RETHINKING THE LAW AND ECONOMICS OF POST-CRISIS MICRO-PRUDENTIAL REGULATION: THE NEED TO INVERT THE RELATIONSHIP OF LAW TO ECONOMICS?

IRIS H-Y CHIU*

Table of Contents

I. Introduction

In the decade after the global financial crisis of 2007-09 (Crisis), extensive financial regulation reforms have been led at the international level by the Basel Committee of the Bank for International Settlements[1] and the Financial Stability Board (FSB).[2] The European Union has implemented most, if not all, of the international standards.[3] In addition to overhauling regulatory architecture such as introducing the direct micro-prudential supervision of key euro-area banks by the European Central Bank (Banking Union)[4] the European Union (EU) has worked to institute pan-European architecture to ensure implementation of regulatory reforms utilizing a robust and

---

* Professor of Corporate Law and Financial Regulation, University College London. I thank the participants at the conference: The Global Financial Crisis: 10 Years On, University of Bristol, 10 May 2018, for their comments on an earlier presentation, in particular Professors Armin Kammel, Keith Stanton and Sandra Booysen.

[1] *Basel Committee Charter*, BASEL COMMITTEE ON BANKING SUPERVISION, https://www.bis.org/bcbs/charter.htm [http://perma.cc/DB7J-CLWM] (last updated June 5, 2018). Discussion of the measures recommended by the Committee will be discussed in the text of the article.

[2] *See About the FSB*, FIN. STABILITY BOARD, http://www.fsb.org/about [http://perma.cc/77T7-5JZX]. Discussion of the measures recommended by the Board will be discussed in the text of this article.

[3] Client Publication from Shearman & Sterling LLP, Basel III Framework: US/EU Comparison (Sept. 17, 2013), https://www.shearman.com/~/media/files/newsinsights/publications/2013/09/basel-iii-framework-useu-comparison/files/view-full-memo-basel-iii-framework-useu-comparison/fileattachment/baseliiiframeworkuseucomparisonfia091713.pdf, [https://perma.cc/AE6T-5T9C]. The Basel Committee measures are implemented in the Capital Requirements Regulation 575/2013 and Capital Requirements Directive 2013/36/EU and their Commission-delegated legislation. The FSB's recommendations on remuneration of bankers have been implemented in the Capital Requirements Directive 2013/36/EU and Commission-delegated legislation, while recommendations in relation to overhauling capital requirements for systemically important financial institutions (TLAC, which will be discussed in Section III) and recommendations dealing with resolution of financial institutions in crisis are implemented in the Bank Recovery and Resolution Directive 2014/59/EU.

[4] Council Regulation 1024/2013 of Oct. 15, 2013, Conferring Specific Tasks on the European Central Bank Concerning Policies Relating to the Prudential Supervision of Credit Institutions, 2013 O.J. (L 287) 63, 63–89 (requiring the European Central Bank to oversee credit institutions).

faithful standard (the European System of Financial Supervision, notably the role of the European Banking Authority (EBA)).[5]

Where banks are concerned, being the perpetrators of the Crisis has put them in the spotlight, and few would opine that the new regulatory framework has made little impact.[6] Banks have experienced not only a marked rise in the capital requirements imposed upon them, but also the controlling forces of other micro-prudential regulatory rules on leverage and liquidity.[7] In addition, banks are also experiencing much more intense supervisory scrutiny through significantly increased obligations in transparency[8] and stress-testing.[9] These micro-

[5] Regulation 1093/2010 of the European Parliament and Council of Nov. 24, 2010, Establishing a European Supervisory Authority (European Banking Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/78/EC, art. 27, 2010 O.J. (L 331) 12, 31 ("The Authority shall contribute to developing methods for the resolution of failing financial institutions, in particular those that may pose a systemic risk, in ways which avoid contagion and allow them to be wound down in an orderly and timely manner, including, where applicable, coherent and robust funding mechanisms as appropriate.").

[6] *See generally* MADS ANDENAS & IRIS H-Y CHIU, THE FOUNDATIONS AND FUTURE OF FINANCIAL REGULATION: GOVERNANCE FOR RESPONSIBILITY (Routledge 2014) (explaining how regulatory reforms have been both extensive and intensive). *See also* Armin J. Kammel, *Chapter 1: Governments Versus Markets—A Change in Financial Regulation*, *in* THE CHANGING LANDSCAPE OF GLOBAL FINANCIAL GOVERNANCE AND THE ROLE OF SOFT LAW 3, 3–25 (Brill et al. eds., 2015).

[7] These will be discussed in Sections II and III. *See* discussion *infra* notes 43–44, 79, and 84 and accompanying text.

[8] *See generally* Iris H-Y Chiu, *Transparency Regulation in Financial Markets— Moving into the Surveillance Age*, 2 EUR. J. RISK REG. 305, 305–21 (2011) (outlining increased transparency obligations for banks and financial institutions after the crisis).

[9] Stress-testing refers to banks' obligations to put their business models, capital and liquidity positions through simulated stressful scenarios of business unviability that are stressful but plausible. Banks need to ascertain how they would manage or survive those scenarios and report the results to regulators. Regulation 575/2013 of the European Parliament and of the Council of June 26, 2013 on Prudential Requirements for Credit Institutions and Investment Firms and amending Regulation 648/202 Text with EEA relevance, art. 177, 2013 O.J. (L 176) 1, 112; BASEL COMM. ON BANKING SUPERVISION, PRINCIPLES FOR SOUND STRESS-TESTING PRACTICES AND SUPERVISION 1 (2009), http://www.bis.org/publ/bcbs155.pdf [https://perma.cc/Q5K9-GQZ5] ("Stress testing is an important risk management tool that is

prudential regulatory reforms are targeted changing banks' strategic behaviors so that their essential financial risk-taking can be calibrated at a level appropriate for the bank but also for the wider financial system and economy in which the bank is nested.[10]

This article focuses on the development of micro-prudential regulation in the wake of the Crisis, although it is acknowledged that many other regulatory tools have developed to deal with the problems that surfaced.[11] Micro-prudential regulation remains a key feature in "preventing failure" and it is important to question how far the reforms have moved closer to the objective. The essence of micro-prudential regulation is that it is aimed at preventing financial institution failure by introducing behavioral levers through the setting of regulatory price for different types of financial risk-taking.[12] Pre-Crisis, regulatory pricing was arguably set unrealistically low and became manipulable and of little significance in shaping risk-taking behavior.[13] Post-Crisis, the reforms have reset regulatory prices to much higher levels and closed off gaps for manipulating and undermining such regulatory prices.[14] The underlying methodology remains the same and continues to rely on a fundamentally microeconomic framework for shaping behavior.[15]

Micro-prudential regulation is quintessentially law and economics at work in regulatory design, as regulation gives expression

---

used by banks as part of their internal risk management and, through the Basel II capital adequacy framework, is promoted by supervisors.").

[10] Micro-prudential regulation is chiefly targeted at preventing the individual institution from failing. However, there is now also accepted a wider dimension of preventing risk to the financial system that can occasion from the failure of individual institutions. *Cf.* Tom C.W. Lin, *Too Big to Fail, Too Blind to See*, 80 MISS. L.J. 355, 369–70 (2010) (reviewing ALAN ROSS SORKIN, TOO BIG TO FAIL: THE INSIDE STORY OF HOW WALL STREET AND WASHINGTON FOUGHT TO SAVE THE FINANCIAL SYSTEM AND THEMSELVES (2009) (discussing the post-Financial Crisis mentality of regulation which requires an emphasis on "real individuals, who are inherently flawed")).

[11] *See infra* Section III (discussing liquidity and leverage ratios as an example of such tools).

[12] Peter O. Mülbert, *Managing Risk in the Financial System, in* The Oxford Handbook on Financial Regulation 364, 370–81 (Niamh Moloney et al. eds., 2015).

[13] *Id.* at 371 (analyzing the deficiency of bank supervision and other regulatory tools during the lead-up to the global financial crisis).

[14] *Id.*

[15] *Id.* at 369–81.

to microeconomic tools in shaping the regulated entity's behavior. The weaknesses of the pre-Crisis "law and economics" approach to micro-prudential regulation have been criticized,[16] and post-Crisis reforms are arguably founded upon "new and improved" law and economics which takes into account flawed assumptions of earlier micro-economic models and incorporates insights from macro-economics.[17] It seems that the economic foundations for the law and economics of micro-prudential regulation have been made more comprehensive and robust. However, commentators continue to point out the shortcomings of the "law and economics" foundations,[18] and are also concerned about the increasingly complex prescriptions in micro-prudential regulation.[19] In other words, "new and improved" law and economics has supported a new regime for micro-prudential regulation that is increasingly unwieldy, complex and burdensome without clearly connecting to the wider public interest benefits that were articulated as necessary in the wake of the Crisis, such as the need for finance to serve socially useful needs and in a long-termist and inter-generational manner, and for financial markets and economies to be sufficiently stable, competitive, and and be less susceptible to boom and bust.[20]

---

[16] *See, e.g.*, Simon Deakin, *The Evolution of Theory and Method in Law and Finance*, *in* THE OXFORD HANDBOOK ON FINANCIAL REGULATION 13, 35 (Niamh Moloney et al. eds., 2017) (summarizing criticism of the logic of shareholder value that drove much deregulation in the 1980s); David M. Driesen, *Legal Theory Lessons from the Financial Crisis*, 40 J. CORP. L. 55, 74 (2014); Steven L. Schwarcz, *Banking and Financial Regulation*, *in* 2 THE OXFORD HANDBOOK OF LAW AND ECONOMICS 423, 441 (Francesco Parisi ed., 2017) (observing that "capital and solvency requirements do not always efficiently reduce systemic risk").

[17] *See* Yair Listokin, *Law and Macroeconomics: The Law and Economics of Recessions*, 34 YALE J. REG. 791, 844 (2016); Richard A. Posner, *On the Receipt of the Ronald H. Coase Medal: Uncertainty, the Economic Crisis, and the Future of Law and Economics*, 12 AM. L. & ECON. REV. 265, 268 (2010). *See also infra* Section III.

[18] *See*, *e.g.*, STEVEN A. RAMIREZ, LAWLESS CAPITALISM: THE SUBPRIME CRISIS AND THE CASE FOR AN ECONOMIC RULE OF LAW 45 (2013); Timothy Canova, *Financial Market Failure as a Crisis in the Rule of Law: From Market Fundamentalism to a New Keynesian Regulatory Model*, 3 HARV. L. & POL'Y REV. 369, 381 (2009); Tamara Lothian, *The Past and Future of Financial Reform: From Regulation to Reorganization*, *in* LAW AND THE WEALTH OF NATIONS 73 (2017). *See also infra* Section IV.

[19] Kammel, s*upra* note 6, at 24.

[20] *See* LOTHIAN, *supra* note 18.

The regulatory adoption of a methodology to govern behavior formation in financial institutions is necessary as financial institutions do suffer from perverse incentives in managing "other people's money"[21] and from behavioral heuristics in the face of market pressures.[22] However, the regulatory price for risk-taking is largely set in micro-economic and quantitative terms (in keeping with the law and economics tradition).[23] We argue that such an approach does not address certain shortfalls which are better addressed by qualitative regulatory methodologies, such as regulatory standards of conduct and duties that have both *ex ante* and *ex post* effects on behavior formation. The rebalancing of law's role can introduce qualitative duties and obligations that re-embed regulatory objectives of public interest in the formation of financial institution behavior. Comparatively, quantitative methods tend to compel focus on "numbers as boundaries," dis-embedding the behavior formation process from the wider context of regulatory objectives and public interest.[24] Hence, a rebalancing of the law's role in a law and economics approach has the potential to assist in constructing a more enduring regulatory design with both quantitative and qualitative aspects.

The article proceeds as follows. Section II provides an outline of the nature of micro-prudential regulation in the pre-Crisis context in terms of how it reflects a certain tradition in law and economics and what blind spots were uncovered in the wake of the Crisis. Section III discusses key features of post-Crisis micro-prudential reforms, including new capital buffers, loss-absorbing capital for systemically important financial institutions, liquidity, leverage, stress-testing reforms, as well as the introduction of macro-prudential supervision, in

---

[21] *See* JOHN KAY, OTHER PEOPLE'S MONEY: THE REAL BUSINESS OF FINANCE 79–81 (2015).

[22] Behavioral finance has been extensively written upon. *See, e.g.,* HEURISTICS AND BIASES: THE PSYCHOLOGY OF INTUITIVE JUDGMENT (Thomas Gilovich, et al. eds. 2002); CHOICES, VALUES AND FRAMES (Daniel Kahneman & Amos Tversky, eds. 2003); Emilios Avgouleas, *The Global Financial Crisis, Behavioural Finance and Financial Regulation: In Search of a New Orthodoxy*, 9 J. CORP. L. STUD. 23 (2009); Donald C. Langevoort, *Taming the Animal Spirits of the Stock Markets: A Behavioral Approach to Securities Regulation*, 97 NW. U. L. REV. 135 (2002).

[23] *See infra* pp. 4–5; *see generally* Eric A. Posner, *How Do Bank Regulators Determine Capital-Adequacy Requirements?*, 82 U. CHI. L REV. 4 (2015); Samuel G. Hanson, Anil K. Kashyap, and Jeremy C. Stein, *A Macroprudential Appraoch to Financial Regulation*, 25 J. ECON. PERSP. 1 (2011).

[24] *See* Hanson, *supra* note 23, at 4–5.

order to demonstrate how the regulatory foundations in law and economics have developed into a "new and improved" version after the Crisis. Section IV critically questions if "new and improved" law and economics is better placed to calibrate the behavior of financial institutions towards the regulatory objectives that were not met during the Crisis, and what deficits remain. We argue that these deficits remain due to the continued reliance upon the quantitative nature of the "new and improved" law and economics methodology and that these deficits may be better addressed by adding to the predominantly economic methodology, a rebalancing of law's role, and its potential qualitative contributions. Section V explores the broad contours of what law's qualitative contribution would be, noting that the United Kingdom (UK) is already heading towards a qualitative dimension for controlling behavior by introducing individual liability for financial institution personnel based on broadly worded principles. These however support the quantitative nature of compliance in the post-Crisis micro-prudential reforms reflecting the "new and improved" law and economics foundations. In that approach, law remains subservient to economic principles and does not offer a rebalancing role that can much better frame the economic implementation in micro-prudential regulation. We suggest new and qualitative regulatory duties that rebalance the useful role of law in behavior formation at financial institutions. Law needs to become an equal partner to economics in this challenging, but socially important, area of financial regulation.

II. The Development of Micro-prudential Regulation

In this Section we set out the trilogy of the stages of development in micro-prudential regulation, how its law and economics foundations were laid, how this methodology became predominant, and how this methodology has been changed and adapted in the wake of the Crisis. The embrace of law and economics in micro-prudential regulatory policy has arguably progressed through a cycle of dipping into "shades of grey" to immersing in "shades darker," finally emerging as "shades freed" (nevertheless, one could still be in doubt as to the new level of credibility achieved).

A. The First Capital Adequacy Standards and Their Law and Economics Foundations

Micro-prudential regulation developed first as a set of international standards in capital adequacy in the 1980s, and has morphed

from a minimalist regulatory tool in law and economics to a maximal regime today.[25]

The Basel Committee of the Bank for International Settlements (Basel Committee, Committee) developed its first set of capital adequacy standards in the Basel I Capital Accord of 1988 (Accord).[26] The Committee, whose membership comprises central bankers in leading financial jurisdictions, recommended the Accord as a set of universally applicable standards for international banks in order to create a level playing field in international banking where observers previously encountered disparate practices of risk management. There was concern that the capital ratios of many international banks were deteriorating at a time of growing international risk, reflecting a "race to the bottom" in global banking competition.[27] As such, the move towards global harmonization of capital adequacy standards sought to mitigate that trend.[28] As Basel I was intended to set only minimum requirements, countries would be free to impose higher standards and demonstrate a "race to the top."[29] Moreover, even if countries only stuck to the minimum Basel I standards, this would prevent a landscape of fragmented and low regulatory standards.

Basel I introduced a regulatory methodology of linking banks' lending risks to their levels of capital.[30] In economic terms, the regulatory price for risk-taking by banks in lending activities would be the levels of capital they are required to hold against such risks.[31] Linking capital requirements to the risks associated with bank lending acts as a form of control upon banks' excessive risk-taking activity

---

[25] *See generally* Narissa Lyngen, *Basel III: Dynamics of State Implementation*, 53 HARV. INT'L L.J. 519 (2012).

[26] BASEL COMM. ON BANKING SUPERVISION, *International Convergence of Capital Measurement and Capital Standards* 15 (1988), https://www.bis.org/publ/bcbs04a.pdf [https://perma.cc/7BHK-RNFM].

[27] BASEL COMM. ON BANKING SUPERVISION, A BRIEF HISTORY OF THE BASEL COMMITTEE 2 (2014), http://www.bis.org/bcbs/history.pdf [https://perma.cc/KUP5-67TK].

[28] *Id.*

[29] *Id.*

[30] *Capital Standards for Banks: The Evolving Basel Accord, Hearing Before the Comm. on Banking, Housing, and Urban Affair on the Judiciary*, 108th Cong. 396 (2003) (statement of Roger W. Ferguson, Jr., Chairman, Federal Reserve Board).

[31] *Id.*

when creating credit.[32] In this way, shareholders (i.e., the providers of capital) are enrolled into the monitoring process for bank risk-taking.[33] Basel I prescribes a scale of measuring the riskiness of different types of bank loans (or assets) in percentage terms of capital required, therefore introducing a standardized, easy-to-use regulatory pricing system for bank risk-taking.[34] Based on this system, banks are required to hold eight percent of their capital against risk-weighted assets.[35] The fundamental ideology is micro-economic in nature—that rational decision-making is based on price.[36]

However, regulatory pricing is not a reflection of a scientific method for guaranteeing the prudence or safety of banks. First, regulatory pricing was determined based on broad impressions of the creditworthiness of different types of assets, and the pricing system has attracted criticism for being rather ill-refined and over-inclusive.[37] Second, the settling for eight percent as a minimum capital-asset ratio was arrived at through negotiation and bargaining at the Committee, and was not based on empirical or scientific research on what levels of capital actually support bank resilience and safety.[38]

The Accord reflects an economic analysis of bank risk-taking behavior that is then translated into regulatory policy. Hence the development of capital adequacy regulation is rooted in a "law and economics"[39] approach of treating law as functionally implementing

---

[32] Patricia Jackson et al., *Capital Requirements and Bank Behaviour: The Impact of the Basle Accord* 4 (Basel Comm. on Banking Supervision, Working Paper No. 1, 1999).

[33] Shams Pathan, *Strong Board, CEO Power and Bank Risk-Taking*, 33 J. BANKING & FIN. 1, 6 (2009).

[34] Basel Committee on Banking Supervision, *supra* note 26, at 8 (introducing risk weights).

[35] *Id.* at 14.

[36] Herbert A. Simon, *Theories of Decision-Making in Economics and Behavioral Science*, 49 AM. ECON. REV. 253, 254 (1959) (noting that while macroeconomics deals with public policy, microeconomics operates at the "level of the individual consumer or businessman").

[37] Basel Committee on Banking Supervision, *supra* note 26, at 8 ("There are inevitably some broad-brush judgements in deciding which weight should apply to different types of assets. . . .").

[38] Eric A. Posner, *How Do Bank Regulators Determine Capital Adequacy Requirements?* 19–26 (Univ. of Chi. Law Sch. Coase-Sander Inst. for Law and Econ., Working Paper No. 698, 2014) (discussing that regulators did not give much justification for the capital adequacy requirements).

[39] ROBERT COOTER & THOMAS ULEN, LAW AND ECONOMICS 3 (6th ed. 2016) (explaining how economics provides a scientific theory to predict the effects

an economic tool that calibrates incentives through price.[40] The economic method in predicting and calibrating behavior has become predominant as it provides an objective, sometimes pseudo-scientific approach to justifying and designing regulatory policy.[41] Its quantitative orientation also mitigates the uncertainties and debates that may entail with more qualitative orientations.[42] Further, as Lagenbucher points out, the economic language of policy-making effectively facilitates international harmonization of regulatory standards.[43] The law and economics approach in the Accord quickly found favor with EU policy-makers[44] as they embarked on legal harmonization to remove barriers to entry within in the intra-EU banking and capital markets, in order to construct the Single Market in the European Economic Area.[45]

The Accord was adopted by the European Economic Area by virtue of the now-obsolete Own Funds Directive,[46] which defined the

---

of legal sanctions on behavior); *cf.* Thomas J. Miceli, *Economic Models of Law*, *in* 1 THE OXFORD HANDBOOK OF LAW AND ECONOMICS: VOLUME 1: METHODOLOGY AND CONCEPTS 9, 13 (Francesco Parisi ed., 2017) (arguing that the relegating of law to a functional implementation of economic methods is an "economic analysis of law," whereas "law and economics" shows how economic behavior is regulated within institutions including law, and in particular whether economic behavior is better regulated by market mechanisms or other non-economic institutions).

[40] This is a micro-economic approach.

[41] Kevin D. Hoover, *Facts and Artifacts: Calibration and the Empirical Assessment of Real-Business-Cycle Models*, 47 OXFORD ECON. PAPERS, n.s. 24, 25 (1995).

[42] *Id.* (explaining how economic models are calibrated when its parameters are quantified from casual empiricism and can guarantee that the model precisely mimics some particular feature of historical data).

[43] KATJA LANGENBUCHER, ECONOMIC TRANSPLANTS: ON LAWMAKING FOR CORPORATIONS AND CAPITAL MARKETS 21, 39–40, 68–69, 74–78 (2017).

[44] Thomas Biebricher, *Ordoliberalism as a Variety of Neoliberalism*, *in* ORDOLIBERALISM, LAW AND THE RULE OF ECONOMICS 103, 112–13 (Josef Hien & Christian Joerges eds., 2017) (referring to the EU Single Market policy as an ordoliberal project where institutions of law are built up to support economic policy).

[45] IRIS H-Y CHIU, REGULATORY CONVERGENCE IN EU SECURITIES REGULATION 26 (2008) (elaborating on the importance of legal harmonization as a reflection of increased cross-border movement of capital and commerce).

[46] Council Directive 89/299 of Apr. 17, 1989, On the Own Funds of Credit Institutions, 1989 O.J. (L 124) 16 (EC).

constituents of capital, and the repealed Solvency Ratio Directive[47] which specified the rules for estimating the banks' risk-weighted assets.[48] Unsurprisingly, given the fact that the Basel Committee included representatives from seven EU member countries, the rules of the 1988 Basel Capital Accord and the two directives were very similar.[49]

B. The Law and Economics Predominance in Developing Capital Adequacy Standards

The Basel II Accord, which sought to refine Basel I, can be thought of as the pinnacle of the law and economics approach in capital adequacy regulation. As the Basel I Accord gained international recognition and adoption, even when banking practices changed, there was appetite to further develop it for the purposes of continued international harmonization. The Basel II Accord was seen as poised to become a leading and mature standard with the turn of the millennium, and not just a pioneering "starting point."[50]

By the 1990s, it was recognized by the Basel Committee that banks were exposed to considerable risk of losses from interest rate and foreign currency movements.[51] These risks were not taken into account in Basel I.[52] Further, banks in the US in particular started to move into investment banking aggressively in the 1990s after the repeal of the Glass-Steagall Act, which prevented consolidation of such activities.[53] Although European banks had never faced such restrictions and always embraced a "universal banking" model which

---

[47] Council Directive 89/647, art. 5–6, 1989 O.J. (L 386) 16–18 (EC).

[48] BASEL COMM. ON BANKING SUPERVISION, *supra* note 26, at 2 ("The Accord was adopted by the European Economic Area by virtue of the now-obsolete Own Funds Directive which defined the constituents of capital, and the repealed Solvency Ratio Directive which specified the rules for estimating the banks' risk-weighted assets.")

[49] *See id.*

[50] BASEL COMM. ON BANKING SUPERVISION, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS: A REVISED FRAMEWORK—COMPREHENSIVE VERSION (2006), http://www.bis.org/publ/bcbs128.htm [hereinafter COMPREHENSIVE VERSION].

[51] *See id.* at 166–76 (providing that the Basel II outlines interest rate risk concerns).

[52] *See* BASEL COMM. ON BANKING SUPERVISION, *supra* note 26, at 2.

[53] Gramm-Leach Bliley Act of 1999, Pub. L. 106-102, § 101, 113 Stat. 1341, 1341 (repealing the restrictions under the Glass-Steagall Act).

allowed banks to conduct a variety of financial intermediation services, the newly competitive forces coming from the US were crucial in European and UK banks' expansion into investment activities.[54] Thus, many international banks started to undertake activities such as securities underwriting, corporate finance in restructuring and mergers and acquisitions, proprietary trading, collective investment schemes and advisory and brokerage services.[55] As banks became exposed to investment activities, the nature of their business risks changed too.[56] Hence it became important to consider how capital adequacy rules should compel banks to make provision for market risks and operational risks deriving from international banks' increasingly multi-faceted lines of businesses.[57]

The Basel Committee extended its approach to risk-weighting from Basel I by developing "standardised" approaches for risk-weighting which covered a much wider range of financial assets and instruments.[58] For financial assets and instruments that could be traded in financial markets, standardised approaches were based on conventional observations on market price fluctuations under non-Crisis conditions.[59] Moreover, responding to criticism that the Basel I

---

[54] Helen A. Garten, *Universal Banking and Financial Stability*, 19 BROOK. J. INT'L L. 159, 160–62 (1993) (explaining the universal model of banking in Europe); Sarah Smith, *Gramm-Leach-Bliley: The Effect of Interim Rulings on German Banks*, 8 ISLA J. INT'L & COMP. L. 663, 669 (2002) ("The EU has encouraged the proliferation of financial services abroad.").

[55] Jonathan R. Macey, *The Business of Banking: Before and After Gramm-Leach-Bliley*, 25 J. CORP. L. 691, 709 (2000); Ingo Wallenborn, *Competitiveness of U.S. Banks After Gramm-Leach-Bliley: A Comparison between the U.S. and European Regulatory Systems*, 20 ANN. REV. BANKING L. 243, 267 (2001).

[56] Matthew J. Restrepo, *The Convergence of Commercial and Investment Banking under the Gramm-Leach-Bliley Act*; *Revisiting Old Risks and Facing New Problems*, 11 L. & BUS. REV. AM. 269, 273 (2005) (highlighting risks involved in engagement in both commercial and investment activities, including interest risks, underwriting risks, stock risks, bond risks, and double-exposure risks); *see also* Comprehensive Version, *supra* note 50 (explaining the numerous risks apparent in the financial sector, including credit, operational, and market risks).

[57] Comprehensive Version, *supra* note 50 at 144–202.

[58] *Id.* at 12.

[59] BASEL COMM. ON BANKING SUPERVISION, AMENDMENT TO THE CAPITAL ACCORD TO INCORPORATE MARKET RISKS 1–6 (1996), http://www.bis.org/publ/bcbs24.pdf?noframes=1 [https://perma.cc/6CZX-E4J6]. This was later consolidated into Basel II.

methodology for risk-weighting loan assets was too crude and over-inclusive, the standardised approach for credit risk-weighting also became more sensitive to externally-produced data for the creditworthiness of different borrowers, such as the credit ratings produced by credit rating agencies.[60]

The regulatory focus is thus placed on pursuing greater efficiency in accurate risk measurement, in order to apply efficient and accurate regulatory pricing in terms of capital.[61] The mathematical and quantitative modus has arguably taken over in dominating regulatory methodology and policy, culminating in Basel II's best-known and now-controversial strategy of accepting an "internal models" approach to risk-weighting.[62] Over time, banks have developed internal scoring and modeling systems to measure the creditworthiness of their borrowers in a more sensitive fashion, as well as loss estimation models to measure market risk in a quantitative manner.[63] Policy-makers have become convinced that such "internal models" may yield quantitatively more sensitive and accurate risk measures and have therefore adopted a policy to allow banks to use internal models for risk-weighting, subject to supervisory oversight and market transparency.[64]

With the benefit of hindsight in the light of the Crisis, Basel II's approach of co-opting banks to develop internal models for risk management turned out to be hazardous.[65] Banks, in a fiercely

---

[60] COMPREHENSIVE VERSION, *supra* note 50, at 52–120.
[61] *Id.* at 161.
[62] *Id.* at 195–97.
[63] Jose A Lopez & Mark R Saidenberg, *The Development of Internal Models Approaches to Bank Regulation & Supervision: Lessons from the Market Risk Amendment* (2001), http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.134.4270&rep=rep1&type=pdf [https://perma.cc/N2MR-T5QT].
[64] COMPREHENSIVE VERSION, *supra* note 50, at 204, 226. These are known as Pillars 2 and 3 of the Basel II Accord. The Second Pillar (Pillar 2) referred to bank regulators' supervisory role and review of banks' compliance with the capital adequacy framework. The Third Pillar (Pillar 3) referred to market discipline, which imposed mandatory disclosure on banks to their investors in the securities markets, in order to allow investors to assess key pieces of information on the capital, risk exposures, risk assessment processes, and hence the capital adequacy of the bank. Pillars 2 and 3 were intended to ensure that banks' internal models would be subject to appropriate transparency to regulators and investors and scrutinized by them.
[65] Jeffrey Atik, *Basel II: A Post-Crisis Post Mortem*, 19 TRANSNAT'L L. & CONTEMP. PROBS. 731, 749 (2011) ("The national regulator verified the

competitive international landscape, chose to engage in high levels of risk-taking that brought immediate rewards, while developing internal models that would minimize their need to keep capital adequacy levels high.[66] Empirical evidence[67] on the application of internal approaches developed by banks for credit and operational risk under Basel II showed that the internal models encouraged banks to set aside less capital than otherwise would have been the case applying standardised Basel II approaches. Further, as risk management and internal control were not centers of revenue generation for banks, some banks marginalized their risk management functions as to not interfere with business decisions.[68] Where banks have used internal models merely to avoid regulatory burdens, it could be argued that regulatory supervision (Pillar 2) and market transparency (Pillar 3) should have been able to keep such maneuvers in check. In reality, regulators were

---

presence of such internally developed risk management systems, but did not verify their effectiveness, which was regarded as technically beyond the pale."); Sandra Rutova & Tim Volkheimer, *Revisiting the Basel Accords: Lessons Learned from the Credit Crisis*, 19 U. MIAMI BUS. L. REV. 83, 99 (2011) ("[G]iven the lack of credible information regarding risks, asset prices and liquidity, and recent market volatility, it is disputable whether banks using the internal models are able to correctly determine the risks associated with their assets.").

[66] Atik, *supra* note 65 at 748 ("There is a general consensus that management incentives were significantly skewed towards excessive risk taking [during the Financial Crisis]."); Rutova & Volkheimer, *supra* note 65 at 95 ("[B]anks may treat the same or similar assets differently based on their individual internal perception of risk. This may have resulted in underweighting, which rendered banks' capital reserves inadequate in times of stress.").

[67] Paul H. Kupiec, *Financial Stability and Basel II* (FDIC Ctr. for Fin. Res. Working Paper No. 2006-10, 32, 2006), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=942297; Michael Jacobs Jr., *An Empirical Study of the Returns on Defaulted Debt and the Discount Rate for Loss-Given-Default*, 33 (Sept. 2009), *available at* https://www.bis.org/bcbs/events/cbrworkshop09/jacobs.pdf [https://perma.cc/4UAW-94RA]; Jukka Vauhkonen, *Bank Safety under Basel II Capital Requirements* 18 (Bank of Fin. Res. Paper No. 29-2009, 2009), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1513239.

[68] PARLIAMENTARY COMM'N ON BANKING STANDARDS, AN ACCIDENT WAITING TO HAPPEN: THE FAILURE OF HBOS, Report 2012–13, HL 144, HC 705, at 18 (UK) (Apr. 4, 2013), https://publications.parliament.uk/pa/jt201213/jtselect/jtpcbs/144/144.pdf [https://perma.cc/3ZYJ-DNN9]; Michael McAleer et al., *What Happened to Risk Management During the 2008- 2009 Financial Crisis?*, *in* ROBERT W. KOLB, LESSONS FROM THE FINANCIAL CRISIS 307, 311–12 (John Wiley ed., 2010).

operating at a meta-level of supervision, as risk management had become devolved to banks' internal models, and regulators found it hard to make judgments on the technical robustness of those models. Hence, the use of internal models by approved banks devolved into a form of self-regulation in banks, and they were effectively left unchecked.[69]

In relation to Pillar 3, it could be argued that market discipline was exercised not to the effect of making banks more prudent in risk management, but more competitive in risk-taking.[70] Investors would scrutinize banks' short-term profitability quarter to quarter as banks reported their financial performance to investors, so banks were under tremendous pressure to generate earnings and profits.[71] Hence, being able to increase risk-taking and grow market share were important to bank strategy, and some of this was achieved at the expense of maintaining high capital adequacy levels or prudent risk management.[72] Some commentators[73] opined that bank shareholders had indeed driven excessive risk-taking by banks instead of acting as the checking and moderating influence wrongly assumed in Basel II. For example, the Halifax Bank of Scotland in the UK embarked on aggressive market growth in lending, and generated significant bad debts in corporate lending that ultimately led to its £45bn deficit.[74] Shareholders did not seem to have exerted any moderating influence

[69] The internal review of the UK Financial Services Authority in the wake of the Northern Rock failure showed that the FSA department dealing with prudential supervision were not equipped to critically understand banks' models and processes and did not raise relevant queries. FSA INTERNAL AUDIT DIV., THE SUPERVISION OF NORTHERN ROCK: A LESSONS LEARNED REVIEW 64–71 (2008), http://www.fsa.gov.uk/pubs/other/nr_report.pdf [https://perma.cc/BR94-RQYB].

[70] PARLIAMENTARY COMM'N ON BANKING STANDARDS, *supra* note 68, at 51–52.

[71] *Id.* at 40–43 (demonstrating that bank employees were under "pressure from the top of the bank to increase profit targets . . . .").

[72] *See, e.g.*, *id.* at 6–9.

[73] Peter O Mülbert, *Corporate Governance of Banks after the Financial Crisis—Theory, Evidence, Reforms* 15 (ECGI Working Paper Series No. 151/2010, 2010) http://ssrn.com/abstract=1448118.

[74] PARLIAMENTARY COMM'N ON BANKING STANDARDS, *supra* note 68, at 36–40.

upon the bank's strategy.[75] At its worst, the bank relied on a £20.5bn liquidity assistance line from the central bank to keep it going until it was bought and merged into Lloyds in January 2009.[76]

C. The Law and Economics Renewal in the Wake of the Global Financial Crisis 2007–09

Basel II had not been fully implemented internationally before the onset of the Crisis.[77] However, in the wake of the crisis, the approach of deferring to banks to develop stringent internal models that could achieve responsible risk management became severely doubted.[78] Nevertheless, the banking business had become complex and not easily susceptible to standardised approaches in risk-weighting for the purposes of calculating the "regulatory price" of capital adequacy.[79]

The global financial crisis arguably brought about a potential turning point for regulatory policy in micro-prudential regulation.[80] Should policy-makers address the problems of low capital adequacy due to inappropriate and overly optimistic use of internal models by focusing on reducing banks' discretion to use them? Or should a broader approach be taken to critically question the micro-economic assumptions and quantitative methodology in capital adequacy regulation? The policy changes that have been implemented since the crisis lie somewhere in between the minimal approach in the former and the more radical approach in the latter.[81] Policy-makers have persisted in holding on to the micro-economic model of setting an appropriate regulatory price for risk-weighting, which they continue to

---

[75] *Id.* at 44 ("In the case of HBOS, neither shareholders nor ratings agencies exerted the effective pressure that might have acted as a constraint upon the flawed strategy of the bank.").
[76] *Id.* at 36.
[77] Vutova & Volheimer, *supra* note 65, at 98.
[78] *See* McAleer et al., *supra* note 68, at 312–15.
[79] BASEL COMM. ON BANKING SUPERVISION, STANDARDS: REVISIONS TO THE STANDARDISED APPROACH FOR CREDIT RISK 3–4 (2015), https://www.bis.org/bcbs/publ/d307.pdf [https://perma.cc/7LAW-5Y55].
[80] *Id.* at 15.
[81] *See* BASEL COMM. ON BANKING SUPERVISION, BASEL III: FINALISING POST-CRISIS REFORMS (2017), https://www.bis.org/bcbs/publ/d424.pdf [https://perma.cc/AP49-WUTD] [hereinafter Basel III Post-Crisis] (demonstrating Basel III's approach for financial reforms, which included standardising credit risk weighting and establishing new capital requirements).

endeavor to measure, but more conservatively.[82] By 2023, they would also introduce an absolute "floor" to the capital requirements differences that are derived from using standardised approaches and internal models approaches to risk-weighting.[83] This would curtail banks' discretion to use internal models manipulatively to reduce their capital adequacy burdens. Further, policy-makers have added to the capital adequacy tool other similar tools for regulating behavior, such as calibrating banks' assets and liabilities according to quantitative requirements of liquidity.[84] A further set of regulatory tools intended to shape banks' behavior by incentives continue in the law and economics tradition of introducing levers to affect rational decision-making and behavior.[85]

---

[82] Will be discussed in Section III in relation to capital buffers, reforms to risk-weighting methodologies in the standardised and internal model approaches, and in relation to loss absorbing capital requirements for systemically important financial institutions.

[83] Basel III Post-Crisis, *supra* note 81, at 137–39 (establishing an output floor to "ensure that banks' capital requirements do not fall below a certain percentage of capital requirements derived from standardised approaches").

[84] *See* BASEL COMM. ON BANKING SUPERVISION, BASEL III: THE NET STABLE FUNDING RATIO 1–12 (Oct. 31, 2014) http://www.bis.org/bcbs/publ/d295.pdf [https://perma.cc/7T64-S2CC] (introducing the net stable funding ratio as a complementary tool to "measure other dimensions of a bank's liquidity and funding risk profile"). *See also* BASEL COMM. ON BANKING SUPERVISION, BASEL III: THE LIQUIDITY COVERAGE RATIO AND LIQUIDITY RISK MONITORING TOOLS (Jan. 7, 2013), https://www.bis.org/publ/bcbs238.pdf [https://perma.cc/VQ3Q-R336] [hereinafter Basel III Liquidity Coverage Ratio] (providing methods for calculating asset liquidity); BASEL COMM. ON BANKING SUPERVISION, BASEL III: A GLOBAL REGULATORY FRAMEWORK FOR MORE RESILIENT BANKS AND BANKING SYSTEMS, 8–10 (June 1, 2011), http://www.bis.org/publ/bcbs189.pdf [https://perma.cc/AP49-WUTD] [hereinafter Basel III Global Regulatory Framework] (introducing a global liquidity standard for banks).

[85] Such as regulation of bankers' remuneration, *see* Commission Delegated Regulation 2015/35, 2015 O.J. (L 12) 1, 173 (EU) (adopting a remuneration policy). *See also* FIN. STABILITY BD., SUPPLEMENTARY GUIDANCE TO THE FSB PRINCIPLES AND STANDARDS ON SOUND COMPENSATION PRACTICES 11–14 (2018) http://www.fsb.org/wp-content/uploads/P090318-1.pdf [https://perma.cc/69NP-MQFV]; FIN. STABILITY BD., FSB PRINCIPLES FOR SOUND COMPENSATION PRACTICES: IMPLEMENTATION STANDARDS 2–5 (2009), http://www.fsb.org/wp-content/uploads/r_090925c.pdf [https://perma.cc/Y2V5-896E]; FIN. STABILITY FORUM, FSF PRINCIPLES FOR SOUND COMPENSATION PRACTICES, 1–5 (2009) http://www.fsb.org/wp-content/uploads/r_0904b.pdf [https://perma.cc/G7X8-XAS4].

In other words, regulatory reforms, in the tradition of law and economics, continue to be aimed at regulating banks' behavior in relation to their risk-taking and resilience, but are also taking on more conservative assumptions, correcting for the flaws of previous assumptions and application, and becoming more multi-faceted in capturing bank risk-taking behavior in a more holistic paradigm.[86] However, efforts have also been made to address the broader criticisms of over-reliance on micro-economic methods to regulate bank behavior, and new regulatory tools have been introduced to deal with macro-prudential regulation.[87]

The character and key highlights of post-crisis reforms to micro-prudential regulation will be fleshed out shortly, but we suggest that such micro-prudential regulatory reforms are now founded on a form of new and improved law and economics which incorporates more complex micro-economic modeling and a recognition of the importance of the macro-economic dimension. Regulatory policy continues to rely on economic solutions although the quantitative nature of the previous regime has been somewhat balanced by qualitative aspects.[88] The next Section discusses the key features of micro-prudential regulation reflecting "new and improved law and economics" foundations and Section C critically queries what gaps may remain in regulating for the safety of individual financial institutions and overall financial system stability.

III. New and Improved Law and Economics in Post-Crisis Micro-prudential Regulation

A number of commentators, in diagnosing the causes of the global financial crisis and weaknesses of the regulatory regimes prior to the crisis, identified common themes such as the lack of capital adequacy requirements that reflected systemic risks that banks posed, and the lack of an overall view by regulators of the financial system

---

[86] *See e.g.*, Basel III Post-Crisis, *supra* note 81, at 3–136 (creating a standardised approach for risk-taking and also establishing capital requirements).

[87] *See* Colin Mayer, *Economic Development, Financial Systems, and the Law*, *in* THE OXFORD HANDBOOK OF FINANCIAL REGULATION 41–65 (Niamh Moloney et al. eds., 2015); Mülbert, *supra* note 12, at 367–69, 381–401 (discussing the balance and proper use of micro- and macro-prudential supervision when the policies conflict); Driesen, *supra* note 16, at 90–97. The nature of macroprudential policy will be discussed in Section III.

[88] *See, e.g.*, Mayer, *supra* note 87, at 54–59.

and markets as a whole.[89] The Basel Committee responded by robustly reforming the capital adequacy regime and recommending new micro-prudential regulatory tools to support each other. Overall, micro-prudential regulation is still a key part of a more comprehensive regulatory regime that covers corporate governance and risk management regulation and oversight,[90] structural reforms for systemically important banks in the UK,[91] regulation of non-bank entities for both resilience and stability purposes,[92] market regulation over hitherto unregulated markets in order to demand transparency and promote more risk-conscious transactions,[93] regulation of credit rating agencies,[94] recovery, resolution and crisis management regimes for

[89] Markus Brunnermeier et al., *Fundamental Principles of Financial Regulation*, 11 GENEVA REPS. ON WORLD ECON. 23–29 (2009); Viral V. Acharya et al., Measuring Systemic Risk 2 (Mar. 16, 2010) (unpublished manuscript), http://ssrn.com/abstract=1573171 (describing the disconnect between theoretical approaches to financial regulation and the practical needs of regulators).

[90] *See, e.g.*, Directive 2013/36/EU, of the European Parliament and of the Council of 26 June 2013 on Access to the Activity of Credit Institutions and the Prudential Supervision of Credit Institutions and Investment Firms, art. 88, 2013 O.J. (L 176) 338, 384 (establishing principles for governance arrangements); DAVID WALKER, A REVIEW OF CORPORATE GOVERNANCE IN UK BANKS AND OTHER FINANCIAL INDUSTRY ENTITIES: FINAL RECOMMENDATIONS 6–7 (2009).

[91] Financial Services (Banking Reform) Act, 2013, c. 33 (U.K.), § 142; INDEP. COMM'N ON BANKING, FINAL REPORT RECOMMENDATIONS 7 (2011) (recommending reforms to for systemically important financial institutions in the wake of the financial crisis).

[92] Covering a wide range from investment firms to investment funds, even alternative funds such as hedge and private equity funds. *See, e.g.,* Directive 2014/65/EU, of the European Parliament and of the Council of 15 May 2014 on Markets in Financial Instruments, 2014 O.J. (L 173) 349; Directive 2011/61/EU, of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers, 2011 O.J. (L 174) 1; Regulation 2017/1131, of the European Parliament and of the Council of 14 June 2017 on Money Market Funds, 2011 O.J. (L169) 8.

[93] Regulation 648/2012, of the European Parliament and of the Council of 4 July 2012 on OTC Derivatives, Central Counterparties, and Trade Repositories, 2012 O.J. (L201) 1; Regulation 2015/2365 of the European Parliament and of the Council of 25 November 2015 on Transparency of Securities Financing Transactions and of Reuse and Amending Regulation (EU) No 648/2012, 2015 O.J. (L337), 1.

[94] Regulation 462/2013, of the European Parliament and of the Council of 21 May 2013 Amending Regulation 1060/2009 on Credit Rating Agencies, 2013

banks and other financial institutions,[95] and more formalization in terms of cooperation and coordination amongst regulators for international banks.[96]

Capital adequacy regulation underwent significant change in the years between 2009 and 2017 as the Basel Committee developed, phased in, and finalized their recommendations.[97] Capital adequacy is no longer the exclusive regulatory tool and is flanked by other micro-prudential measures designed to introduce different dimensions of regulatory price and controls upon banks' risk-taking behavior.[98] We discuss this multi-faceted approach in four key ways. First, capital adequacy regulation now incorporates a more conservative regulatory price calibration.[99] Second, less trust is reposed in risk-weighting calculations derived from internal models approaches, as regulatory intervention has made inroads into the implementation of such models.[100] Third, systemically important financial institutions are treated separately in relation to capital adequacy and the regulatory price for them reflects the potential price that is to be paid if the institution fails.[101] Finally, micro-prudential regulation has become elevated to be indispensable for implementing the regulatory ideology for financial stability.[102] This will be discussed in relation to the EU's reforms for the micro-prudential regulation of non-bank financial institutions, in particular investment firms.

O.J. (L146) 1 (establishing supervision authority over credit rating agencies to mitigate conflicts of interest and ensure transparency in credit rating processes).

[95] Directive 2014/59/EU, of the European Parliament and of the Council of 15 May 2014 Establishing a Framework for the Recovery and Resolution of Credit Institutions and Investment Firms and Amending Council Directive 82/891/EEC, and Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC, 2011/35/EU, 2012/30/EU and 2013/36/EU, and Regulations (EU) No 1093/2010 and (EU) No 648/2012, 2014 O.J. (L173) 190 (creating Union level tools to adequately deal with unsound or failing financial institutions).

[96] BASEL COMM. ON BANKING SUPERVISION, GOOD PRACTICE PRINCIPLES ON SUPERVISORY COLLEGES (2014), http://www.bis.org/publ/bcbs177.pdf [https://perma.cc/8SY8-VT5D].

[97] Basel III Post-Crisis, *supra* note 81, at 109.

[98] *Id*. at 1.

[99] *Id.* at 109.

[100] *Id*. at 1.

[101] *Id*. at 4–10.

[102] *Id*.

A. Greater Conservatism in Capital Adequacy

One of the first measures that the Basel Committee introduced in the immediate wake of the global financial crisis was the addition of "capital buffers" to the baseline eight percent capital asset ratio.[103]

There are two types of capital buffers. One type is "absolute" in the sense that these are imposed on banks across the board regardless of their risk profile, the other is institution-specific, i.e., regulators may determine to impose on banks subject to certain criteria or discretionary assessment.

In terms of "absolute" capital buffers, the capital conservation buffer and the counter-cyclical buffer introduced by Basel III fall within this category. In order to comply with the capital conservation buffer, banks are required to set aside an extra 2.5% of risk-weighted assets as a mandatory capital conservation buffer, effectively raising the capital asset ratio from 8% to 10.5%, in order to address criticisms of the 8% being perceived as too low.[104] The capital conservation buffer is phased in between 1 January 2016 and year end 2018 becoming fully effective on 1 January 2019.[105] Next, Basel III provides that where national regulators determine it to be necessary, a counter-cyclical buffer may be imposed on the banking sector in that jurisdiction.[106] The objective of the counter-cyclical buffer is to allow national regulators to compel banks to control risk-taking in times of market exuberance, so that banks can be more prepared and resilient in challenging times.[107] Banks may be required to provision for up to 2.5% of risk-weighted assets in addition to the risk asset ratio of 8% and the capital conservation buffer of 2.5%.[108] The countercyclical buffer regime is "phased-in in parallel with the capital conservation buffer," becoming fully effective on 1 January 2019.[109] The UK has

---

[103] BASEL COMM. ON BANKING SUPERVISION, BASEL III: A GLOBAL REGULATORY FRAMEWORK FOR MORE RESILIENT BANKS AND BANKING SYSTEMS 7 (2011), https://www.bis.org/publ/bcbs189.htm [https://perma.cc/WL6G-SQWZ].

[104] Basel III Post-Crisis, *supra* note 81, at 57; Candemir Baltali & Joseph Tanega, *Basel III: Dehybridization of Capital*, 8 N.Y.U. J. L. & BUS. 1, 13-15 (2011)

[105] Basel III Post-Crisis, *supra* note 81, at 57.

[106] *Id.*

[107] *Id.*

[108] *Id.* at 58–59.

[109] *Id.* at 60.

recommended a 1% counter-cyclical buffer to be in place.[110] In total, in the UK for example, capital adequacy requirements have arguably been raised by 30% from the Basel II regime.

The EU regulators introduced further "absolute" capital buffers. The systemic risk buffer, introduced by the EU's Capital Requirements IV Directive 2013 (CRD IV Directive), allows national regulators to impose an additional buffer on the financial sector or one or more subsets of the sector, in order to address long-term non-cyclical and macro-prudential risks.[111] In other words, the Directive permits Member States to allow their regulators to introduce an additional forward-looking buffer based on the outlook of general economic conditions. The systemic risk buffer is to at least one percent of risk-weighted assets, in excess of the recommendations made under Basel III.[112] These capital buffers are intended to improve a bank's resilience by acting as increased controls on risk-taking behavior.[113]

Institution-specific capital buffers are imposed on banks in order to reflect their individual risk profiles.[114] An example would be the institution-specific counter-cyclical buffer introduced in the CRD IV Directive 2013.[115] European banks that have credit exposures in a number of jurisdictions would have to meet an extra capital requirement calculated by obtaining a weighted average of the counter-cyclical buffers set in each jurisdiction where the bank has exposures, including both EU and non-EU jurisdictions.[116]

---

[110] BANK OF ENG., FINANCIAL STABILITY REPORT 36 (2018), https://www.bankofengland.co.uk/-/media/boe/files/financial-stability-report/2018/november-2018.pdf [https://perma.cc/8F6M-Z8N3].

[111] Council Directive 2013/36, art. 140, 2013 O.J. (L 176) 338, 413 (discussing access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms and amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC (CRD IV Directive)).

[112] Council Directive 2013/36, art. 133(3), 2013 O.J. (L 176) 338, 408

[113] Council Directive 2013/36, art. 85, 2013 O.J. (L 176) 338, 347 ("In order to ensure consistent macroprudential oversight across the Union, it is appropriate that the European Systemic Risk Board (ESRB) develop principles tailored to the Union economy and be responsible for monitoring their application.").

[114] *Id.*

[115] Council Directive 2013/36, art. 130, 2013 O.J. (L 176) 338.

[116] Council Directive 2013/36, art. 140, 2013 O.J. (L 176) 338, 413 ("The institution-specific countercyclical capital buffer rate shall consist of the weighted average of the countercyclical buffer rates that apply in the

Next, regulators may, after supervisory review of individual institutions, impose additional requirements tailored to the bank's risk profile, called the Pillar 2 buffer, therefore bringing supervisory oversight to bear upon banks.[117] Such a buffer is intended to fill in gaps for areas of risk not taken into account of in the harmonized Basel III and EU measures as well as to compensate for any risk management deficiencies in the institution assessed by the regulator.[118] Finally, systemically important financial institutions are required to meet additional buffers,[119] pending the rollout of a more bespoke regime that deals with their capital requirements shortly to be discussed.

The capital buffers regime adds, in a modular fashion, to the baseline capital asset ratio of eight percent incremental amounts of capital requirements, on the one hand giving time for banks to adjust to the new conservatism, on the other hand demonstrating the range of regulatory tools that can be developed to take into account of different mixes of risk profiles.[120] It may be argued that buffer tools are not exactly risk-sensitive as they conflate banks' individual risk profiles with wider economic contextual factors and the jurisdictions in which they operate. However, this mix of micro-prudential and macro-prudential aspects in measuring risk and regulatory price was precisely what was missing in the pre-crisis era where focus was placed only on individual institutions' behavior.[121]

---

jurisdictions where the relevant credit exposures of the institution are located . . . .").

[117] PRUDENTIAL REGULATION AUTH., The PRA's Methodologies for Setting Pillar 2 Capital 35 (2018), https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/statement-of-policy/2017/the-pras-methodologies-for-setting-pillar-2a-capital-december-2017.pdf?la=en&hash=A157541ACACD7EC18CEA8C8695CDD5F30E5D1B53 [https://perma.cc/FZF6-XM23].

[118] *Id.*

[119] BANK FOR INT'L SETTLEMENTS, GLOBALLY SYSTEMICALLY IMPORTANT BANS: UPDATED ASSESSMENT METHODOLOGY AND THE HIGHER LOSS ABSORBENCY REQUIREMENT 1–2 (2013), https://www.bis.org/publ/bcbs255.htm [https://perma.cc/NR9K-ZY8K].

[120] *Id.* at 3.

[121] Brunnermeier et al., *supra* note 89, at 23–29; Steven L. Schwarcz, *Systemic Risk*, 97 GEO. L.J. 193, 210–13 (2008).

B. Regulatory Moderation of Internal Models Approaches

A major weakness identified in relation to banks' risk management during the global financial crisis was the use of internal models to derive low risk-weightings of bank risk in order to minimize regulatory capital compliance.[122] Hence, the use of internal models must be subject to more robust standards and regulatory scrutiny.[123] Under the European CRD IV Directive, regulators are compelled to review banks' internal models at least every three years even if approval has been given for their use.[124] Regulators' scrutiny has also turned to addressing the consistency of application of internal models amongst banks, in order to ascertain if models are properly designed and used.[125] The Basel Committee advocates the use of "hypothetical portfolio exercises" to detect where the variations in risk-weighting lie as a result of using internal models, and the drivers for such variations.[126] Hypothetical portfolio exercises involve small samples of bank portfolios for comparative study in order to chart variations in approaches.[127] These cannot be conclusive as they are small samples, but they would provide indicative directions for investigating into the nature and drivers of variations in risk-weighting methodologies.

In the EU, national regulators are required to collect information in order to assess whether and to what extent the applications of internal models by banks within their jurisdictions generate different risk-weighting results.[128] National regulators are to

---

[122] *Id.* at 25.

[123] *Id.* (discussing the need for objective risk measures across institutions).

[124] Council Directive 2013/36, art. 101, 2013 O.J. (L 176) 338, 392 (discussing access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC).

[125] BANK FOR INT'L SETTLEMENTS, Reducing Excessive Variability in Banks' Regulatory Capital Ratios 1 (Nov. 2014) ("An important focus of the Basel Committee is establishing consistency in the implementation of post crisis regulatory reforms to improve the resilience of the global banking system, promote public confidence in regulatory capital ratios and encourage a regulatory level playing field for internationally active banks.").

[126] *Id.*

[127] *Id.* at 5 (discussing the Committee's ongoing monitoring through the hypothetical portfolio exercises program).

[128] Council Directive 2013/36, art. 78, 2013 O.J. (L 176) 338, 380 (establishing the requirements of national regulators).

conduct yearly assessments and benchmarking exercises of banks' internal models approaches to credit risk and market risk.[129] Such transparency and regulatory scrutiny allow regulators to identify regulatory arbitrage practices and compel banks to justify their model designs and implementation.

In order to achieve a certain level of consistency in applying internal models and to prevent banks from severely under-estimating risk-weightings, there would also be "floors" imposed on the results of using internal models so as to limit the room for deviation from the application of standardised approaches.[130] This addresses the problem discussed earlier in relation to empirical research findings that banks have used internal model approaches in the pre-crisis years to support less capital adequacy requirements for their risk-taking.[131]

The Basel Committee[132] has recommended reform to make banks publicly disclose—and not just to regulators—the risk-weighting measures as derived from internal models, and the risk-weighting measures that would apply to the same assets if a standardised approach had been taken.[133] An "output floor" is set at a prescribed level of the risk-weighting derived from standardised approaches.[134] If the risk-weighting derived from internal models exceeds this level, then the measure from internal models will apply.[135] If the risk-weighting from internal models is below the output floor, then the output floor applies.[136]The output floors are set and to be phased in as shown in the Table below.[137]

---

[129] Commission Regulation 2017/180 of Oct. 24, 2016, Supplementing Directive 2013/36/EU of the European Parliament and of the Council with regard to regulatory technical standards for benchmarking portfolio assessment standards and assessment-sharing procedures 2016 O.J. (L 29) 1, 3 (emphasizing the requirements put forth in Article 78(3) of Directive 2013/36/EU, which requires yearly assessments); *see also* Council Directive 2013/36, art. 78, 2013 O.J. (L 176) 338, 380 (establishing the requirements of national regulators, including yearly assessments).

[130] Basel III Post-Crisis, *supra* note 81, at 127.

[131] Brunnermeier et al., *supra* note 89, at 31.

[132] *Id*.

[133] Basel III Post-Crisis, *supra* note 81, at 108.

[134] *Id.* at 137.

[135] *Id.* ("The output floor will ensure that Banks' capital requirements do not fall below a certain percentage of capital requirements derived under standardised approaches.").

[136] *Id.*

[137] *Id.* at 139 (setting forth the output floor phase-in arrangement table).

Table 1

Date	Output Floor Calibration
1 Jan 2022	50% (of risk-weighting as if standardised approaches apply)
1 Jan 2023	55%
1 Jan 2024	60%
1 Jan 2025	65%
1 Jan 2026	70%
1 Jan 2027	72.5%

Finally, the use of internal models has become subject to limitations and more prescription.[138] The Basel Committee envisages that internal models can be used for more unusual assets such as project, object finance, higher-risk real estate, sovereign exposures, etc. but they need to be classified into different classes for specific risk treatment in accordance with the loan characteristics prescribed.[139] Further, internal models could be excluded from use in relation to certain asset classes such as financial institution exposures, exposures to certain large corporate and to equities.[140] The reason for this is that there may be a relative lack of historical default information with respect to these exposures to support the use of these models in providing estimates in relation to default.[141] Only the standardised approach will be used to determine the risk-weightings of these exposures.[142] In relation to measuring operational risk, the internal models approach in Basel II are recommended to be abolished in favor of a more prescriptive approach.[143]

Under Basel II, in measuring operational risk, two broad-brush standardised approaches were recommended alongside an internal models approach which allowed banks to estimate their exposure to operational risk based on historical information over five years.[144] In

[138] *See id*.
[139] *Id.* at 54–55.
[140] *Id.* at 59 (explaining that the internal models approach is not permitted for exposure to equities).
[141] BASEL COMM. ON BANKING SUPERVISION, CREDIT RISK MODELLING: CURRENT PRACTICES AND APPLICATIONS 10 (1999), https://www.bis.org/publ/bcbs49.pdf [https://perma.cc/4ACM-ZHXY].
[142] Basel III Post-Crisis, *supra* note 81, at 59 (detailing the exposures for which the internal models cannot be used).
[143] *Id.* at 128 (summarizing the standardised approach for minimal capital requirement for operational risk, replacing the Basel II approach).
[144] *See* COMPREHENSIVE VERSION, *supra* note 50.

finalising the Basel III reforms, the Basel Committee[145] recommended a replacement of the Basel II methodology for operational risk and introduced a more complex quantitative indicator based on banks' revenues and expenses, to be combined with banks' historical data over ten years of operational risk incidents and losses, in order to derive a closer estimate for operational risk exposure in order to apply capital adequacy requirements. Basel III therefore abolished the use of internal models in relation to operational risk which could be perceived as giving banks too much discretion to play down their risk profiles.[146]

C. Imposing Capital Requirements Special to Systemically Important Financial Institutions

Special regulatory standards are arguably needed for banks that are regarded as globally systemically important financial institutions (G-SIBs) as they tend to pose different types and extents of risks and require different regulatory treatment. In the pre-crisis environment, Basel II would have subjected them to a relatively low compliance regime for regulatory capital, and their frequent use of internal models would have allowed them to underestimate risks while pushing for growth and empire-building.[147] However, G-SIBs participate in many markets, carry on a wide range of bank business, and are often at the forefront of financial innovation and complex transactions.[148] They are also often highly inter-connected with other financial institutions.[149] If a part of a G-SIB becomes crisis-stricken, its adversities may infect the entire group and may also affect other financial institutions through contagion, resulting in systemic

---

[145] *See* Basel III Post-Crisis, *supra* note 81, at 128–29.

[146] *Id.* at 128 ("The standardised approach for measuring minimum operational risk capital requirements replaces all existing approaches in the Basel II framework.").

[147] *See id*.

[148] *See* Leonhard Fischer, *Major Risks of International Banking*, (U. of St. Gallen Law Sch.,Working Paper No. 2008-20 June 2007) (mentioning the level of innovation and change in the international financial markets and banking industry).

[149] *See* Tom C.W. Lin, *Too Big to Fail, Too Blind to See*, 80 MISS L.J. 355, 363 (2010) (reviewing ANDREW ROSS SORKIN, TOO BIG TO FAIL: THE INSIDE STORY OF HOW WALL STREET AND WASHINGTON FOUGHT TO SAVE THE FINANCIAL SYSTEM—AND THEMSELVES (2009)).

effects.[150] The global financial crisis has led to countless bank bailouts in the US and EU precisely because the banks concerned had G-SIB profiles and became "too big" or "too important" to fail.[151]

The Basel Committee and its sister institution, the FSB, have developed international standards to identify G-SIBs and other systemically important financial institutions that may not be banks.[152] The identification approach is important as these institutions are distinguished for additional regulatory treatment.[153] The FSB sets out every year a list of approximately thirty global banks to recommend an extra application of a systemically important financial institution buffer of up to three percent of risk-weighted assets.[154] The leadership of international institutions is important in this regard in order to achieve an internationally convergent approach that is objective and removed from domestic political interests.[155] The EU has implemented the above requirements for G-SIBs in the CRD IV Directive, calling them "Globally Systemically Important Institution" or the "GSII" buffer.[156]

Further, since 2014, the EU started to develop the concept that capital requirements for G-SIBs should be sensitive to their systemic risk impact and that, unlike in the case of non-systemically important financial institutions—which could be allowed to fail—G-SIBs should be prevented from failing to the extent possible.[157] Hence, the micro-

---

[150] *Id.* at 357.

[151] *Id.* at 368.

[152] *See* BASEL COMM. ON BANKING SUPERVISION, GLOBAL SYSTEMICALLY IMPORTANT BANKS: UPDATED ASSESSMENT METHODOLOGY AND THE HIGHER LOSS ABSORBENCY REQUIREMENT (2013), https://www.bis.org/publ/bcbs 255.pdf [https://perma.cc/M69N-2AED] (discussing the methodology for assessing the systemic importance of G-SIBs).

[153] *Id.* at 6–7 (describing the indicator-based measurement approach for the assessment on systemic importance).

[154] FIN. STABILITY BD., GLOBALLY SYSTEMICALLY IMPORTANT FINANCIAL INSTITUTIONS (G-SIFIS), http://www.fsb.org/what-we-do/policy-development/systematically-important-financial-institutions-sifis/global-systemically-important-financial-institutions-g-sifis/ [http://perma.cc/5GWX-DBDA] (identifying the global systemically important banks since 2011).

[155] *Id.* (describing the partnering of the Financial Stability Board, Basel Committee on Banking Supervision, and national authorities in identifying global systemically important financial institutions).

[156] *See* Council Directive 2013/36, art. 78, 2013 O.J. (L 176) 342.

[157] *See id*. at 380 (asserting that authorities shall ensure that institutions abide by the supervisory benchmarking for the calculation of funds requirement).

prudential regulatory regime for G-SIBs has shifted towards requiring them to hold levels of "loss-absorbing" capital that can help them absorb losses and recapitalize after a stressful onset.[158] This regime is known as the "Minimum Requirement for Eligible Liabilities" (MREL)[159] in the EU, while a narrower scope of G-SIBs is targeted under a similar approach recommended by the FSB known as the "Total Loss Absorbing Capacity" (TLAC).[160]

The FSB is of the view that the safety of G-SIBs is dependent upon their resolvability if any G-SIB should encounter a crisis.[161] As the objective is to prevent G-SIBs from failing (and entailing a cascade of global systemic risks), the adequate capitalization of G-SIBs should not merely relate to *ex ante* controls on risk-taking effected by capital adequacy regulation but by the holding of capital instruments by banks that can actually be used to absorb losses and recapitalize the bank if a crisis should occur. G-SIBs should therefore hold loss absorbing capital in a sufficient quantity so that they are able to absorb losses should these occur. Banks therefore need to hold "loss-absorbing" instruments, which are issued to investors willing to incur the risk of these instruments being used for "loss absorption." Loss-absorbing instruments will be priced by markets, and it is arguable that the price banks have to pay will act as a form of *ex ante* control upon their risk-taking.

The TLAC reforms[162] require banks to hold sufficient loss absorbing instruments so that private sector creditors and shareholders

---

[158] *Id.* at 347 ("It is therefore appropriate to require credit institutions and relevant investment firms to hold, in addition to other own fund requirements, a capital conservation buffer and a countercyclical capital buffer to ensure that they accumulate, during periods of economic growth, a sufficient capital base to absorb losses in stressed periods.").

[159] Council Directive 2014/59/EU, art. 45, 2014 O.J. (L 173), Commission Delegated Regulation (EU) 2016/1450 of 23 May 2016 supplementing Directive 2014/59/EU of the European Parliament and of the Council with regard to regulatory technical standards specifying the criteria relating to the methodology for setting the minimum requirement for own funds and eligible liabilities, 2016 O.J. (L 237).

[160] *See generally*, FIN. STABILITY BD., PRINCIPLES ON LOSS-ABSORBING AND RECAPITALISATION CAPACITY OF G-SIBS IN RESOLUTION TOTAL LOSS-ABSORBING CAPACITY (TLAC) TERM SHEET (Nov 2015).

[161] *Id.* (crediting the FSB's Resolvability Assessment Process with having the objective to "promote adequate and consistent reporting on the resolvability of each G-SIFI").

[162] *Id.*

will take much of the hit of a bank crisis rather than the public sector (as seen in the global financial crisis).[163] G-SIBs must hold loss-absorbing instruments equivalent to sixteen to eighteen percent of the bank's risk weighted assets. This will in effect absorb the eight percent risk-asset ratio, but will exclude all capital buffers, which means that all capital buffers continue to act as regulatory pricing for risk-taking, in terms of *ex ante* controls on banks' behavior. TLAC requirements would meet both the needs of *ex ante* control as well as *ex post* recovery and resolution of a bank.

The EU's MREL is also defined[164] to comprise a "minimum" component, that is set at the level of the baseline regulatory capital requirements; i.e., the eight percent capital asset ratio plus all capital buffers, and two additional discretionary components for loss absorption that regulators would apply depending on their assessment of the systemic risk profile of the G-SIB, vis-a-vis the "recapitalisation" component and the "market confidence charge." The recapitalisation amount is defined as the sum of eight percent of risk-weighted assets and the Pillar 2 capital requirement imposed on the bank, while the "market confidence charge" is defined as the sum of all regulatory capital buffers. In effect, MREL would double up from the baseline regulatory capital requirements for systemically important financial institutions, which arrives closely at the quantitative result as the FSB's TLAC. National regulators are however envisaged to have

---

[163] The MREL is intended to support the application of a resolution tool called "bail-in" which makes creditors and shareholders absorb losses first in a crisis-stricken bank in order to mitigate the moral hazard of state bail out. Council Directive 2014/59/EU, art. 43, 2014 O.J. (L 173) (detailing the situations when the Bail-in tool may be used); Thomas Conlon & John Cotter, *The Anatomy of a Bail-in*, 15 J. FIN. STABILITY 257, 257–58 (2013) (examining the bail-in framework in the context of failed banks in the wake of the financial crisis); Tobias Troeger, *Too Complex to Work: A Critical Assessment of the Bail-In Tool Under the European Bank Recovery and Resolution Regime,* EUR. BANKING INST. (2018) ("Moreover, the idea that nearly all positions on the liability side of a bank's balance sheet should be subjected to bail-in is misguided. Instead, a concentration of PSI in instruments that fall under the minimum requirements for own funds and eligible liabilities (MREL) is preferable.").

[164] Commission Delegated Regulation (EU) 2016/1450 of 23 May 2016 supplementing Directive 2014/59/EU of the European Parliament and of the Council with regard to regulatory technical standards specifying the criteria relating to the methodology for setting the minimum requirement for own funds and eligible liabilities.

greater discretion in calibrating MREL, as they deal with a potentially wider scope of systemically important financial institutions than those identified by the FSB.[165] The MREL applies not only to EU-licensed global banks but also regional/local banks of systemic importance that may not have been included in the FSB's list.[166]

In sum, systemically important financial institutions expect to adhere to capital requirements that double up from those applicable to other banks. The reforms to capital adequacy above show a willingness on the part of international and national regulators to engage in ever-increasing sophistication and complexity in order to extract appropriately conservative regulatory prices for bank risk-taking. Does this rejuvenate faith and the appeal of the law and economics approach in capital adequacy regulation? Policy-makers continue to believe that risk-taking behavior can be calibrated and controlled through capital pricing, and this belief is further exemplified in EU policy-makers' extension of micro-prudential regulation into an ideological starting point from which adaptations from the bank-based regime is made for the rest of the financial sector which we shall discuss shortly.

D. Expanded Suite of Harmonized Micro-prudential Regulatory Tools

Capital adequacy has been the dominant tool in the micro-prudential regulation of banks.[167] However, after the global financial

---

[165] Peter Green & Jeremy Jennings-Mares, *EU Bank Resolution Inconsistencies*, 35 INT'L FIN. L. REV. 38–39 (2016) ("The BRRD specifies that member states should set, for each bank in their jurisdiction (whether or not a G-sib), a minimum required level of eligible (loss-absorbing) liabilities (MREL).").

[166] FIN. STABILITY BD., APPLICATIONS OF THE MINIMUM REQUIREMENT FOR OWN FUNDS AND ELIGIBLE LIABILITIES (MREL) 6–8 (2018), https://rvv.fi/documents/1871970/0/Omien+varojen+ja+alentamiskelpoisten+velkojen+vähimmäisvaatimuksen+%28MREL%29+soveltaminen_ENG/2b74c84a-67b1-49ac-94ed-3da081b8d4ba/Omien+varojen+ja+alentamiskelpoisten+velkojen+vähimmäisvaatimuksen+%28MREL%29+soveltaminen_ENG.pdf [https://perma.cc/FV47-LCF2].

[167] THE WARWICK COMM'N, THE WARWICK COMMISSION ON INTERNATIONAL FINANCIAL REFORM: IN PRAISE OF UNLEVEL PLAYING FIELDS 12 (2009), https://warwick.ac.uk/research/warwickcommission/financialreform/report/chapter_2.pdf [https://perma.cc/7EYP-SP3X] ("We regulate to interalise these externalities in the bahvior of such institutions. One of the main tools regulators use to do this is capital adequacy requirements.").

crisis, other micro-prudential measures have been developed internationally to support capital adequacy rules, as these rules are not able to capture certain aspects of bank risks.[168] For example, capital adequacy rules do not deal with liquidity risk, that is the risk that banks may not meet immediate demands (such as withdrawal of deposits) that fall due as their assets may not be realized in time, or can only be realized at a major loss. Liquidity pressures can force banks to suffer more impairment to their assets than necessary and could even result in bank insolvency. Hence, banks need to manage their liquidity needs and this area is now subject to international regulatory harmonization. We also discuss other measures of micro-prudential regulation developed or enhanced after the crisis. One is the leverage ratio, which sets an absolute amount of lending banks can engage in, regardless of risk-weighting.[169] Further, regulation to control large exposures, which has existed in the EU prior to the crisis, deals with controlling the over-concentration by banks in lending to certain customers. This area is also reformed after the global financial crisis.

The Basel Committee has now introduced two liquidity standards for banks as internationally harmonizing measures.[170] One is the liquidity coverage ratio, which refers to immediate term liquidity management by banks to meet present demands.[171] The compliance with the liquidity coverage ratio is intended to be a prudent measure to ensure that banks have sufficient liquid assets to meet immediate demands for the next thirty days should a stressful event occur. The second is the net stable funding ratio which deals with the longer-term liquidity profile for bank assets, requiring banks to ensure that they have different assets and types of funding sources to call upon in order to meet their liabilities over the longer term of one year. These have been accepted in the EU[172] and apply to the UK.

Next, the regulation of large exposures is meant to allow regulators to monitor the credit risk of banks' significant lending to

---

[168] *See generally,* Basel III Post-Crisis, *supra* note 81.

[169] *Id.* at 140.

[170] BASEL COMM. ON BANKING SUPERVISION, PRINCIPLES FOR SOUND LIQUIDITY RISK MANAGEMENT AND SUPERVISION (2008), http://www.bis.org/publ/bcbs144.htm. This report was superseded by BASEL COMM. ON BANKING SUPERVISION, BASEL III: THE LIQUIDITY COVERAGE RATIO AND LIQUIDITY RISK MONITORING TOOLS (2013), http://www.bis.org/publ/bcbs238.pdf; and BASEL COMM. ON BANKING SUPERVISION, BASEL III; THE NET STABLE FUNDING RATIO (2014), http://www.bis.org/bcbs/publ/d295.pdf.

[171] *See* sources cited *supra* note 171.

[172] Council Regulation 575/2013, arts. 412–14, 2013 O.J. (L 176).

certain clients,[173] as the materialization of such risk could pose dangers to banks' safety and soundness. Large exposures are defined as exposures (in terms of lending or trading) to a client or a connected group of clients in excess of 10% of the bank's "eligible capital," which is the sum of its tier one capital and a third of its tier two capital.[174] Large exposures are subject to reporting to regulators and a cap of large exposures to 25% of eligible capital to any one client or group of connected clients is imposed.[175] The Basel Committee[176] has affirmed the importance of large exposure limitations as a means to control banks' credit risk. The Committee proposes that systemically important financial institutions should be subject to an absolute limit of large exposures at 15% of tier one capital, instead of the 25% of eligible capital imposed on other banks.[177] This is because such financial institutions are highly inter-connected with other global banks and are more likely to transmit contagion effects upon others than their smaller counterparts.[178] Hence, it may be a more prudent approach to limit the credit risk exposure of such institutions in proportion to the systemic risks they pose. The EU is in the process of implementing a similar reform through an amendment to the Capital Requirements Regulation.[179]

---

[173] Council Directive 2006/49/EC, Capital Adequacy of Investment Firms and Credit Institutions (recast), 2006 E.N. (L 177) 201.

[174] Regulation 575/2013, of the European Parliament and of the Council of 26 June 2013 on Prudential Requirements for Credit Institutions and Investment Firms and Amending Regulation (EU) No. 648/2012, art. 392, 2013 O.J. (L 176) ("An institution's exposure to a client or group of connected clients shall be considered a large exposure where its value is equal to or exceeds 10% of its eligible capital.").

[175] *Id.* art. 395.

[176] BASEL COMM. ON BANKING SUPERVISION, SUPERVISORY FRAMEWORK FOR MEASURING AND CONTROLLING LARGE EXPOSURES (2014), http://www.bis.org/publ/bcbs283.pdf [https://perma.cc/H2Z7-2DDD] ("The need for banks to measure and limit the size of large exposures in relation to their capital has long been recognised by the Basel Committee on Banking Supervision.").

[177] *Id*.

[178] *Id*.

[179] Simon Lovegrove, *Draft Capital Requirements (Amendment) (EU Exit) Regulations 2018,* NORTON ROSE FULBRIGHT, LLP (Aug. 22, 2018) https://www.regulationtomorrow.com/eu/draft-capital-requirements-amendment-eu-exit-regulations-2018 [https://perma.cc/9KDN-8TWY].

Basel III also introduced the leverage ratio,[180] which restricts the total level of bank lending to bank capital without applying risk-weighting. This means that the leverage ratio would cap bank lending at an absolute level proportionate to their capital, whether such lending is extended to 0% risk-weighted governments or to residential mortgages.[181] The Basel Committee regards the leverage ratio as "a simple, transparent, non-risk based leverage ratio to act as a credible supplementary measure to the risk-based capital requirements." The Committee recommends that a 3% leverage ratio be maintained, meaning that banks' tier one capital should be at a level of 3% or more of its total exposures.[182] Like the capital asset ratio discussed above, the leverage ratio is not an exact science and does not represent absolute "safe" levels of lending. In fact, at first blush, it is rather low as gross leverage supported by as low as 3% tier one capital does not seem to be a substantial cushion for losses. Hence for globally systemically important banks, the FSB recommends the maintenance of a higher leverage ratio, e.g., 6%.[183] The UK has implemented a 3% minimum leverage ratio for all banks that accept deposits in the UK exceeding £50 billion.[184] This was nudged higher to 3.25% following a recommendation by the Financial Policy Committee in October 2017.[185]

---

[180] BASEL COMMITTEE ON BANKING SUPERVISION, *Basel III Leverage Ratio Framework and Disclosure Requirements,* BANK FOR INTERNATIONAL SETTLEMENTS (Jan. 2014) http://www.bis.org/publ/bcbs270.pdf [https://perma.cc/44ZF-VMP3] (explaining in detail the leverage ratio within Basel III).

[181] *Id*.

[182] *Id*. ("The Committee will continue to test a minimum requirement of 3% for the leverage ratio during the parallel run period.").

[183] *Basel Committee Publishes More Details on Globally Systematically Important Banks*, BANK FOR INT'L SETTLEMENTS (Nov. 16, 2018), https://www.bis.org/press/p181116.htm [https://perma.cc/3VBH-F8TX].

[184] *'Basel IV': Leverage Ratio Revisited*, PRICEWATERHOUSECOOPERS LLP (Jan. 2018) https://www.pwc.co.uk/financial-services/assets/pdf/hot-topic-the-leverage-ratio.pdf [https://perma.cc/GZ8J-SQ8Y] ("Since 2015 the PRA has applied a leverage ratio of 3% to banks and building societies (based on the definition of CRR) with retail deposits equal to or greater than £50 billion . . . .").

[185] BANK OF ENG. PRUDENTIAL REGULATION AUTH., UK LEVERAGE RATIO: TREATMENT OF CLAIMS ON CENTRAL BANKS (2017) https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/policy-statement/2017/ps2117 [https://perma.cc/D6FZ-54AH].

The expanded suite of micro-prudential regulatory tools is envisaged to support each other in shaping bank behavior in risk-taking, with capital adequacy implementing a conservative and more sophisticated regulatory pricing system and the other tools, liquidity, leverage, and large exposures setting levels of constraints upon different types of risk. It may be argued that these other measures deal largely with credit risk and constraining measures have not really been developed for market risk and other types of non-Basel III risks captured within Pillar 2. Although we can appreciate the increased levels of sophistication and complexity that regulators have engaged with to develop reformed micro-prudential regulatory tools, there is a hazard of tending towards even more complex forms of quantification if more developments should be needed. Regulatory complexity itself can contain hidden dangers in relation to how these tools relate to each other and work together. Further, the predominance of quantification can still tempt banks to find ways in order to manipulate the "numbers." Nevertheless, more intense regulatory reporting and scrutiny, as well as the support of more qualitative regimes such as structural reforms[186] and corporate governance/risk management reforms,[187] may address potential gaps for creative compliance.

The reliance on refining and improving micro-prudential regulation as a governance mechanism *du jour* for the financial sector is relentless. In the EU, micro-prudential regulation is elevated to an arguably ideological platform as we discuss below.

E. Micro-prudential Regulation as Governance Ideology for the Financial Sector

The EU's raison d'etre for adopting harmonizing micro-prudential regulation, since the first Basel Accord, is based on the usefulness of harmonizing regulation for the purposes of building the Single Market for banking and capital, as well as removing regulatory barriers to cross-border business that could be imposed by Member States.[188] The global financial crisis sounded an important wake-up call to the EU market integration project not to neglect public interest

---

[186] INDEP. COMM'N ON BANKING, *supra* note 91.

[187] *See infra* notes 292–94.

[188] *See* Mads Andenas & Iris H.-Y. Chiu, *Financial Stability and Legal Integration in Financial Regulation*, 38 EUR. L. REV. 335, 336–37 (2013) ("The integration of the single market for capital and financial services is the key policy objective driving the developments in EU financial regulation.").

regulatory objectives in its single-minded pursuit of market integration.[189] EU policy-makers, at the recommendation of the de Larosière report,[190] took seriously the importance of ensuring that regulatory design could meet the purposes of financial stability protection, consumer protection etc., not just for the purposes of creating harmonized standards that would incentivize the supply-side to expand cross-border financial business. Hence the EU created a European System of Financial Supervision[191] to have stewardship over a number of public interest objectives such as systemic risk oversight, financial stability protection, and consumer protection.[192] With the elevation of systemic risk oversight and financial stability protection into pan-European regulatory objectives, the importance of micro-prudential regulation rose as its law and economics methodology is seen as applicable and relevant for governing risk-taking in all corners of the financial sector.[193] Micro-prudential regulation has thus become functionalized as the go-to regulatory institution that is intrinsically necessary for the implementation of the financial stability objective.

Adapting from its roots in banking regulation, the EU has developed micro-prudential regulation specific to the insurance sector and is in the process of developing bespoke micro-prudential regulation for investment firms.[194] Hence, micro-prudential regulation

---

[189] *Id*. at 335.

[190] Jacques de Larosière et al., *Report by the High-Level Group on Financial Supervision in the EU*, DE LAROSIERE GROUP (Feb. 25, 2009), http://ec.europa.eu/economy_finance/publications/pages/publication14527_en.pdf [https://perma.cc/483W-LRLT].

[191] *See* Regulation 1093/2010 of the European Parliament and Council of Nov. 24, 2010, Establishing a European Supervisory Authority (European Banking Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/78/EC, art. 27, 2010 O.J. (L 331) 12, 31. *See also* Niamh Moloney, *EU Financial Market Regulation After the Global Financial Crisis: More Europe or More Risks?* 47 COMMON MKT. L. R. 1317, 1333 (2010).

[192] These objectives are found in the EBA Regulation. Regulation 1093/2010 of the European Parliament and Council of Nov. 24, 2010, Establishing a European Supervisory Authority (European Banking Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/78/EC, art. 27, 2010 O.J. (L 331) 12, 31. *See* ANDENAS & CHIU, *supra* note 6, at 16–72.

[193] Andenas & Chiu, *supra* note 192, at 357–412 (illustrating the importance of micro-prudential regulation when governing risk-taking).

[194] Press Release, Eur. Banking Auth., *EBA Issues Opinion on the Design of a New Prudential Framework for Investment Firms* (Sept. 29, 2017), https://

is not merely tied to managing bank's business risks, but is focused on the underlying law and economics methodology, i.e., to set regulatory prices according to a financial institution's business and financial risks, is more widely embraced.[195] The law and economics foundations have given rise to, first, the Solvency II Directive[196] for modernising and harmonizing capital requirements for insurers. The Solvency II Directive adopts a three pillar approach which first developed in Basel II for banks, in order to introduce capital requirements for insurers, supervisory reporting and review and market transparency.[197] The capital requirements for insurers are different from banks in terms of their components, but they are also based on the insurers' balance sheet and regulatory price is set in terms of capital.[198] The capital requirements are meant to shape behavior in risk-taking as well as absorb losses and ensure that insurers and reinsurers are able to pay out on claims.[199]

Next, the EU is developing a completely bespoke micro-prudential regulatory regime for investment firms.[200] This regime

---

eba.europa.eu/-/eba-issues-opinion-on-the-design-of-a-new-prudential-framework-for-investment-firms [https://perma.cc/MAJ3-PSTC].

[195] *Id*.

[196] Directive 2009/138/EC of the European Parliament and of the Council on Taking-up and Pursuit of the Business of Insurance and Reinsurance (Solvency II), 2009 O.J. (L 335/1) (showing how the law and economics model has provided the insurance industry with harmonization with regards to capital requirements).

[197] *Id.*

[198] *Id*.

[199] *See id.* at Title I, Chapter VI ("The Solvency Capital Requirement should reflect a level of eligible own funds that enables insurance and reinsurance undertakings to absorb significant losses and that gives reasonable assurance to policy holders and beneficiaries that payments will be made as they fall due.").

[200] European Commission, Commission Proposal for a Regulation of the European Parliament and of the Council on the Prudential Requirements of Investment Firms and Amending Regulations (EU) No 575/2013, (EU) 600/2014 and (EU) 1093/2010, COM (2017) 790 final (Dec. 20, 2017) ("[T]he Commission therefore announced . . . that it would propose a more effective prudential and supervisory framework for investment firms . . . ."); Proposal for a Directive of the European Parliament and of the Council on the Prudential Supervision of Investment Firms and Amending Directives 2013/36/EU and 2014/65/EU, COM (2017) 790 final (Dec. 20, 2017) ("The proposals covering this Directive and the accompanying Regulation . . . aim to ensure that investment firms are subject to capital, liquidity and other key prudential

continues to be premised on the law and economics foundations in micro-prudential regulation in terms of setting regulatory prices in capital requirements, but such prices are not set against the balance sheet of investment firms.[201] This is a departure from the approach used for banks and insurers but takes into account differences between the full intermediation nature of banks' and insurers' business[202] as compared to the partial intermediation nature of most investment firms' business.[203] Investment firms do not take on their clients' capital risks unlike banks and insurers who fully intermediate their depositors' or policy-holders' risks.[204] Hence, micro-prudential regulation for investment firms warrants a different regulatory design.[205]

Investment firms that are systemically important are envisaged to adopt the bank-based regime because large investment banks that do not take deposits are more bank-like in character and warrant such

---

requirements and corresponding supervisory arrangements that are adapted to their business yet sufficiently robust to capture the risks of investment firms in a prudentially sound manner in order to protect the stability of the EU's financial markets."); based on EUR. BANKING AUTH., OPINION OF THE EUROPEAN BANKING AUTHORITY IN RESPONSE TO THE EUROPEAN COMMISSION'S CALL FOR ADVICE ON INVESTMENT FIRMS, EBA/Op/2017/11 (2017) [hereinafter New Prudential Framework for Investment Firms] ("Following the EBA report on investment firms . . . published on 15 December 2015, the EBA received a second call for advice . . . from the Commission in June 2016 to provide further technical advice on the first two recommendations included in that Report.").

[201] New Prudential Framework for Investment Firms, *supra* note 200 (categorizing investment firms into different models of capital requirements).

[202] Philip Bond, *Bank and Nonbank Financial Intermediation*, 59 J. FIN. 2489, 2490 ("Institutions of this type fund comparatively low-risk/high quality projects (III). This allows them to issue mostly low-risk liabilities, such as bank deposits and low-risk bonds (IV)."). Full intermediation means the financial institution takes on fully the financial risks of intermediating between saver and borrower/investee, such as banks lending out on deposits and taking the risks of the default of borrowers while remaining committed to the safety of depositors' capital.

[203] *Id.* ("Intermediaries in this category finance high-risk/low quality projects (III). Consequently, the liabilities they issue to investors are also relatively high-risk (IV)."). Partial intermediation means the financial institution does not take on the financial risks of capital loss in intermediating between savers and investees, and savers are aware that their capital may be at risk, such as when savers invest in a mutual fund or hedge fund.

[204] *Id.*

[205] New Prudential Framework for Investment Firms, *supra* note 200.

regulatory treatment.[206] However, a large number of investment firms that are not systemically important would be subject to a completely different micro-prudential regulatory regime.[207] Their risk calculations are based on a prescribed "K-factor" applied to significant areas of the firm's business risk.[208] For example, "assets under management" are a significant area of business risk for investment firms as they face pressure to generate yields if too much inflow is achieved.[209] In the opposite case, a firm may face pressure in terms of liquidity if investors redeem and therefore cause outflows in significant measure.[210] Hence, a K-factor of 0.02% is to be applied to assets under management as the regulatory price in capital that the firm needs to have in place in order to support the relevant level of assets under management.[211] This K-factor approach is applied to the commonly-identified business risks of investment firms in relation to: client money held, client orders handled, assets under custody, and daily trading flow.[212] Further, a quarter of the firm's overheads calculated in the preceding year forms part of the regulatory capital calculations.[213]

Although departing from the bank-based template for capital adequacy, micro-prudential regulation for investment firms continues with a quantitative approach attaching to what regulators identify as key risks in order to set appropriate regulatory prices in capital vis-à-vis them.[214] It may be argued that investment firms are already subject

---

[206] *Id.* ("The EBA provided its response to this part on 19 October 2016, recommending that Class 1 investment firms should be those identified as G-SII or O-SII in accordance with the current regulatory framework and should be subject to the full CRR and CRD.").
[207] *Id.*
[208] *Id.*
[209] *Id.*
[210] George G. Kaufman, *Bank Runs: Causes, Benefits, and Costs*, 7 CATO J. 559, 562 (1988) ("If the depositors underestimate a bank's financial integrity and ignite a run on an economically solvent bank . . . the major problem facing the bank will be the need to obtain additional liquidity quickly to meet the deposit withdrawals successfully.").
[211] New Prudential Framework for Investment Firms, *supra* note 200.
[212] *Id.*
[213] *Id.*
[214] *Id.* ("The new prudential regime may include criteria that would allow the exemption from certain prudential requirements of positions that are objectively measurable as reducing risks directly related to commercial activities.").

to duties in statutory trust[215] for client money held or assets under custody, and their partial intermediation business model means that they do not bear all the market risks for client trading. Why should capital adequacy for investment firms be attached to such risks that are concurrently managed in other ways?

We suggest that although there may be an overlap between conduct of business regulation such as duties to protect client moneys and assets and the capital adequacy requirements for investment firms holding client moneys and assets, the role of micro-prudential regulation serves a different objective. Statutory trust regulation in favor of clients protects clients' rights to their moneys and assets, but micro-prudential regulation is based on shaping business behavior towards prudence in order to prevent the firm itself from failing and adversely affecting the financial system.[216] The quantitative levers in such regulation ultimately affect quantitative growth in business risk and would have an impact upon any firm that may have a systemically significant profile. It can, however, be argued that if this regime applies to non-systemically important investment firms, why is there a need to regulate business behavior and prudence as failure is not taboo for such firms? It is possible that the quantitative levers can be regarded as designed to constrain firms' business risk growth to the point of being systemically important, but this could be subject to the critique that there should be no such business inhibition, and if firms indeed become systemically important, they are subject to the bank-based regime which is perceived as more stringent.[217] Overall it is more likely that the introduction of this regime is based on an indefatigable trend towards the EU's desire to govern all corners of the financial sector in a functionally convergent and equivalent manner—that the governance of business risks by regulatory capital pricing is

---

[215] Lehman Bros. Int'l (Europe) (In administration) v. CRC Credit Fund Ltd. & Ors. [2010] EWCA (Civ) 917 [203] (Eng.) ("I am provisionally of the view that client money becomes subject to the statutory trust imposed by that provision on receipt of client money.").

[216] *See* Lehman Brothers International, *supra* note 210 (weighing arguments for regarding client moneys as subject to statutory trust); JACEK OSINSKI ET AL., INT'L MONETARY FUND, MACROPRUDENTIAL AND MICROPRUDENTIAL POLICIES: TOWARD COHABITATION (2013).

[217] *See* EUR. BANKING AUTH., REPORT TO THE COMMISSIONER'S CALL FOR ADVICE OF DECEMBER 2014, EBA/Op/2015/20 (2015) ("In particular, specific rules could be developed with regards to investment business risks, such as credit, market, operational and liquidity risks taking particular account of the holding of client money and securities.").

applied to all financial sector institutions and activities, even if in different ways.

In this manner, the law and economics foundations of micro-prudential regulation have gained ideological elevation in EU policy-making and have transformed micro-prudential regulation into an umbrella of functionally equivalent approaches to govern strategic risk-taking behavior in the financial sector, towards the objective of preserving financial stability in European financial economies and markets.

F. Intensifying Regulatory Scrutiny in Micro-prudential Compliance

Micro-prudential reforms are supported by the promise of more intensive and effective regulatory scrutiny.[218] In order to ensure that financial institutions are complying with their micro-prudential requirements and that these requirements *are likely to work* in situations of stress, new regulatory frameworks for stress-testing have been introduced.[219] Stress-testing refers to the regular testing of financial institutions' capital and liquidity positions in order to take stock of their resilience.[220] There are two types of stress-testing: the first is that which financial institutions are to regularly perform themselves and account to regulators for doing so.[221] Such stress-testing involves putting financial institutions' business models and financial positions through forward-looking hypothetical scenarios that are severe but plausible.[222] Financial institutions are to make

---

[218] *See* THE WARWICK COMM'N, *supra* note 167, at 2 ("Our primary objective is not more regulation but more effective regulation, more focused on the market failures it is there to address.").

[219] Council Regulation 575/2013, art. 177, 2013 O.J. (L 176) 1, ("An institution shall have in place sound stress testing processes for use in the assessment of its capital adequacy.").

[220] BANK OF ENG., THE BANK OF ENGLAND'S APPROACH TO STRESS TESTING THE UK BANKING SYSTEM 5 (2015) https://www.bankofengland.co.uk/-/media/boe/files/stress-testing/2015/the-boes-approach-to-stress-testing-the-uk-banking-system [https://perma.cc/XNB4-53UK].

[221] BASEL COMM. ON BANKING SUPERVISION, SUPERVISORY AND BANK STRESS TESTING: RANGE OF PRACTICES, BANK FOR INTERNATIONAL SETTLEMENTS 39 (2017), https://www.bis.org/bcbs/publ/d427.pdf [https://perma.cc/2CT3-7UKU].

[222] *Id.*

regulatory reporting of stress-test results in order to assist in supervisory review.[223]

The second type of stress-testing is only applicable to banks so far, and that is partly as a result of the Crisis that largely involved banks.[224] Regulators would carry out stress-tests across the banks they supervise at regular intervals.[225] The EU CRD IV Directive makes it mandatory for regulators in EU Member States to develop stress-tests for the banks they oversee, and carry out the stress-tests on at least an annual basis.[226] The EBA, as meta-level supervisor over member state regulators further carries out EU-wide stress-tests in addition to member state regulators' tests.[227] The EBA's stress-testing is distinguished on the basis of its general powers to identify, measure, and monitor systemic risks.[228] The EBA carried out yearly stress-tests from 2011, partly in response to the euro area debt crisis when sovereigns such as Greece and Ireland looked close to default.[229] It has resumed biennial stress-testing from 2014.[230] Although there is no particular legal framework that governs the EBA's stress-testing, over the years the EBA has developed a more predictable and transparent program for its stress-tests and communications to banks.[231] These communications

---

[223] *See* Regulatory Brief, PWC, Stress Testing: First at Bat for Midsized Firms (2014) http://www.pwc.com/en_us/us/financial-services/regulatory-services/publications/assets/fs-reg-brief-dodd-frank-act-banks-stress-test-dfast.pdf [https://perma.cc/3M8J-PSJ7].

[224] BASEL COMM. ON BANKING SUPERVISION, *supra* note 221, at 10.

[225] BANK OF ENG., *supra* note 220, at 5.

[226] Council Directive 2013/36, art. 100, 2013 O.J. (L 176) ("The competent authorities shall carry out as appropriate but at least annually supervisory stress tests on institutions they supervise, to facilitate the review and evaluation process under Article 97.").

[227] *See* Council Regulation 1093/2010, 2010 O.J. (L 331).

[228] *Id.* arts. 23–24, 33.

[229] EUR. COURT OF AUDITORS, EUROPEAN BANKING SUPERVISION TAKING SHAPE—EBA AND ITS CHANGING CONTEXT 29 (2014) ("In 2011 EBA carried out a stress test of 91 banks in 21 EU countries. The objective was to assess the resilience of the EU banking system and the solvency of individual institutions.").

[230] Letter from Andrea Enria, Chairperson of the Eur. Banking Auth., to Martin Schulz, President of the Eur. Parliament (Dec. 21, 2016) (discussing the EBA Board of Supervisors' decision to conduct biennial EU-wide stress-testing).

[231] EUR. COURT OF AUDITORS, *supra* note 229, at 64.

are advisory in nature.[232] Stress-testing, whether carried out by the financial institution or by regulators, are forms of "health checks"—one internally administered according to regulatory frameworks, and the other externally administered.[233] These health checks produce vital information for both financial institutions and regulators.[234]

As regulatory scrutiny is made of essentially quantitative compliance in micro-prudential regulation, relevant regulatory expertise is crucial for effective regulatory supervision.[235] This is the reason for the UK's reform in regulatory architecture in 2013, shifting from a multiple-objective single regulator for financial services[236] to a "twin peaks" approach[237] where prudential supervision of systemically important financial institutions is reposed in the central bank. Central banks continue to be staffed with largely economically trained personnel, and the Bank of England has transitioned seamlessly from its monetary policy focus to multiple objectives including micro-prudential oversight and financial stability oversight at a broader level.[238]These objectives are, however, being delivered largely by regulatory designs rooted in economic methods, from micro-prudential

---

[232] *Id.* ("[A] strengthened advisory role of the EBA . . . would enable the EBA to fulfil optimally its role . . . .").

[233] BASEL COMM. ON BANKING SUPERVISION, *supra* note 221, at 10.

[234] *Id.* at 51–52.

[235] BASEL COMM. ON BANKING SUPERVISION, CORE PRINCIPLES FOR EFFECTIVE BANKING SUPERVISION, BANK FOR INTERNATIONAL SETTLEMENTS 15 (2012) (discussing the need for competent, independent, and experienced professionals in order to have strong financial systems).

[236] E. Ferran, *Examining the UK's Experience in Adopting a Single Financial Regulator Model*, 28 BROOK. J. INT'L. L. 257, 257–58 (2003); *See* Richard A. Abrams & Michael W. Taylor, *Issues in the Unification of Financial Sector Supervision* 10–19 (IMF, Working Paper WP00213, 2000), https://www.imf.org/external/pubs/ft/wp/2000/wp00213.pdf [https://perma.cc/JPQ4-MMDT].

[237] Financial Services Act 2012, c. 21 (Eng.) (amending the Financial Services and Markets Act 2000); Giorgio Di Giorgio & Carmine Di Noia, *Financial Market Regulation and Supervision: How Many Peaks for the Euro Area?*, 28 BROOK. J. INT'L. L. 463, 468 (2003) (discussing the nature of twin peaks as in reposing different objectives in different regulators, such as prudential regulation in one regulator and conduct of business in another).

[238] *See* Mark Carney, Governor, Bank of Eng. and Chairman of the Fin. Stability Bd., 30th Mais Lecture, Cass Business School: One Mission. One Bank. Promoting the Good of the People of the United Kingdom (Mar. 18, 2014), https://www.bis.org/review/r140319b.pdf [https://perma.cc/GJE7-7T48] ("The obvious overlaps in tools and objectives mean that combining the two arms of prudential policy in one organisation makes sense.").

regulation to macro-prudential supervision, to which we now turn.[239]The development of macro-prudential supervision is a key change to the law and economics foundations of prudential regulation which shifted regulators from a solely micro-economic approach to a "new and improved" approach incorporating macro-economic perspectives.[240]

G. Introduction of Macro-prudential Supervision

Finally, key to the "new and improved" law and economics foundations for the post-crisis reforms is the introduction of a macro-economic perspective to regulating finance. Even Richard Posner,[241] a leading commentator in the predominance of micro-economics in analysing legal behavior and rules, acknowledged the sad lack of a macro-economic perspective in regulating finance in the pre-crisis era that caused the regulatory focus to become myopic and "lost the big picture."[242]

The United States introduced the Financial Stability Oversight Council[243] to gather intelligence on financial stability risks in the US

---

[239] *See id.* ("Microprudential supervision aims to maintain the safety and soundness of individual financial institutions by ensuring they are adequately capitalised and have sufficiently resilient funding and liquidity. Macroprudential policy seeks to safeguard the stability and resilience of the financial system as a whole both by using prudential policy for macroeconomic ends—for example in managing the financial cycle—and by addressing risks related to structural features of financial institutions and markets. In the latter regard, the priorities range from ending too big to fail to improving the resilience of financial market infrastructure.").

[240] *See* Vitor Constancio, Vice-President, Eur. Cent. Bank, Address at the ECB Conference: Macro-Prudential Regulation as an Approach to Containing Systemic Risk (Sept. 27, 2010), https://www.ecb.europa.eu/press/key/date/2010/html/sp100927_3.en.html [https://perma.cc/57VA-AJPC] ("Under the new framework, the ESRB will be responsible for the macro-prudential oversight of the financial system within the EU, while the ESAs will be assigned micro-prudential responsibilities.").

[241] RICHARD POSNER, A FAILURE OF CAPITALISM: THE CRISIS OF '08 AND THE DESCENT INTO DEPRESSION 317–19 (2008).

[242] *See* Yair Listokin, *Law and Macroeconomics: The Law and Economics of Recessions* 46–47 (Yale Law Sch. Research Paper No. 576, 2016), http://ssrn.com/abstract=2828352.

[243] *See Financial Stability Oversight Council*, *About FSOC*, DEP'T TREAS., https://www.treasury.gov/initiatives/fsoc/about/Pages/default.aspx [https://perma.cc/SQT2-8M5J].

financial system and markets, with the assistance of the Office of Financial Research, in order to make recommendations to the Department of the Treasury in relation to financial regulation standards and to facilitate inter-agency coordination. This body is chaired by the Secretary of the Treasury and is part of the Treasury's umbrella of responsibilities although it is separately accountable to Congress. Such a body is a macro-prudential supervisory body which is empowered to carry out systemic surveillance of the financial system and markets as a whole in order to determine if regulatory action should be recommended to deal with stability risks at an early stage.

The EU and the UK have introduced similar regulatory bodies. The European Systemic Risk Board (ESRB)[244] is the pan-European body responsible for macro-prudential oversight.[245] The ESRB is responsible for collecting and analysing information in order to identify signals of risk in EU financial systems and markets, so as to determine if appropriate warnings and recommendations should be issued in view of these risks.[246]The ESRB is nested within the European Central Bank, and its board comprises largely of European and national central bankers and the chairs of the European financial regulatory authorities in the European System for Financial Supervision discussed above.[247]

In order to fulfil its monitoring and policy functions, the ESRB has the power to collect and request information from the three European Supervisory Authorities, from national central banks, and from Member State regulators.[248] The ESRB also provides information to the three European Supervisory Authorities where appropriate.[249] In 2012, the ESRB set out in its mandate document[250] that Member States should designate macro-prudential supervisors and that the ESRB should maintain information sharing and coordination relationships

---

[244] Regulation 1092/2010 of the European Parliament and of the Council of 24 November 2010 on European Union Macro-prudential Oversight of the Financial System and Establishing a European Systemic Risk Board, 2010 O.J. (L 331) 1.
[245] *Id.* arts. 1, 3.
[246] *Id.* art. 3.
[247] *Id.* art. 1, 3.
[248] *Id.* art. 15.
[249] *Id.*
[250] Press Release, Eur. Systemic Risk Bd., ESRB Publishes Recommendation on Macroprudential Mandate of National Authorities (Jan. 16, 2012), https://www.esrb.europa.eu/news/pr/date/2012/html/pr120116.en.html [https://perma.cc/4NS8-K5RW].

with them. This mandate ensures that responsibility for macro-prudential supervision is not only centralized in the ESRB.[251] The ESRB has also issued a policy document to guide national macro-prudential supervisors so that convergence can be achieved in relation to macro-prudential policy objectives.[252] These ESRB guidelines relate largely to the use of micro-prudential tools such as setting capital buffer rates and leverage ratios.[253] The ESRB's role is to issue non-binding warnings and/or recommendations to the EU as a whole or to individual Member States' regulators,[254] but these are soft law and Member States are expected to comply or otherwise explain.

In the UK, the Bank of England has established the Financial Policy Committee[255] to provide macro-prudential oversight. The objective of the Financial Policy Committee is to protect financial stability in the UK by monitoring the development of systemic risks.[256] Systemic risks are defined as including (i) risks attributable to structural features of financial markets, such as connections between financial institutions; (ii) risks attributable to the distribution, such as whether there are concentrations of risk within the financial sector; and (iii) unsustainable levels of debt, such as borrowing by households or businesses.[257] The Financial Policy Committee's membership comprises central bankers, representatives from the Treasury and the Chair of the Financial Conduct Authority.[258]

We observe that macro-prudential bodies are now inter-agency bodies poised to have a holistic view of the financial system

---

[251] *Id*.

[252] *See generally* EUR. SYSTEMIC RISK BD., RECOMMENDATION OF THE EUROPEAN SYSTEMIC RISK BOARD OF 4 APRIL 2013 ON INTERMEDIATE OBJECTIVES AND INSTRUMENTS OF MACRO-PRUDENTIAL POLICY (ESRB/2013/1), https://www.esrb.europa.eu/pub/pdf/recommendations/2013/ESRB_2013_1.en.pdf?ad6bc3424dd7690e2f818db264c03299 [https://perma.cc/TZ85-THC8].

[253] *See*, *e.g.*, *id*. at 2–3.

[254] Regulation 1092/2010 of the European Parliament and of the Council of 24 November 2010 on European Union Macro-prudential Oversight of the Financial System and Establishing a European Systemic Risk Board, art. 16, 2010 O.J. (L 331).

[255] Bank of England Act 1998, c. 11, § 9A–V (Eng.), as amended by the Financial Services Act 2012, c. 21 (Eng.)).

[256] *Id*.

[257] *Id.* § 9C.

[258] *Id*. § 9B(1).

and markets as a whole to discern signals of risk.[259] They are assisted by research capacity, usually within central banks or in the case of the US, the Treasury, in order to take proactive actions to deal with emerging signals of risk.[260] What is interesting, however is that macro-prudential supervisors nevertheless rely heavily on micro-prudential tools; the counter-cyclical buffer capital requirement (as discussed earlier) in particular is to be monitored and determined by the macro-prudential supervisor.[261] In the UK, the Financial Policy Committee has set the rate at 0.5% and has now raised it to 1%.[262]

Macro-prudential tools also include novel tools to "cool off" asset bubbles in markets.[263] It is envisaged that such tools may be controversial as they intervene into commercial decision-making by banks and financial institutions.[264] For example, the Financial Policy Committee is given powers to direct the UK regulators to require regulated lenders to place limits on residential mortgage lending in both the owner-occupied and buy-to-let sectors.[265] Such limits can be placed in terms of loan-to-value ratios, which means that lenders can only lend partially to meet the full purchase price of houses.[266] Loans that require little funding from home purchasers (i.e., high loan-to-value ratios) are seen as more susceptible to the risk of default risk.[267] This is because home purchasers are more likely to commit to mortgage repayments if they have themselves funded the purchase in a

---

[259] *Financial Stability Oversight Council*, *supra* note 243.

[260] *Id*.

[261] *See generally* Basel III Global Regulatory Framework, *supra* note 26, at 55–64 (explaining the tools used for micro-prudential regulation).

[262] *Interest Rates and Bank Rate*, BANK OF ENG. (Jan. 26, 2019), https://www.bankofengland.co.uk/monetary-policy/the-interest-rate-bank-rate [https://perma.cc/CU3W-8TQ6].

[263] Jaime Caruana, Gen. Manager, Bank for Int'l Settlements, The Challenge of Taking Macroprudential Decisions: Who Will Press Which Button(s)?, 13th Annual Int'l Banking Conference (Sept. 24, 2010), in Bank for International Settlements, at 1–2.

[264] *Id*. at 4.

[265] HM TREAS., FINANCIAL POLICY COMMITTEE POWERS OF DIRECTION IN THE BUY-TO-LET MARKET: RESPONSE TO CONSULTATION (2016), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/568504/buy_to_let_consultation_response_final.pdf [https://perma.cc/YQ85-E69Z].

[266] Caruana, *supra* note 263, at 5 (discussing authorities' power to set maximum loan-to-value ratios).

[267] Steven L. Schwarcz, Macroprudential Regulation of Mortgage Lending, 69 SMU L. REV. 595, 606 n.71 (2016).

substantial amount.[268] Restricting the proportion of high loan-to-value ratio loans can moderate lender behavior towards more prudent and less risky loans, avoiding other negative effects such as housing price "bubbles."[269] The Financial Policy Committee also has the power to direct the UK regulators to place limits on lending in buy-to-let markets using the debt-to income ratio tool.[270] The debt-to-income ratio is the ratio of the borrower's outstanding debt to his or her annual income. Where debt-to-income ratio is high, such as debt being more than five times annual income, borrowers are more likely to struggle in terms of servicing the debt, heightening default risk. While the Financial Policy Committee has not yet exercised such powers, their existence may cause banks to review and moderate their lending behavior so as to avoid the imposition of formal restrictions.

The recognition of the need for regulators to be able to introduce systemic-wide corrective policies and measures complements the concurrent implementation of enhanced micro-economic levers for behavioral shaping in financial institutions.[271] These are, however, not uncontroversial, as they tend to be anti-cyclical,[272] "cooling off" asset bubbles and interfere with market profits that individual entities could gain. Macro-prudential measures are premised on achieving "collective" goods and require collective participation or contribution.[273] We recognize that "new and improved" law and economics has markedly changed the law and economics foundations

---

[268] *Id*. at 600–01.
[269] *Id*. at 603.
[270] HM TREAS., *supra* 265.
[271] Dirk Heremans & Alessio M. Pacces, *Regulation in Banking and Financial Markets in* ENCYCLOPAEDIA OF LAW AND ECONOMICS: REGULATION AND LAW 558, 578, 592 (Alessio M. Pacces & Roger J. Van den Bergh eds., 4th ed. 2012) (discussing the need for systemic-wide policies and the application of different tools to suit the needs of various types of institutions).
[272] *See* Frank Partnoy, *Financial Systems, Crises, and Regulation*, *in* THE OXFORD HANDBOOK ON FINANCIAL REGULATION 68, 76 (Niamh Moloney et al. eds., 2015) (discussing the need for regulation to correct markets).
[273] *See, e.g.,* Steven L. Schwarcz, Keynote Address: The Case for a Market Liquidity Provider of Last Resort, 5 N.Y.U. J.L. & BUS. 339 (2009). Prof. Schwarcz discusses systemic solutions and collective goods for financial crises but these require financial institutions to internalize the cost *ex ante. See also* Oliver Hart & Luigi Zingales, *A New Capital Regulation for Large Financial Institutions*, 13 AM. L. & ECON. REV. 453, 477–78 (considering a proposal to incorporate macro or systemic costs into financial institutions' capital requirements, therefore internalising such cost on an *ex ante* basis).

of financial regulation since the global financial crisis. But the powers are sparingly used to date. The next question to ask is whether the reforms, based on "new and improved" law and economics foundations have addressed the malaises of the global financial crisis and provide for us an enduring regulatory design for the future?

IV. Shortfalls in the "New and Improved" Law and Economics Foundations in Post-crisis Financial Regulation

The "new and improved" law and economics foundations of post-crisis regulation continues to support a regulatory methodology of introducing quantitatively-calibrated levers, commands or nudges (where there is soft law, such as the ESRB's recommendations discussed above) to incentivize or steer behavior. In the post-crisis era, "financial stability" has arisen to become a normative goal, although it we continue to struggle with defining what this means. We are skeptical that the same micro-economic approach targeted at individual firm behavior would be effective in addressing the public good nature of financial stability. Post-crisis micro-prudential regulation has incorporated macro-prudential aspects in setting regulatory price and is supported by macro-prudential supervision. However, the regulatory methodology is still predominantly micro-economic in nature, with macro-prudential supervision playing a modest role.

We set out our skepticism below in relation to three main arguments. First, there is a need to prevent the dominance of regulatory methodology over regulatory purpose or objectives, as the micro-economic and quantitative nature of regulatory rules can become insular and self-referential, losing connection with the public interest purpose of regulation in governing finance and the social purposes it should serve. Second, there is a need to reconcile value judgments in financial stability with the quantitative methods in micro-prudential regulation which we believe is unaddressed, as the quantitative nature of compliance has already given rise to perverse incentives observed in empirical research. Finally, it is imperative to achieve coherence between micro-economic approaches in regulation with the collective goods that need to be achieved. We believe that such "collective goods" remain poorly articulated and it remains unclear how the advancement of more intense and "new and improved" micro-prudential regulation would address a suite of social expectations that we discuss below.

A. Do Post-Crisis Micro-Prudential Reforms Meet the Needs of Financial Stability?

Bieri opines that "[f]inancial stability carries all the textbook hallmarks of a public good: first, it is nonrival, . . . [s]econd, financial stability is nonexcludable . . . [l]astly, individual agents cannot actively withdraw themselves from the influence of financial stability."[274]In its Charter, the FSB refers to "address[ing] vulnerabilities affecting financial systems" as being key to maintaining financial stability.[275] How is "financial stability" defined and what are the "vulnerabilities" to be managed? Can the vulnerabilities be managed by regulatory intervention?

Schinasi[276] argues that the financial sector's essential purpose is to manage risks and allocate resources in the real economy; hence, in taking on its intermediary role, the sector becomes itself a clearing house for risk and an essential facilitator for wealth creation in the real economy. Hence, it may be said that a continuum exists between financial stability and instability insofar as the financial sector serves the needs of economic activity and, in so doing, must tolerate a certain number of deficiencies, vulnerabilities and disturbances.[277] The key issue in understanding financial stability or instability is *when* certain vulnerabilities or suboptimal situations should be regarded as no longer tolerable in the system and should be regarded as a form of "instability." It is opined[278] that the measurability or objective quantification of stability or instability is difficult to achieve given the dynamics and the uncertainty of variables affecting the continuum. Further, "stability" or "instability" may be regarded as occurring at different thresholds depending on whose perspective is adopted; the

---

[274] David S. Bieri, *Regulation and Financial Stability in the Age of Turbulence in* LESSONS FROM THE FINANCIAL CRISIS 331 (Robert W. Kolb ed., 2010).

[275] FIN. STABILITY BD., CHARTER ART. 1 (2012), http://www.financialstabilityboard.org/publications/r_090925d.pdf [https://perma.cc/Q4JM-D79C].

[276] Gary J. Schinasi, *Defining Financial Stability* 6 (Int'l Monetary Fund, IMF Working Paper WP/04/187, 2004), https://www.imf.org/external/pubs/ft/wp/2004/wp04187.pdf [https://perma.cc/K58G-J7CL].

[277] Joanna Gray, *Toward a More Resilient Financial System*, 36 SEATTLE U. L. REV. 799, 803 (2012); Joanna Gray & David Bholat, *Law, Systemic Risk and Resilience—Are We Asking the Right Questions?,* Berle IV Symposium, London (June 14–15, 2012).

[278] Schinasi, *supra* note 276, at 12.

industry's perspective would likely differ from the perspective of policymakers, stakeholders and the wider public. Davies and Green[279] also take the view that it is difficult to define stability or instability, particularly with forecasting purposes in mind but with hindsight, one could refer to a state of loss of normalcy, harm to bystanders or lack of resilience to shocks as states of instability. These terms are not precise, however, and have to be understood within context. They are thus of the view that "financial stability . . . cannot be defined in terms other than broad and general ones that give little guidance on policy or action, and indeed that it could even be dangerous [to do so]."[280] Ultimately in the UK, the role of the Financial Policy Committee and its relationship with the Treasury may be key to defining and strategically managing "financial stability" at a level that is regarded as democratically and politically tolerable.[281] In this manner, "financial stability" is not merely a quantifiable or technocratic policy goal but one that is deeply embedded in political and social appetite.[282] There is a need to ensure that the socially desirable level of "financial stability" or "financial instability" is a choice that is politically and socially accountable and that achieves social justice.[283]

The apparent precision and calculability in the quantitative methodologies that implement micro-prudential regulation actually relate to a regulatory objective that is far more subjective and ill-defined, therefore it obscures the policy choices that are made.[284] The calculable quantitative solutions are merely a proxy for addressing regulatory purposes, but they may be excessively relied on for comfort, and regulators may fail to review them over time to ascertain

---

[279] Howard Davies & David Green, *Banking on the Future: The Rise and Fall of Central Banking* 54–59 (2010).
[280] *Id*. at 55–58, 61.
[281] *See* Financial Services Act 2012, c. 21 (Eng.).
[282] *Id.*
[283] *Id.*
[284] DeLisle Worrell, *Quantitative Assessment of the Financial Sector: An Integrated Approach* 15 (Int'l Monetary Fund, IMF Working Paper WP/04/153, 2004) (explaining that the methodology of financial soundness assessment should use quantitative approaches in a complementary way that allows for individual assessments to be tailored to the structure and characteristics for each country's financial system, for example, to reflect the relative importance of nonbanks or the scope of activity undertaken by commercial banks).

if they really achieve regulatory objectives in public interest.[285] Further, regulators can be captured by the "expertise" appeal[286] of quantitative methods in regulation and trust such methods to work on their own to produce results.[287] This dangerous reliance, which Goodhart[288] calls the domination of law by economics in excessive "one-way traffic," can result in a myopic form of regulatory implementation that becomes disconnected from the institutions and values that form the context for delivering public interest objectives through regulation.

The predominantly quantitative measures of micro-prudential regulation do not cohere with and may indeed obstruct the achievement of political and social accountability and social justice. Depending on the numeracy of the population,[289] a quantitatively-based conversation may not be meaningful for stakeholder

---

[285] Roberta Romano, *Regulating in the Dark in* REGULATORY BREAKDOWN: THE CRISIS OF CONFIDENCE IN U.S. REGULATION 88 (Cary Coglianese ed., 2012).

[286] *See* Robert F. Weber, *New Governance, Financial Regulation, and Challenges to Legitimacy: The Example of the Internal Models Approach to Capital Adequacy Regulation*, 62 Admin. L. Rev. 783, 842 (2010).

[287] ALISON LUI, FINANCIAL STABILITY AND PRUDENTIAL REGULATION: A COMPARATIVE APPROACH TO THE UK, US, CANADA, AUSTRALIA AND GERMANY 18–19 (2017).

[288] Charles A.E. Goodhart, *Economics and the Law: Too Much One-Way Traffic?*, 60 MODERN L. REV. 1, 10 (1997) ("[E]conomists in general take insufficient notice of the importance of the legal underpinnings of the economy . . . [and] there is some tendency for there to be a belief in some quarters that economics can provide an answer for more legal questions than is actually the case.").

[289] Levels of numeracy are lamented to be worsening in the UK, and is highly related to ability to understand and manage one's financial needs. *What is the Issue?*, NAT'L NUMERACY, https://www.nationalnumeracy.org.uk/what-issue [https://perma.cc/BUY6-87LG] ("Low levels of numeracy are a long-term problem for the UK . . . [and] have gotten worse, not better."). *See* Annamaria Lusardi, *Numeracy, Financial Literacy, and Financial Decision-Making* 10 (Nat'l Bureau of Econ. Research, Working Paper 17821, 2012) ("Findings from both the United States and other countries regarding the level of numeracy in the adult population give reasons to worry: the level of numeracy is very low and particularly severe among some already vulnerable groups in the population, such as the elderly, women, and those with low educational attainment.").

engagement, resulting in a form of technocratic supremacy.[290] This leads to the framing of the accountability of finance to its technocratic and quantitative standard-setters instead of to its constituents, the weakest in this group in terms of power, influence and expertise[291] being households and retail savers and customers.

However, it can be argued that the "new and improved" micro-prudential regulatory framework is supported by (i) corporate governance and risk management regulation that is more qualitative in nature; and (ii) a more policy-based macro-prudential regulatory framework which makes appropriate evaluations for the level of financial stability that society desires. These arguably provide the necessary "qualitative" balance in micro-prudential regulation. Moreover, it may be argued that the quantitative methodologies provide an objective check against the discretionary policy choices made by policy-makers.

---

[290] This point is discussed in the author's earlier work on policy-making in shadow banking in terms of how the conversation has become technocratic and bureaucratic and has disengaged economy-society conversations. see Iris H-Y Chiu, *Transcending Regulatory Fragmentation and the Construction of an Economy-Society Discourse: Implications for Regulatory Policy Derived from a Functional Approach to Understanding Shadow Banking*, 42 J. CORP. L. 327, 358 (2016) ("Presumptions that regulatory policy-making in the wholesale financial sector is confined to participants in the sector and should not enroll other citizens' opinions are merely elitist and insular in nature.").

[291] The matrix of power and influence in financial policy-making is discussed in various contexts, internationally, at the EU and nationally. *See* Stephen L. Harris, *Regulating Finance: Who Rules, Whose Rules?*, 21 REV. POL'Y RES. 743, 745 (2004); Stefano Pagliari, *Who Governs Finance? The Shifting Public-Private Divide in the Regulation of Derivatives, Rating Agencies and Hedge Funds*, 18 EUR. L.J. 44, 51–52 (2012) ("Some authors have highlighted the central role played by American and British regulatory authorities in pushing the international agenda towards a greater reliance on self-regulation and market-based regulation since the mid-1990s."); Sol Piccioto & Jason Haines, *Regulating Global Financial Markets*, 26 J. L. & SOC'Y 351, 368 (1999); Geoffrey Underhill & Xiaoke Zhang, *Norms, Legitimacy, and Global Financial Governance* 1, 28 (World Econ. & Fin. Research Programme Working Paper 0013, 2006) ("This relative disarmament of public authorities has implied that private market interests increasingly define supervisory criteria, and that the crucial aspect of public policy, the safety and stability of the financial system, is dominated by the preferences of those private market makers who stand to benefit from it most."). *See generally* THE POLITICAL ECONOMY OF FINANCIAL REGULATION 371, 372 (Peter Mooslechner et al. eds., 2006).

In relation to (i), the Basel Committee[292] and European legislation[293] have introduced standards for corporate governance in financial institutions in order to instil the strategic importance of risk management in Boards, and to organize risk management in a way that is sufficiently empowered and credible. Further, financial institutions' risk-takers' compensation has become subject to regulation in order to moderate their risk-taking and short-termist incentives.[294] Further, the UK has introduced a "senior persons regime" to ensure that senior managers are allocated certain defined responsibilities in a financial institution[295] and to be made personally accountable for negligent failings or for falling below certain standards of conduct in relation to integrity, care, skill, effective control, oversight, and transparency.[296] These qualitative standards may mitigate against the criticism that the law and economics nature of micro-prudential regulation is too quantitative and disengaged from the organizational and institutional

---

[292] *See generally* BASEL COMM., GUIDELINES: CORPORATE GOVERNANCE PRINCIPLES FOR BANKS (2015).

[293] Council Directive 2013/36, arts. 76, 88, 2013 O.J. (L 176).

[294] *Id.* art. 90; FIN. STABILITY FORUM, FSF PRINCIPLES FOR SOUND COMPENSATION PRACTICES, *supra* note 85, at 1. *See generally* FIN. STABILITY BD., FSB PRINCIPLES FOR SOUND COMPENSATION PRACTICES: IMPLEMENTING STANDARDS, *supra* note 85; FIN. STABILITY BOARD, SUPPLEMENTARY GUIDANCE TO THE FSB PRINCIPLES AND STANDARDS ON SOUND COMPENSATION PRACTICES, *supra* note 85, at 1–2.

[295] *See* Bank of Eng., Prudential Regulation Auth., *Allocation of Responsibilities and Conduct Rules, in* PRUDENTIAL REGULATION AUTHORITY HANDBOOK (2016), http://www.prarulebook.co.uk/rulebook/Content/Part/212514/17-01-2019 [http://perma.cc/HAE8-3JVD]; BANK OF ENG., PRUDENTIAL REGULATION AUTH., CP15/22 STRENGTHENING ACCOUNTABILITY IN BANKING: FINAL RULES (INCLUDING FEEDBACK ON CP14/31 AND CP15/5) AND CONSULTATION ON EXTENDING THE CERTIFICATION REGIME TO WHOLESALE MARKET ACTIVITIES 12 (2015) ("Some firms told us, in their responses to our consultation last July 29, that they found the rules that we were proposing on the allocation of responsibilities to senior managers confusing. We have already made a number of changes to our Handbook text to try to simplify matters, but we appreciate that further illustration may be helpful.").

[296] *See* Bank of Eng., Prudential Regulation Auth., *Conduct Rules, in* PRUDENTIAL REGULATION AUTHORITY HANDBOOK (2016), http://www.prarulebook.co.uk/rulebook/Content/Part/302382/17-01-2019 [http://perma.cc/H5T2-FA9K].

contexts.[297] Nevertheless, these qualitative standards in risk management, corporate governance, and personal liability serve the purposes of achieving the quantitative rules and are arguably subservient to them.[298]

In relation to the qualitative regulation of corporate governance and risk management in financial institutions, these are to facilitate the achievement of micro-prudential compliance as per the quantitative thresholds set in regulation.[299] In determining personal liability for senior managers' conduct, the UK tribunal that deals with challenges against the regulator's imposition of personal liability on senior managers[300] has opined that a case can only be made for falling below the required standards of conduct if there is a poor or non-compliant outcome. Hence, the qualitative standards of conduct for senior managers are hinged upon rule infringements, and are not judged purely on the basis of attitude or non-consequential behavior.[301]

In relation to (ii), macro-prudential regulation is achieved in two ways, by incorporating macro perspectives into regulatory price in micro-prudential regulation, such as the imposition of the counter-cyclical capital buffer discussed above, and by measures of macro-prudential supervision directly addressed to the financial sector.[302] However, we query whether the infusion of macro-prudential aspects into the regulatory price-setting mechanism of micro-prudential regulation will work, as there may be incompatibility between the approach of micro-prudential regulation in targeting individual firm behavior and the needs of collective good that macro-prudential regulation wish to address.

Can the uncoordinated behavior of individual, albeit regulated financial institutions collectively add up to the prevention of collective

---

[297] Viral V. Acharya et al., *Corporate Governance in the Modern Financial Sector, in* RESTORING FINANCIAL STABILITY: HOW TO REPAIR A FAILED SYSTEM 185 (Viral Acharya & Matthew Richardson eds., 2012).

[298] ANDENAS & CHIU, *supra* note 6, at 38.

[299] Viral V. Acharya et al., *supra* note 297, at 196 ("Even with an optimally designed compensation structure that induces the best actions, the ability of the regulator to monitor the LCFI and directly limit risk taking through fully enforced leverage constraints, capital requirements, or position limits may still be an essential ingredient of a sound financial system.").

[300] Financial Services and Markets Act 2000, c. 8, § 133 (Eng.), amended by The Transfer of Tribunal Functions Order 2010 (S.I. 2010/22) (Eng.) & the Banking (Special Provisions) Act 2008, c. 2 (Eng.).

[301] Carrimjee v. Fin. Conduct Auth. [2015] UKUT 79.

[302] Heremans, *supra* note 271, at 592 (describing measures of macro-prudential regulation imposed by the U.S. and the E.U.).

harm or bringing about of collective good?[303] This critique has precisely been levied by Schwarcz in relation to pre-crisis bank regulation.[304] Micro-prudential regulation that is addressed to each financial institution's behavior may still fail to inculcate any consciousness of collective good or prevention of collective harm.[305] Although one may see the quantitative nature of micro-prudential regulation as providing a check against discretionary policy choices in financial stability, we have only seen the sparing use of macro-prudential supervisory tools to date. Much of macro-prudential supervision relates to surveillance and reporting.[306] The qualitative powers and aspects in the regulatory framework have largely played a role of serving the compliance with quantitative rules.[307] Further, a commentator[308] points out that there may also be conflicts between individual incentives and the collective good of the financial system, putting in doubt the assumption that there is coherence in the implementation of micro-prudential regulation and macro-prudential supervision.

There is yet a final fundamental issue with meeting the needs of financial stability through predominantly micro-prudential regulation. Value judgements need to be made as to the tolerance of levels for financial stability or instability, as discussed above.[309] As Driesen and Malloy argue, at the core of legal and economic regulation is the goal of achieving Kaldor-Hicks efficiency, meaning there should be

---

[303] The question is also posed in Mayer, *supra* note 87.

[304] *See* Schwarcz, *supra* note 121 at 248.

[305] Viral V. Acharya et al., *supra* note 89, at 2 ("However, current financial regulations, such as Basel I and Basel II, are designed to limit each institution's risk seen in isolation; they are not sufficiently focused on systemic risk even though systemic risk is often the rationale provided for such regulation. As a result, while individual risks may be properly dealt with in normal times, the system itself remains, or in some cases is induced to be, fragile and vulnerable to large macroeconomic shocks.").

[306] *See supra* Section III.

[307] Andenas & Chiu, *supra* note 6, at 38. ("Gray and Bholat, however, wonder whether quantitative measures of systemic risk currently being developed should not be tweaked to include qualitative input, such as social tolerance for the levels of financial stability/instability in the economy at any given point in time, rather than leaving the measures entirely to technocratic and expert communities.").

[308] Mülbert, *supra* note 12.

[309] Drawing on NIKLAS LUHMANN, RISK: A SOCIOLOGICAL THEORY 3 (Rhodes Barrett trans., Walter de Gruyter 1993).

more benefits than costs engendered by the regulatory system,[310] and in sum more "gainers" than "losers." Would "financial stability," within the framework of a law and economics approach to regulation settle at the majoritarian preference for the level of stability/instability in financial systems and markets? If so, there are certain hazards for policy-making. This article is concerned that the gainers are predominantly financial sector participants, while the losers are other participants, usually in the real economy. This is because of a sharp disparity in expertise, influence and voice in shaping policy choices between the financial industry stakeholders and the rest.[311]

A number of studies indicate that access to finance by households and small and medium sized enterprises has become more difficult to obtain as banks across the United States and Europe have reduced lending to these consumers,[312] while not necessarily shrinking large commercial exposures. The more profitable corporate businesses have taken priority[313] as financial institutions are forced to make more conservative decisions in light of the post-Crisis micro-prudential compliance requirements. Retail sector lending has also decreased as liquidity rules have compelled banks to hold more tradeable and liquid assets.[314] Research from the United States shows an increase in banks parking their capital in the deposit accounts of other financial institutions, therefore being compliant and benefiting each other at the

---

[310] Driesen, *supra* note 16.

[311] *See*, Stefano Pagliari, *Who Governs Finance? The Shifting Public-Private Divide in the Regulation of Derivatives, Rating Agencies and Hedge Funds*, 18 EUR. L.J. 44, 45–52 (2011) (explaining the shift in political dynamics between the regulators and the regulatees following the most recent financial crisis).

[312] Sami Ben Naceur & Caroline Roulet, *Basel III and Bank-Lending: Evidence from the United States and Europe* 22–24 (Int'l Monetary Fund, Working Paper No. WP/17/xx, 2017), https://www.imf.org/en/Publications/WP/Issues/2017/11/15/Basel-III-and-Bank-Lending-Evidence-from-the-United-States-and-Europe-45345 [https://perma.cc/7AAC-TKSQ].

[313] MARTIN NEIL BAILY ET AL., THE BIG FOUR BANKS: THE EVOLUTION OF THE FINANCIAL SECTOR, PART I (2015); William Bekker & Sarah E. Holmes, *The Big Four Banks: The Evolution of the Financial Sector, Part I* (Brookings Inst. Research Paper, 2015), https://www.brookings.edu/wp-content/uploads/2016/06/big_four_banks_evolution_financial_sector_pt1_final.pdf [https://perma.cc/E8LE-UUWM] (detailing changes in the big four American investment banks' assets and liabilities pre-and post-crisis).

[314] *See* Ben Naceur & Roulet, *supra* note 312, at 27.

same time, while lending to the real economy has stalled.[315] The European Central Bank also notes that lending in general has become more costly with the new compliance demands in the micro-prudential regulatory regime.[316] The societies that bailed out financial institutions during the global financial crisis could indeed have different expectations for the financial institutions that are stabilized at great fiscal cost.[317] There may have been social expectations regarding the return of the financial sector to health and stability in order allocate capital sensibly for productive economic activities instead of myopically profitable and possibly speculative and damaging activities[318] such as those that have surfaced during the crisis.

Complying with the quantitative outcomes of micro-prudential regulatory requirements seems to bear remote relation to what society would like finance to serve. The law and economics foundations of regulation relies too heavily on the price mechanism to steer individual firm behavior and neglects other levers that affect behavior such as social, organizational and values-oriented factors.[319] Indeed the behavioral levers in the law and economics approach are focused on keeping the financial institution and system safe, i.e., disaster-

---

[315] *See* BAILY ET AL., *supra* note 313, at 3 ("With more cash than good investment opportunities, banks have looked to park their money in interest-bearing deposit accounts."); Bekker & Holmes, *supra* note 313.

[316] Lorenzo Bibi Smaghi, Eur. Cent. Bank, *Basel III and the Real Economy*, The Outlook for Financial Markets, for Their Governance and for Finance, Cernobbio (Apr. 1–2, 2011), https://www.ecb.europa.eu/press/key/date/2011/html/sp110401.en.pdf?6308646b7650c12c82fbfde7dddd4185 [https://perma.cc/5MCN-QLPK].

[317] The UK bank bailed out during the financial crisis, ie Royal Bank of Scotland and has remained until this year in almost 90% state ownership, was embroiled in accusations of abusively managing struggling small business borrowers and exploiting them even in their financial distress. *See* FIN. CONDUCT AUTH., A REPORT ON AN INDEPENDENT REVIEW OF ROYAL BANK OF SCOTLAND GROUP'S TREATMENT OF SMALL AND MEDIUM-SIZED ENTERPRISE CUSTOMERS REFERRED TO THE GLOBAL RESTRUCTURING GROUP (2017), https://www.fca.org.uk/publication/corporate/final-summary-independent-review-rbs-grg.pdf [https://perma.cc/VKK4-6AG8].

[318] *See, e.g.*, ROSS P. BUCKLEY, *The Changing Nature of Banking and Why it Matters, in* RECONCEPTUALISING GLOBAL FINANCE AND ITS REGULATION 9 (Ross P. Buckley et al. eds., 2016) (discussing evolution of more complex and speculative financial products that result in gains for bankers while socialising losses).

[319] Robert B. Ahdieh, *Beyond Individualism in Law and Economics*, 91 B.U. L. REV. 43 (2009).

prevention, as far as is possible, but bear little relation to facilitating finance to serve normative and substantive purposes. Where in financial regulation are there standards that direct finance to serve, for example, the reduction of financial disparities or the promotion of social justice?[320] There remain visions of unfinished work in governing finance towards, for example, supporting a sustainable economy,[321] addressing socio-economic phenomena such as financial insecurity[322] and inclusion,[323] weeding out "socially useless"[324] and speculative activity and "boom and bust."[325] The conceptual disengagement of

---

[320] One may argue that social justice is in the province of the state, as it allocates resources and makes distributive choices, but as the financial sector is in an age of financialization, is increasingly important for making allocative decisions; why should such allocative decisions not take into account of or be governed by overarching socio-economic policy?

[321] REPORT OF THE EU HIGH-LEVEL EXPERT GRP. IN SUSTAINABLE FIN., FINANCING A SUSTAINABLE EUROPEAN ECONOMY (2018) at https://ec.europa.eu/info/sites/info/files/180131-sustainable-finance-final-report_en.pdf [https://perma.cc/4AQE-GBH8].

[322] Financial insecurity can entail from not knowing how to manage one's financial affairs to mismanaging them, but also relates to diligent savers in schemes such as pensions having no security in how such savings would deliver for future financial needs. There is often no guarantee or safety net for expected returns, *see, e.g.,* FIN. CONDUCT AUTH., RETIREMENT OUTCOMES REVIEW (2017), https://www.fca.org.uk/publication/market-studies/retirement-outcomes-review-summary.pdf [https://perma.cc/R473-VGGY]; Stephen F. Befort, *The Perfect Storm of Retirement Insecurity: Fixing the Three-Legged Stool of Social Security, Pensions, and Personal Savings,* 91 MINN. L. REV. 938, 939 (2007).

[323] Relating to access to finance, which requires a balanced approach of educating consumers to access finance appropriately and prudently and governing financial institutions to provide for such markets responsibly and in a non-exploitative manner. *See Consumer Vulnerability* 6 (Fin. Conduct Auth., Occasional Paper No. 8, 2015) https://www.fca.org.uk/publication/occasional-papers/occasional-paper-8-exec-summary.pdf [https://perma.cc/MY95-Y2T3].

[324] Martin Wolf, *Lunch with the FT: Adair* Turner, FIN. TIMES (June 16, 2016), https://www.ft.com/content/bc424150-3165-11e6-ad39-3fee5ffe5b5b. *See also Carney Tells Banks to End 'Socially Useless' Activities*, BBC NEWS (Aug. 8, 2013), https://www.bbc.com/news/av/business-23627515/carney-tells-banks-to-end-socially-useless-activities [https://perma.cc/6JWZ-MUBT].

[325] Jeremy Cooper, *The Regulatory Cycle: From Boom to Bust*, *in* THE FUTURE OF FINANCIAL REGULATION 455 (Iain G. MacNeil & Justin O'Brien eds., 2010); Jihad Dagher, Regulatory Cycles, Revisiting the Political Economic of Financial Crises (Int'l Monetary Fund, Working Paper No.

micro-prudential regulation from other non-economic factors obscures normative and substantive outcomes from being achieved, such as social justice.[326] The regulatory reforms may have artificially heightened our perceived sense of safety while the financial system is still regulated in such a way as dis-embedded from its social fabric[327] and the real economy it should serve.[328]

B. An Alternative Proposal

The shortfalls in micro-prudential regulatory reforms are fundamentally attributed to the nature of the law and economics approach, which continues to rely on micro-economic assumptions and models, quantitative methods of price-setting to calibrate behavior, and giving such an approach a supremacy that ought to be questioned.[329]

WP/18/8, 2018), https://www.imf.org/en/Publications/WP/Issues/2018/01/15/Regulatory-Cycles-Revisiting-the-Political-Economy-of-Financial-Crises-45562 [https://perma.cc/A4RB-Z6KK] (contending that regulation itself can become relaxed during a boom cycleand contributes to the next bust cycle).

[326] Argued in Steven A. Ramirez, *A Revolution in Economics but Not in Law*, *Animal Spirits and Financial Regulation*, and *The Crisis in Crisis Management*, *in* LAWLESS CAPITALISM: THE SUBPRIME CRISIS AND THE CASE FOR AN ECONOMIC RULE OF LAW (2013).

[327] Fred Block & Margaret F. Sommers, *Beyond the Economistic Fallacy: The Holistic Social Science of Karl Polanyi*, *in* VISION AND METHOD IN HISTORICAL SOCIOLOGY 63 (Theda Skocpol ed., 1984) (discussing Karl Polanyi's theory concerning societal influences, like relationships, religion, and politics, on the economy); Alexander Ebner, *The Regulation of Markets: Polanyian Perspectives*, *in* REGULATORY TRANSFORMATIONS: RETHINKING ECONOMY-SOCIETY INTERACTIONS 31, 52 (Bettina Lange et al. eds., 2015) (discussing the ramifications and new vision of corporations and markets that are socially oriented and embedded); KARL POLANYI, THE GREAT TRANSFORMATION: THE POLITICAL AND ECONOMIC ORIGINS OF OUR TIME 45–58 (2d ed. 2001) (discussing reliance on past civilizations in order to inform present market regulation); CARLO TRIGILIA, ECONOMIC SOCIOLOGY: STATE, MARKET, AND SOCIETY IN MODERN CAPITALISM 17–19 (2002) (introducing and summarising Karl Polanyi's view on the "primal link between economic enquiry and the consolidation of the market").

[328] *See supra* p. 31 ("Complying with the quantitative outcomes of micro-prudential regulatory requirements seems to bear remote relation to what society would like finance to serve.").

[329] Langenbucher sets out extensively in Parts I and II why such approaches have significant appeal, but lessons ought to be learnt in the wake of the global financial crisis! *See* LANGENBUCHER, *supra* note 43, at 11–135.

An alternative proposal would be to rebalance the law and economics approach in regulating financial institution behavior with law that is infused with policy informed by social and institutional values and other normative perspectives. In this way, the law and economics methodology need not be completely replaced, but can be rebalanced and enriched within a broader and more realistic socio-economic context.

We sketch the contours of this alternative proposal in Section D. However, we first set out the likely resistance and challenges to such an alternative proposal.

First, as finance is highly transnational and global in nature, it is appealing for international standards to be harmonized for governing finance.[330] In seeking consensus for such international harmonization, Langenbucher rightly argues that a common language which is apolitical is highly facilitative for such efforts.[331] The quantitative, measurable promises in the economic method which can be modeled and tested provide such a "common language" that seems to transcend political and institutional contexts.[332] Hence, any effort in rebalancing a predominantly economic method in regulating finance with law or other socially-embedded or value-laden approach may be seen as counterproductive, as such may promote divergence and discontinuity. We however argue that the global financial crisis has produced an opportunity for many policy-makers in the world to agree on the normative collective good that finance should serve, such as financial stability,[333] and so high-level principles of collective goods can be charted although each jurisdiction may have its own unique needs. The detailed needs of individual jurisdictions can be addressed differently, allowing for forms of differential implementation within an agreed broad framework.[334] We see nothing sub-optimal about this phenomenon as uniformity in governing finance for all corners of the globe will suffer from over-inclusion or over-exclusion. The main advantage that international harmonization has secured through a form of quantitative

---

[330] LANGENBUCHER, *supra* note 43, at 68–69.

[331] *Id.* at 162–72 ("The more economic transplants resemble measurable, straightforward building blocks of a legal argument, the better they can furnish a common denominator for lawyers from different national and cultural backgrounds.").

[332] *Id.* at 68–69.

[333] Refer to the above discussion and the recognition of the Financial Stability Board above that reflects the sense of collective position on the part of its global members.

[334] Andenas & Chiu, *supra* note 188, at 342.

uniformity in regulatory method is that international banks and financial institutions are provided with the convenience of not having to navigate too many local differences in developing their international footprints. Differences in legal duties, for example, imposed in different jurisdictions would be susceptible to criticisms of "vagueness" and "unpredictability," therefore raising the cost of doing financial business. However, an excessive focus on catering to the needs of the industry was exactly the reason for developing flexibility and devolving to bank self-regulation under the internal models approach in the capital requirements of Basel II.[335] It is timely for regulators to rebalance the attention they have paid to supply-side needs with demand-side needs and other perspectives.

Second, the excessive attention paid to supply side needs has been very much supported by economic theory, such as "law and finance," which broadly posits that law has a part to play in developing successful financial markets.[336] Such a theory inevitably influences policy-makers to see the role of law and regulation as facilitating financial development and growth.[337] The US and EU have both developed financial regulation policies in the vein of law and finance, the most notable in the US being the passing of the Gramm-Leach-Bliley Act in 1999 to repeal the longstanding prohibitions placed on investment banks and securities firms from undertaking retail banking activities.[338] McGee argues that this is catalytic to the growth of US financial conglomerates and empires extending their footprints globally.[339] The EU has always also pursued regulatory harmonization to promote the interests of financial firms to go cross-border in order to

---

[335] *See* COMPREHENSIVE VERSION, *supra* note 50, at 80 (providing that the internal models method allows banks greater flexibility).

[336] *See, e.g.*, Rafael La Porta et al., *Law and Finance*, 106 J. POL. ECON., no. 6, 1113 (1998); Rafael La Porta et al., *What Works in Securities Laws?*, 61 J. FIN. no. 1, 1 (2006).

[337] *See, e.g.*, Dilek Durusu-Ciftci et al., *Financial Development and Economic Growth: Some Theory and More Evidence*, 39 J. POL'Y MODELLING 290 (2017); M. Kabir Hassan et al., *Financial Development and Economic Growth: New Evidence from Panel Data*, 51 Q. REV. ECON. 88 (2010); Mohsin S. Khan & Abdelhak Senhadji, *Financial Development and Economic Growth: An Overview* (IMF Working Paper No. 00/209, 2000).

[338] Gramm-Leach-Bliley Act of 1999, Pub. L. No. 106-102, § 101, 113 Stat. 1338, 1341 (1999) (repealing parts of the Glass-Steagall Act).

[339] SUZANNE MCGEE, CHASING GOLDMAN SACHS 146–47 (2010); GILLIAN TETT, FOOL'S GOLD: HOW UNRESTRAINED GREED CORRUPTED A DREAM, SHATTERED GLOBAL MARKETS AND UNLEASHED A CATASTROPHE (2010).

build up the Single Market, and protective forms of regulation such as those for consumers caught up much later.[340]

Law and finance ideology supports financialization, which is defined as "the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies."[341] An alternative definition, derived from political science, defines financialization as, "the increase in the influence of financial markets, institutions and elites over both the economy and other institutions of society, including the government."[342] In this manner, regulating finance, in ensuring that financial consumers have wide access to financial products and services, results in augmenting opportunities and markets for the financial sector.[343] By elevating the social importance of finance, law and regulation has served the perceived social good of finance in meeting the financial needs of households, corporations and sovereigns all over the world.[344] Policy-makers have preferred for financial regulation to be justifiable in terms of proportionality and cost by relying on economic methods of regulation which inherently lend themselves to calculability of cost and benefit and are aimed at the most efficient ways of providing governance, would naturally appeal to policy-makers.[345]

---

[340] Jean Dermine, *European Banking Integration: Don't Put the Cart Before the Horse*, 15 FIN. MKTS., INSTITUTIONS & INSTRUMENTS 57, 57–58, 89–90 (2006); Lucia Quaglia, *Setting the Pace? Private Financial Interests and European Financial Market Integration*, 10 BRIT. J. POL. INT'L REL. 46, 46–47 (2008).

[341] Gerald A. Epstein, *Introduction: Financialization and the World Economy*, *in* FINANCIALIZATION AND THE WORLD ECONOMY (Gerald A. Epstein ed., 20063, (2006).

[342] Gautam Mukunda, *The Price of Wall Street's Power,* HARV. BUS. REV. 70, 74 (2014). (describing the efforts of financialization on the American economy).

[343] Christos K Staikouras & Anastasia Koutsomanoli-Fillipaki, *Competition and Concentration in the New European Banking Landscape* 12 J. OF EUROPEAN FIN. MGMT. 443, 443–44 (2016) (arguing that market integration has allowed universal banking institutions to become large concentrated behemoths capturing ever larger market shares).

[344] ANDENAS & CHIU, *supra* note 6, at 17 ("This period in particular saw much financial liberalization and deregulation, largely driven by more developed economies that believed in the link between financial liberalization and economic development and wealth creation for all.").

[345] FIN. CONDUCT AUTH., ECONOMICS FOR EFFECTIVE REGULATION 40 (2016), https://www.fca.org.uk/publications/occasional-papers/occasional-paper-no-13-economics-effective-regulation [https://perma.cc/T3M6-DJ3Q]

Finally, micro-prudential regulation is developed largely by the Basel Committee which comprises of central bankers, and many micro-prudential regulators are central banks staffed with economists.[346] The influence of central bank economists on standard setting inevitably skews regulators towards a preference for the ideological foundations of law and economics as well as its methods in regulation.[347] Bank regulation is now in the hands of the Bank of England via its Prudential Regulation Authority which is one of the Bank's committees.[348] At the EU level, the European Central Bank is the micro-prudential supervisor for all systemically important Euro-area banks.[349] Research by Goodhart et al. show that non-central bank regulators have a higher proportion of lawyers, and such expertise is perceived as important to contribute to standard-setting over financial activities that are more market-based such as securities.[350] Particularly in jurisdictions where micro-prudential regulation is implemented and overseen by prudential regulators based in central banks, there is a need for increased awareness of the limitations of the law and economics approach to regulating financial institution behavior.[351] For central banks that have taken over prudential regulation such as in the UK and at the ECB mentioned above, the augmentation of central banks' responsibilities has taken them into a new era, as they are

---

(showing a predominantly economic leaning in allowing financial sector solutions and markets to work facilitate support, instead of dealing with intrusions from law and regulation); *see also* Mayer, *supra* note 87.

[346] Charles Goodhart et al., *The Skill Profile of Central Bankers and Supervisors*, 6 EUR. FIN. REV. 397, 399 (2002).

[347] *Id*. at 406 ("The results are clear and strong. The main determinant is whether the agency is a Central Bank, or not. Central Banks hire economists and financial experts, but many fewer lawyers. . . . Non-Central Banks have the reverse tendency. Central Banks are economics-driven; non-Central Banks are law driven.").

[348] What does the Bank of England Do?, BANK ENG., https://www.bankofengland.co.uk/about#anchor_1510759697010 [https://perma.cc/G2V3-8MKF].

[349] Consolidated Version of the Treaty Establishing the European Community, Dec. 29, 2006, 2006 O.J. (C 321) 87 ("The Council may, acting unanimously on a proposal from the Commission and after consulting the ECB and after receiving the assent of the European Parliament, confer upon the ECB specific tasks concerning policies relating to the prudential supervision of credit institutions and other financial institutions with the exception of insurance undertakings.").

[350] Goodhart et al., *supra* note 346, at 406.

[351] *Id*.

perceived to be guardians and providers of financial stability and economic growth.[352]

Although "new and improved" law and economics shows a more holistic economic approach to regulating financial institutions, the increased responsibilities for prudential regulators import of wider social expectations and are not merely technocratic in nature.[353] Hence, the guardians in micro-prudential regulation need to engage more widely with contextual, institutional, social and stakeholder perspectives,[354] and policy-making inevitably has to take on a more nuanced and qualitative character than excessively relying on micro-economic and quantitative approaches to governing the financial sector.

We suggest an alternative proposal for regulating financial institutions' prudent behavior, and argue that there is a need for rebalancing law in this approach. The prudence needed in financial intermediation is a nuanced form of decision-making that should incorporate the interests of financial customers, the risks for the individual institution and the context of markets, economic and social policy. The socially-embedded policy choice of financial stability should incorporate what society envisages finance to serve[355] instead of merely leaving finance to the commercial decision-making of firms. Ramirez also argues for a constitution for framing financial activity so as to prevent the financial sector from being self-serving, perpetuating excesses of "lawless capitalism" in financial markets and amassing great power in this age of financialization.[356] Quantitative regulatory approaches focused on measuring the price of risk in micro-prudential regulation continue to perpetuate an atomistic existence and purpose for finance in a socially dis-embedded manner.[357]

---

[352] *See generally* MOHAMED EL-ERIAN, THE ONLY GAME IN TOWN: CENTRAL BANKS, INSTABILITY, AND AVOIDING THE NEXT COLLAPSE (2016).

[353] ANDENAS & CHIU, *supra* note 6, at 36–37.

[354] JAMES R. BARTH ET AL., GUARDIANS OF FINANCE: MAKING REGULATORS WORK FOR US 203 (2012) (arguing that reforms from the US, UK, EU and other bodies do not sufficiently address flaws in the regulatory apparatus to cure the underlying defects that lead to the crisis). *See see generally*, Saule T. Omarova, *Bankers, Bureaucrats, and Guardians: Toward Tripartism in Financial Services Regulation*, 37 J. CORP. L. 621, 658–59 (2012).

[355] Lothian, *supra* note 18, at 69–70; *see also* Canova, *supra* note 18; Driesen, *supra* note 16, at 55.

[356] Steven A. Ramirez, *The Potential for an Economic Rule of Law*, *in* LAWLESS CAPITALISM: THE SUBPRIME CRISIS AND THE CASE FOR AN ECONOMIC RULE OF LAW 211–12 (2013).

[357] *Id.* at 213.

V. Rebalancing Law in Micro-prudential Regulation

Goodhart reminds us that economic policy is anchored within the context of making choices within an institutional context.[358] Law gives formalization to institutions established by political powers and social contexts, and economic policy works within such a context.[359] However, the rise of neoliberal ideology since the 1980s has contributed to the elevation of micro-economic efficiency as a policy goal as such.[360] Micro-economic efficiency is perceived as individually liberating and capable of culminating in an "uncoordinated" common good. This perspective has facilitated the development of economic policy in a dis-embedded manner from institutional contexts, such as promoting competition and globalization without giving thought to local and social disruptions,[361] or promoting financial liberalization without giving thought to the needs of financial stability.[362] "Regulating finance" in such an ideological tide becomes concerned with achieving individual choice, efficiency and building markets to serve those purposes,[363] becoming a servant to micro-economic assumptions.[364]

Ramirez[365] reminds us that law reflects important institutional values and has the potential to give rise to a constitutional framework for economic activity—that economic activity should be directed towards achieving the values and goals of the society concerned, such

---

[358] Goodhart, *supra* note 291, at 6 (quoting Coase: "[e]conomic policy involves a choice among alternative social institutions, and these are created by the law or are dependent on it.").
[359] *See id.* at 5–6.
[360] Thomas Biebricher, *Ordoliberalism as a Variety of Neoloberalism*, Christian Joerges, *The Overburdening of Law by Ordoliberalism and the Integration Project*, Michelle Everson, *Ordoliberal Escape from* Societas Economica*: Re-establihsing the Normative*, *in* ORDOLIBERALISM, LAW AND THE RULE OF ECONOMICS, *supra* note 44, at 103–04, 179–89.
[361] Lothian, *supra* note 18, at 97–98.
[362] Gerding argues that regulation promotes and stimulates financial markets and then retreats in the face of market bubbles and exuberance in order not to perturb the perceived optimal working of financial markets. *See* ERIC GERDING, LAW, BUBBLES, AND FINANCIAL REGULATION 8 (2014).
[363] *See generally id.*
[364] *See generally* Goodhart, *supra* note 288; Katja Lagenbucher, *Economic Imperalism*, *in* ECONOMIC TRANSPLANTS: ON LAWMAKING FOR CORPORATIONS AND CAPITAL MARKETS (Eilis Ferran et al. eds., 2017).
[365] *See generally* RAMIREZ, *supra* note 18.

as equalities in access to opportunities, social and distributive justice, and as suggested by Lothian,[366] service to the real economy in bringing about real prospects of self-realization in an institutional context that promotes social cohesion and stability. A number of commentators[367] also argue in the EU context that legal integration in regulating economic activities is meant to be ordoliberal in nature, i.e., introducing an ordered, institutionally-coherent approach to regulation, and not just to introduce regulation in order to support and serve efficient markets. In light of the discussion in Section C on the shortfalls of post-crisis financial regulation reforms, law seems to have a part to play in bringing to bear important institutional values and social expectations upon financial regulation, in relation to connecting regulatory methodology to ultimate substantive outcomes.

By introducing qualitative standards in law to regulate prudent behavior, and not just relying on economic levers, we could have the opportunity to consider the broad principles for governing finance, the standards of behavior society wishes to hold financial intermediaries to, and develop less complex but meaningful regulatory standards.[368] In this way one is also not lost in the myopia of "managing numbers" for compliance with quantitative methods of economic regulation which has the tendency of insulating from the purposes and objectives of compliance, resulting in procedural forms of ritualization and box-ticking.[369] Many have lamented the complexity and volumes of post-crisis regulation and the demands placed on compliance.[370] We

---

[366] *See generally*, Lothian, *supra* note 18.

[367] *See* sources *supra* note 360.

[368] Iris H-Y. Chiu & Anna Donovan, *A New Milestone in Corporate Regulation: Procedural Legalisation, Standards of Transnational Corporate Behaviour and Lessons from Financial Regulation and Anti-bribery Regulation* 17 J. CORP. L. STUD. 427, 432–33 (2017) ("Procedural legalisation targets the incentives and behavior of micro-constituents within an organisation in a procedural but prescriptive manner.").

[369] *See* MICHAEL POWER, ORGANISED UNCERTAINTY: DESIGNING A WORLD OF RISK MANAGEMENT 34–65, 152–203 (2008). *See also* MICHAEL POWER, THE AUDIT SOCIETY: RITUALS OF VERIFICATION 16 , 122–47 (1997) ("Forms of inspection with clear standards of performance and criteria for determining compliance or breach will be epistemically independent."); *see generally* Kimberly Krawiec, *Cosmetic Compliance and the Failure of Negotiated Governance,* 81 WASH. U. L. Q. 487 (describing the ineffective compliance that often times arises from mandatory internal compliance standards).

[370] Gerard Caprio, Jr., *Financial Regulation After the Crisis: How Did We Get Here, and How Do We Get Out?* 2–5 (London Sch. of Econ. Fin. Mkts. Grp.

therefore suggest that the introduction of legal principles and standards can support genuinely useful economic levers, such as those that infuse macro-prudential perspectives, but could also pave the way for scaling back excessively prescriptive quantitative forms of regulation that bear uncertain relationships with normative outcomes such as the preservation of financial stability or promoting financial and social justice. Three legal duties are sketched out in their contours in the next section.

A. Three Legal Duties for Financial Institutions

First, as the global financial crisis has illustrated, large, complex and inter-connected financial institutions pose the greatest level of systemic risk regionally and globally when they fail.[371] Hence there should be legal principles to reflect the social expectations of institutions that attain that profile. As in general law, hazardous activities demand greater attention and care,[372] and this has been reflected in European legislation regarding financial market trading undertaken by automated and highly sophisticated traders so that they do not inflict market crashes and cause extreme losses for other market participants. We suggest that a legal duty framed along the lines of increasing prudential care proportionate to the systemic hazards posed can be framed for institutions that undertake financial intermediation risks at significant levels.

Special Paper 226, 2013), http://www.lse.ac.uk/fmg/assets/documents/papers/special-papers/SP226.pdf [https://perma.cc/3TUP-YHPE] ("Neither a static rulebook, nor an ever increasingly complex one, will ever provide financial safety and soundness."); Tom Groenfeldt, *Financial Regulations Will Surpass 300 Million Pages by 2020*, FINTECH — NEWS & ANALYSIS (Apr. 16 2016), https://techandfinance.com/2016/04/20/financial-regulations-will-surpass-300-million-pages-by-2020-says-jwg/ [https://perma.cc/K3PF-WTU].

[371] INT'L MONETARY FUND ET AL., GUIDANCE TO ASSESS THE SYSTEMIC IMPORTANCE OF FINANCIAL INSTITUTIONS, MARKETS AND INSTRUMENTS: INITIAL CONSIDERATIONS 9 (2009), https://www.imf.org/external/np/g20/pdf/100109.pdf [https://perma.cc/UDB2-8NMS] ("Systemic risk can arise through direct and indirect interlinkages between the components of the financial system so that individual failure or malfunction has repercussions around the financial system, leading to a reduction in the aggregate amount of services."); Rosa María Lastra, *Systemic Risk, SIFIs and Financial Stability*, 6 CAP. MKTS. L.J. 197, 198–201.

[372] Council Directive 2014/65, art. 17, 2014 O.J. (L 173) 349, 398; *Honeywill & Stein, Ltd. v Larkin Bros.* [1934] 1 KB 191 (C.A.).

On 6 May 2010, the New York Stock Exchange experienced a flash crash.[373] In 20 minutes, many stocks lost significant amounts in value and the Dow Jones Index had fallen by nine percent.[374]It emerged that a trader in London had developed an algorithm to place automated sell orders of certain derivative instruments for him in high frequency in order to drive prices down in those instruments.[375] Such conduct is illegal market manipulation and caused the underlying securities to dive in price.[376] Although the trader Navinder Sarao was extradited to the US to face charges to which he pleaded guilty, this episode highlights a more fundamental principle regarding augmentation of financial risk through significant scale of financial activity.[377] Although smaller episodes of high volatility are now becoming the norm in the UK, European and US markets with the advent of automated and high frequency trading,[378] European legislation is dealing with such risks by conferring on high frequency traders certain duties in order to make them responsible for protecting financial and market stability.[379] European legislation designates traders who conduct a certain volume of trading in certain frequencies as market-makers.[380] They are imposed with duties to carry out a level market-making consistent with market needs and to ensure that their systems and controls safeguard that responsibility.[381] They are not to withdraw liquidity in stressed times and have to be mindful of overall market

---

[373] Jill Treanor, *The 2010 Flash Crash: How it Unfolded*, GUARDIAN (Apr. 22, 2015, 1:43 PM), https://www.theguardian.com/business/2015/apr/22/2010-flash-crash-new-york-stock-exchange-unfolded [http://perma.cc/RV5K-2BTH].
[374] *Id.*
[375] Sarah N. Lynch, *Federal Grand Jury Indicts 'Flash Crash' Trader*, REUTERS (Sept. 3, 2015, 4:57 PM) https://www.reuters.com/article/us-usa-indictment-flashcrash/federal-grand-jury-indicts-flash-crash-trader-idUSKCN0R32D720150903 [https://perma.cc/M3E9-6DGU].
[376] *Id.*
[377] *Id*.
[378] Alexander Munk & Erhan Bayraktar, *Opinion: The Stock Market Has About 12 Mini Flash Crashes a Day—and We Can't Prevent Them*, MARKETWATCH (July 31, 2017, 12:47 PM), https://www.marketwatch.com/story/the-stock-market-has-about-12-mini-flash-crashes-a-day-and-we-cant-prevent-them-2017-07-31 [https://perma.cc/EK2F-ZTRC].
[379] Council Directive 2014/65, art. 17, 2014 O.J. (L 173) 349, 399.
[380] *Id.*
[381] *Id.*

stability.[382] Whether these duties go far enough may remain a matter for debate, but the broad principle of imposing legal duties of extra care and a sense of responsibility for their part in preserving financial stability is instructive for policy-making in other areas where significant levels of risk may be augmented due to scale of activities.[383]

In applying to financial institutions in their undertaking of risks in financial intermediation, there should be a legal duty for those engaged in significant levels of risk, such as having large market shares in particular areas of lending (e.g., the failed UK lender Northern Rock in residential mortgages), or asset managers with gargantuan amounts of assets under management, to justify their significant areas of risk and to take extra care in exercising prudence and in preventing adverse impact on financial stability and the real economy.[384]

In defining what significant scale of risks mean, existing guidance from the Basel Committee's indicator approach[385] which identifies five indicators of systemically important financial institutions—by their size, inter-connectedness, complexity, cross-jurisdictional activity and substitutability can form a starting point. However national regulators should be able to adapt these to the financial markets that they are addressing, and identify unique indicators of significant risks that are appropriate, such as for example a firm's market share of vulnerable customers for high-cost short term credit (such as payday lending), which raises issues of concern unique to the UK.[386] A financial institution regarded as carrying out significant

---

[382] *Id.* ("An investment firm that engages in algorithmic trading to pursue a market making strategy shall, taking into account the liquidity, scale and nature of the specific market and the characteristics of the instrument traded . . . .").

[383] Chiu & Donovan, *supra* note 368.

[384] *See* Caprio, Jr, *supra* note 370, at 14 (attributing failure to regulators lack of proactivity).

[385] BASEL COMM. ON BANKING SUPERVISION, *supra* note 152, at 3 ("The negative externalities associated with institutions that are perceived as not being allowed to fail due to their size, interconnectedness, complexity, lack of substitutability or global scope are well recognised.").

[386] *See* Press Release, Fin. Conduct Auth., FCA Publishes Outcome of High-Cost Credit Review (May 31, 2018), https://www.fca.org.uk/news/press-releases/fca-publishes-outcome-high-cost-credit-review [http://perma.cc/YZ7C-TFTA] (providing an example to show where the Basel Committee could adjust their scaling approach for determining risk factors in specific areas of the market).

levels of risk-taking in its respective area and is subsequently flagged by its regulator's indicators should have a duty to account to the regulator frequently in terms of the steps taken to mitigate prudential risks and risks to the wider financial system. As supervisory measures, regulators can prescribe quantitative micro-prudential tools that are appropriate for each institution's profile, such as regulatory pricing for certain risk levels as well as qualitative measures such as corporate governance and risk management.[387] In this way financial institutions are inculcated with a broader consciousness of their impact on collective good, and quantitative micro-prudential tools can play a useful part in supporting and implementing supervisory and policy decisions.

It may be argued that the UK's approach to ring-fencing the retail parts of a large banking group is, in addition to micro-prudential regulatory reforms discussed above, the key measure for dealing with systemically important banks.[388] This measure is far more certain in nature than the vagueness of a legal duty to account for prudential management and to take extra precautions.[389] The objective of structurally ring-fencing the retail bank is to achieve a form of separation from its parent banking group and provide immunity from contagion if the parent banking group should be stricken.[390] The nature and extent of separation is prescribed in legislation,[391] and its implementation gives the impression of having achieved a socially desirable level of protection for banking aspects that relate most keenly to social utility. However, structural reforms do not necessarily ensure that the retail bank serves socially useful purposes such as "the real economy"[392] nor do they improve the safety of the bank from excessive risks that such a bank may take in relation to retail activities.[393] Further, policy-makers' unwillingness to put in constraints on banking activities for banking groups means that although retail banks are ring-fenced, they maintain a connection to the group and it remains

---

[387] *Id*.

[388] *See generally* INDEP. COMM'N ON BANKING, *supra* note 91. The findings are implements in § 142ff of the Financial Services and Markets Act as amended by the Financial Services (Banking Reform) Act 2013, c. 33 (Eng.).

[389] Financial Services (Banking Reform) Act 2013, c. 33 (Eng.).

[390] *Id.* § 1.

[391] INDEP. COMM'N ON BANKING, *supra* note 91, at 9–10.

[392] Lothian, *supra* note 18*; see* Canova, *supra* note 18, at 369, 390.

[393] Iris H-Y Chiu, *The Vickers Independent Banking Commission Report—Does the Ring-fending of Retail Banks Mitigate Systemic Risk Concerns in the Banking Sector?*, 9 INT'L CORP. RESCUE 79 (2012).

uncertain to what extent they are protected from contagion.[394] Ultimately this measure applies to only a handful of the systemically important banks in the UK and does not provide an organic framework for dealing with systemically risky profiles in non-banking sectors and non-bank firms.[395]

Second, financial institutions should be imposed with duties to conduct financial intermediation in such a way as to not promote purely speculative activities. Such a duty is important for two reasons, one being that capital diverted to speculative activities is not put towards real economically productive purposes and can subvert the objective of financial intermediation to serve the real economy.[396] This "diversion" is observed at a significant scale as "speculative" activities have grown in volume,[397] and commentators note that the rise in "rentier" incomes made from speculating on financial assets, creates wider disparity between income that is generated from financial market activity and income generated from real economic productivity.[398] Second, high levels of financial risk, such as leverage and taking large trading positions are often associated with speculative activities,[399] and losses occasioned in this manner are both wasteful (in light of the first argument above) and could be catastrophic to the financial institution concerned[400] and perhaps entail systemic risk.

---

[394] *Id.*

[395] *See Ring-fencing,* FIN. CONDUCT AUTH., https://www.fca.org.uk/consumers/ring-fencing [http://perma.cc/3J85-YBWU].

[396] Jana Drutarovská, *Speculative Activities in the Financial Markets and its Relation to the Real Economy* 6 J. PUB. ADMIN., FIN. & L. 144, 147 (2014); Emilios Avgouleas, Presentation at Murray Edwards College, University of Cambridge, *From Speculative to Sustainable Finance: Can Markets Do Good?* (Jan. 19, 2007) ("Instead of resources being used to benefit society, they are held up in high frequency trading, or rather speculative trading strategies.").

[397] *See Drutarovská, supra* note 396, at 147.

[398] *See* Gerald Epstein & Arjun Jayadev, *The Rise of Rentier Incomes in OECD Countries: Financialization, Central Bank Policy and Labor Solidarity*, *in* FINANCIALIZATION AND THE WORLD ECONOMY 46 (Gerald A. Epstein ed., 2006); R.H. Tawney, *The Rentier and Financier*, John Maynard Keynes, *Speculation, Cyclicality and the Euthanasia of the Rentier*, Greta Krippner, *Accumulation and the Profits of Finance*, *in* FINANCIALIZATION AT WORK: KEY TESTS AND COMMENTARY 59, 78, 204 (Ismail Erturk et al. eds., 2008).

[399] Avgouleas, *supra* note 396.

[400] *See* Howard G. Chua-Eoan, *Going For Broke*, TIME, (Jun. 24, 2001) http://content.time.com/time/magazine/article/0,9171,133878,00.html

It can be argued that there is a thin line between speculative activities and activities that may perform the function of hedging for financial risks that are genuinely useful.[401] Further, why should one stop financial institutions from making financial profits out of speculation if "good judgment" is made on the markets? However, as Duffie acknowledges, speculative financial activities are zero-sum games.[402] We are of the view that it is highly uncertain that such zero-sum games, which make huge profits for one financial institution but inflict losses upon another financial institution, are either collectively beneficial or systemically non-hazardous. Further, behavioral psychologists show that similar attitudes are at play in speculative finance and gambling,[403] entailing hazards of addiction which compromise the need to make informed and sound investment and financial intermediation decisions. There are likely to be challenges in defining what regulators should prohibit as speculative in nature, and we suggest broadly that regulators could look at the scale of derivatives, leverage and margined trading activities[404] to discern the extent these represent hedging and risk management as proportionate to the business of financial intermediation. The duty not to speculate should form part of the conditions for authorising the financial business, and financial institutions should also have in place systems and controls to monitor culture and individual behavior so that purely speculative activities are not undertaken.

We also argue that the current UK regime[405] for imposing criminal liability on directors who have made a risky decision while "aware of a risk that the implementation of the decision may cause the failure of the . . . institution," and in taking such decision has conducted himself/herself in a manner "below what could reasonably be expected of a person in [his/her] position," does not address the

---

(discussing Nick Leeson's bets on the Nikkei Index in 1995 that caused Barings Bank to collapse).

[401] Darrell Duffie, *Challenges to a Policy Treatment of Speculative Trading Motivated by Differences in Beliefs*, 43 J. LEGAL STUD. 173, 178–81 (2004).

[402] *Id*.

[403] *See generally* Jennifer N. Arthur et al., *The Conceptual and Empirical Relationship Between Gambling, Investing, and Speculation*, 5 J. BEHAV. ADDICTIONS 580 (2006).

[404] *See* Jana Drutarovská, *Speculative Activities in the Financial Markets and its Relation to the Real Economy*, 6 J. PUB. ADMIN., FIN. & L. 144 (2014).

[405] Financial Services (Banking Reform) Act 2013, c. 33, § 36.

concern regarding speculative activities discussed above.[406] The UK regime is very narrowly framed as it compares the standard of conduct of an indicted financier with what other reasonable financiers would do, therefore merely endorsing and not changing extant financial practices.[407] The regime also only applies if the financial institution group should fail.[408] Hence this regime does not deter purely speculative activities as it sends out a message that risky activities are not deterred unless there is a "nuclear" risk of ultimate failure for the institution.[409] This regime does not cover episodes of significant losses or damage to stakeholders' interests for example.

Finally, we suggest that there is a case for the corporate charter of certain financial institutions to incorporate the collective social interest of its financial intermediation role. This would apply to systemically important financial institutions that have a wide social and economic footprint and pose risks to systemic financial stability. This would also apply to institutions that although not yet systemically important, serve important purposes of financial intermediation with significant economic and social implications. We envisage these to include retail-facing institutions such as deposit-taking institutions, pensions-managing financial institutions and their intermediaries, financial institutions that offer products with wide retail appeal, such as savings, investment and insurance products that are regarded to be in wide demand or are staple. We also envisage that financial institutions serving wholesale market needs would fall within our scope if they engender financial stability risks, such as some hedge funds. In other words, unless a financial institution is inconsequential upon failure or likely to engender contained adverse impact upon failure, such a financial institution should be included within the scope of financial corporations that should have a public interest objective in its charter.

---

[406] Schwarcz argues that the internalization of losses by responsible individuals in financial institutions more widely will play a significant part in deterring wrong-doing. *See* Steven Schwarcz, *The Governance Structure of Shadow Banking: Rethinking Assumptions about Limited Liability*, 90 NOTRE DAME L. REV. 1, 1 (2014). The deterrence effect flanks the current thinking on micro-prudential regulation in terms of avoiding crises and mitigating trouble but goes not go a step further to govern finance in terms of what it ought to serve.

[407] Financial Services (Banking Reform) Act 2013, c. 33, § 37.

[408] *Id.* § 36.

[409] *Id*.

We agree with Hockett and Omarova[410] in re-introducing a public interest objective into the charter of financial institutions, as part of the condition for authorization of business. In this age of financialization where extensive household, individual, corporate and sovereign needs in financial management are met through financial intermediation, financial institutions should not merely regard their roles as for-profit private organizations primarily accountable to shareholders.[411] Their role is crucially important to economic allocation at a macro level and has a social impact in terms of financial provision and wealth distribution, thus justifying treatment as a "public-private franchise."[412] Some commentators[413] have also mooted the "public interest" duty for directors of financial institutions, but Clark and Henderson's discussion of its implementation in Ireland raises some doubts as to how it is interpreted and the uncertainties such a framing has caused in terms of directors' discharge of their functions.[414] We believe it is of primary importance to introduce a public interest corporate objective that necessarily cascades into strategic decision-making and organizational structures and culture, and supports any form of "public interest" duty that directors may be imposed with. It approximates towards Lothian's vision of "reorganising finance" to serve the needs of the real economy.[415]

---

[410] *See* Robert Hockett & Saule T. Omarova, *"Special," Vestigial, or Visionary? What Bank Regulation Tells Us About the Corporation - and Vice Versa*, 39 SEATTLE U. L. REV. 453, 477–83 (2016).

[411] Simon Deakin, *Corporate Governance and Financial Crisis in the Long Run*, *in* THE EMBEDDED FIRM: CORPORATE GOVERNANCE, LABOR AND FINANCE CAPITALISM 15 (Cynthia A. Williams & Peer Zumbansen eds., 2011).

[412] Term used in Hockett & Omarova, *supra* note 410, at 453 ("In effect, it is a form of public–private "franchise" arrangement in which the public is the franchisor and private parties collectively serve as the franchisees.").

[413] *See, e.g.*, Steven Schwarcz, *Too Big to Fool: Moral Hazard, Bailouts, and Corporate Responsibility*, 102 MINN. L. REV. 761, 788 (2017) (proposing that managers of systemically-important financial firms should have a "public governance duty" to society to reduce excessive risk-taking); P.M. Vasudev, *Credit Derivatives and Risk Management: Corporate Governance in the Sarbanes-Oxley World*, J. BUS. L. 331, 352 (2009).

[414] Blanaid Clark & Gail E. Henderson, *Directors as Guardians of the Public Interest: Lessons from the Irish Banking Crisis*, 16 J. CORP. L. STUD. 187, 203–04 (2016).

[415] Lothian, *supra* note 18, at 70–71.

In this manner, it may be argued most financial institutions should be authorized upon the condition that they are incorporated into a special organizational form that gives effect to the public interest corporate objective, distinguished from the for-profit corporation whose governance is largely accountable to shareholders. "Shareholder primacy," which is an orientation based on maximising corporate wealth in order to maximize shareholders' wealth invested in the corporation,[416] may be an efficient way to control directors' agency problems is-à-vis shareholders,[417] but commentators have pointed out that financial corporations are different from other for-profit corporations.[418] In particular, banks are financed to a large extent by deposits, but depositors often only have a contractual right of demand for return of their deposit and no other governance or stakeholder rights in banks.[419] Banks and many financial corporations also generate significant amounts of funding from borrowing in institutional funding markets often on a short term basis, using the financial assets they hold as collateral.[420] Hence, financial corporations implicate many more stakeholders on the basis of their risk-taking, and conventional

---

[416] D. Gordon Smith, *The Shareholder Primacy Norm*, 23 J. CORP. L. 277, 278 (1998).

[417] Shareholders are treated by economists as "residual claimants," meaning that their supply of capital to the company is under an open-ended arrangement which renders them liable to be ultimate losers if the company should fail. The "residual claimant" status of the shareholders therefore requires protection so that managers do not abuse the privilege of being in control of the use and application of capital. *See* John Armour et al., *Agency Problems and Legal Strategies*, *in* THE ANATOMY OF CORPORATE LAW: A COMPARATIVE AND FUNCTIONAL APPROACH 29–30 (Kraakman et al. eds., 2017); Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure*, 3 J. FIN. ECON. 305, 340 (1976) (discussing the risky status of residual claimants vis-à-vis the operation of a public company);Oliver Williamson, *Corporate Governance*, 93 YALE L.J. 1197, 1210 (1984).

[418] *See, e.g.*, Penny Ciancanelli & Jose Antonio Reyes Gonzalez, *Corporate Governance in Banking: A Conceptual Framework* 3 (2000), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=253714 (discussing the impact of banks on the broader market system and suggesting that bank corporate governance in particular may require tailoring to mitigate systemic risk).

[419] *See* Daniel R. Fischel et al., *The Regulation of Banks and Bank Holding Companies*, 73 VA. L. REV. 301, 305–07, 318, 337 (1987).

[420] *See* MANMOHAN SINGH, COLLATERAL AND FINANCIAL PLUMBING 13 (2014) ("A great deal of short-term financing is generally extended by private agents against financial collateral.").

corporate governance structures and rights that flow from mainstream corporate finance structures are not necessarily appropriate for financial corporations.[421]

It would be necessary to explore a special organizational form, including structures, governance and rights, in order to integrate a public interest objective, adapted forms of directors' duties and accountability, and to provide for financial and non-financial stakeholders' rights and obligations.[422] The persistence with the for-profit corporation and its institutions of protection for a limited set of stakeholders, in particular the tendency to uphold shareholder primacy, would continue to pose challenges for governing finance towards public interest purposes and in a socially-embedded manner.[423]

---

[421] *See* Ciancanelli & Gonzalez, *supra* note 418.

[422] A blueprint for a corporation attuned towards a broader range of stakeholders is discussed in Iris H-Y Chiu, *Operationalising A Stakeholder Conception in Company Law,* 10 LAW FIN. MKT. REV. 173, 173–76 (2017).

[423] The adverse impact of shareholder primacy on banks, *see* Elisabetta Gualandri et al., *Internal Corporate Governance and the Financial Crisis: Lessons for Banks, Regulators and Supervisors* 4 (Dec, 13, 2011) (unpublished manuscript), http://ssrn.com/abstract=1971659; Karen Ho, *Disciplining Investment Bankers, Disciplining the Economy: Wall Street's Institutional Culture of Crisis and the Downsizing of "Corporate America,"* 111 AM. ANTHROPOLOGIST 177, 183 (2009); Lawrence J. White, *Corporate Governance and Prudential Regulation of Banks: Is There Any Connection*?, *in* RESEARCH HANDBOOK ON INTERNATIONAL BANKING AND GOVERNANCE 2–3 (James R. Barth et al. eds., 2012) (arguing broadly that the business model of banking has been shaped by embracing 'shareholder value', an ideology which encourages the corporate world to be obsessed with stock market prices and to take a short-termist approach to profitability). For empirical research on the adverse impact of shareholder primacy on bank risk-taking and financial performance, *see* Andrea Beltratti & René M. Stultz, *Why Did Some Banks Perform Better During the Credit Crisis? A Cross-Country Study of the Impact of Governance and Regulation* 3 (Nat'l Bureau of Econ. Research, Working Paper No. 15108, 2012), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1433502; Reint Gropp & Matthias Köhler, *Bank Owners or Bank Managers: Who is Keen on Risk? Evidence from the Financial Crisis* 4 (Eur. Bus. School Research Paper No 10-02, 2010), http://ssrn.com/abstract=1555663; Hanna Westman, *The Role of Ownership Structure and Regulatory Environment in Bank Corporate Governance* 1 (Jan. 14, 2010) (unpublished manuscript), http://ssrn.com/abstract=1435041.

B. Drawbacks of Introducing Legal Duties?

It may however be argued that the qualitative nature of legal duties entails vagueness and lack of certainty for financial institutions to organize and make strategic and operational decisions that need to be made quickly in competitive global markets. This would be counterproductive to their financial intermediation roles. Further, duties such as resisting a significant scale of activities in order not to become "systemically important" could be regarded as unnecessary in the light of existing regimes for competition regulation, and could be counter-productive for financial institution groups that enjoy economies of scale. A "public interest" charter in financial institutions could also become manipulated for political ends and subvert the efficient working of the financial institution.

Such critique on the one hand deals with the very qualitative nature of the proposed duties, but on the other hand simply deals with challenges in implementation, which is a more practical rather than conceptual issue.

The qualitative nature of regulating financial institutions for prudence is arguably necessary, as risk management is itself not an exact science.[424] The qualitative duties discussed above are better able to feed into strategic deliberations, operational consciousness and control and firm culture[425] than a form of compliance based on quantitative calculations that would be devolved to small departments of specialists.

Commentators have described financial risk management as dealing with the measurement and analysis of risks in the form of

---

[424] *See* JOHN BARTLETT, THE ESSENTIALS OF MANAGING RISK FOR PROJECTS AND PROGRAMMES (2017).

[425] The call for enterprise-wide risk management has been loud in the wake of the global financial crisis as business, operations and strategic parts of a financial firm should all be aware of and implement prudent risk management as inherent in their roles. This would call for a qualitative form of policy cascading in firms based on senior management leadership and effective systems, *see* EUR. BANKING AUTH., FINAL REPORT ON GUIDELINES ON INTERNAL GOVERNANCE UNDER DIRECTIVE 2013/36/EU ¶¶ 94–98 (2017); https://www.eba.europa.eu/documents/10180/1972987/Final+Guidelines+on+Internal+Governance+%28EBA-GL-2017-11%29.pdf [https://perma.cc/2EJG-6JYG]; Betty Simkins & Steven A. Ramirez, *Enterprise Wide Risk Management and Corporate Governance*, 39 LOY. U. CHI. L.J. 571, 572–73 (2008); René M Stultz, *Rethinking Risk Management*, in CORPORATE RISK MANAGEMENT 11–15 (Donald H. Chew ed., 2008).

"known" risks (k), "unknown risks" (u) and "unknowable" risks (U).[426] "Known risks" refer to risks that can be identified and quantified.[427] Often past data and statistical information are used in analytical models which use mathematical probabilities to generate risk measurements.[428]"Unknown risks" refer to risks that are not entirely unexpected although the likelihood of occurrence is uncertain, and the magnitude of the materialization of such risk is also not exactly predictable.[429] Hence, "unknown risks" present problems of objective measurability.[430] "Unknowable risks" refer to risks that are unexpected and therefore not measured at all.[431] Often, systemic type events may be regarded as manifestations of "unknowable risk."[432] This taxonomy of risks shows that some risks may be more easily measured than others and Kuritzkes et al.[433] have in an empirical study found that market risk is the easiest to measure due to the availability of market transparency and is therefore managed to a greater extent in banks and financial institutions. Credit, operational, legal and reputational risks are much harder to measure by comparison. Unknown and unknowable risks can also be augmented by behavioral weaknesses.[434] The uncertainties in measuring risk provided room for financial institutions in the pre-crisis era to underestimate such risks when there were strong incentives to engage in the business that could generate high returns.[435] Further the errors in risk measurement were

---

[426] Richard J. Herring, *The Known, the Unknown, and the Unknowable in Financial Policy: An Application to the Subprime Crisis,* 26 YALE J. ON REG. 391, 391–92 (2009); Phillippe Jorion, *Risk Management Lessons from the Credit Crisis*, 15 EUR. FIN. MGMT. 923, 929–30 (2009); Andrew Kuritzkes & Til Schuermann, *What We Know, Don't Know and Can't Know about Bank Risk: A View from the Trenches*, *in* THE KNOWN, THE UNKNOWN AND THE UNKNOWABLE IN FINANCIAL RISK MANAGEMENT 2 (Francis X. Diebold et al. eds., 2010).

[427] Kuritzkes *supra*, note 426, at 2.

[428] JOËL BESSIS, RISK MANAGEMENT IN BANKING xi, §§ 4–5 (2011).

[429] Kuritzkes *supra*, note 426, at 2.

[430] *Id.*; Jorion, *supra* note 426, at 929–30.

[431] Kuritzkes, *supra*, note at 426, at 2.

[432] *Id.*

[433] *Id.*

[434] *See* IRIS H-Y CHIU, REGULATING (FROM) THE INSIDE: THE LEGAL FRAMEWORK FOR INTERNAL CONTROL IN BANKS AND FINANCIAL INSTITUTIONS (2018).

[435] Arnold Kling, *The Financial Crisis: Moral Failure or Cognitive Failure?*, 33 HARV. J. L. & PUB. POL'Y 507, 508 (2010); Karl S. Okamoto, *After the Bailout: Regulating Systemic Moral Hazard*, 57 UCLA L. REV. 183,

augmented by subjective assumptions made in light of cognitive biases.[436] Unknown and unknowable risks have been underestimated due to changes in the business models of financial institutions,[437] informational and liquidity problems,[438] errors of judgment,[439] and over-optimism.[440]

There are thus limitations to quantitatively and objectively managing unknown and unknowable risks, and it is arguably misleading to steer the judgment and behavior of financiers towards managing the quantitative thresholds set in micro-prudential regulation as a proxy for safe risk management.[441] Imposing qualitative duties is proportionate to, and coheres with, the nature of managing the full suite of financial risks as matters of strategic, business, and operational judgments, which are highly qualitative in nature.[442] The financial institution should adhere to the three duties of ensuring that their profile is accountable for systemic implications, their financial intermediation is not purely speculative, and their financial intermediation is consistent with the public interest, which are qualitative dimensions that shape financial decision-making at firms.[443] These duties are envisaged to work with economic levers and quantitative

---

214 (2009). Kose John et al., *A Theory of Bank Regulation and Management Compensation* 13 REV. FIN. STUD. 95, 96 (2000) is an early paper that has warned that incentives such as in remuneration fundamentally affect risk-taking at banks and financial institutions.

[436] RICCARDO REBONATO, PLIGHT OF THE FORTUNE TELLERS: WHY WE NEED TO MANAGE FINANCIAL RISK DIFFERENTLY 18ff, 28ff, 43ff, 127ff, 144ff (2007).

[437] Michel Crouhy, *Risk Management Failures During the Financial Crisis, in* LESSONS FROM THE FINANCIAL. CRISIS 288 (Robert W. Kolb ed., 2010).

[438] *Id.* at 283–84. *See also infra* Section III.

[439] Robert T. Miller, *Oversight Liability for Risk-Management Failures at Financial Firms*, 84 S. CAL. L. REV. 47, 60 (2010).

[440] Steven L. Schwarz & Lucy Chang, *The Custom-to-Failure Cycle*, 62 DUKE L.J. 767, 776–82.

[441] Miller, *supra* note 442, at 113.

[442] Robert F. Weber, *An Alternative Story of the Law and Regulation of Risk Management*, 15 U. PA. J. BUS. L. 1005, 1065 (2013) (quoting Annette Mikes, *Chief Risk Officers at Crunch Time: Compliance Champions or Business Partners*, 2 J. RISK MGM'T FIN. INSTITUTIONS 7, 16 (2008)).

[443] *See* Andenas & Chiu, *supra* note 190, at 358.

tools that regulators should deploy appropriately in supervisory assessments.[444]

At a less challenging level, the critiques levied against qualitative duties are implementational in nature, such as in relation to how "speculative" activities are defined, when a "systemic profile" threshold is crossed, and how "public interest" is interpreted.[445] These are important as they set the boundaries for conduct that can be enforced against.[446] However, they are also not insurmountable, as legal duties are replete with qualitative norms that require judicial and administrative interpretation. At the very least, as mentioned above, we propose that "speculative" be defined in accordance with purpose and scale in relation to the financial intermediation business of the financial institution. It is envisaged that supervisory relationships provide a context for such interpretations to be framed and defined, and such interpretation would not necessarily result in a financial institution being slapped with a nuclear enforcement without adequate notice or due process of challenge.[447] The interpretation of "systemic profile" or "public interest" would also be fostered in the context of supervisory processes and exchanges, as well as judicial interpretation, where challenge is made.[448] Compelling financial institutions to give an account of how they perceive and manage risks and how they relate to their socially important purposes in financial intermediation helps

---

[444] *Id.* at 38 (citing Joanna Gray & David Bholat, *Law, Systemic Risk, and Reliance—Are We Asking the Right Questions?*, Berle IV Symposium, London (June 14–15, 2012)).

[445] *Id.* at 30.

[446] *Id.* at 359 ("[T]here are limits to what can be achieved in making financial business safer without overly interfering with the freedom to generate wealth.").

[447] Indeed, the U.K. regulators set out their supervisory frameworks clearly, and enforcement is usually after a thematic review of the industry, an in-depth supervisory audit, or report into a financial institution has been made. *See, e.g.*, BANK OF ENG., OUR APPROACH TO BANKING SUPERVISION 31 (2012), http://www.fsa.gov.uk/static/pubs/other/pra-approach-banking.pdf [https://perma.cc/CP49-3GHY]; FIN. CONDUCT AUTH., FCA FACTSHEET 1, https://www.fca.org.uk/publication/other/factsheet.pdf [https://perma.cc/4YAN-SAUA].

[448] The administrative law of the regulators' powers is a growing area in the U.K. as the PRA and FCA undergo challenges in the Upper Tribunal for Chancery and Tax and useful jurisprudence is produced. *See, e.g.*, British Bankers Ass'n. v. Fin. Servs. Auth. [2011] EWHC (Admin) 999 (Eng.).

foster a more accountable and embedded financial services industry in its institutional and social context.[449]

It may be argued that the proposed legal duties are no different from the qualitative regulation of corporate governance and risk management highlighted earlier in Section C. Firms would need to interpret how to comply with qualitative duties and would inevitably install governance, systems, and procedures to do so. It can be argued that legal duties would only give rise to procedural forms of compliance and would go no further in actually moderating financial firms' excessive or imprudent ambitions, or weed out "socially useless" speculative activities. We are, however, of the view that these qualitative duties are not servant to quantitative thresholds in micro-prudential regulation, but provide the framework for any quantitative tools to be used, i.e., in a "master" and not servant relationship to economic levers for behavior. In this way, legal duties provide a framework for the *ex ante* supervisory judgment of a financial institution's prudential management, but also reinforce *ex post* enforcement of the financial institution's judgment of its prudential risk management.

We see the legal duties as providing an *ex ante* framework for regulators to assess each regulated financial institution's prudential risk management so that appropriate supervisory judgments can be made in relation to the regulator-regulated dialogue on how behavior should be shaped. But such legal duties also provide the legal framework for *ex post* enforcement, such as by regulators and in civil actions against financial institutions.[450] *Ex post* enforcement is important, as a financial institution would have to justify its conduct in care or in speculative-type activities regarding how it has served its public interest purposes in financial intermediation.[451] Such accountability re-embeds the conduct of finance in the social fabric, which is less likely achieved by technocratic applications of compliance with quantitatively-calibrated rules. The *ex post* enforcement reinforces *ex ante* supervision,[452] bringing about a coherent and consistent signal of governance for banks in relation to their prudential risk management,

---

[449] ANDENAS & CHIU, *supra* note 6, at 108–09.
[450] *Id*. at 447.
[451] *Id.* at 371.
[452] The importance of these two dimensions is discussed in Iman Anabtawi and Steven L. Schwarcz's article, "Regulating Ex Post: How Law Can Address the Inevitability of Financial Failure*"* although in relation to a different combination of *ex ante* and *ex post* rules. 92 TEX. L. REV. 75, 100 (2013).

and brings together the regulator and the financial institution's stakeholders in a more comprehensive governance space for the financial institution.[453]

Of course, there is a need to ensure that regulatory supervision is credible and robust, and the quality of regulatory supervision could be another story. Regulatory capture is acknowledged to be a problem,[454] and there is a need to recruit, train, empower and equip regulators and also make them accountable to a diversity of government, judicial and stakeholder channels[455] in order to support the robustness and credibility of regulatory supervision. There are international efforts related to improving supervisory architecture and best practices.[456] As the Basel Committee has also taken steps to formalize regulatory cooperation and dialogue,[457] regulators could also engage in such exchanges in terms of how they administer qualitative duties in order to detect gaps and loopholes for regulatory arbitrage and foster an international system based on common principles and regulatory goals. At the EU level, European Supervisory Authorities provide public accountability through annual reporting[458] and engage intensively with stakeholders.[459] The UK as a national regulator is transparent about its supervisory framework,[460] informs the industry

---

[453] ANDENAS & CHIU, *supra* note 6, at 443.

[454] Stavros Gadinis, *From Independence to Politics in Financial Regulation*, 101 CALIF. L. REV. 327 (2013); Daniel C. Hardy, *Regulatory Capture in Banking* (IMF Working Paper WP/06/34, 2006), http://ssrn.com/abstract=892925.

[455] *See* sources cited *supra* note 350.

[456] BASEL COMM. ON BANKING SUPERVISION, *supra* note 237; FIN. STABILITY BD., KEY ATTRIBUTES OF EFFECTIVE RESOLUTION REGIMES FOR FINANCIAL INSTITUTIONS (2014), http://www.fsb.org/2014/10/key-attributes-of-effective-resolution-regimes-for-financial-institutions-3 [https://perma.cc/K6Q7-4GC9].

[457] BASEL COMM. ON BANKING SUPERVISION, *supra* note 96.

[458] EUR. SECS. & MKTS. AUTH., ANNUAL REPORT (2017), https://www.esma.europa.eu/document-types/annual-report [https://perma.cc/U28N-CPND]. *See also* EUR. BANKING ASS'N, ANNUAL REPORT (2017), http://www.eba.europa.eu/about-us/annual-reports [https://perma.cc/87J3-JSTA].

[459] Stakeholder panels are mandatory for the European Supervisory Agencies and the European Systemic Risk Board. Council Regulation 1093/2010, art. 37, 2010 O.J. (L 331); Council Regulation 1095/2010, 2010 O.J. (L 331); Council Regulation 1092/2010, art. 14, 2010 O.J. (L 331). The Authorities also engage in public consultation extensively and hold public days of engagement for stakeholders such as the Consumer Day.

[460] *See* Clark & Henderson, *supra* note 410.

and public of forthcoming supervisory themes in annual business plans[461] and is itself subject to government, judicial and stakeholder accountability,[462] such as the FCA's annual public meetings.[463] The article does not propose to engage in more detail regarding regulatory structures and powers, but a broad point can be made—even if regulators may not be perfect, genuine endeavors can be made towards supporting regulatory capacity and expertise in governing the regulated industry in a credible and accountable manner.

VI. Conclusion

This article takes stock of the post-crisis regulation for financial institutions' prudential safety and their impact on financial stability, and acknowledges that the earlier micro-economic and quantitative methods of micro-prudential regulation that have failed to shape bank behavior optimally have given way to "new and improved" law and economics approaches to micro-prudential regulation. These "new and improved" regulatory approaches infuse macro-economic perspectives into micro-prudential regulation and also calibrate the quantitative nature of micro-prudential regulation to become more conservative and demanding in terms of setting regulatory prices for risk-taking.

However, the "new and improved" law and economics approaches to post-crisis micro-prudential regulation have to grapple with the need for complex and precise regulatory pricing for risks and has led to rulebooks that are prescriptive, long, complex and arguably unwieldy. Such regulation in its quantitative focus also risks becoming dis-embedded from regulatory goals and social good while not being clearly related to the social expectations for finance, such as serving

---

[461] *See, e.g.*, BANK OF ENG. PRUDENTIAL REGULATION AUTH., BUSINESS PLAN 2018/19 (2018), https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/publication/pra-business-plan-2018-19.pdf?la=en&hash=6F17C11CD4579E3E25FBAFB8AE2FD3A67DF2DFE6 [https://perma.cc/76QD-M2RV]; FIN. CONDUCT AUTH., BUSINESS PLAN 2018/9 (2018), https://www.fca.org.uk/publication/business-plans/business-plan-2018-19.pdf [https://perma.cc/LTS5-6HDK].

[462] *See* Financial Services and Markets Act 2012 (amending Financial Services and Markets Act 2000), c. 21, schs. 1ZA (FCA), 1ZB (PRA), pts. 1N–Q, 2M–N (Eng.); Eva Lomnicka, *Making the Financial Services Authority Accountable*, J. OF BUS. L. 65 (2000).

[463] Financial Services and Markets Act 2012 (amending Financial Services and Markets Act 2000), c. 21, sch. 1ZA (Eng.).

the real economy, desisting from "socially useless" speculation and protecting financial stability.

We propose that the substantive public interest and social goods that we desire finance to serve can better be framed in relation to qualitative legal duties for financial institutions, namely to justify their attainment of systemically important profiles and to take extra prudential care if they do, to desist from purely speculative activities that do not serve a genuine or proportionate purpose to their financial intermediation business and to be subject to a public interest purpose in their corporate charters. Although legal duties are qualitative in nature and require interpretation in order to become refined and more certain, they can better foster a consciousness for regulatory compliance that is embedded in regulatory goals and social expectations. We discuss the contours of the legal duties we have sketched and the promise they hold in transforming the efficacy of prudential regulation for financial institutions, while acknowledging the challenges for implementing these.