at http://www.ft.com/cms/s/0/d3eeba2c-dd76-11dd-930e-000077b07658.html). Compare Gideon Rachman's interpretation in the Financial Times: *And now for a world government*, Fin. Times Dec. 9 2008 (available at http://www.ft.com/cms/s/0/05c36962-c594-11dd-b516-000077b07658.html) (taking the view that calls for "global governance" are merely disguised efforts toward the creation of global government that is fervently advocated by various European officials).

[155] The experiences with all four institutions have had a major impact on thinking about appropriate public policy, as a review of the many official and independent reports and recommendations, *supra* note 2, will reveal.

[156] The OBAMA PROPOSALS emphasize the need to eliminate regulatory gaps. *See* OBAMA PROPOSALS*, supra* note 7, at 5: "the responsibility for supervising the consolidated operations of large financial firms was split among various federal agencies. Fragmentation of supervisory responsibility and loopholes in the legal definition of a "bank" allowed owners of banks and other insured depository institutions to shop for the regulator of their choice."

[157] *See, e.g.*, Matt Taibbi, *The Big Takeover*, Rolling Stone March 21 2009 (http://www.rollingstone.com/politics/story/26793903/the_big_takeover); Noam Schieber, *Top Dow: A New Theory of the AIG Catastrophe*, The New Republic Apr. 15 2009 (http://www.tnr.com/story_print.html?id=c69b8e09-a5f8-4ffb-82b0-f88955701 80d; and the Wash. Post Trilogy by Robert O'Harrow, Jr. & Brady Dennis: *The Beautiful Machine*, Dec. 29 2008 (http://www.washingtonpost.com/wp-dyn/content/article/2008/12/28/AR2008122801916_pf.html); *A Crack in the System*, Dec. 30 2008 A1 (http://www.washingtonpost.com/wp-dyn/content/article/2008/12/29/AR2008122902670_pf.html); and *Downgrades and Downfall*, Dec. 31 2008, A01 (http://www.washingtonpost.com/wp-dyn/content/article/2008/12/30/AR2008123003431_pf.html).

[158] *See* Carsten Volkery, G-20 Discord: Merkel and Sarkozy Sharpen Their Tone in London, Spiegel Online (April, 2, 2009) http://www.spiegel.de/international/world/0,1518,616963,00.html.

transnational model of bank regulation could possibly be secured in the short or even medium term. Not only are the political difficulties likely to be overwhelming, but it is also difficult to see why we would ever want to subject the complex and evolving networks of global finance to such an outdated concept of central control.

In the first place, such regulation would touch on matters that are virtually impossible to divorce from local concerns and, unlike human rights violations, involve highly contested issues of public policy. Powerful political interests tend to coincide with or follow the interests of those wielding economic power, so any efforts to impinge through regulation upon the interests of those who wield such economic power is likely to meet with highly organized resistance. Recent experience in both the United States and Europe bears this out.[159] If it was difficult to establish war crimes tribunals, where there is at least general agreement on simple underlying norms, it is hard to imagine an international regulator taking a line that is different from one adopted locally without quickly becoming stymied in its efforts to implement and enforce.

Furthermore, a justification for such an international regulator is that the institution would be able to act consistently in the public international interest, and this implies an ability to establish uniformity or at least harmonization or rules governing actors that operate across borders. Powerful national regulators are able to protect strong national interests, often to the detriment of international interests, where the failure of large international banks can have serious cross-border impacts. These are important concerns that must be addressed. Yet, while consistency across borders and at the level of principle is desirable and certainly expressed to be a clear goal of international bank regulators after the GFC,[160] it is not immediately evident why there should be uniformity or even harmony at the level of local interpretation and enforcement. The environmental conditions in which financial services are developed and delivered in widely varying circumstances and within frameworks that are seldom similar, let alone harmonious between countries.[161] While it may be true that money is now perhaps the most fungible of all elements in international trade, a great irony is that its meaning and tangible characteristics are perhaps more diverse from one community to another than, say, electronic products. An iPhone might be an iPhone whether one is using it in Hong Kong or New York, but a vehicle of payment such as a credit card has greater or lesser significance from one market to the next, depending on many factors such as alternative credit availability consumer behavior, cultural characteristics, who provides the cards and what other regulations they might be under, and so on. There *has* to be significantly differential forms of competition, service delivery, supervision and enforcement, at the *local* level, and the public policy that most appropriately addresses these issues is almost

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[159] *See, e.g.*, Verdier, *supra* note 143, at 139-42 (describing the problems with implementing Basel II).
[160] *See supra* text accompanying notes 5- 7
[161] *See*, *e.g.*, Hal S. Scott, *Internationalization of Primary Public Securities Markets*, 63: 3 L. & C.P. 71, 78-80 (Summer 2000) (arguing against the harmonization of international securities issuance laws because, among other reasons, it is doubtful that international agreement could be achieved, and uniformity would likely stifle innovation).

certain to vary from place to place and certainly from country to country. These market and regulatory components are highly *sub systemic* and must be understood within their whole context. So we have to seek other methods—perhaps more complex, interactive and sense-and-respond regulation[162]—to address the legitimate concerns of regulatory arbitrage that would arise in the absence of substantive harmonization.

Fourth, it has been observed at various points in this article one of the most important challenges to the financial system, both domestic and international, is that of systemic risk. The problem arises from the classic tragedy of the commons involved,

> in which the benefits of exploiting finite capital resources accrue to individual market participants, each of which is motivated to maximize the use of the resource, whereas the costs of exploitation, which affect the real economy, are distributed among an even wider class of persons.[163]

Systemic risk, from a complexity point of view, represents a substantial potential instability for a system that lacks the capability to self-regulate in an enduring, robust fashion. Furthermore, there is no reason to assume that national regulators would not engage in the same kind of externalization of regulatory costs as do market participants.[164] Viewed from this perspective, the principal consideration in attempting to reshape a dangerously unstable complex system such as international banking therefore becomes how to influence the variable elements of the financial system in a manner that encourages more spontaneous self-ordering. Difficult as this task might be, it is likely to be more effective than attempting to cabin the labile world of international finance into traditional regulatory rules.

Finally, if international banking regulation is merely an aspect of a highly complex system, the debate as currently framed about its validity does not make sense. The validity of international law itself has long been the subject of animated debate.[165] This debate has been evoked within the context of network theory in international bank regulation. Sure enough, the TRNs celebrated as resolving the "globalization paradox"—to the extent that they facilitate technical governance while maintaining accountability[166]—have been severely criticized as setting the stage for a usurpation of legitimate state authority upon the "myth" of disaggregation.[167] The history of TRNs, celebrated by proponents of the "new world order," hardly supports the claim

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[162] *See supra* text accompanying notes 150-152.
[163] Schwarcz, *supra* note 38, at 206.
[164] I am indebted to my colleague, Steve Schwarcz, for this insight. We cannot assume that regulators will evidence significantly different, more "altruistic" behavior themselves.
[165] *See* the extended discussion by Oona Hathaway, *Between Power and Principle: An Integrated Theory of International Law*, 72 U. Chicago L. Rev. 469 (2005).
[166] *See* Slaughter *supra* note 138.
[167] Kenneth Anderson, *Book Review: Squaring the Circle? Reconciling Sovereignty and Global Governance through Global Government Networks*, 118 Harv. L. Rev. 1255 (2005).

that TRN collaboration has engendered successful international resolution of common problems such as bank regulation.[168]

One might, to the contrary, take the view that the GFC, coming as it has despite two decades of intense TRN activity, demonstrates the relative immaturity of the entire regime of global bank regulation. This could make it all the more important to identify a secure base upon which international bank regulation might rest.

On the other hand, perhaps validity in the traditional sense is a *Will o' the Wisp* because international banking regulation is not, and cannot ever be, the product of clearly defined authority. Instead it is an emergent regime that can only be predicted to some extent, influenced constantly by participants, both official and private, and remains in a constant state of change—a good albeit perplexing thing! International banking regulation might be no more than a perpetually nascent normative system requiring much more analysis from an interdisciplinary perspective.[169]

We might conclude, therefore, by suggesting that the insights of complexity theory reinforce a progression toward more adaptive and sophisticated forms of regulation that blend the evolving nature of the markets under regulation with the evolving or adapting tools that are necessary for effective shaping or influence over such markets and in the direction of outcomes that promote the general welfare. In international bank regulation we appear already to have moved to what environmentalists have called "second generation" regulatory instruments[170] and are learning to "tap into decentralized behavior coordinating mechanisms"[171] that seem so appropriate to the extremely localized activities of the participants in the international markets themselves.

This kind of thinking will require some adjustment on the part of those lawyers who like to have their sources of authority cut and dried and their rules clear and predictable. But the system of international finance is neither clear nor predictable

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[168] *See* in particular, Verdier, *supra* note 143, at 130-61 (evaluating the limited progress of the work of the Basel Committee, the International Organization of Securities Commissions (IOSCO) and the International Competition Network (ICN)). An even more complex entity worthy of consideration is the International Association of Insurance Supervisors (IAIS), a global body of domestic insurance regulators, of which there are many in the United States alone. The OBAMA PROPOSALS, *supra* note 7, would create a new federal body called the Office of National Insurance to develop expertise and coordinate policy in the arena of insurance regulation. *Id.* 39-41. Presumably this agency will become a member of IAIS as well!

[169] *See*, e.g., the interesting resort to international relations theory, sociology and organizational theory that leading international lawyers are making in their endeavor to understand the legally binding nature of international law as a normative system: e.g., Ryan Goodman & Derek Jinks, *International Law and State Socialization: Conceptual, Empirical, and Normative Challenges*, 54 Duke L.J. 983 (2005); Harold Hongju Koh, *Internalization through Socialization*, 54 Duke L.J. 975 (2005).

[170] *See* J.B Ruhl, *Regulation by Adaptive Management: Is It Possible?*, 7 Minn. J. L. Sci. & Tech. 21 n. 9 (2005)

[171] *Id.* at 27.

and, dangerous though this can be if guided by wooden regulatory hands, complexity and constant fluidity and adaptation is the systemic condition of an amazing world in which geography has ceased to provide barriers for the flow of finance.