The New Global Financial Regulatory Order: Can Macroprudential Regulation Prevent Another Global Financial Disaster?

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I. INTRODUCTION

Carter Glass, author of the Glass–Steagall Act and Secretary of Treasury under President Wilson, once asked: "Is there any reason why the American people should be taxed to guarantee the debts of banks, any more than they should be taxed to guarantee the debts of other institutions, including merchants, the industries, and the mills of the country?"[1] What Glass could not have foretold were financial institutions so large and interconnected, so deeply integrated into every facet of the global economy, that the failure of one would trigger a crisis rivaled only by the Great Depression. It was in such an unfathomable socio-economic and regulatory environment, some 90 years later, on a late summer afternoon in 2008, when another Secretary of Treasury—Hank Paulson—fell to his knees in the bowels of the U.S. Congress and begged Nancy Pelosi for a $700 billion check with no strings attached to bail out the largest financial institutions in the United

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1. JEAN REITH SCHROEDEL, CONGRESS, THE PRESIDENT, AND POLICYMAKING: A HISTORICAL ANALYSIS 64 (1994) (quoting SMITH AND BEASLEY, CARTER GLASS: A BIOGRAPHY 357 (1939)).

States by guaranteeing their debts.[2] That a champion of markets, free from and uninhibited by regulation, a man who only days before allowed a stalwart of American finance to file bankruptcy for fear of creating "moral hazard," felt compelled to kneel before one of the staunchest critics of deregulation, was a singular moment in the biggest, deepest financial crisis in the United States in over 70 years.[3]

A month earlier, as the crisis was unfolding, Chairman Bernanke, in a speech before the Federal Reserve Bank of Kansas City, outlined the Federal Reserve's three-pronged approach to the crisis. The first two prongs were traditional central bank tools: the easing of monetary policy and offering "liquidity support" to the markets as needed.[4] The third component—macroprudential regulation—was a multifaceted approach to the crisis that advocated a stronger role for the Federal Reserve as a regulator.[5] Bernanke advocated for the expansion of the regulatory system's "field of vision," including macroprudential "oversight" in a step that would "broaden the mandate of regulators" and address systemic risks to manage the unfolding crisis and prevent future crises from having such a deep impact.[6]

The financial crisis of 2008, like the pandemic Spanish flu 90 years prior, spanned the globe twice and caused substantial destruction. It also introduced an entirely new lexicon of economic and regulatory terminology, such as "contagion" and "systemic shock," into the popular and academic legal community; one such term is "macroprudential" regulation.[7] Once an obscure term used by a select few banking economists, it now forms the cornerstone of a vast global regulatory regime with advocates claiming that it will prevent future systemic shocks.[8]

The purpose of this Article is to examine the roots of macroprudential regulation and its path to prominence as the next "messiah" of the financial markets. This Article presents an overview of the challenge in the implementation of macroprudential regulation as it has gone from a theoretical construct to a regulatory tool, its domestic and cross-border

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2. It was reported that Mr. Paulson's gesture was intended as a moment of levity in an otherwise tense political standoff. *Paulson Was Down on One Knee, Begging for a Deal*, THE INDEPENDENT (Sept. 27, 2008), http://www.independent.co.uk/news/business/news/paulson-was-down-on-one-knee-begging-for-a-deal-944046.html (describing negotiations between Hank Paulson and Nancy Pelosi in the wake of the crisis).

3. *See* Michael S. Barr, *The Financial Crisis and the Path of Reform*, 29 YALE J. ON REG. 91, 114 (2012) (arguing that the path of reform should involve reducing "moral hazard"); *see also* Iman Anabtawi & Steven L. Schwarcz, *Regulation Ex Post: How Law Can Address the Inevitability of Financial Failure*, 92 TEX. L. REV. 75, 122–25 (2013) (defining "moral hazard" and its potential effects on the financial markets).

4. Ben S. Bernanke, Chairman, Federal Reserve Bank, Speech at the Federal Reserve Bank of Kansas City's Annual Economic Symposium: Reducing Systemic Risk (Aug. 22, 2008), *available at* http://www.federalreserve.gov/newsevents/speech/bernanke20080822a.htm (outlining the plan of reform in the wake of the financial crisis). It is an accepted principle of finance that systemic risk is the risk that is inherent to the market in its entirety versus an institutional risk, which concerns a single entity or a group of entities. One can characterize systemic risk as the common denominator possibility of loss that pervades the entirety of the financial system of a country or global community.

5. *Id.*

6. *Id.*

7. *See* Samuel Hanson et al., *A Macroprudential Approach to Financial Regulation*, 25 J. OF ECON. PERSPS. 3, 5–7 (2011) (offering a detailed vision of how a macroprudential regime might be designed).

8. *See generally Macroprudential Policy: An Organizing Framework*, INT'L MONETARY FUND & CAPITAL MARKETS DEPARTMENT (Mar. 14, 2011), https://www.imf.org/external/np/pp/eng/2011/031411.pdf (explaining and evaluating the current use of macroprudential tools and policies).

development, and applications in the United States.[9] This analysis is pertinent as it examines the strengths and weaknesses of macroprudential regulation as currently implemented, as well as the opportunities and threats macroprudential regulation faces, given that it is an economic theory being ported into a regulatory environment that is beset by social, political, and administrative roadblocks.

Part II presents a brief history of prudential regulation and an overview of microprudential regulation and its incomplete regulatory scope. Part III examines the spectrum that contains both micro and macroprudential regulation, with the purpose of providing an adequate differentiation between the two areas and examining the rise of macroprudential regulation as the choice of regulators for the mitigation of systemic shocks. Part III presents the prudential regulatory efforts made on an international level, analyzing the efforts of various groups prior to and after the global financial crisis of 2008.[10] Part IV presents an analysis focusing on the strengths and weaknesses of macroprudential regulation.[11]

This Article posits that the success of macroprudential regulation will depend on four factors. First, the economic philosophy of the central banker in charge of the domestic institution with jurisdiction over macroprudential regulation will prove crucial in the implementation of adopted regulation. If, like Chairman Greenspan, the banker is averse to the exercise of the Central Bank's regulatory oversight authority, then no amount or volume of policy or regulation will prevent or mitigate systemic risks and the accompanying shocks.[12] Second, a sufficiently deep level of international cooperation is required to mitigate regulatory arbitrage, without being so broad that the ensuing harmonization of regulatory regimes will result in a homogenized global regulatory system that will possibly give rise to a productization of risk and therefore a far more rapid spread of systemic risk and shock.[13] Third, the acceptance of macroprudential regulation by

9. *See* Gabriele Galati & Richhild Moessner, *Macroprudential Policy—A Literature Review* 3 (Bank for International Settlements, BIS Working Paper No. 337, 2011) (discussing the usage of macroprudential policy and macroprudential tools, the tools' relationship with monetary policy, and implementation and effectiveness); *see also* Tom Lin, *The New Financial Industry*, 65 ALA. L. REV. 567, 569 (2014) (examining the ongoing transformation of the financial industry and presenting a set of regulatory principles for governing the new industry).

10. *See* Dirk Heremans & Katrien Bosquet, *The Future of Law and Finance After the Financial Crisis: New Perspectives on Regulation and Corporate Governance for Banks*, 2011 U. ILL. L. REV. 1551, 1554 (2011) (stating that prudential regulation of the safety and soundness of financial intermediaries constitutes an important domain in financial policymaking).

11. *See generally* Dodd–Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376, H.R. 4173 (July 21, 2010) (stating that its goal is to "promote the financial stability of the United States by improving accountability and transparency in the financial system, to end 'too big to fail', to protect the American taxpayer by ending bailouts, to protect consumers from abusive financial services practices, and for other purposes").

12. *See* Javier Bianchi et al., *Macroprudential Policy in a Fisherian Model of Financial Innovation*, 60 IMF ECON. REV. 223, 226 (2012) (studying the effects of macroprudential policy where "the pecuniary externality is influenced by the interaction of the credit constraint with learning about the riskiness of a new financial regime"); Monetary & Capital Mkts. Dep't, *Macroprudential Policy: An Organizing Framework*, INT'L MONETARY FUND (Mar. 14, 2011), https://www.imf.org/external/np/pp/eng/2011/031411.pdf (describing macroprudential policy as seeking to limit systemic financial risk).

13. Eric J. Pan, *Challenge of International Cooperation and Institutional Design in Financial Supervision: Beyond Transgovernmental Networks*, 11 CHI. J. INT'L L. 243, 250 (2010) (describing international governments as active investors in private markets).

disparate domestic regulators will require a new guiding philosophy for the financial industry that will allow the macroprudential regulator the opportunity to meet its mandate and provide a foundation for system-wide success. Fourth, there needs to be a sufficient level of political willpower on the part of domestic legislatures and regulators in the face of what may be fierce opposition to macroprudential regulation by the largest and most politically powerful institutions the policy aims to supervise.[14] To counter this, macroprudential regulation is primarily under the purview of the Central Bank, and therefore less prone to regulatory or political turbulence.[15]

To explore the present and possible future impact of macroprudential regulation, one must recognize the possible implications of the current regulatory proposals. One way to ascertain such information is to examine the strengths and weaknesses of macroprudential regulation as it is currently proposed and implemented. As such, this Article considers the possible opportunities and threats that lay ahead within a policy and regulatory framework that considers the economic, political, and international implications of macroprudential regulation proposals.

II. HISTORY OF PRUDENTIAL REGULATION

A. The Predominance of Microprudential Regulation

The banking and securities regulation regime in the United States has long been designed to regulate transactions and entities, not the entirety of the financial services industry. This regulatory structure is based on the long-held belief that a disclosure-based system—which requires the party in possession of information to disclose, or abstain from, trading—provides the strongest protection for investors, maintains market efficiency, and enables capital formation. This belief system runs deep, not just in the regulation of the securities markets but in the entirety of the financial services industry.[16] The logical extension of this system has been a regulatory environment shaped by microprudential regulation, and designed to manage prudential risk by focusing on individual institutions and assessing their systemic risk potentials in the context of regulatory oversight.[17]

Microprudential regulation focuses primarily on regulating institutions and transactions, thereby managing risk using a "bottom-up" approach that centers on exogenous risk and aims to protect the consumer of the financial services—the investor and/or depositor.[18] This regulatory system takes the view that markets are "largely

14. *See* Senator Jeff Merkley & Senator Carl Levin, *The Dodd-Frank Act Restrictions on Proprietary Trading and Conflicts of Interest: New Tools to Address Evolving Threats*, 48 HARV. J. ON LEGIS. 515, 523 (2011) (describing how banks have put proprietary trading interests ahead of their clients).

15. *See* Chris Brummer, *How International Financial Law Works (and How It Doesn't)*, 99 GEO. L.J. 257, 275 (2011) (stating that Central Bank Governors provides a forum for banking and finance ministers from 19 of the largest and fastest-developing economies to meet to discuss financial, economic, and monetary policy).

16. *See, e.g.*, Karen E. Woody, *Conflict Minerals Legislation: The SEC's New Role as Diplomatic and Humanitarian Watchdog*, 81 FORDHAM L. REV. 1315, 1320–24 (2012) (outlining the history and importance of the disclosure regime in securities regulation).

17. *See* Anita I. Anand, *Is Systemic Risk Relevant to Securities Regulation?,* 60 U. TORONTO L.J. 941, 961 (2010) (arguing "[t]he mandate of securities regulators should be . . . to ensure that markets are fair, efficient, and transparent; and to reduce systemic risk").

18. Claudio Borio, *Towards a Macroprudential Framework for Financial Supervision and Regulation?* 2 (Bank for Int'l Settlements, Working Paper No. 128, 2003), http://www.bis.org/publ/work128.pdf.

efficient" and simply require better and "more timely" disclosure to provide more transparency to the participants.[19] In this system, a regulator's role is to collect and disseminate information and to ensure that individual entities offering products and services in the financial services market are not denying the end user the information deemed necessary. As a result, the focus of this form of regulator becomes the availability and dissemination of information, the prevention of insider trading or market abuse, and the assurance that the market's operation continues unimpeded.

The focus on microprudential regulation through concentration on institutional risk arose and was coupled with the deregulatory zeal that consumed the United States for almost three decades prior to the 2008 crisis.[20] The Financial Services Modernization Act of 1999, the Gramm–Leach–Bliley Act (GLBA), is one example of such deregulation.[21] Enacted with the belief that Glass–Steagall was no longer necessary, it contributed to the rise of an era in which financial behemoths would offer banking, brokerage, and trading services that, when combined with new and innovative products offered by the same firms and their proprietary trading departments, created risks heretofore unseen.[22] GLBA is also credited with inadvertently giving birth to "too big to fail" (TBTF)—cited as one of the primary factors that complicated and amplified the financial crisis of 2008.[23]

GLBA's partial repeal of Glass–Steagall positioned section 23A of the Federal Reserve Act as the "the principal statutory firewall keeping banks safe and preventing them from being used as a cheap, publicly subsidized source of financing for potentially high-risk business activities of their nonbank affiliates."[24] However, the Federal Reserve's (the Fed) exercise of this power created a "false sense of security with respect to the safety and soundness of the depository system."[25] In fact, under the stewardship of Chairman Greenspan, the Fed pursued a distinctly deregulatory posture, asserting that markets, governed by the best interest of the participants, are the model regulators.[26] In the aftermath of the financial crisis, Chairman Greenspan offered a meek *mea culpa* where he famously told Congress in 2008: "Those of us who have looked to the self-interest of lending institutions to protect shareholders' equity, myself included, are in a state of shocked disbelief."[27] Perhaps he was shocked most of all to realize that objectivism is not a

19. Andrew Baker, *The New Political Economy of the Macroprudential Ideational Shift*, 18 NEW POL. ECON. 112, 117 (2013).

20. *See generally* David Zaring, *Finding Legal Principle in Global Financial Regulation*, 52 VA. J. INT'L L. 685 (2012) (discussing the evolution and changes in international regulation from the late 1970s to early 2010s).

21. Gramm–Leach–Bliley Act, Pub. L. No. 106-102, § 101, 113 Stat. 1338, 1341 (1999) (repealing Glass–Stegall).

22. *See* Sens. Merkley & Levin, *supra* note 14, at 519–20 (2011) (discussing the dramatic growth of both commercial and investment banks after the passage of GLBA).

23. *See* Saule T. Omarova, *From Gramm-Leach-Bliley to Dodd-Frank: The Unfulfilled Promise of Section 23A of the Federal Reserve Act*, 89 N.C. L. REV. 1683, 1706–29 (2011) (explaining how GLBA changed the financial regulation system and led to increased exemptions for investment banks and financial holding companies, which in turn contributed to the 2008 financial crisis).

24. *Id.* at 1776.

25. *Id.*

26. Edmund L. Andrews, *Greenspan Concedes Error on Regulation*, N.Y. TIMES (Oct. 23, 2008), http://www.nytimes.com/2008/10/24/business/economy/24panel.html.

27. *Id.*

regulatory philosophy.[28]

B. The Incomplete Structure of Microprudential Regulatory Systems

One of the principal flaws in a microprudential system—exposed during the financial crisis of 2008—is its failure to detect, measure, and mitigate the concept of procyclicality, which is an inherent behavior of the financial system and amplified by a microprudential regulatory regime.[29] According to Deputy General Manager of Bank for International Settlements, Hervé Hannoun, procyclicality provides:

> [T]he self-reinforcing mechanisms within the financial system and between the financial system and the real economy that can exacerbate boom and bust cycles, undermining financial and macroeconomic stability. These effects are most prominent in the downward phase. As strains develop, previously unseen risks materialise, deepening the retrenchment that is already under way.[30]

An unimpeded market—one of the byproducts of microprudential regulation—is not always the best regulatory approach for any market. There are times, for example during a credit bubble, that the unimpeded functioning of the market is the very fact that leads to a crisis, for it allows the bubble to grow without a mechanism for safe deflation.[31]

In short, procyclicality denotes that financial institutions can develop their asset base during an economic expansion, when the cost of capital is cheap.[32] Conversely, during an economic contraction, when the financial health of an institution declines along with the value of its asset base, the bank will incur higher costs in raising capital.[33] Unfortunately, it is precisely at such a time that a microprudential system's capital buffer requirements will create the conditions for a fire sale and further thrust the bank into illiquidity and potential bankruptcy.[34] If the bank is a Systemically Important Financial Institution (SIFI), then the problem is suddenly systemic and institutional. In other words, "[t]his bias toward overliquidation engendered by microprudential financial regulatory policy is a source of unnecessary downward pressure throughout the banking system on the value of assets, leading to potentially catastrophic increases in systemic risk and financial contagion."[35]

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28. Michael Kinsley, *Greenspan Shrugged*, N.Y. TIMES (Oct. 14, 2007), http://www.nytimes.com/2007/10/14/books/review/Kinsley-t.html.

29. *See* Anita Anand & Andrew Green, *Regulating Financial Institutions: The Value of Opacity*, 57 MCGILL L.J. 399, 406–07 (2012) (stating that microprudential systems only deal with specific and localized issues).

30. Hervé Hannoun, Deputy Gen. Manager, Bank for Int'l Settlements, 45th SEACEN Governor's Conference: Towards a Global Financial Stability Framework 16–17 (Feb. 26–27, 2010), *available at* www.bis.org/speeches/sp100303.pdf.

31. *See* Andrew K. Rose, *International Financial Integration and Crisis Intensity* 8 (Asian Dev. Bank Inst., Working Paper Series No. 341, 2012), http://www.adbi.org/files/2012.01.25.wp341.intl.financial.integration.crisis.intensity.pdf (demonstrating that unregulated markets often lead to more issues).

32. Paul A. Volcker & Jacob A. Frenkel, *Enhancing Financial Stability Resilience, Macroprudential Policy, Tools, and Systems for the Future*, GROUP OF THIRTY 29–30 (Oct. 2010), *available at* http://www.group30.org/images/PDF/Macroprudential_Report_Final.pdf.

33. *Id.*

34. *Id.* at 32 (arguing the importance of macroprudential systems to procyclicality recovery).

35. Sarah Pei Woo, *Regulatory Bankruptcy: How Bank Regulation Causes Fire Sales*, 99 GEO. L.J. 1615, 1615 (2011).

This weakness in the manner in which markets perform—leading to buying high and selling low—is a primary target of macroprudential regulation.

This structural flaw extended to global regulatory regimes that espoused a microprudential view of risk. Prior to the Dodd–Frank Act and Basel III Accords, the financial regulatory regimes around the world were primarily concerned with exogenous risk.[36] The underlying theory was based on the premise that by managing risk at an institutional level, systemic risk would be adequately mitigated. After several banking crises, however, the United States, the G20, and the Basel Committee on Banking Supervision (BCBS), gave macroprudential regulation the center stage.[37]

III. THE EVOLUTION OF MACROPRUDENTIAL REGULATION

The term macroprudential policy was coined in the late 1970s, perhaps at a meeting of the Cooke Committee.[38] In the beginning, the term was used to describe concerns over disproportionate transnational lending.[39] These concerns grew to include financial product innovation and eventually the issue of procyclicality.[40] Macroprudential regulation gained widespread acceptance among central bankers in the 1990s and 2000s, in the midst of a series of financial crises.[41] It rose to prominence as the optimal system to achieve the goal of preventing and/or containing systemic financial crises in the wake of the 2008 financial crisis.

The characteristics of a macroprudential regulatory system are in part contradictory and in part complementary to that of a microprudential system. Macroprudential regulation is viewed as a yin to the yang of microprudential regulation—a necessary set of tools that aims to manage systemic risk within the rapidly growing and ever-interconnected global financial system.[42] Macroprudential policy is decidedly opaque. Scholars thus provide a description of the policy by way of objectives, tools, and metrics.[43]

In 2003, Claudio Borio stated that macroprudential regulation's objective is to "limit the risk of episodes of financial distress with significant losses in terms of the real output for the economy as a whole."[44] This definition is sufficiently expansive to grant

36. Narissa Lyngen, *Basel III: Dynamics of State Implementation*, 53 HARV. INT'L L.J. 519, 534–35 (2012). *See generally* Marianne Ojo, *Basel III—Responses to Consultative Documents, Vital Aspects of the Consultative Process and the Journey Culminating in the Present Framework (Part 2)*, 30 No. 10 BANKING & FIN. SERVICES POL'Y REP. 15 (2011).

37. *See generally* BASEL COMMITTEE ON BANKING SUPERVISION, REPORT TO G20 FINANCE MINISTERS AND CENTRAL BANK GOVERNORS ON BASEL III IMPLEMENTATION (Oct. 2012), *available at* www.bis.org/publ/bcbs234.pdf.

38. Piet Clement, *The Term "Macroprudential": Origins and Evolution*, BIS Q. REV. 59, 59 (2010).

39. *Id.* at 59–61.

40. *Id.* at 63 (describing various international lending concerns of the time). Procyclicality references the tendency of financial variables to fluctuate around a trend during an economic cycle.

41. *See* Andrew Baker, *The New Political Economy of the Macroprudential Ideational Shift*, 18 NEW POL. ECON. 112, 119 (2012) (explaining how macroprudential ideas have grown in prominence after the most recent financial crisis).

42. *Id.* at 115.

43. *See, e.g.*, Kristin N. Johnson, *Macroprudential Regulation: A Sustainable Approach to Regulating Financial Markets*, 2013 U. ILL. L. REV. 881 (2013) (mentioning that macroprudential regulation focuses on the interconnectedness of financial institutions, and by demanding that institutions use qualitative tools that measure capital requirements needed for surviving financial shocks).

44. Borio, *supra* note 18, at 2.

policymakers the needed scope to better define specific goals to counter the pattern of systemic financial crises that have been present since the 1970s, while being simultaneously narrow enough so as to exclude many of the smaller and more limited financial crises of the past.[45] The definition is contingent upon the measure of a *significant* loss to the real national output, as determined by economists and policymakers. This loss, also known as the output gap, is the difference between the *actual* GDP of a country versus its *potential* GDP.

Macroprudential regulation's banking origins impart context for its recent rise to prominence. Its goal is to provide balance in the regulatory regime that oversees the financial sector to mitigate the perceived weaknesses of a microprudential regulatory system.[46] Macroprudential regulation functions as an early warning system,[47] consisting of a collection of tools, the most important of which are best defined by their primary function—oversight of the financial system to prevent the accumulation of risk. Macroprudential regulation evaluates endogenous risk in light of system-wide distress factors to prevent output costs to the economy at large.[48] As a metric of regulatory oversight, endogenous risk is an especially important concept.[49] Financial systems—especially in a post-crisis environment—are viewed as inherently vulnerable, containing many system-wide internal unseen risks that can be laid bare by a shock that could be either internal or external.[50] It is this vulnerability that lends credence to macroprudential regulation as a powerful tool.[51]

Macroprudential policy aims to prevent a systemic shock to the economy that would produce an output gap that is larger than that produced by a recession caused by the normal cyclical forces in the economy.[52] As such, a macroprudential regulator's mandate would not require an overly interventionist approach to the financial markets, but rather the design and implementation of a system that requires banks—and other regulated entities—to anticipate the actions they need, and to take the requisite prompt corrective action to

45. *See* Ricardo J. Caballero & Pablo Kurlat, *The "Surprising" Origin and Nature of Financial Crises: A Macroeconomic Policy Proposal* 4 (MIT Dep't of Econ., Working Paper, No. 09-24, 2009), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1473918 (proposing a new financial instrument, tradable insurance credits, that would provide flexible protections to the financial market).

46. *See* HM TREASURY, A NEW APPROACH TO FINANCIAL REGULATION: BUILDING A STRONGER SYSTEM, Cm. 8012, at 35–36 (2011*), available at* https://www.gov.uk/government/consultations/a-new-approach-to-financial-regulation-building-a-stronger-system (describing the interaction between Britain's micro and macroprudential financial risk-assessment systems).

47. There is significant debate on even the use of the word "regulation" in conjunction with "macroprudential," with some scholars arguing that macroprudentialism only rises to the level of policy. For the purpose of this article, macroprudential policy and macroprudential regulation will be used interchangeably.

48. *See* Clement, *supra* note 38, at 65 (extrapolating the challenge of creating objective analytical tools to allow regulators to predict world market risks).

49. *See* Borio, *supra* note 18, at 188–89 (stating how individual failures spread through the financial system).

50. *See* Chris Brummer, *Post-American Securities Regulation*, 98 CALIF. L. REV. 327 (2010) (arguing that the cross-border sale of securities expose all markets to the risks of individual firm failure).

51. *See* Volcker & Frenkel, *supra* note 32 (demanding that a powerful macroprudential regulatory regime be put in place).

52. *See generally* Jeffrey M. Lipshaw, *The Epistemology of the Financial Crisis: Complexity, Causation, Law, and Judgment*, 19 S. CAL. INTERDISC. L.J. 299 (2010) (explaining the causes of the 2008 financial crisis).

comply with the regulation.[53]

Academically, the components of macroprudential regulation are (1) capital conservation and (2) countercyclical buffers.[54] Capital conservation focuses on enhancing the capital requirements of bank holding companies and systemically important nonbank financial institutions, especially those operating on a global scale.[55] Countercyclical buffers, meanwhile, provide for constraints on capital during periods of rapid credit growth in order to prevent or mitigate the buildup of risk in the system.[56]

In implementation, macroprudential regulation requires a robust regulatory regime that includes a macroprudential toolkit,[57] which provides the opportunity for both

53. *See* Samuel Hanson et al., *A Macroprudential Approach to Financial Regulation*, 25 J. ECON. PERSP. 3, 10 (2011) (discussing the idea of prompt corrective action, including the notion that corrective action targeted at dollars of capital can achieve the same regulatory goals as targeting capital ratios but in a less-interventionalist manner).

54. *See generally* Kathryn Judge, *Fragmentation Nodes: A Study in Financial Innovation, Complexity, and Systemic Risk*, 64 STAN. L. REV. 657 (2012) (describing a macroprudential approach to regulating systemtic risk).

55. *Id.*

56. *Id.*

57. *See* Anil K. Kashyap et al., *The Macroprudential Toolkit*, 59 IMF ECON. REV. 145, 145 (2011) (defining a macroprudential toolkit as multiple regulatory devices). Scholars have proposed that the formula for measurement of institutional risk must also be changed. Jim Chen, *Postmodern Disaster Theory* 33 (Mich. State Univ. Coll. of Law, Research Paper No. 11-17, 2012), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2141591. This formula known as value at risk (VAR) has been criticized in the past, and it is presented that a new formula measuring the expected shortfall (ES) should replace VAR. John Hull, *VAR Versus Expected Shortfall*, RISK MAGAZINE (Mar. 1, 2007), *available at* http://www.risk.net/risk-magazine/technical-paper/1506669/var-versus-expected-shortfall. It is folly to believe that by simply switching a formula that is supposed to measure the risk of tail events, the world can now sleep easy and not worry about the next crisis. There are five reasons behind this assertion. First, VAR—and its variants—functioned well prior to the crisis, and their failure to predict the equity shortfall is not necessarily rooted in the design of the model, but in the inputs used to calculate risk variability. A financial model's results are entirely dependent upon the skill and knowledge of the user and quality of the data economists input into the model. Nevertheless, these economists rarely agree, and most are often wrong by a degree of variance that if applied to a tail event prediction, would render that prediction completely useless. Chen, *supra*, at 64. The folly of expecting perfection from financial and economic forecasting models is in not the math, but rather everything that surrounds it. Second, expected shortfall, as a tool of measuring asset portfolio risk, remains untested in crisis, and it may not be wise to test it during the next "inside job." The primary problem with the BCBS moving away from VAR lies not in the accuracy—or lack thereof—of VAR itself, but in the human desire to put up a "under new management" sign after every seismic shift in order to convey a message that there is action being taken to ameliorate the perceived problems with the previous management. This tendency often results in the rushed adoption of new and untested methodologies, that, only years later—in the face of a future crisis—will prove to be insufficient. This problem is especially acute in the case of tail events, where the degree of confidence in the predictive capacity of any model remains in question—both mathematically and pragmatically. Third, the speed and globalization of markets renders any risk modeling that presumes a national or regional system significantly vulnerable to error. There is a common fallacy that because of modern computer hardware and software, financial modeling has significantly advanced and is able to account for and mitigate speed and globalization. Chen, *supra*, at 35. In fact, computers—with rare exceptions that are used in military and academic settings—do not have the ability to develop new financial models; nor do they have the ability to fully test any theoretical models against heretofore unknown future set of facts that may lead to the next crisis. Furthermore, given that the data across national and market boundaries tends to lack the uniformity and cohesion necessary for such end tail calculations, it is impracticable to develop a risk model that fully accounts for international variability. *See* BANK FOR INTERNATIONAL SETTLEMENTS, IMPLEMENTATION OF BASEL STANDARDS: A REPORT TO G20 LEADERS ON IMPLEMENTATION OF THE BASEL III REGULATORY REFORMS 10–11 (Nov. 2014), *available at* http://www.bis.org/bcbs/publ/d299.pdf (discussing inconsistencies in implementation of the Basel III program

regulators and central bankers to better observe the ebbs and tides in systemic risk, and thus be able to prevent and/or mitigate any systemic crises.[58]

A. An Overview of International Prudential Regulation

Macroprudential regulation is presented as a crucial aspect of systemic monitoring. Without the system-wide tools providing sufficiently early warning, no global economy can adequately manage systemic risk.[59] This notion has been accepted and enshrined in the United States, Europe, and much of the global regulatory system.[60] Integral to the success of macroprudential regulation is an adequate international foundation, including the Basel Accords and the steps taken by International Organization of Securities Commissioners (IOSCO) and the G20.[61] An international regulatory system must consider the varying legal, cultural and economic foundations of each nation-state, and thus it is slow to advance. International prudential regulation has, thus far, taken the form of bi- or

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and noting that the differences "tend to be driven by specific local circumstances"). While banking regulation under the Basel accords, especially the more specific and restrictive capital requirements of Basel III, are fairly harmonized, central banks still maintain significant authority over their domestic banking systems. *Id.* This autonomy provides the opportunity for future SIFIs, or a collection of seemingly smaller banks that act in unison as a SIFI equivalent, to skirt the rules. Fourth, and this argument may seem overly simplistic, no two systemic crises are identical insofar as their origins, triggers, contagions and underlying structures. Systemic crises are similar to flu epidemics. While all flus function in the same manner (as an upper respiratory infection), they do not attack or replicate in the same manner, and they require different antibodies to kill them. This is why until a virus is recognized and genetically mapped, it is impossible to develop a vaccine for it. By the same token, changing the formula for measuring the risk of a tail event, by the virtue of the failure of a previous formula to predict a previous tail event, is akin to saying that more lifeboats for the Titanic will have prevented the Hindenburg disaster. Finally, the fifth reason that switching from VAR to ES may prove to be much ado about nothing is the human element involved in each crisis. Alluded to throughout the first four reasons, mathematics is only as good as the human beings utilizing and interpreting the results of the financial model. Therein lies the paradox of scientific advancement. Risk measurement is not akin to Newton developing an entirely new branch of mathematics to explain his theories. It is merely a set of statistical tools to address the likelihood of rare events, depending on variable inputs. So, if the outcome depends on the input, then human control over the input becomes the single point of failure that may render the entire endeavor fruitless. Statistical modeling is especially susceptible to this problem, due to the fact that humans can select the data input into the model, and the introduction of selection bias can negate the benefits of the model.

58. Tobias Adrian, Fed. Reserve Bank of N.Y., Presentation at OFR-FSOC Inaugural Conference: The Macroprudential Toolkit: Discussion of "New Models of the Economy and the Financial System" by Charles Goodhardt and Dimitri Tsomocos, (Dec. 2, 2011) *available at* http://www.treasury.gov/initiatives/wsr/Documents/OFR-Adrian.pdf; *see also* Lewis Alexander, U.S. Chief Economist, Nomura Securities International Inc.: Macro Prudential Toolkit: Measurement and Analysis: Measurement and Analysis, Financial Stability Risk Measurement, (Dec. 2011), *available at* http://www.treasury.gov/initiatives/wsr/Documents/OFR-Alexander.pdf (analyzing growth of financial crises).

59. *See generally* Michael M. Hutchison et al., *A Brief Review of Literature on the Effectiveness of International Capital Controls*, 29 ASIAN DEV. REV. 1 (2012) (reviewing regulation on international capital).

60. *The European Systemic Risk Board: From Institutional Foundation to Credible Macroprudential Oversight*, DEUTSCHE BUNDESBANK (Apr. 1, 2012), *available at* http://www.bundesbank.de/Redaktion/EN/Downloads/Publications/Monthly_Report_Articles/2012/2012_04_esrb.pdf;jsessionid=0000VBv_5IEug4aTTiGIZMGwjNN:-1?__blob=publicationFile. *See generally* Rosa M. Lastra, *The Evolution of the European Central Bank*, 35 FORDHAM INT'L L.J. 1260 (2012) (exploring the functions and the objectives of the European Central Bank as a means to strengthen financial stability in Europe).

61. *See* Hannoun, *supra* note 30 (advocating the cooperation of banks and supervisory agencies in achieving global financial stability).

multilateral agreements and contains general frameworks to account for the vast cultural, legal, and social differences among the member states of the organization adopting the agreement.[62] This foundation includes the Basel Accords; IOSCO's statement of objectives and principles and its Multilateral Memorandum of Understanding (MMOU); as well as the G20's recent establishment of the Financial Stability Board (FSB).[63]

As with any idea in this conversion from theory to practice, however, the details present challenges.[64] This is particularly pertinent to any economic theory that portends to become a foundational solution for the mitigation or prevention of global systemic crises. The main issue remains the promulgation and adoption of rules based on legislative efforts. In order to better understand these potential pitfalls, the analysis must begin with prudential regulatory efforts prior to the 2008 global financial crisis.

1. International Prudential Regulation Prior to 2008

In the past few decades, prudential regulation has required international cooperation among central banks and securities regulators.[65] The increasing global presence of various financial institutions has created the problem of regulatory arbitrage in a manner not possible before digital markets became a ubiquitous feature of the financial landscape. It is the digitization of capital and globalization of risk that, when combined with increasing size, poses a significant burden to risk management.

The Financial Stability Forum (FSF), the precursor to the Financial Stability Board,

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62. While many have pondered the possibility of a truly global financial regulatory regime, professor Chris Brummer argues that the future belongs not to global agreements but to smaller cohorts that move forward to dominate the regulatory landscape. *See generally* CHRIS BRUMMER, MINILATERALISM: HOW TRADE ALLIANCES, SOFT LAW AND FINANCIAL ENGINEERING ARE REDEFINING ECONOMIC STATECRAFT (Cambridge University Press, 2014). His is an interesting perspective that argues that moving forward—at least for the foreseeable future—international action will take place in fits and starts, and in small groups of nations rather than grand multilateral organizations or among large groups of state actors. *Id.*

63. *See generally* Jose Vinals, Financial Counselor and Director, International Monetary Fund, Remarks at G-20 Reform Initiatives: Lessons Learned from Regulatory and Supervisory Responses to the Crisis (Nov.11, 2009), *available at* http://www.imf.org/external/np/speeches/2009/111109.htm (discussing the effect of the international financial crisis, specifically those from regulatory agencies).

64. *See* Philip Aldrick, *Eurozone Will Suffer if Brussels Controls Banking, Says FSA Boss*, DAILY TELEGRAPH (UK) (Apr. 27, 2012), *available at* http://www.telegraph.co.uk/finance/economics/9230309/Letting-Brussels-regulate-banks-would-deepen-EU-instability-warns-FSA-chairman-Lord-Turner.html (advocating against allowing Brussels further banking regulatory authority); *see also* Philip Aldrick, *Letting Brussels Regulate Banks Would Deepen EU Instability, Warns FSA Chairman Lord Turner*, TELEGRAPH ONLINE (UK), (Apr. 27, 2012), *available at* http://www.telegraph.co.uk/finance/economics/9230309/Letting-Brussels-regulate-banks-would-deepen-EU-instability-warns-FSA-chairman-Lord-Turner.html (discussing remarks made by the Financial Services Authority Chairman Lord Turner on newly proposed banking regulations); Christos Hadjiemmanuil, *European Monetary Union, The European System of Central Banks, and Banking Supervision: A Neglected Aspect of the Maastricht Treaty*, 5 TUL. J. INT'L & COMP. L. 105 (1997) (discussing the relationship between the Maastricht Treaty and European financial regulatory institutions).

65. *See* Douglas W. Arner, *Adaptation and Resilience in Global Financial Regulation*, 89 N.C. L. REV. 1579, 1580 (2011) (discussing the evolution of international regulatory cooperation in response to global financial crises). *See generally* Franklin Allen & Richard Herring, Presentation at Wharton School of the University of Pennsylvania Asian Development Bank Institute/Wharton Financial Institutions Center Conference on Financial Regulation, Securities Markets Versus Banks, and Crisis Prevention: Banking Regulation Versus Securities Market Regulation (July 11, 2001), *available at* http://finance.wharton.upenn.edu/~allenf/download/Vita/0129.pdf (comparing contemporary banking and securities market regulation).

is an example of an attempt at what may be termed pseudo-macroprudential regulation. The FSF ascended to the forefront of the global financial regulatory scene, aiming to succeed where the IMF had supposedly failed. Established in the aftermath of the 1997 Asian financial crisis, the FSF's goal was to serve as an early warning system designed to shine a light on the "vulnerabilities" in the financial sector.[66] In fact, the Financial Sector Assessment Program (FSAP), an International Monetary Fund (IMF) and World Bank initiative, is associated with the FSF and "designed to monitor and assess financial stability on a country by country basis."[67] The IMF's failure to predict the financial crises of the late 1990s in Asia is evidence of its regulatory shortcomings of the time and a narrow view of risk. This history underscores an integral query about whether a broader macroprudential regulatory entity is capable of accomplishing a feat that multiple other entities and groups have failed to accomplish.

In addition to the FSB, IOSCO has maintained systemic risk mitigation as one of its three main principles, the other two being investor protection and market fairness.[68] More specifically, IOSCO has required measures related to capital, collateral, and corporate governance for central counterparty clearance in the derivative markets. Furthermore, in the wake of the 2008 financial crisis, IOSCO members have begun to regard the organization as more essential to monitoring and managing systemic risk than ever before.[69] However, IOSCO is an international body comprised of members from varying countries. Thus, the speed at which IOSCO is capable of amending and enhancing its multilateral memorandum of understanding, given that it must reach compromise and accord from its member states, is problematic.

Supervisory colleges are another risk management organizational tool with prudential regulatory functions that have become somewhat popular in the past two decades.[70] First used in the aftermath of the BCCI scandal in the late 1980s, they gained momentum after the 2008 financial crisis.[71] As Duncan Alford states: "Even before the current crisis, supervisory authorities were utilizing colleges as a tool to share prudential information on financial institutions with cross-border operations."[72] Their use is particularly important in the European Union, where supervisory colleges monitor the activities of the member states.[73] Although mainly viewed as organizational tools, these colleges have gained renewed interest as a way of heading off multinational banking crises by allowing the

66. Douglas W. Arner & Michael W. Taylor, *The Global Financial Crisis and the Financial Stability Board: Hardening the Soft Law of International Financial Regulation?*, 32 U. NEW S. WALES L. J. 488, 489–90 (2009).

67. Cally Jordan, *The Dangerous Illusion of International Financial Standards and the Legacy of the Financial Stability Forum*, 12 SAN DIEGO INT'L L.J. 333, 336 (2011).

68. *See generally* Pierre-Hugues Verdier, *Mutual Recognition in International Finance*, 52 HARV. INT'L L.J. 55 (2011) (discussing models of transnational financial regulatory networks).

69. Jordan, *supra* note 67, at 361–62.

70. Duncan Alford, *Supervisory Colleges: The Global Financial Crisis and Improving International Supervisory Coordination*, 24 EMORY INT'L L. REV. 57, 77–79 (2010).

71. *Id.* at 59–62. Bank of Credit and Commerce International (BCCI) was an international bank, with over $20 billion in assets, whose failure is one of the largest in history. *Id.* at 59. Proven to be a corrupt enterprise, BCCI's spectacular downfall is—to this day—cited as a prime example of regulatory failure and the need for more systemic oversight. *Id.* at 59–60.

72. *Id.* at 58.

73. Alford, *supra* note 70, at 62.

college to disseminate information faster and monitor SIFIs in a more coordinated manner.[74]

Although many international bodies have attempted to address prudential regulation on an international scope, BCBS was formed in direct response to a microprudential crisis in 1974, and the Basel I and II Accords were rooted in the collective desire of central bankers to avoid systemic risk. [75] Central banks adopted Basel I in 1988, and only addressed "credit risk."[76] This round of Basel accords contained a rudimentary characterization of bank assets, and classified them into two tiers, divided into various categories based on their liquidity and risk weight.[77] Basel I stands upon four pillars: 1) the constituents of capital, 2) risk weighting, 3) a target standard ratio, and 4) transitioning and implementing agreements.[78] These pillars were the outcome of a regulatory harmonization goal on the part of Basel I, to level the playing field for banks that operated across their borders and competed for the same loans.[79] The primary idea of Basel I was that international banks with large holdings, and potential for systemic impact, would have to measure their assets by the same rules, and set aside the same amount of capital.[80]

Risk weighting, which viewed domestic currency and debt as lowest risk and therefore provided a favorable treatment, proved to be a fatal flaw in Basel I.[81] Another flaw in the design of Basel I led to its capital adequacy requirements only addressing the credit risk for a bank's loan-book.[82] Before Basel I there were no capital requirements to manage risks associated with fluctuations in exchange rates, interest rates and macroeconomic conditions.[83] This structure formed the basis for the subsequent criticism of Basel I, which focused on the accord's narrow scope, limited implementation, and finally the "misaligned incentives" that the accord provides to banks by essentially encouraging them to take on risks that were not classified and measured by the accord.[84]

In 1999, BCBS—largely in response to the banking crises of the 1990s—proposed what was supposed to be a "new and improved" and far-reaching capital adequacy accord. Formally known as *A Revised Framework on International Convergence of Capital Measurement and Capital Standards*, Basel II divided risk into categories in an effort to better mitigate systemic risk by providing rules for credit, operational and market risk.[85] The theory behind this classification of risk was that as asset classes changed, risk factors—

74. *Id.* at 62–64.

75. Sandra Rutova, *Revisiting the Basel Accords: Lessons Learned From the Credit Crisis*, 19 U. MIAMI BUS. L. REV. 83, 84–85 (2011).

76. *Id.*

77. *See* Bryan J. Balin, *Basel I, Basel II and Emerging Markets: A Nontechnical Analysis* (2008), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1477712 (discussing generally the development, implementation, and problems associated with the Basel I criteria).

78. *Id.* at 3–4.

79. Rutova, *supra* note 75, at 85–86.

80. *See* Marc Quintyn & Michael W. Taylor, *Regulatory and Supervisory Independence and Financial Stability*, 49 ECON. STUD. 259, 264–5 (2003) (arguing that regulatory and supervisory independence is important for financial stability).

81. Balin, *supra* note 77, at 3.

82. Rutova, supra note 75, at 95–96.

83. Joshua N. Rudin, *Basel III: The Banking Band-Aid?*, 6 BROOK. J. CORP. FIN. & COM. L. 621, 621 (2012).

84. Balin, *supra* note 77, at 5.

85. *Id.* at 6.

both on an institutional and macroeconomic level—remained stable over time.[86]

Basel II's implementation of risk monitoring, however, was left to credit rating agencies, Nationally Recognized Statistical Rating Organizations (NRSROs), which were tasked to opine on the "creditworthiness" of products and companies governed under Basel II.[87] This accord engendered a false sense of security among regulators and central bankers by relying too heavily on credit rating agencies.[88] The impact of Basel II on the 2008 financial crisis left important questions that mandate an inquiry into whether the three pillar foundations of the accord contributed to and accelerated the crisis, or whether the framework was simply too outmoded and fragile to help prevent the crisis.[89]

Specifically, the procyclical design of Basel II has received much criticism as one of its primary weaknesses, creating "cascading increases in the decline of asset values"[90] that would lead to disastrous consequences.[91] One negative outcome is the fire sale that must occur under liquidity rules when an asset's value is marked to market, and the bank is forced to dispose of that asset at the lowest possible value, and most likely the worst possible economic climate.[92]

Basel II's main attempt at shoring up the weaknesses of its predecessor was in its standardized approach to credit risk.[93] As part of the first pillar of Basel II, certain "authorized" credit rating agencies were given the authority to rate sovereign debt. Basel II's risk weighting methodology assigns a weight of 0% to debt rated AAA to AAA-, 20% to A+ to A-, and so forth down to B- debt rated at 150%. Thus came the main criticism that Basel II provides a "false sense of security."[94] Atik notes that Basel II "acceded to the credence that banks inevitably know their risk exposures and know how to manage risks better than their regulators."[95]

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86. *See id.* at 6–7 (discussing Pillar I of Basel II).

87. *See Credit Rating Agencies and Nationally Recognized Statistical Rating Organizations (NRSROs)*, U.S. SEC. & EXCHANGE COMMISSION, http://www.sec.gov/answers/nrsro.htm (last visited Jan. 16, 2015) (noting that although 11 NRSROs are named by the SEC, only three are regarded as the major agencies).

88. *See* Aline Darbellay & Frank Partnoy, *Credit Rating Agencies Under the Dodd-Frank Act*, 30 BANKING & FIN. SERVICES POL'Y REP. 1, 2 (2011) (discussing the impact of credit rating agencies after Dodd–Frank).

89. *See generally* Misa Tanaka, *The Macroeconomic Implications of the New Basel Accord*, 49 ECON. STUD. 217 (2003) (explaining the shortcomings of the Basel II accords).

90. Jeffery Atik, *Basel II: A Post-Crisis Post-Mortem*, 19 TRANSNAT'L L. & CONTEMP. PROBS. 731, 752 (2011).

91. *See* Matthew J. Eichner et al., *Financial Statistics for the United States and the Crisis: What Did They Get Right, What Did They Miss, and How Should They Change?*, DIVISION OF RESEARCH & STATISTICS & MONETARY AFFAIRS, FEDERAL RESERVE BOARD 20–28 (Apr. 2010), *available at* http://www.federalreserve.gov/pubs/feds/2010/201020/201020pap.pdf (arguing that to best prevent another financial crisis financial data must be used in a specialized and specific way).

92. Mark J. Welshimer, *Capital and Liquidity Regulation and Reform—An Update*, 1920 PRACTICING LAW INSTITUTE 127 (2011).

93. *See* W. Ronald Gard, *George Bailey in the Twenty-First Century: Are We Moving to the Postmodern Era in International Financial Regulation with Basel II?*, 8 TRANSACTIONS: TENN. J. BUS. L. 161, 163 (2006) (stating that the changes instituted by Basel I were quickly outgrown and that the two-tiered approach of Basel II would be better utilized by the international financial system).

94. Atik, *supra* note 90, at 749.

95. *Id.*

2. Movement Towards Macroprudential Regulation After 2008

In November 2009, the G20 called on BCBS to issue stronger prudential standards.[96] BCBS's efforts led to the draft and adoption of Basel III in 2010–11.[97] Basel III is the chief promoter of macroprudential regulation in the international community.[98]

The G20, through the latest Basel Accord (Basel III), have outlined various goals for systemic risk monitoring that synchronize with the academic goals of macroprudential regulation. From a regulatory standpoint, macroprudential regulation aims to: 1) prevent and/or contain systemic shocks to the financial system; 2) supervise SIFIs and their risk accumulation; 3) provide a conservation buffer above and beyond the rules prior to the 2008 financial crisis; and 4) provide for countercyclical measures that mitigate the procyclical policies of prior regulatory mandates, thus allowing for more flexibility in the system.[99] This factor allows SIFIs to expand reserves during an economic expansion and reduce reserves amidst a contraction.

As a preliminary, but all-important, first step, Basel III adopts a new, stricter definition of capital for regulated entities.[100] BCBS found that the credit crisis of 2008—which is arguably only a portion of the overall crisis—could have been largely avoided with this new definition.[101] These changes primarily address the "size and quality" of common equity tier 1 (CET1) capital.[102] At the time of the crisis, Basel rules allowed 15% of CET1 capital to consist of "hybrid capital instruments" which contributed significantly to the asset devaluation of the banks.[103] Hybrid capital instruments became a leading indicator

96. Alford, *supra* note 70, at 75.

97. Viral V. Acharya, *The Dodd-Frank Act and Basel III: Intentions, Unintended Consequences, and Lessons for Emerging Markets* 9–10 (Asian Dev. Bank Inst., Working Paper No. 392, 2012), *available at* http://www.eaber.org/sites/default/files/documents/2012.10.29.wp392.dodd_.frank_.act_.basel_.iii_.emerging.markets.pdf.

98. *See* Hannoun, *supra* note 30 (discussing the role of central banks in the implementation and oversight of Basel III).

99. *Id. See* Peter King & Heath Tarbert, *Basel III: An Overview*, 30 BANKING & FIN. SERVIS. POL'Y REP. 1 (2011) (explaining that the departure from micro to macroprudential measures was to better address systemic financial risks at the global level). *See also* Andrew W. Lo & Thomas J. Brennan, *Do Labyrinthine Legal Limits on Leverage Lessen the Likelihood of Losses? An Analytical Framework*, 90 TEX. L. REV. 1775, 1784–89 (2012) (Basel III updates previous accords by specifically incorporating two primary drivers of macroprudential regulation. First, Basel III adopts countercyclical capital measures to dampen the procyclical effects of other regulation and, more specifically, to help mitigate the hidden impact of procyclical tendencies of firms that go unnoticed in the expansion phase of an economic cycle. The second major enhancement to the Basel Accords materializes in the embracing of liquidity buffers to address the insufficient capital requirements that led to the financial crisis of 2008. Basel III significantly modifies capital requirements at all tiers and introduces leverage ratios to assist large institutions in maintaining their financial health in both expansionary and recessionary periods.). *See generally* Randall D. Guynn, *The Global Financial Crisis and Proposed Regulatory Reform*, 2010 BYU L. REV. 421 (2010) (detailing that the Basel III adopted a broad set of regulatory reforms to combat market instability following the 2008 financial crisis).

100. Rudin, *supra* note 83, at 623.

101. BASEL COMMITTEE ON BANKING SUPERVISION, BASEL III: A GLOBAL REGULATORY FRAMEWORK FOR MORE RESILIENT BANKS AND BANKING SYSTEMS, BANK FOR INTERNATIONAL SETTLEMENTS, para. 6 (Dec. 2010), *available at* http://www.bis.org/publ/bcbs189.pdf [hereinafter BASEL III]. (Basel III was revised to finalize the treatments of counterparty credit risk in bilateral trades and re-released in June 2011).

102. Blair Keefe & Andrew Pfleiderer, *Basel III: What It Means for the Global Banking System*, 27 BANKING & FIN.L.REV. 407, 410 (2012).

103. *Id.*

of the credit crunch that followed.[104] Such capital is to be phased out by Basel III. Basel III's tier 1 and tier 2 capital are basically defined as "going concern capital" and "gone concern capital." The latter is used in liquidation and bankruptcy, while the former is used in the operation of the bank.[105]

While stringent capital rules are the cornerstone of Basel III, this latest accord has also taken significant steps to mitigate the procyclical impact of Basel II.[106] Countercyclical measures can provide a smoothing effect on the risk curve experienced by various institutions, and indeed act to curb their appetite for risk in the boom phase of a cycle. This will not be achieved immediately upon execution, especially given the fact that a financial institution's appetite for risk is higher with the growth of the institution and the economy. Over the long term, however, macroprudential regulation's countercyclical reforms will help the financial services industry realize the ultimate benefits of reduced risk in the form of longevity in the life cycle of its products, and continued and more stable profitability.[107]

Another international step towards a more macroprudential-centered regulatory framework is the G20's establishment of the FSB, in 2009, as the successor of the aforementioned FSF.[108] Its goal is to provide the foundation for financial reform, with four approaches: "(1) strong regulatory controls; (2) effective supervision; (3) enhanced methods for addressing resolution and systemic institutions; and (4) transparent international assessment and peer review."[109] The FSB has a lofty mandate that proposes "to enhance cooperation among the various national and international supervisory bodies and international financial institutions so as to promote stability in the international financial system."[110] The immediate, primary problem for the FSB will be credibility. Essentially, the FSB suffers a branding problem; the FSB merely is a renamed version of the FSF. As early as 2001, the FSF was called a "think tank with nowhere to go."[111] It remains to be seen whether the board can succeed where the forum failed.[112]

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104. *Id.*

105. BASEL III, *supra* note 101, at 12.

106. *See* Hans Gersbach & Jan Wenzelburger, *The Workout of Banking Crisis: A Macroeconomic Perspective*, 49 ECON. STUD. 233, 233 (2003) (arguing "strict enforcement of capital adequate rules suffices in prosperous periods").

107. *See* Angela Monaghan, *Banks Urgently Need to Raise More Capital, Says BoE*, THE TELEGRAPH (Mar. 23, 2012, 10:09 AM), http://www.telegraph.co.uk/finance/newsbysector/banksandfinance/9162329/Banks-urgently-need-to-raise-more-capital-says-BoE.html (arguing British banks should raise capital to reduce risk).

108. *See* Arie C. Eernisse, Note, *Banking on Cooperation: The Role of the G-20 in Improving the International Financial Architecture*, 22 DUKE J. COMP. & INT'L L. 239, 239 (2012) (discussing how G20's establishment of the Financial Stability Board improved international financial architecture); John Eatwell, Paper Presented at the Western Economic Association International Conference: The Challenges Facing International Financial Regulation 14 (July 4–8, 2001), *available at* http://www.financialpolicy.org/DSCEatwell.pdf (arguing for a strong global authority with the authority to monitor and enforce international standards).

109. Ernisse, *supra* note 108, at 240–41.

110. Jose Vinals, Financial Counselors and Director, International Monetary Fund, Remarks at G20 Reform Initiatives, Seoul, Korea: Lessons Learned from Regulatory and Supervisory Responses to the Crisis, (Nov. 11, 2009), *available at* http://www.imf.org/external/np/speeches/2009/111109.htm.

111. Eatwell, *supra* note 108, at 14.

112. The Brookings Institution has proposed to elevate the FSB to a treaty institution. DOMENICO LOMBARDI, BROOKINGS INSTITUTION, THE GOVERNANCE OF THE FINANCIAL STABILITY BOARD 15 (2011), *available at* http://www.brookings.edu/~/media/research/files/papers/2011/9/23%20financial%20stability%20board%20lombardi/fsb_issues_paper_lombardi.pdf. However, the proposal by the Brookings Institution to establish the FSB as

B. Prudential Regulation in the United States

1. Prudential Regulation Prior to 2008

Prudential regulation prior to the 2008 financial crisis—around the globe—focused on institutional risk, as evidenced by the fact that even the Basel I and II Accords addressed systemic risk from a microprudential perspective. In the United States, the Federal Reserve had final prudential authority over banks, with the Federal Deposit Insurance Corporation (FDIC) and the Office of Thrift Supervision (OTS) carrying resolution authority over all banking institutions.[113] The Securities and Exchange Commission (SEC) and Commodity Futures Trading Commission (CFTC) both maintained prudential regulatory authority and the necessary mandates regarding the institutions they supervised. These measures were primarily aimed at the exchanges and other clearing entities, with focus on customer fund segregation and minimum capital requirements in order to prevent contagion to the market-at-large. The Fed, which is arguably the institution ideally suited for macroprudential regulation, had a dual mandate that did not appear to include any systemic risk regulation.[114] While the argument could be put forth that the primary monetary policies of the Fed acted as the best macroprudential regulatory tool available, the institution itself was neither geared toward nor focused on systemic risk regulation.

2. Post-Crisis Prudential Regulation in the United States: Dodd–Frank

In the United States, the Dodd–Frank Act served as the foundational legislation for the introduction of macroprudential policies as a regulatory tool. The Dodd–Frank Act created the Financial Stability Oversight Council (FSOC) with the mandate to design and

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a treaty institution is untenable. Treaties—especially in the fast evolving field of finance—could prove useless, because new products can be designed to circumvent the treaty language. Treaties can also be watered down. As such, the proposal to elevate the FSB to the status of a treaty organization is fraught with peril. The global financial system, while vast, continues to evolve rapidly with basic securities, derivatives, and other financial instruments regulated under varying structures by different regimes. Even domestically, which regulator in the United States will be tasked with the implementation of hypothetical treaty mandates under the FSB? Another reason that the treaty proposal for the FSB is unwarranted is the fractured nature of domestic and international relations. The following is a different approach for the new FSB (which is for all intents and purposes a top-down organization): the implementation of a two-part strategy in inviting members and providing access to and expanding its audience. Part one would grant membership to countries based on the size of the economy—provided the economy meets certain factors. For example, Iran's economy has no financial sector of consequence and is currently subject to severe international sanctions, so it would not receive an invitation. Countries that are not invited would be eligible to join based on certain objective, measureable and verifiable criteria. Part two would grant membership using a three-part test. (1) How fast is the economy growing, and how fast has it grown in the past decade? Rapidly developing countries pose both an opportunity and a threat to the global economy. Their continued, stable growth provides an opportunity for their own population and the world, while a sudden financial shock would not only destabilize the country, but also its trading and financial partners. (2) The country must have a measurably robust financial services sector. (3) The country must have a strong financial regulator, or plans institute one that is able to implement international mandates.

113. *See generally* Michele Cea, *The Regulatory Powers of the Federal Reserve and of the European Central Bank in the Wake of the Financial Crisis of 2007–2009*, 2 CREIGHTON INT'L & COMP. L.J. 54 (2011) (examining the "newly expanded functions" of the Fed and EBC in the new roles of "ensuring financial stability, carrying out the so-called bank-stress tests and acting as 'lender of last resort'").

114. *Id.* at 58.

implement macroprudential regulation in the United States.[115] According to the Government Accountability Office (GAO), the Dodd–Frank Act "created FSOC to identify and address threats to the stability of the U.S. financial system and the Office of Financial Research (OFR) to support FSOC and Congress by providing financial research and data."[116] The FSOC has 14 members, five of whom are nonvoting.[117] The Secretary of the Treasury chairs the Council.[118] The voting members include the chairs of the SEC, CFTC, the Fed and FDIC, as well as the directors of Department of Housing and Urban Development (HUD) and CFPB.[119] FSOC's aim is to unite all agencies, whose previous regulatory mandate was microprudential, with the goal of assisting in the Dodd–Frank Act's macroprudential regulatory mandates.

The Dodd–Frank Act also required that the FSOC regulate large Bank Holding Companies (BHC) and SIFIs.[120] BHCs are defined as banks with a total asset base of $50 billion or more, arguably enshrining the concept of TBTF.[121] Section 165 of the Dodd–Frank Act provides sweeping powers for the Federal Reserve to impose prudential standards on systemic financial entities. Specifically, Section 165(d) required financial entities with various sized holdings to file their resolution plans with the Federal Reserve Board (FRB) and the FDIC by December 31, 2013.[122] These so-called "living will" provisions aim to mitigate this permanent enshrinement of large banks and require that BHCs provide a document to their regulators that sets forth the specific design and manner by which they can be liquidated should the need arise.[123] The theory behind the living wills is that if any SIFIs are in such trouble that they may require another bailout, an orderly demise will be a more prudent option.[124] Additionally, such a scenario presents the opportunity to demonstrate to these institutions that the United States is committed to ending TBTF.[125] In fact, a possible end to TBTF continues to be cited as the primary objective of the resolution authority under the Dodd–Frank.[126] Of course, the problem with

115. Robert F. Weber, *Structural Regulation as Antidote to Complexity Capture*, 49 AM. BUS. L.J. 643, 662 (2012).

116. U.S. GOV'T ACCOUNTABILITY OFFICE, REP. NO. GAO-12-886, REPORT TO CONGRESSIONAL REQUESTERS, NEW COUNCIL AND RESEARCH OFFICE SHOULD STRENGTHEN THE ACCOUNTABILITY AND TRANSPARENCY OF THEIR DECISIONS 1 (2012), *available at* http://www.gao.gov/assets/650/648064.pdf [hereinafter REPORT TO CONGRESSIONAL REQUESTERS].

117. FINANCIAL STABILITY OVERSIGHT COUNCIL, ANNUAL REPORT iii (2014), *available at* http://www.treasury.gov/initiatives/fsoc/Documents/FSOC%202014%20Annual%20Report.pdf.

118. *Id.*

119. *Id.*

120. *Id.* at 3.

121. *Id.* at 92.

122. Resolution Plans Required, 76 Fed. Reg. 67,323, 67,323–30 (Nov. 1, 2011) (to be codified at 12 C.F.R. pt. 243).

123. Dodd–Frank Act, 12 U.S.C. § 5365.

124. *See generally* Stacie E. McGinn, *Industrial Organization and Systemic Risk: An Agenda for Future Research*, *in* BANKING LAW INSTITUTE 2011: THE TRANSFORMATION CONTINUES 351 (Lee A. Meyerson & William J. Sweet, Jr. eds. 2011) (presenting the scenario detailing how large financial institutions should go through the liquidation process).

125. *See generally* Ann Graham, *Bringing to Heel the Elephants in the Economy: The Case for Ending "Too Big To Fail"*, 8 PIERCE L. REV. 117 (2010) (generally demonstrating that an orderly demise scenario would be the opportune time to demonstrate that the government is committed to ending TBTF).

126. Joe Adler, *Four Reasons You Should Care about Big Bank Wind-Down Plans*, AM. BANKER (June 20, 2014), http://www.americanbanker.com/issues/179_119/four-reasons-you-should-care-about-big-bank-wind-

living wills is the potential lack of political willingness on the part of regulators to execute the directives of the will when most needed.[127] Nevertheless, Professor Joseph Karl Grant notes that these provisions are "the most sweeping piece of financial legislation and regulation since the Great Depression, the FRB, and FDIC resolution planning rules will have an enormous regulatory impact on financial institutions for years to come."[128] This forecasted impact is a consequence of macroprudential policy implementation, and the dampening of the risk appetite of SIFIs—lest they cease to exist.

The Dodd–Frank Act also devises a permanent stress test requirement similar to the Supervisory Capital Assessment Program (SCAP)—the U.S. government's stress tests in the wake of the 2008 financial crisis for all BHCs.[129] These tests are recognized as an important macroprudential tool that will provide regulators with significant and detailed information about the financial health of the individual institutions under their regulatory supervision.[130] Furthermore, they illuminate potentially rising systemic risks.[131]

The tip of the spear of macroprudential regulation in the Dodd–Frank Act is the creation of the OFR within FSOC.[132] The OFR is tasked with "serving" FSOC as well as its member agencies, "by improving the quality, transparency, and accessibility of financial data and information, conducting and sponsoring research related to financial stability, and promoting best practices in risk management."[133] This mandate requires OFR to establish a data and research center to collect and standardize data, develop tools for risk management, and perform long-term research.[134]

Another macroprudential tool that the Dodd–Frank Act created is its directive for enhanced oversight of credit rating agencies.[135] The SEC possesses this oversight authority, and the Commission has proposed rules to augment its existing oversight and complement the steps it followed after the Credit Rating Agency Reform Act of 2006.[136]

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down-plans-1068216-1.html.

127. *See generally* Adam J. Levitin, *In Defense of Bailouts*, 99 GEO. L.J. 435 (2011) (generally identifying the lack of political willingness as a threat to the functionality of living wills).

128. Joseph Karl Grant, *Planning for the Death of a Systematically Important Financial Institution Under Title I § 165(D) of the Dodd-Frank Act: The Practical Implications of Resolution Plans or Living Wills in Planning a Bank's Funeral*, 6 VA. L. & BUS. REV. 467, 469 (2012).

129. Acharya, *supra* note 97, at 18–19. The initial test results released by the Fed on March 15, 2013, indicated that all BHCs in the United States have fully recovered and are maintaining Tier 1 capital at well-above Basel III requirements. A thorough evaluation of these numbers may bring to light elements that would benefit from further examination. The latest stress test results published in March 2014 indicated that all banks, except one—Zions Bank—have passed the tests. Halah Touryalai, *Stress Test Results: Big Banks Look Healthier as 29 of 30 Pass, Zions Fails*, FORBES (Mar. 20, 2014, 4:32 PM), http://www.forbes.com/sites/halahtouryalai/2014/03/20/stress-test-results-big-banks-look-healthier-as-29-of-30-pass-zion-fails/. These tests and their criteria have been criticized in the past.

130. Andru E. Wall, *Stress Tests & Market Discipline*, 30 No. 10 BANKING & FIN. SERVS. POL'Y REP. 1, 1 (2011).

131. *Id.*

132. *See generally* OFFICE OF FIN. RESEARCH, U.S. DEP'T OF THE TREASURY, 2012 ANNUAL REPORT 1 (2012), *available at* http://www.treasury.gov/initiatives/wsr/ofr/Documents/OFR_Annual_Report_071912_Final.pdf [hereinafter 2012 ANNUAL REPORT] (noting the creation of the Office of Financial Research within FSOC).

133. REPORT TO CONGRESSIONAL REQUESTERS, *supra* note 116, at 6.

134. *Id.*

135. Dodd–Frank Act, 12 U.S.C. § 5365.

136. *Credit Rating Agencies*, SEC. & EXCHANGE COMMISSION, http://www.sec.gov/spotlight/dodd-

Section 932 of the Dodd–Frank Act allows for new requirements for these NRSROs, such as conflict of interest reporting and examination that aim to prevent a close relationship between the rating agency and the issuer of any rated product.[137] Under the Dodd–Frank Act, each NRSRO is required to implement effective internal controls, and submit annual reports to the SEC.[138]

It is this combination of ongoing stress tests, living wills, FSOC, OFR and NRSRO oversight that gives macroprudential regulation the highest chance of preventing—or dampening—the impacts of systemic shocks, among available regulatory, and policy tools.[139] First, at present, no other theories have been put forth that claim the potential to mitigate a systemic crisis or manage the procyclical behavior of financial services firms. Second, microprudential regulation alone has been demonstratively deficient in managing large–scale crises. Third, macroprudential regulation is a complementary policy and regulatory tool to microprudential regulation, and, as such, will serve to enhance current regimes.[140]

IV. STRENGTHS AND WEAKNESSES OF MACROPRUDENTIAL REGULATORY SCHEMES

Macroprudential regulation—properly designed and implemented—can act as both a preventive measure and a containment mechanism for systemic shocks. Macroprudential regulation's focus on endogenous risk and its design to collect system-wide information delivered to a single regulatory entity that can act as either an exclusive macroprudential regulator or more simply as an information aggregator tasked with spotting systemic risks, provides a significant advantage unavailable to regulators and governments prior to 2008.[141] This information aggregation is central to the task of a macroprudential regulator. Systemic risks—as evidenced by decreased capital, liquidity, or increased leverage ratios—can only be addressed on a large scale if the appropriate information has been collected, dissected, and analyzed by a single regulatory body.[142] Ideally, the same body will have the authority to enforce mandates to bring the system into balance by requiring various entities—or the banking industry as a whole—to change their practices. Nevertheless, a centralized repository and analytic body is a necessary first step. In

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frank/creditratingagencies.shtml (last visited Jan. 16, 2015).

137. Dodd–Frank Act § 932(a)(2)(B); 15 U.S.C. § 78a(15)(E)(c)(3).

138. SEC Release No. 34-64514; File No. S7-18-11 (May 18, 2011), *available at* http://www.sec.gov/rules/proposed/2011/34-64514.pdf.

139. *See generally* 2012 ANNUAL REPORT, *supra* note 132.

140. Hannoun, *supra* note 30, at 15–16.

141. *See generally* Amanda Risch, *The Financial Stability Oversight Council*, 31 REV. BANKING & FIN. L. 521 (2012) (discussing the Financial Stability Oversight Council); *see generally* Douglas W. Arner, et al., *Central Banks and Central Bank Cooperation in the Global Financial System*, 23 PAC. MCGEORGE GLOBAL BUS. & DEV. L.J. 1 (2010) (discussing central banks).

142. *See generally* Dimitrios Bisias et al., *A Survey of Systemic Risk Analytics* (Office of Financial Research, U.S. Department of the Treasury, Working Paper #0001 2012), *available at* http://www.treasury.gov/initiatives/wsr/ofr/Documents/OFRwp0001_BisiasFloodLoValavanis_ASurveyOfSystemicRiskAnalytics.pdf (discussing how regulatory agencies can utilize data from financial institutions to identify systemic risk threats).

addition, harmonization on an international and domestic level is both a critical component of macroprudential regulation and a potential threat to its existence.

A. Global Regulatory Harmonization: A Double Edged Sword

Macroprudential regulation—if and when implemented by the largest economies—can be a significant incentive to bring various rogue financial jurisdictions, which until now have tried to benefit from regulatory arbitrage, under the authority of the international financial regulatory regimes of the Basel Accords and IOSCO. This presents a unique opportunity for international financial regulation to succeed where it has previously faltered.[143] This can even be seen in the flawed Basel II accord. As of May 2008, it was estimated that by 2015, roughly 77% of the world's GDP, including countries such as India, Egypt, and Pakistan, were planning to adopt and implement Basel II's guidelines.[144] By 2008, however, only 46% of the world's GDP had adopted Basel II, which could be one measure of its ineffective control.[145] Perhaps this area of increased adoption presents an opportunity for IOSCO to step in and enhance cooperation among its members, and thereby help affect a deeper harmonization of macroprudential policy.

The greatest opportunity in the long-term implementation of macroprudential regulation is the reduction or elimination of the risk of systemic shocks that spread from the financial sector to the economy at large. Specifically, macroprudential regulation—correctly implemented domestically and coordinated globally—has the potential to significantly reduce the risk of systemic shocks by providing governments and economies with a sufficiently early warning that will enable preventive measures to be implemented, or at least a containment system that will reduce the impact of any future shock. This early warning system can be an essential component of a sound regulatory system without market interference.

On the other hand, macroprudential regulation's success, in large part, is contingent upon harmonized global standards because of the interconnection between large economies and their markets, as well as the global footprint of the largest—and systemically most important—entities that will be subject to macroprudential regulation. In essence, no single nation can successfully implement macroprudential regulation alone in today's world. Some argue that the concept of a globalized and interconnected world is not new, and if measured by capital mobility, the world was just as globalized in 1914 as it was in 2000.[146] However, assuming that the depth and breadth of past globalization is equal in various measures to today, our world is different by one measure: speed of capital mobility. Moving capital from one financial center to another historically involved more time and effort than it does today. This speed is facilitated by two important factors. The first is the spread of technology as an enabler of banking transactions around the world. The second

143. *See generally* Rolf H. Weber & Douglas W. Arner, *Toward a New Design for International Financial Regulation*, 29 U. PA. J. INT'L L. 391 (2007) (discussing the history international financial regulatory institutions and programs).

144. Balin, *supra* note 77, at 13.

145. *Id.*

146. *See* Maurice Obstfeld & Alan M. Taylor, *Globalization and Capital Markets* 6 (Nat'l Bureau of Econ. Research, Working Paper No. 8846, 2003), *available at* www.nber.org/papers/w8846.pdf (noting that while "globalization" is a relatively new term, global integration in capital mobility has only recently returned to levels seen in 1914).

factor is the rise of a global corporatocracy that aims to penetrate all available markets for its products. Such penetration has naturally smoothed the cultural differences in international trade. Speed and mobility of capital present compelling reasons as to why macroprudential regulation is needed, yet can only function if different domestic regulators cooperate on a scale heretofore unseen. Unfortunately, such integrated cooperation has not been observed, and may also lead to problems inherent in harmonization, as discussed below.

A potential weakness inherent in any new regulatory endeavor that is amplified by harmonization is the uncertainty in the predictive ability of regulation. The poor performance of Basel I and II underscore the tenuous predictive ability of policy and regulation. This may be partly due to the use of causation as a regulatory analytical tool. One premise of all post-hoc regulation in the United States has been the remediation of the underlying causes of previous crises. The history of regulation from the 1933 Securities Act to Basel II demonstrates that post hoc regulation, while capable of addressing the issues of a previous crisis, is very poor at predicting and mitigating future crises.[147]

The primary obstacle in harmonization is that in a future crisis, any inherent regulatory flaw has, by the time of the crisis, automatically spread far and wide at a much more rapid pace than before. Systemic crises are damaging in different ways to different systems.[148] The 2008 financial crisis devastated many countries around the world, but it did so in divergent ways.[149] In a harmonized global financial regulatory system, the risk is that all member states of that system will experience the same damage on a depth not previously experienced.[150]

These reasons foretell why harmonization will be difficult, when considering that various governments have taken different approaches to the concept of macroprudential regulation's implementation.[151] Even if the United States, United Kingdom[152] and European Union[153] manage to successfully harmonize, China may remain marginalized,

147. *See* Anthony Browne, *Here's a Radical Idea: Let's Take Stock Before Introducing More Regulation*, CITY AM (Oct. 4, 2012, 12:39 AM), http://www.cityam.com/article/here-s-radical-idea-let-s-take-stock-introducing-more-regulation (explaining the overregulation problem and suggesting a slower implementation process).

148. *See generally* Carmen M. Reinhart & Kenneth S. Rogoff, *The Aftermath of Financial Crises* (Nat'l Bureau of Econ. Research, Working Paper No. 14656, 2009), *available at* http://web.calstatela.edu/faculty/rcastil/Econ462/Crises.pdf (comparing the buildup and aftermath of banking crises in various economies).

149. *See generally* Anna Gelpern, *Financial Crisis Containment*, 41 CONN. L. REV. 1051 (2009) (examining financial crisis containment).

150. *See generally* Eric J. Pan, *Challenge of International Cooperation and Institutional Design in Financial Supervision: Beyond Transgovernmental Networks*, 11 CHI. J. INT'L L. 243 (2010) (examining the effectiveness of international organizations in responding to financial crises).

151. *See* Pierre-Hugues Verdier, *Mutual Recognition in International Finance*, 52 HARV. INT'L L.J. 55, 62–63 (2011) (explaining the different financial systems used by various states).

152. *See generally* Paula Moffatt & Andrew Campbell, *Emerging Changes to the United Kingdom's Financial-Sector Safety Net Following the Banking Crisis of 2007–2008*, 30 BANKING & FIN. SERVS. POL'Y REP. 10 (2011) (describing the current evolution of the U.K.'s financial sector regulations); *see also Central Banking: The England Job*, THE ECONOMIST (Sept. 1, 2012), *available at* http://www.economist.com/node/21561889 (discussing the candidates for governor of the Bank of England).

153. Some scholars, like Nicolas Veron, have argued for deeper integration in the European Union. Veron compares the U.S. and E.U. experience in the aftermath of the 2008 global financial crisis and arrives at the conclusion that the federal legislative system in the U.S. enabled the country to adopt better regulations at a faster pace. This allowed the U.S. to exit the crisis more successfully than its Atlantic neighbors. *Challenges of Europe's*

especially since its state-driven, centrally-planned economy can quickly implement macroprudential regulation without external cooperation. Furthermore, commoditization of risk transference is both a weakness of macroprudential regulation and a threat. If all agencies cooperate globally, then the risk of contagion is both instant and global. Risk is productized by the virtue of harmonization of regulatory systems required to meet macroprudential regulation mandates. The likely best path to a successful implementation of macroprudential policies is deep regulatory harmonization among the G20. At the macroprudential level, as posited by Basel III, such harmonization, by its very nature, leaves close to 90% of the world's GDP[154] susceptible to the same "unknown unknown" systemic risks that no one can fathom today. In such a case, if the threat is not manageable by macroprudential—or other—policies, then harmonization will only lead to faster, deeper, harder, and longer economic crises.[155]

One particular threat to the success of macroprudential regulation is the rapid global growth of shadow banking. According to Pozsar et al., "Shadow banks are financial intermediaries that conduct maturity, credit, and liquidity transformation without explicit access to central bank liquidity or public sector credit guarantees."[156] These banking activities, which include "credit, maturity and liquidity transformation," lack the support of a central bank that can act as a backstop.[157] At the height of the previous boom in the financial services industry, around 2007, the difference between bank and shadow liabilities was estimated at approximately eight trillion dollars.[158] Yet, regulation of shadow banking has been fraught with difficulty.[159] The same parties who have challenged other aspects of macroprudential regulation have also opposed regulation of shadow banking, citing a potential reduction of economic growth as a negative factor.[160] Another possible risk is that the United States may not prove willing to cooperate on an international level and refuse or fail to implement macroprudential regulation on a truly harmonized international landscape that may compromise American traditions. There is the risk that the United States rigidly insists on being a shining city on the hill and merely invites all

Fourfold Union: Hearing on "The Future of the Eurozone: Outlook and Lessons" Before the Subcomm. on European Affairs of the S. Comm. on Foreign Relations, 112th Cong. 4 (2012) (statement of Nicolas Veron, Visiting Fellow, Peterson Institute for International Economics), *available at* http://www.foreign.senate.gov/imo/media/doc/Veron_Testimony.pdf.

154. The G20 economies made up 85% of global GDP in 2014. G20, POLICY NOTE: GROWTH AND DEVELOPMENT 1 (Nov. 2014), *available at* https://g20.org/wp-content/uploads/2014/12/policy-note-growth-and-development1.pdf.

155. *See* Hyun Song Shin, Macroprudential Policies Beyond Basel III, Keynote Speech Before the Joint Conference of the Bank for International Settlements and the Bank of Korea: Macroprudential Policies Beyond Basel III (Jan. 17, 2011), *in* BIS PAPERS NO. 60, Dec. 2011, at 5, *available at* http://www.bis.org/publ/bppdf/bispap60.pdf (examining the risk associated with the interconnectedness of international banks).

156. Zoltan Pozsar et al., *Shadow Banking*, 2013 FED. RESERVE BANK N.Y. ECON. POL'Y REV. 1 (2013).

157. *Id.*

158. *Id.* at 6.

159. *See* Thorvald Grung–Moe, *Shadow Banking: Policy Challenges for Central Banks* 20 (Levy Economics Institute of Bard College, Working Paper No. 802, May 2014), *available at* http://www.levyinstitute.org/publications/shadow-banking-policy-challenges-for-central-banks (discussing the problems with regulation of shadow banking).

160. *See* Paul Kupiec, *The Economic Costs of Imposing Bank Regulations on "Shadow Banking,"* AM. ENTER. INST. (May 5, 2014), http://www.aei.org/article/economics/financial-services/banking/the-economic-costs-of-imposing-bank-regulations-on-shadow-banking/ (discussing the problems with attempting to regulate shadow banking).

others to climb that hill.

B. Domestic Regulatory Coordination & Cooperation

The dual issues of regulatory fragmentation and discretion pose a significant hindrance to the harmonized view of macroprudential policy. One weakness inherent in the effective implementation of macroprudential regulation on an international level is the requirement of a tectonic shift in the belief system of *domestic* regulatory regimes. In the move from micro to macroprudential regulation, disclosure must take into account the links between products, institutions, and transactions that have been regulated by different agencies, subject to different rules, promulgated under different legislation, and adopted under an often-varied, socio-economic environment. Therefore, the regulated entities must provide far more information about their institutions and affairs than ever before.[161]

This leads directly to another inherent weakness of a coordinated regulatory system, where such regimes exercise their discretion, which often fails to be in the best interests of markets or investors. Regulators, faced with limited resources, must choose where, how, and when to make their mark. This resource allocation naturally leads to choices that may be the least efficient means of exercising jurisdiction. This has been a significant problem heretofore. In the case of macroprudential regulation, poor exercise of regulatory discretion would render the concept moot. Macroprudential regulation requires its primary regulator to collect vast amounts of data and develop risk models based on the current state of the industry at large.[162] As such, macroprudential regulation will suffer a fatal blow if the regulators choose to collect the incorrect data at the wrong intervals or simply to choose not to collect certain data. Furthermore, this vast effort will certainly face significant opposition from industry. To be fair, the entirety of the U.S. regulatory system was "fragmented" prior to the crisis, and did not focus on systemic risk to a sufficient degree.[163] The fact that systemic risk regulation requires cooperation on the part of disparate regulators with differing mandates rendered such regulation a postscript to the prudential regulatory efforts of the Fed.[164]

A potential pitfall of attempting to coordinate a fragmented domestic regulatory system is failing to exert influence over the strength of the correlation between securities/commodities regulation and systemic risk. Essentially, why should the SEC or the CFTC include macroprudential mandates in their already overburdened regulatory infrastructure? The primary arguments against such mandates focus on the core mission of each agency and their continued work to protect investors, and ensure market efficiency and capital flow. However, these arguments are merely thinly veiled efforts to maintain the trajectory of regulatory fragmentation that has existed in the United States. This fragmentation has created various turfs that need fences to protect them and to keep out

161. *See* NICOLAS GRABAR & ETHIOPIS TAFARA, GLOBAL CAPITAL MARKETS & THE U.S. SECURITIES LAWS 2010: STRATEGIES FOR THE CHANGING REGULATORY ENVIRONMENT 632–37 (PLI/Corp. 2010) (reporting SEC changes in regulations requiring increased disclosure).

162. *See Models and Tools for Macroprudential Analysis* 9 (Basel Committee on Banking Supervision, Working Paper No. 21, Bank for International Settlements, 2012) (analyzing how "[c]entral banks and supervisors typically use a suite of models and tools . . . to conduct macro stress testing").

163. Annette L. Nazareth, *Reflections on Systemic Risk Regulation in Response to Karmel's Paper*, 35 BROOK. J. INT'L L. 845, 847 (2010).

164. *Id.*

intruders. Systemic risk is—and will remain—arguably the foundation of all three mandates of securities regulators. Specifically, the largest failure in the investor protection arena would be a systemic failure of large banks, leading to a severe market collapse.[165] Such an event would also have a significantly negative impact on market efficiency and capital flow.

The problem of coordinating differing regulatory regimes, both domestic and international, presented itself in January 2013, when BCBS further delayed implementation of its capital requirement rules, essentially acknowledging that the stricter definitions and capital requirements may lead to another economic downturn.[166] This acknowledgment highlights a significant challenge in the implementation of tighter banking rules after three decades of global deregulation. However, not everyone is convinced of the sufficiency of Basel III's capital requirement rules.

In a scathing article, Thomas Hoenig, Vice Chairman of the Federal Deposit Insurance Corporation, criticizes Basel III as a "continuation" of a "poor record" of a "fundamentally flawed" regulatory system.[167] He goes on to suggest, "to be useful, a capital rule must be simple, understandable and enforceable."[168] The argument Hoenig puts forth, repeated by others, is that the Basel framework has become too complex. Complexity presents two important problems for an international body, seeking adherence to its standards.[169] First, the more complex the system, the more room for regulatory arbitrage among member states.[170] The Basel Accords frame broad mandates and leave the specific rulemaking to the discretion of domestic regulators.[171] Therefore, each signatory may interpret these mandates in a light most favorable to its domestic banking institutions, in an effort to provide these banks with a competitive global advantage in attracting foreign capital. Second, the higher the level of complexity, the less likely it is to be uniformly enforced—even among member states that wish to fully enforce the rules.[172] Such lack of uniformity will, in turn, undermine one of the main purposes of the Basel Accords: harmonization of international banking rules, leading to better management of individual institutions with a global presence that pose a systemic risk to the global economies and their markets.[173]

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165. *See* Lawrence G. Baxter, *Betting Big: Value, Caution and Accountability in an Era of Large Banks and Complex Finance*, 31 REV. BANKING & FIN. L. 765, 765 (2012) (analyzing whether big banks actually generate greater risks to financial stability than do other institutions).

166. Jack Ewing, *Banks Win an Easing of Rules on* Assets, N.Y. TIMES (Jan. 6, 2013), http://www.nytimes.com/2013/01/07/business/global/07iht-banks07.html?partner=rss&emc=rss.

167. Thomas Hoenig, *A Better Alternative to Basel Capital Rules*, HARV. L. F. ON CORP. GOVERNANCE & FIN. REG. (Sept. 28, 2012, 8:58 am), http://blogs.law.harvard.edu/corpgov/ 2012/09/28/a-better-alternative-to-basel-capital-rules/#more-33274.

168. *Id.*

169. *See* Donna Borak, *A Bold Plan to Eliminate 'Complexity Risk'*, 176 AM. BANKER 1, 3 (Nov. 21, 2011) (quoting a managing partner at Federal Financial Analytics, Inc., who asserts that, "the underlying problem is complexity risk, which . . . may well be 'the most significant impediment to financial market recovery and robust economic growth'").

170. *Id.*

171. Rudin, *supra* note 83, at 627.

172. *See* Manuel A. Utset, *Complex Financial Institutions and Systemic Risk*, 45 GA. L. REV. 779, 797– h801 (2011) (describing how financial market complexity discourages participants from fully examining or understanding the risk in their actions).

173. *See generally* Adeline Saillard, *The Role of Complementarity and the Financial Liberalization in the Financial Crisis* (Documents de Travail du Centre d'Economie de la Sorbonne, Working Paper, 2012.38, 2012),

C. Evolving View of Risk

A macroprudential regulator *tells* banks and financial institutions what they *must and must not do*.[174] Therefore, this "ideational shift" raises an important concern about how macroprudential regulation might be situated within the economy-at-large and the financial services regulatory framework in particular.[175] Theoretically, macroprudential regulation aims to produce foundational support for the economy by mandating capital buffers that change with the specific institutional risk profile taken in the context of the macroeconomic view of risk.[176] Therefore, micro and macroprudential regulation should complement each other by providing a comprehensive view of both institutional and industry-wide risk. This would not only provide for a shift in prudential regulation, from institutional management to systemic early warning, but also requires that both regulatory systems work in tandem for prudential regulation to succeed. In short, a macroprudential regulatory system is partially dependent on the success of a modified institutional microprudential system that continues to track institutional risk, and gather and disseminate information. One can see the balance between macro and microprudential policies by examining how each system views risk. A microprudential regulatory system focuses on exogenous risk by evaluating institutional risk through transactional disclosure.[177] Macroprudential regulation focuses on endogenous risk by concentrating on liquidity, cyclical forces and capital adequacy within the scope of a sector.[178]

These two regulatory frameworks have complementary risk mitigation objectives. It is arguable that a microprudential regulator with existing oversight authority can most efficiently collect the information required to help assess systemic risk by a macroprudential regulator.[179] The difficulty in implementing macroprudential regulation will arrive with the authority and jurisdiction of the regulator tasked with designing and enforcing that regime. A macroprudential regulator whose only authority is to collect and analyze information lacks the necessary mandate to dictate the steps essential to enforcing countercyclical measures, and may therefore be ultimately unsuccessful.

D. The Future of Macroprudential Regulation in the United States

One of the primary threats to macroprudential regulatory success comes from the strength of the current financial regulatory system in the United States, which may prove

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available at ftp://mse.univ-paris1.fr/pub/mse/CES2012/12038.pdf (using modeling to predict the effects of structure and liberalization on the likelihood of a major crisis).

174. Andrew Baker, *The New Political Economy of the Macroprudential Ideational Shift*, 18 NEW POL. ECON. 112 (2013).

175. *See id.* at 113 (exploring the shift of macroprudential regulation to become an important interpretative framework).

176. *See* Avinash Persaud, *Macro-Prudential Regulation*, 6 CRISIS RESPONSE 1, 3–4 (2009) (describing the usefulness of capital buffers).

177. *Id.* at 2.

178. *See* Viral V. Acharya, Professor of Economics at NYU-Stern, Presentation at OFR: Contingent Liquidity Risks (December 2011), *available at* http://www.treasury.gov/initiatives/wsr/Documents/OFR-Archarya.pdf (presenting information and examples on the dangers of contingent liquidity risks).

179. Nikola Spatafora, *Global Financial Stability Report: Responding to the Financial Crisis and Measuring Systemic Risks*, *in* THE GLOBAL FINANCIAL CRISIS 2009: PREPARING FOR THE FUTURE 319, 420–21 (Practicing Law Institute, 2009).

to be a hindrance to macroprudential regulatory efforts. The critical metric in this issue is whether—and by how much—the current system will bend to accommodate macroprudential regulation.

Annette Nazareth—a former Director of the Division of Trading and Markets at the SEC—argues that a systemic risk regulator without the requisite enforcement authority will not be able to perform its duties.[180] She states,

> whether the Federal Reserve adds a systemic risk function to its current supervisory and regulatory responsibilities, or a council of regulators aggregates their collective information and experience to serve the systemic risk role, ultimately, functional regulators must play a key role in an effective systemic risk regulatory regime. A systemic risk regulator that has no supervisory and regulatory role could theoretically rely on data provided by the functional regulators, but the information would be derivative and may lag real-time events due to coordination issues. This could be problematic, particularly in times of crisis. Given that the U.S. regulatory framework will likely remain fragmented after the anticipated legislative reforms to financial regulation, a council of regulators would be conducive to the information aggregation process, whether as an advisory body to a systemic risk regulator or as a body with systemic risk authority itself.[181]

Such lack of supervisory roles may, in turn, lead to turf fights, both domestic and international, and prove to be a significant challenge in the rush to build a macroprudential regulatory system. It may create short-term turf wars among various domestic regulators in the United States.[182] Of course, the important question is: how is the information processed, analyzed, and updated upon disclosure? Even if the disclosures are accurate, timely, and provided in a cooperative manner, the task of distilling this vast reservoir of information into a pool of knowledge that can produce a pearl of wisdom may prove difficult to implement. In the end, the question is: who, or what, shall serve as the oracle that will sit atop the newly created Delphi and impart wisdom? The United States' answer has been the creation of the FSOC.[183] FSOC's membership contains all the primary financial regulators in the United States. However, the synchronization and information transfer necessary between FSOC and its member regulatory agencies may prove difficult to implement.[184]

Indeed, FSOC has experienced growing pains and attacks from all directions. First, it has come under fire from other regulatory agencies that deemed its activities to fall under their jurisdiction.[185] In fact, in early 2014, the SEC opposed efforts on the part of FSOC to regulate certain firms in the asset management industry, deemed to be systemically

180. Nazareth, *supra* note 163, at 845.

181. *Id.* at 846–47.

182. Gina Chon, *SEC Commissioner Calls on US Regulators to End Turf Wars*, FIN. TIMES (June 12, 2014), http://www.ft.com/intl/cms/s/0/97ffacce-f251-11e3-ac7a-00144feabdc0.html.

183. Risch, *supra* note 141, at 523.

184. *See id.* at 529 (discussing structural issues of the FSOC).

185. Ryan Tracy, *Regulators Promise Changes for Applying 'Systemic' Label*, WALL ST. J. (Jan. 21, 2015), http://www.wsj.com/articles/regulators-promise-changes-for-applying-systemic-label-1421876026?autologin=y.

important enough to fall under the mandate of FSOC.[186] Second, it has come under fire from Congress for overreach and cooperation with the FSB.[187] Third, it has experienced significant opposition from industry for various attempts at SIFI designation.[188]

In this process, some have even questioned the agency's authority to enforce its mandate. At the same time, others have come to defend the young agency by pointing out that FSOC needs to be strengthened, not weakened, in order to be able to fulfill the promise of foreseeing future crises and mitigating systemic risk.[189] FSOC's attempts to regulate the financial industry or designate SIFIs will continue to be fiercely opposed, given that it is the primary macroprudential regulator in the United States. In attempting to use various macroprudential regulatory tools, FSOC has become the disruptive force within both the financial services industry and the regulatory infrastructure of the United States. However, the coordination required to implement FSOC's mandates among various domestic regulators will lead to more effective and uniform implementation of regulatory oversight, especially for SIFIs. Presently, the regulatory system in the United States is fragmented along products and transactions, so a single institution's different activities fall under the jurisdiction of separate agencies. This organizational structure may have been effective at a time when banking, securities, and derivatives trading were conducted in distinct, unrelated entities; in a world of SIFIs, however, macroprudential regulation can bring all the information from different agencies under one umbrella and create a far more comprehensive and cohesive view of the markets and their participants.[190] One must not underestimate, however, the political and regulatory clout that SIFIs possess, which is a power they will utilize to maintain the status quo in a fragmented system.[191] In the process of various agencies promulgating rules under the Dodd–Frank Act, the SIFIs have proven to be a formidable voice in relaxing the mandates, if they believe that macroprudential regulation will hurt their short- or long-term profitability.[192]

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186. Andrew Ackerman & Ryan Tracy, *SEC Fights Turf War Over Asset Managers*, WALL ST. J. (Jan. 28, 2014), http://online.wsj.com/news/articles/SB10001424052702303277704579349162124450516.

187. Denny Gulino, *Enemies of US FSOC See Too Much Cooperation with G20's FSB*, MNI (May 20, 2014), https://mninews.marketnews.com/index.php/enemies-us-fsoc-see-too-much-cooperation-g20s-fsb?q=content/enemies-us-fsoc-see-too-much-cooperation-g20s-fsb.

188. Peter J. Wallison, *The Authority of the FSOC and the FSB to Designate SIFIs: Implications for the Regulation of Insurers in the United States after the Prudential Decision* 3–4 (Networks Financial Institute at Indiana State University, Paper No. 2014-PB-02, 2014), *available at* http://indstate.edu/business/NFI/leadership/briefs/2014-PB-02_Wallison.pdf.

189. U.S. GOVERNMENT ACCOUNTABILITY OFFICE, FINANCIAL STABILITY, CONTINUED ACTIONS NEEDED TO STRENGTHEN NEW COUNCIL AND RESEARCH OFFICE 4 (Mar. 14, 2013), *available at* http://www.gao.gov/assets/660/653013.pdf.

190. *See* Hilary J. Allen, *Cocos Can Drive Markets Cuckoo*, 16 LEWIS & CLARK L. REV. 125, 137 (2012) (encouraging the use of common equity instead of cocos). *See generally* Alireza M. Gharagozlou, *Unregulable: Why Derivatives May Never Be Regulated*, 4 BROOK. J. CORP. FIN. & COM. L. 269 (2010) (exploring various methods of regulating financial derivative contracts); Mark J. Roe, *The Derivatives Market's Payment Priorities as Financial Crisis Accelerator*, 63 STAN. L. REV. 539 (2011) (describing how a bankrupt's derivative counterparty receives unfair advantages from being able to collect from bankrupt party first).

191. *See* Jack Ewing, *Banks Win an Easing of Rules on Assets*, N.Y. TIMES (Jan. 6, 2013), http://www.nytimes.com/2013/01/07/business/global/07iht-banks07.html?partner=rss&emc=rss (describing how regulators are giving banks more time to comply with rules).

192. *See* Eugene A. Ludwig, *Assessment of Dodd–Frank Financial Regulatory Reform: Strengths, Challenges, and Opportunities for a Stronger Regulatory System*, 29 YALE J. ON REG. 181, 193 (2012) (examining the strengths and limitation of the Dodd–Frank Act, which gives regulators great latitude to narrow or expand

Another existential threat to macroprudential regulation's success in the United States is that implementation of macroprudential mandates is years away, and in the meantime risk could continue to build in the system.[193] The Dodd–Frank Act's rulemaking process has been slow and painful. Even FSOC and OFR have not been able to implement their mandates rapidly. Regulatory critics have heralded this slow progress as further evidence that the Dodd–Frank Act is too burdensome.[194] On the other hand, supporters of further regulation lament the prospect of watered down rules in the face of industry pressure. Both sides observe that the implementation of macroprudential regulatory mandates is years away, for better or worse.

One tool of a macroprudential regulatory scheme, however, has already been put in place in the United States—stress tests of banks. The Obama administration's definition of "too big to fail" adopted this concept, beyond the bounds of sheer size to include *interconnectedness* as a criterion for Tier 1 Financial Holding Companies (FHC).[195] Yet, in an environment of TBTF, an opposite sentiment began to brew in the public: let it fail.[196] Macroprudential regulation also affords the fitting course for the supervision of the "*Thank God It Failed*" institution.[197] The living will provisions of the Dodd–Frank Act provide for an orderly winding down of institutions that may prove to exert undue pressure on the financial sector, and their risk profile may warrant liquidation.[198] This is a significant opportunity to contain risk that could become systemic in nature.[199]

"proscriptive nature" of the amendments).

193. *See* Paul Saltzman et al., *A Spirited Conversation Assessing the Risks and Benefits of Big Banks*, 16 N.C. BANKING INST. 1 (2012) (discussing the benefits and risks of big banks).

194. *See generally* Robert Bostrom et al., *Reconciling the Dodd Frank And Basel Committee Capital Requirements*, 129 BANKING L. J. 627 (2012) (analyzing the new risk-based capital requirements imposed under the Dodd–Frank Act).

195. U.S. DEP'T OF THE TREASURY, FINANCIAL REGULATORY REFORM: A NEW FOUNDATION 10 (2009), *available at* http://www.treasury.gov/initiatives/Documents/FinalReport_web.pdf [hereinafter FINANCIAL REGULATORY REFORM: A NEW FOUNDATION] ("We propose the creation of a Financial Services Oversight Council to facilitate information sharing and coordination, identify emerging risks, advise the Federal Reserve on the identification of firms whose failure could pose a threat to financial stability due to their combination of size, leverage, and interconnectedness (hereafter referred to as a Tier 1 FHC), and provide a forum for resolving jurisdictional disputes between regulators."); Part 225—Bank of Holding Companies and Change in Bank Control, 12 C.F.R. § 225 (2014), *available at* http://www.ecfr.gov/cgi-bin/text-idx?SID=a9ca2c8a3fdbc079b3f795dc4d98f5f3&node=12:3.0.1.1.6.9&rgn=div6 (Tier 1 Financial Holding Company designation is intended to be a broader designation than a Bank Holding Company, and targets a financial services entity that is engaged in banking, securities trading, insurance or other financial services activities, and the Federal Reserve Board determines that "material financial distress" at the designated entity "could pose a threat to global or United States financial stability." The designation of these entities is at the discretion of the Fed, and takes into account assets under management and revenue, and the Fed will impose risk-based capital requirements, leverage limits, liquidity requirements and other risk management requirements.).

196. *See* Cheryl D. Block, *A Continuum Approach to Systemic Risk and Too-Big-To-Fail*, 6 BROOK. J. CORP. FIN. & COM. L. 289, 293 (2012) (discussing public outrage over too-big-to-fail banks).

197. *Id.*

198. *See* Joseph Karl Grant, *Planning for the Death of a Systematically Important Financial Institution Under Title I § 165(d) of the Dodd–Frank Act: The Practical Implications of Resolution Plans or Living Wills in Planning a Bank's Funeral*, 6 VA. L. & BUS. REV. 467, 469–70 (2012) (postulating that "the FRB and FDIC resolution planning rules will have an enormous impact on financial institutions for years to come.").

199. *See* Paul A. Volcker & Jacob A. Frenkel, *Enhancing Financial Stability and Resilience, Macroprudential Policy, Tools, and Systems for the Future*, GROUP OF THIRTY 14, (Oct., 2010), *available at* http://hb.betterregulation.com/external/Enhancing%20financial%20stability%20and%20resilience%20macropru

An argument can be made that the stress tests lead to the institutionalization of "too big to fail." Stress testing financial institutions is an important macroprudential regulatory tool.[200] It provides regulators with a deeper and broader view of the future health of a financial services entity under differing scenarios. However, there are several pragmatic problems with stress testing.[201] First, the various capital adequacy and liquidity ratio scenarios that were used in the initial round of stress tests were criticized as being too lenient and thus able to produce a false positive.[202] Second, the macroeconomic indicator assumptions about the scenarios that these entities may face were also criticized as too optimistic, further exacerbating the problem of test validity.[203] Third, choosing which institutions need to be tested is a tacit admission of their importance to the macroeconomic health of the country, and, as such, enshrines their status as "too big to fail."[204]

The stress testing process has also proven difficult to implement. Delays, false starts, and complaints about costs plague the process.[205] Furthermore, with some banks failing the tests from time-to-time, there has grown a cottage industry of analysts who purport to foretell the simultaneous dangers of both the tests and the banks that fail them.[206] Amidst this experimental and rapidly evolving regulatory landscape, the Fed has proposed minor changes to the stress tests, in order to both strengthen their impact and ease the regulatory burden on the banks.[207]

The question that remains, therefore, is twofold. First, will permanent stress testing continue to produce overly positive results, rendering the exercise moot? Second, will permanent stress tests lead to the permanent existence of "too big to fail"? If the answer to both questions is yes, then macroprudential regulation will also fail because stress tests will fail to reveal financial problems at SIFIs, and they will continue to accumulate unnecessary risk based on the assumption that they will, in the end, be rescued by the taxpayers of one government or another.

In spite of both existing and potential weaknesses, macroprudential regulation provides the best path to the management of "too big to fail" institutions. Properly designed

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dential%20policy,%20tools%20and%20systems%20for%20the%20future.pdf ("macroprudential policy aims to enhance the resilience of the financial system and to dampen systemic risks that spread through the financial system . . . .").

200. Wall, *supra* note 130.

201. Claudio Borio et al., *Stress-Testing Macro Stress Testing: Does it Live Up to Expectations?* 1–12 (Bank for Int'l Settlements, Working Paper No. 329, 2012), http://www.bis.org/publ/work369.pdf.

202. Sarah Pei Woo, *Regulatory Bankruptcy: How Bank Regulation Causes Fire Sales*, 99 GEO. L.J. 1615, 1615 (2011).

203. *Id.* at 1647.

204. *Id.* at 1660.

205. Trefis Team, *Fed Stress Test For Banks: Rationale, Results & Implications*, FORBES (Mar. 24, 2014), http://www.forbes.com/sites/greatspeculations/2014/03/24/fed-stress-test-for-banks-rationale-results-implications/.

206. Michael J. Moore & Elizabeth Dexheimer, *Citigroup Fails Fed Stress Test as BofA Gets Dividend Boost*, BLOOMBERG (Mar. 27, 2014), http://www.bloomberg.com/news/2014-03-26/citigroup-fails-fed-stress-test-as-goldman-bofa-modify-plans.html.

207. Alan Zibel, *Fed Proposes Changes to Annual Stress Test*, WALL ST. J. (June 12, 2014), http://online.wsj.com/articles/fed-proposes-changes-to-annual-stress-test-1402600392?tesla=y&mg=reno64-wsj&url=http://online.wsj.com/article/SB10001424052702303642704579620502625729172.html (One interesting change has been pushing back the deadline from January 5th to April 5th, acknowledging the complaints of bankers who spent their 2013 holidays working to produce the test results.).

and executed stress tests combined with the resolve to exercise the living will provisions of the Dodd–Frank Act will lead to two desirable outcomes. First, SIFIs will tend to accumulate less risk in order to show a positive outcome in their stress tests. Second, SIFIs will shy away from their riskiest activities because SIFIs are aware of the fact that they may be liquidated and unwound instead of receiving another injection of capital by the U.S. government.[208]

E. Technology and Information Asymmetry

Another possible hurdle for macroprudential regulation is that it will attempt to mitigate systemic risk in an environment where the *system* itself is undergoing a rapid technological change, the consequences of which may not be easily ascertainable or manageable by regulators at first glance.[209] One threshold issue is the development and maintenance of a proper understanding of the underlying system. In the case of the financial services industry, the system is globally interconnected; therefore, any macroprudential regulation requires coordination on an international level. While this international harmonization may seem beneficial, it also poses certain challenges.[210]

Moreover, there is a structural hindrance to the inherently top-down approach of macroprudential regulation, which lies in the trifold view of the information collected by regulating entities like the OFR.[211] These problems are the quality, quantity, and reliability of the information available and collected by any macroprudential regulator. The quality of the information concerns whether a financial institution and/or its auditors have a high level of confidence in the information produced to the regulator. In essence, do the banks believe their own hype? The quantity of information presents the traditional signal-noise challenge that many engineers face. A macroprudential regulator must collect, collate, correlate, and comprehensibly organize volumes of data every day, before it can actually form a coherent model that can produce the proverbial canary in the coalmine. The problem here is that the volume of information produced by the financial services industry annually is larger than the volume of all the mines on earth. So, how accurate will the models be? Will these macroprudential regulatory models raise the alarm bells in a sufficiently early time so regulators can act and prevent disaster? How can one organization detect the signal from the tsunami of noise that it faces on a daily basis?

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208. *See* Viral V. Acharya, *Governments as Shadow Banks: The Looming Threat to Financial Stability*, 90 TEX. L. REV. 1745, 1765 (2012) (discussing the outcomes of risky investment behavior in the financial market, even when government regulations gauge such behavior in providing capital).

209. *See* 2012 ANNUAL REPORT, *supra* note 132, at 27 (discussing challenges to mitigating financial stability which includes keeping up with technology); *see also* Nellie Liang, FSOC / OFR Conference: Discussion of "A Survey of Systemic Risk Analytics" by Bisias, Flood, Lo, and Valavanis 5 (2011), *available at* http://www.treasury.gov/initiatives/wsr/ofr/Documents/OFR-Liang.pdf (discussing sources of systemic risks—including innovations, financial conditions of financial institutions, and other structural and cyclical risks).

210. *See generally* Paul Fisher, *Why Britain's Banking Rules Aren't Restricting Our Economic Recovery*, CITY AM (Sept. 14, 2012), http://www.cityam.com/article/why-britain-s-banking-rules-aren-t-restricting-our-economic-recovery (discussing the weaknesses of the British banking system, and the need to assess risks before taking on relationships between banking institutions).

211. *See* REPORT TO CONGRESSIONAL REQUESTERS, *supra* note 116, at 10 (discussing the challenges facing the OFR as they attempt to establish a regulatory regime in both the short-term and long-term); *see also* FINANCIAL REGULATORY REFORM: A NEW FOUNDATION, *supra* note 195, at 2–5 (discussing the U.S. Department of the Treasury's approach to increasing its regulation of the financial system).

The problem of reliability is the sister to that of quality. Once it is determined that the information is valid (high quality) and represents a signal (quantity), the regulator must determine its reliability before taking action. Reliability is a problem that plagues every human endeavor. This canyon is so deep that industries from automobiles to the Internet have devised solutions to overcome unreliability by quantifying the problem. Yet, in the field of financial services and economics, most data is viewed to be inherently unreliable. Most economic prognosticators have a very low degree of confidence in their own models. Therefore, how can a macroprudential regulator confidently march forward and act without a reasonable degree of certainty that its actions will counteract the procyclical effects of a boom, and such actions will not simply throw the entire economy into a recession? In the end, data correlation may produce prescient, but unreliable results overruled by human intervention may lead to the same problem we experienced in the past: the ideas and regulations are available, but the people refuse to act.

Nevertheless, in spite of all the risks and weaknesses, macroprudential policy presents the best hope for preventing a repeat of the 2008 global financial crisis. Thus far, the United States has been able to enact legislation necessary for the foundation of a macroprudential system. What remains to be seen is whether the rest of the world will catch, surpass, or remain behind the United States in regulatory efforts.

V. CONCLUSION

Macroprudential regulation differs from its microprudential counterpart in a significant manner. The former's regulatory regimes and bodies, charged with limiting systemic risk, create a top-down approach whereby they dictate the terms and conditions of individual institutions' activities, where those activities impact systemic risk.[212] In essence, where a microprudential system is designed to collect information and relies on the market to ferret out information asymmetries, the macroprudential regime's role is to collect data (disclosures) and search for presumably scattered, anomalous behavior leading to market inefficiencies or investor loss. However, even though macroprudential regulation has a long academic history, as well as a large following in policy circles, it remains a novel regulatory concept. As such, it may prove incompatible with the current regulatory mindset in many of the countries where its implementation is crucial to the long-term success of the concept. In fact, in the United States, in spite of the legislative efforts to incorporate macroprudential regulation, it remains a mystery as to whether the regulators will be able to implement their mandate.[213]

From a broader, macroeconomic perspective, the separation of investment banking from depository banking is hailed as the savior of the financial industry—and cited as a macroprudential policy—by pointing to the absence of financial crises from 1940 to

212. *See* Yves Smith, *Defining Strategies and Tools for Reducing Systemic Risk*, NAKED CAPITALISM (Aug. 6, 2012), http://www.nakedcapitalism.com/2012/08/defining-strategies-and-tools-for-reducing-systemic-risk.html (referencing Giovanni Favara & Lev Ratnovski, *Macroprudential Policy: Economic Rationale and Optimal Tools*, VOX (Aug. 6, 2012), http://www.voxeu.org/article/macroprudential-policy-economic-rationale-and-optimal-tools (comparing the advantages of using macroprudential regulation over microprudential when seeking to control systemic risk in the financial market)).

213. Davis Polk, *Dodd-Frank Progress Report* (2014), *available at* http://www.davispolk.com/Dodd-Frank-Rulemaking-Progress-Report/.

1970.[214] However, it is worth noting that part of the absence of crises post-WWII was due to rebuilding, which eliminated the problem of capital allocation. This is an economically important point that garners little attention. If efficient capital allocation is, in fact, inherently impossible in large-scale economies with different participants and industries, then macroprudential regulation may be doomed from the start. Starting in 1971, banking liberalization led to market forces taking over from centralized allocation of capital, and with this shift came more risk and volatility but also a sensational period of global growth that has rarely been observed since the industrial revolution.[215] The question of efficient capital allocation in a decentralized, capitalist economy is important to consider for macroprudential regulators. Macroprudential regulation may prove to be the best option in a deregulated and globalized market where there are no legal firewalls between various banking activities and regulatory arbitrage provides a haven for those chasing ever increasing risk for the mythically promised returns. The post-2008 answer to this problem is adding countercyclical buffers, enhanced capital requirements and ongoing stress tests.[216] Even with these measures, however, if decentralized market economies are naturally prone to asset bubbles, then it would be difficult to discover, measure, and successfully prevent a systemic shock prior to the bursting of such bubbles.[217]

Macroprudential regulation's efforts at thwarting risk may reduce the growth curve as well.[218] Capital is attracted by the potential for high returns, which are naturally associated with high risk. If the risk is reduced or eliminated from the equation, it is possible that capital allocation will become stagnant, leading to lower risk but lower growth as well. This is one point that opponents of regulation are eager to single out, blaming the reduced growth potential of the U.S. economy in the aftermath of the 2008 financial crisis, in part on regulatory overreach.[219] This line of attack fails to note two important points: first, the economy's output potential was reduced as a direct result of the recession itself; second, much of the macroprudential regulatory regime that Basel III and the Dodd–Frank Act envisioned have yet to be fully implemented, especially with regard to systemic risk oversight. Increased costs to the system and the individual institutions under supervision may create backlash and advocacy for more regulatory forbearance. Chairman Bernanke, for example, warned about the high costs of a macroprudential regulatory system.[220]

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214. Franklin Allen & Richard Herring, *Banking Regulation Versus Securities Market Regulation*, THE WHARTON FIN. INSTS. CTR. (2001), *available at* http://finance.wharton.upenn.edu/~allenf/download/Vita/0129.pdf.

215. *Id.*

216. BASEL COMMITTEE ON BANKING SUPERVISION, BASEL III: A GLOBAL REGULATORY FRAMEWORK FOR MORE RESILIENT BANKS AND BANKING SYSTEMS 60 (rev. 2011), *available at* http://www.bis.org/publ/bcbs189.pdf.

217. *See* James A. Fanto, *The Role of Financial Regulation in Private Financial Firms: Risk Management and the Limitations of the Market Model*, 3 BROOK. J. CORP. FIN. & COM. L. 29, 40 (2008) ("It is likely that this will become apparent too late to prevent significant damage to, and even failure of, the regulated firm.").

218. *See No Need to Strengthen Macroprudential Steps for Now*, KOREA TIMES (Sept. 21, 2012), http://www.koreatimes.co.kr/www/news/biz/2012/09/182_120580.html ("Korea's top central banker said Friday that he does not see the need to beef up the current macroprudential measures 'for now' as more time is necessary to assess impacts of monetary easing by major central banks.").

219. Kupiec, *supra* note 160.

220. *See* Ben S. Bernanke, Fed. Reserve Chairman, Speech at the Council of Foreign Relations, Washington D.C.: Financial Reform to Address Systemic Risk (March 10, 2009), *available at* http://www.federalreserve.gov/newsevents/speech/bernanke20090310a.htm; *see also Bernanke: Economy 'Still*

Nevertheless, as one of its primary promises, macroprudential regulation can act as a global means to shine a permanent light on dark markets, and thus reduce their impact on the financial system.[221] The issue is whether regulation, enacted in hindsight, can prevent a future crisis whose causes are as yet to be determined.

This Article has examined the international prudential regulatory framework, and the recent efforts to incorporate macroprudential policy into its regulatory system. This Article has also presented the significant changes the United States has made to its prudential regulatory regime, with the passage of the Dodd–Frank Act.[222] This Article has analyzed the strengths, weaknesses, opportunities and threats facing a macroprudential regulation regulatory system, and the implementations of such a system in the United States.

The question is whether these new regulations will be able to succeed where others failed since financial systems are inherently prone to crises. How can one set of tools prevent "unknown unknowns?" The answer is that it cannot do so in a vacuum without regulatory and political support. Macroprudential regulation has risen to prominence and is now viewed as the most credible policy and regulatory mechanism for the prevention of systemic shocks, and the management of any systemic risk in the financial services industry. This "toolkit," however, has yet to be fully implemented, validated, or fully enforced by any regulatory regime.[223] Macroprudential regulation's shift from a theoretical construct to a fully developed and executable regulatory system is at least several years away.

Far from Fully Recovered' From Crisis, BOND BUYER (USA) (Apr. 11, 2012), http://www.bondbuyer.com/issues/121_69/bernanke-economy-1038374-1.html.

221. *Id.*

222. *See* Written Testimony of Chris Brummer, Professor of Law, Georgetown University Law Center, Before the House Financial Committee, Subcommittee on Capital Markets and Government Sponsored Entities: Curbing the Extraterritoriality of Dodd–Frank's Derivative Regulation: An Examination of the Swap Jurisdiction Certainty Act" (Feb. 8, 2012), *available at* http://financialservices.house.gov/uploadedfiles/hhrg-112-ba-wstate-cbrummer-20120208.pdf (describing changes caused by the Dodd–Frank Act, which sought to curb risks in specific markets).

223. *See* Anil K. Kashyap et al., *The Macroprudential Toolkit*, 59 IMF ECON. REV. 145, 146 (2011), *available at* http://www.palgrave-journals.com/imfer/journal/v59/n2/pdf/imfer20114a.pdf (explaining that changes implemented by Basel III reforms only affect capital levels at banks.).