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Top-Down Bank Capital Regulation

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I. INTRODUCTION

Suitable regulation of large, systemically important financial institutions remains an elusive goal since the Financial Crisis of 2008. While the United States was quick to respond to the Crisis with the passage of the Dodd-Frank Wall Street Reform and Consumer Protection Act[1] ("Dodd-Frank"), that legislation remains controversial. On the one hand, Congress has given serious consideration to new legislative proposals that would shorten Dodd-Frank's reach.[2] On the other hand, Democratic presidential candidates spar over whether Dodd-Frank is a good law in need of tweaking or is a weak law requiring significant overhaul.[3]

In the midst of the continuing debate stands the regulation of banks' capital. Capital regulation—which constrains the amount of a bank's debt in relation to its equity—has emerged as the centerpiece of modern regulation. While significant debate exists over the appropriate levels of required capital, consensus opinion supports this form of regulation as an appropriate and necessary response to financial crises. More capital and less debt makes banks more resilient and better able to withstand inevitable economic crises. Naturally, the devil is in the details, and the debate regarding capital regulation largely boils down to the question of how much capital is enough, or, on the flip side, how much debt is too much.

Proponents of higher capital requirements claim that the regulation

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1. Pub. L. No. 111-203, 134 Stat. 1376 (2010).

2. *See, e.g.*, The Financial Regulatory Improvement Act of 2015, S. 1484, 114th Cong. (2015), http://www.banking.senate.gov/public/index.cfm/key-issues [https://perma.cc/Q5RE-5KUT] (proposing, among other things, the elimination of the automatic designation of certain bank holding companies as systemically important financial institutions).

3. Laura Meckler, Ryan Tracy & Andrew Ackerman, *Clinton, Sanders Offer Contrasting Approaches to Wall Street Regulation*, WALL ST. J., Jan. 15, 2016, http://www.wsj.com/articles/sanders-clinton-offer-contrasting-approaches-to-wall-street-regulation-1452887307 [https://perma.cc/68EB-4BQK].

of capital solves most problems associated with banks' operations and that it might even eliminate the need for other types of regulation. Opponents of higher capital requirements claim such regulations increase the costs of banks' operations and therefore restrict the credit available to the overall economy. Between these extreme views is the reality that determining the appropriate mix of debt and equity involves a significant amount of guesswork with regard to how much capital is necessary to make and keep banks safe. Along with that guesswork comes a significant risk of error.

Given the obvious benefits of capital, policy makers raised regulatory capital requirements so that banks are now required to fund more of their operations with equity than in the years prior to the Crisis. Yet, many believe that capital rules, in the form of minimum ratios applied to all banks, are still much too low—asserting that such required ratios will not provide the necessary solvency protection in the event of another major crisis. A review of current regulatory practice shows that bank regulators also treat the current capital ratios as insufficient. Bank regulators, utilizing their significant discretionary authority, regularly impose higher capital requirements on individual firms.[4] This practice demonstrates the reality that current capital ratios are not just minimum, but *bare minimum*, ratios. Agency rules set these bare minimum ratios, but agencies impose higher requirements through administrative enforcement powers and capital planning related stress testing.[5] The result is a system of bottom-up regulation with the rules providing a thin foundation on which the supervisory process builds.

Yet in this bottom-up system, the risk of error in determining appropriate levels of capital remains at the feet of regulators and, therefore, ultimately, the public. If it turns out that a very large bank, in particular, is undercapitalized and fails, losses will be borne by the public via government subsidies and harm to the overall economy.

The risks associated with determining sufficient capital could be more sensibly addressed by flipping the current practice from a bottom-up to a top-down system of capital regulation. In a top-down system, capital ratios applicable to all banks would be set high—high enough so that the risk of undercapitalization is very small. The opposite risk, the risk associated with requiring excessive capital, would be addressed through a supervisory process, in which banks could be permitted, on a firm-by-firm basis, to operate below capital levels set by rule.

The top-down system must go one step further to insulate the public from the risk of error. Therefore, the top-down system relies on

4. *See infra* Part IV.
5. *Id.*

the well-established premise that bank managers are ultimately responsible for capital adequacy—appropriate, given their superior knowledge of their firms' operations and risk management. Thus, the top-down system would access that superior knowledge and provide incentives to avoid error by relying on bank managers to determine appropriate capital adequate levels.

In this way, if a bank wished to operate at a ratio lower than required under applicable rules (which now serve as a safe harbor), the bank's management could apply to regulators for an exemption from the rules. Such an application would require management to assure bank regulators that the bank could operate safely at lower levels of capital. To create appropriate incentives for a meaningful application (as opposed to a pro forma statement that lower capital is adequate), an application would serve as the basis for personal liability (including appropriate fines and other penalties) against managers if their assertions regarding capital adequacy proved wrong. Thus, given the risk of error, the top-down system provides for safer banks and appropriate loss allocation. Bank managers would be responsible for error if they seek exemption from capital rules, but may also choose to enjoy safe harbor protections.

In proposing a top-down system of capital regulation, this Article shares a precautionary attitude toward bank regulation found increasingly in post-Financial Crisis scholarship. The viewpoint is one that favors *ex ante* financial regulation[6] in which regulators are charged with avoiding public harm.[7] More broadly, this Article rejects the notion that regulation is the enemy of markets and therefore must be minimized. Regulation is viewed neutrally—neither inherently good nor inherently bad—as a co-existing partner in highly complex and ever evolving financial markets.[8]

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6. As discussed *infra* notes 41–44 and accompanying text, bank supervision, which includes extensive monitoring of individual firms, is a form of *ex ante* regulation in that the purpose of such monitoring is not just to identify violations of law but also to avoid them.

7. *See, e.g.*, Steven L. Schwarcz, *Misalignment: Corporate Risk-Taking and Public Duty*,(Duke L.Sch. Pub. L. & Legal Theory Ser. No. 2015-40, 2016), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2644375 [https://perma.cc/63DM-ZS38] (discussing the application of a precautionary principle to corporate decisionmaking in systemically important firms); Hilary Allen, *A New Philosophy for Financial Stability Regulation*, 45 LOY. U. CHI. L.J. 173 (1973) (proposing the application of the precautionary approach to financial stability regulation); Saule T. Omarova, *License to Deal: Mandatory Approval of Complex Financial Products*, 90 WASH. U. L. REV. 63 (2012) [hereinafter Omarova, *License to Deal*] (proposing a system of *ex ante* licensing of complex financial instruments).

8. In the commenting on the post-Financial Crisis reaction to the pre-Financial Crisis blind belief in markets as the master of risk, Dan Awrey observes: "Just as market fundamentalism has been found wanting in the wake of the [Global Financial Crisis], so too will any approach to regulation which favors ideological purity over the rigorous and ongoing evaluation of the market frictions and market failures that attract regulatory scrutiny and the anticipated costs and benefits of various forms of regulatory intervention." Dan Awrey, *Complexity, Innovation, and the Regulation of Modern Financial Markets*, 2 HARV. BUS. L. REV. 235, 240–41 (2012).

To develop the case for a top-down system of capital regulation, this Article continues as follows, Part II describes the normative foundations of bank regulation—setting the stage for the examination of the importance of capital regulation. Part III overviews the distinctive elements of rulemaking and supervision in the bank regulatory regime. Part IV briefly maps the development of capital regulation and surveys the current rules and supervision. Part V considers the limitations of capital regulation, which serve as the foundation for proposals for significantly higher capital. Finally, Part VI sets forth a proposal in support of higher capital ratios through the top-down mechanism.

II. THE FOUNDATIONS OF BANK REGULATION

Long before the terms "too-big-to-fail" ("TBTF") or "systemically important" were ever coined, banks—large and small—were subjected to a system of prudential regulation (also known as "safety and soundness" regulation).[9] Since the Financial Crisis, two forms of prudential regulation are often identified—micro-prudential regulation, and macro-prudential regulation. Micro-prudential regulation seeks to avoid bank failure, while macro-prudential regulation seeks to limit risks associated with financial institutions more broadly.[10] Although the two forms of prudential regulation overlap, this Article primarily focuses on micro-prudential, asking: how can regulation reduce the likelihood of individual bank failure? Before entering into a discussion of any particular mechanism for preserving banks' safety and soundness through micro-prudential regulation, it is appropriate to consider the normative basis for bank regulation. The discussion below groups the normative basis for bank regulation into three (potentially overlapping) orientations: functional, market-based, and public interest.[11]

A functional account for bank regulation is perhaps the most traditional. According to this view, the prudential regulation of banks seeks to protect banks from failure because of their importance to the overall economy. The so-called "specialness" of banks derives from the unique services they provide customers in the form of both payments and liquidity.[12] While banks provide these essential services, they are

9. The first federal bank regulator, the Office of the Comptroller of the Currency ("OCC"), was established in 1863. *History: 150 Years of the OCC*, OFFICE OF THE COMPTROLLER OF THE CURRENCY, http://www.occ.treas.gov/about/what-we-do/history/index-history.html [https://perma.cc/RS4F-XQF9].

10. For discussion on the difference between micro and macro prudential regulation, see MARKUS K. BRUNNERMEIER, ET AL., THE FUNDAMENTAL PRINCIPLES OF FINANCIAL REGULATION, xvi (2009).

11. Similarly, Professor Omarova identifies three forms of, overlapping, financial regulation: risk regulation, economic regulation, and social regulation. Omarova, *License to Deal*, *supra* note 7, at 79.

12. For the classic exploration of banks' special role in the economy, see E. Gerald Corrigan,

fragile as a result. Banks hold, on the one hand, short-term liabilities (e.g., bank deposits) and, on the other hand, long-term assets (e.g., mortgage loans). In doing so, banks suffer from maturities mismatch, meaning their liabilities are due in the short term but their assets are available only in the long term. In addition, as will be discussed in detail below, banks utilize significant leverage which also serves as an important source of their fragility. Therefore, these special institutions are also financially fragile and in need of regulation to protect them from insolvency.

An economist's view of the purpose of bank regulation naturally focuses on banks' role in a market-based economy. Much like coal-fired factories, the failure of a bank generates negative externalities or spillover effects.[13] In other words, when banks fail—particularly the very large ones—it is not just the banks' shareholders, creditors, and employees who suffer. The wider economy suffers when banks fail because the loss of, for example, payment services causes households and businesses to suffer. And the decrease in the availability of credit to the economy can cause or worsen an economic slowdown. Therefore, an economist would explain that the regulation of banks is necessary to correct a market failure— the negative externality.[14]

A growing number of commentators have moved away from both the functional description (with its emphasis on the uniqueness of services banks provide) and the economist's explanation (which emphasizes the proper functioning of private markets). Many commentators now favor a view of bank regulation that emphasizes the broad public interest.[15] According to this view, bank regulation is not an extrinsic force applied to private firms, but is endogenous to special institutions that are created by governments to serve the public. Much like utilities, banks operate not primarily to generate profit for their

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Annual Report 1982; Are Banks Special?, MINNEAPOLIS FED. RESERVE BANK (1982), https://www.minneapolisfed.org/publications/annual-reports/ar/annual-report-1982-complete-text [https://perma.cc/YQ3M-SDFK]. Professors Carnell, Macey and Miller observe:

> The claim that banks are special thus has a curious dual aspect. On the one hand, it justifies regulatory interventions uncommon or unknown in other businesses. Few businesses face such pervasive governmental control. In this respect we could view banks as specially *disfavored* because government regulation pervasively limits their freedom of action. On the other hand, the claim to specialness also justifies regulator *favors* for banks. Few other businesses can offer creditor the protection afforded by government deposit insurance. Few have ready access to a governmental lender of last resort. Few have benefitted so handsomely from regulatory constraints on competition.

RICHARD SCOTT CARNELL ET AL., THE LAW OF FINANCIAL INSTITUTIONS 57–58 (5th ed. 2013).

13. *See generally* Joseph Stiglitz, *Regulation and Failure*, *in* NEW PERSPECTIVES ON REGULATION 11 (David Moss & John Cisternino eds., 2009).

14. *See* BRUNNERMEIER ET AL., *supra* note 10, at xvii ("We regulate in order to internalize these externalities").

15. The public interest view of banking is not new. *See, e.g.*, Schaake v. Dolley, 118 P. 80, 83 (Kan. 1911) ("The public patronage which the banker invites and receives is of such a character that he becomes in a just sense a trustee of the fiscal affairs of the people and of the state.").

shareholders, but rather to provide necessary services to the public.[16] This public interest view takes various shapes. Broadly, banks are seen as a mechanism through which governments implement ongoing social policy.[17] More narrowly, banks are seen as fundamentally private institutions which enjoy legal privileges (such as limited liability) and government subsidies (like deposit insurance).[18] In exchange for such privileges, banks must be subjected to regulation to ensure that the banks' operations are consistent with the public interest.[19]

The normative perspective of bank regulation matters.[20] The traditional functional view of bank regulation is sustainable only if banks provide unique services not otherwise available to businesses and households.[21] The economist's story of market failure tends to favor very limited regulation. That is, regulation which only seeks to correct a measurable market failure, which must be justified under rigorous cost/benefit type analysis.[22] The public interest justification can support a less tentative regulatory role because banks are treated as a

16. While he was Kansas City Federal Reserve President, Federal Deposit Insurance Corporation ("FDIC") Vice Chairman Thomas Hoenig labeled banks public utilities and suggested that they be regulated as such. *See* Daniel Indiviglio, *Should Big Banks Be Regulated as Utilities?*, THE ATLANTIC April 14, 2011, http://www.theatlantic.com/business/archive/2011/04/should-big-banks-be-regulated-as-utilities/237342/ [https://perma.cc/754E-MJX4]. Lord Adair Turner, chair of the United Kingdom's Financial Services Authority, made waves when he questioned the "social usefulness" of investment banking activities. Andrew Ward & Patrick Jenkins, *Building Banks a Branch at a Time*, THE FINANCIAL TIMES, Feb. 17, 2010, http://www.ft.com/cms/s/0/d2cd4d06-1bf6-11df-a5e1-00144feab49a.html#axzz3z3EbJER6 [https://perma.cc/A64R-ZKGR]; *see also* John Cassidy, *What Good is Wall Street?*, THE NEW YORKER, Nov. 29, 2010, http://www.newyorker.com/magazine/2010/11/29/what-good-is-wall-street [https://perma.cc/2FMT-976M]. Addressing systemically important financial institutions in particular, Professor Steven Schwarcz argues in favor of expanding managers' private corporate governance duty to investors to also include a public corporate governance duty to society. Steven L. Schwarcz, *Keynote Reflections: The Public Governance Duty*, 50 GA. L. REV. __ (forthcoming 2016) (on file with author) [hereinafter Schwarcz, *Keynote Reflections*].

17. Hocket and Omarova describe a developmental finance state in which the government participates actively in financial markets. *See generally,* Robert C. Hockett & Saule T. Omarova, *Public Actors in Private Markets: Toward a Developmental Finance State*, 93 WASH. U. L. REV. 103 (2015). Recognizing the "social contract" between banks and governments, Mehrsa Baradaran proposes a federally owned bank to serve the needs of lower income individuals. MEHRSA BARADARAN, HOW THE OTHER HALF BANKS: EXCLUSION, EXPLOITATION, AND THREAT TO DEMOCRACY (2015). Allen, *supra* note 7, at 177.

18. A group of twenty prominent academics argue that regulation should strive to create healthy banks that provide useful services rather than maximum returns for shareholders and managers. Anat Admati et al., *Heathy Banking System is the Goal, not Profitable Banks*, THE FINANCIAL TIMES, Nov. 9. 2010.

19. *Id.*

20. *See* Richard J. Parsons, *Warring Ideologies Dash Small Banks' Hope for Reg Relief*, AMERICAN BANKER, Sept. 25, 2015, http://www.americanbanker.com/bankthink/warring-ideologies-dash-small-banks-hopes-for-reg-relief-1076927-1.html [https://perma.cc/A94F-M8ZV] (discussing the impact of differing ideology on bank regulation).

21. The growth of alternative, non-bank payment system providers could, for example, undermine this justification. *See* Ronald J. Mann, *Regulating Internet Payment Intermediaries*, 82 TEX. L. REV. 681, 683–90 (2004) (discussing the development of unregulated payment systems).

22. *See* Allen, *supra* note 7, at 177 ("Unfortunately, because of the difficulties inherent in providing hard empirical evidence of the benefits of financial stability rules, such rules . . . are unlikely to be able to withstand the application of a strict cost-benefit analysis standard of review, and are thus likely to be invalidated if challenged.")

government instrumentality inherently subject to significant democratic control.

III. BANK REGULATION: RULEMAKING AND SUPERVISION

Given the many ways to justify the regulation of banks, it should come as no surprise that banks are subject to extensive regulation.[23] Here, the term "regulation" is used in its broadest sense to include all forms of agency control over regulated entities. This includes: (1) agency rulemaking, an administrative process that involves writing proscriptive rules that apply to all regulated entities, and (2) agency supervision, the administrative processes that involve application of rules to specific firms through bank examination and enforcement.[24] Below is an overview of the regulation of banks, beginning with a summary of rules that apply to all banks (or large categories of banks) and then a discussion of the process of firm-specific examination and enforcement.

Prudential rules traditionally have sought to protect banks from failure primarily by limiting entry into the banking business and by restricting banks' activities. Thus, significant barriers surround the business of banking in the form of licensing and other entry restrictions. Banks are subject to a special chartering process which is extensive and substantive and, therefore, very distinct from the essentially *pro forma* process for incorporating other business entities.[25] Bank organizers must meet fitness standards[26] and must demonstrate knowledge of the principles of safety and soundness.[27] Perhaps more importantly, once a bank receives a charter, its activities are restricted. Banks are prohibited from engaging in commercial (i.e. non-financial) activities.[28] And, even within the financial sphere, banks' activities are limited.[29]

23. Several agencies are responsible for bank regulation at the federal level. The FDIC is the primary federal regulator for state-chartered, commercial banks that are not members of the Federal Reserve System ("Federal Reserve"). 12 U.S.C. § 1813(q)(2) (2012). The OCC is the primary federal regulator for nationally-chartered commercial banks and savings institutions. *Id.* § 1813(q)(1). The Board of Governors for the Federal Reserve is the primary regulator for bank holding companies and state-chartered, commercial banks that are members of the Federal Reserve, as well as certain non-bank financial companies. *Id.* §§ 1813(q)(3), 5323(a).

24. For a full discussion of the examination and enforcement process, see RICHARD SCOTT CARNELL ET AL, *supra* note 12, at 431–83.

25. For an extensive discussion of the chartering process for banks, see Robert C. 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, 474–83 (2016).

26. For example, the organizers of a federally chartered bank (called "national" banks) must demonstrate that they "have the experience, competence, willingness, and ability to be active in directing the proposed national bank's affairs in a safe and sound manner." Organizing a National Bank or Federal Savings Association, 12 C.F.R. § 5.20(g)(1) (2015).

27. 12 C.F.R. § 5.20(h)(6).

28. National banks may engage only in activities related to the "business of banking" as set forth in the National Bank Act. National Bank Act, 12 U.S.C. § 24 (2014).

29. Bank holding companies (essentially, a bank's parent company) are restricted to activities

For example, the Glass-Steagall Act[30] famously separated commercial banking from investment banking, and vice versa.[31] More recently, Congress enacted the Volcker Rule,[32] a provision within Dodd-Frank, which prohibits banking entities from engaging in proprietary trading, and limits their relationships with hedge funds and private equity funds.[33] Banks' permitted activities are heavily regulated as well. For example, banks are limited in the size of loans they can make to one borrower.[34] A bank may lend to its officers and directors only in accordance with specific rules.[35] Banks' ability to transact with its affiliates is also regulated.[36]

In addition to the regulation of banks' activities, the overall mix of banks' assets and liabilities is also a frequent target of regulation. As discussed in Part IV, capital regulation has emerged as a centerpiece of modern bank regulation. Capital regulation limits the extent to which a bank can fund its activities with debt. The overall purpose of capital regulation is to limit the risk of insolvency associated with banks that carry too much debt. Regulations focused on a bank's sources of funds take the form of various ratios that impose limits on the bank's debt.

In addition, banks are often vulnerable to insolvency when they lack sufficient liquid assets to meet their current obligations. Banks are particularly vulnerable to this liquidity type of insolvency because many of their liabilities have short-term maturities (e.g., deposits, repurchase

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that are "so closely related to banking." 12 U.S.C. § 1843(c)(8). The activities of "financial holding companies" (well managed; well capitalized bank holding companies) are limited to those activities that are "financial in nature." 12 U.S.C. § 1843(k)(1).

30. Glass-Steagall Act (Banking Act of 1933), Pub. L. No. 73-66, 48 Stat. 162 (1933).

31. The provisions of Glass-Steagall which prohibited banks from affiliating with securities firms were repealed by the Gramm-Leach-Bliley Act of 1999 ("GLB"). Gramm-Leach-Bliley Financial Modernization Act, Pub. L. No. 106-102, 113 Stat. 1338 (codified as amended in scattered sections in 12 & 15 U.S.C.). GLB did not, however, repeal § 16 of Glass-Steagall which prohibits national banks from engaging in most underwriting. 12 U.S.C. § 24. GLB also did not repeal § 21 of Glass-Steagall which prohibits securities firms from taking deposits. 12 U.S.C § 378.

32. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 619, 124 Stat. 1376, 1620–31 (2010) (codified at 12 U.S.C. § 1851).

33. 12 U.S.C. 1851(a)(1). The purpose of the Volcker Rule, among other things, is to restrict banks from engaging in highly profitable and yet highly risky activities while at the same time enjoying access to the federal safety net. A Senate Report found: "The prohibitions in section 619 therefore will reduce potential taxpayer losses at institutions protected by the federal safety net, and reduce threats to financial stability, by lowering their exposure to risk." S. REP. NO. 111-176, at 8 (2010). For a complete discussion of the Volcker covered funds rule, see Erik F. Gerding, *Volcker's Covered Funds Rule & Trans-Statutory Cross Referenced: Securities Regulation in the Service of Banking Law*, 10 CAP. MARK. L.J. 4, 488 (August 2015). For a discussion of the Volcker proprietary trading rule, see Onnig H. Dombalagian, *The Expressive Synergies of the Volcker Rule*, 54 B.C. L. REV. 469 (2013).

34. 12 U.S.C. § 84; 12 C.F.R. § 32.1 (2015). For a general discussion of rules restricting loans to one borrower, see HEIDI MANDANIS SCHOONER & MICHAEL W. TAYLOR, GLOBAL BANK REGULATION: PRINCIPLES AND POLICIES, 185–93 (2010).

35. 12 U.S.C. § 375b; 12 C.F.R. §§ 215.1–215.12.

36. 12 U.S.C. §§ 371c, 371c-1. For a comprehensive discussion of affiliation rules, see Saule T. Omavora, *From Gramm-Leach-Bliley to Dodd-Frank: The Unfulfilled Promise of Section 23A of the Federal Reserve Act*, 89 N.C. L. REV. 1683 (2011).

agreements) and many of their assets have long-term maturities (e.g., mortgage loans). Liquidity has been traditionally regulated through mandatory reserve requirements—rules that require banks to hold a certain percentage of their deposit liabilities (e.g., a rule that allows a bank to lend out only $90 of every $100 deposit).[37] More recently, bank regulators have imposed additional liquidity requirements on large and internationally active banks through a mandatory liquidity coverage ratio that compares a bank's high quality liquid assets to its expected cash demands over a thirty day period.[38]

In addition to the extensive rules governing banks' operations, banks are subject to an intensive examination and enforcement regime (collectively referred to as "supervision"). Supervision is distinct from regulation in that its focus is on individual institutions as opposed to writing rules that apply to all banks (or large categories of banks). The foundation of bank supervision is the process of both on-site and off-site monitoring. Bank regulators monitor a bank's operations through periodic reports and on-site examinations. Generally, bank regulators are required to conduct an annual on-site examination.[39]

The process of monitoring can lead to a determination that a bank has violated a rule. Under such circumstances, bank regulators have broad power to bring administrative enforcement actions against banks and bank managers[40] for violating a law or rule, or, more broadly, engaging in an unsafe and unsound banking practice.[41] The administrative enforcement powers include: cease and desist powers (which can include the authority to order restitution, reimbursement or indemnification),[42] removal from office and prohibition from participation in the banking industry,[43] and civil money penalties.[44] As discussed in Part IV, capital requirements often serve as the basis for administrative enforcement actions.

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37. 12 U.S.C. § 461. The Federal Reserve Board sets reserve requirements in its Regulation D, 12 C.F.R. § 204.1–204.10.

38. 12 C.F.R. § 249.

39. 12 U.S.C. § 1820(d).

40. Bank officers, directors, employees, and certain shareholders, as well as certain professionals (under some circumstances) are "institution-affiliated parties" under federal banking statutes and, therefore, potentially subject to enforcement actions. *Id.* § 1813(u).

41. *See infra* note 42 and accompanying text. For a full discussion of the meaning of "unsafe and unsound banking practices," see Heidi Mandanis Schooner, *Fiduciary Duties' Demanding Cousin: Bank Director Liability for Unsafe or Unsound Banking Practices,* 63 GEO. WASH. L. REV. 175 (1995). These agencies' determinations may be appealed to the appropriate United States Court of Appeals. 12 U.S.C. § 1818(h)(2).

42. 12 U.S.C. § 1818(b)(1). Banking agencies have the authority to issue a cease and desist order against a bank and/or its managers for engaging in "an unsafe or unsound practice" or violating "a law, rule, or regulation, or any condition imposed in any application, notice . . . or any written agreement entered into with the agency." *Id.*

43. *Id.* § 1818(e)(1).

44. *Id.* § 1818(i)(2).

IV. CAPITAL ADEQUACY: THE CORNERSTONE OF BANK REGULATION

As discussed in Part III, banks are subjected to many forms of regulation. The regulation of capital, however, has emerged as the cornerstone of modern bank regulation. Most discussions of capital regulation focus on the agencies' rules, which set minimum capital requirements through various financial ratios and, therefore, such discussions can quickly devolve into a technocratic morass. In an attempt to illuminate rather than obfuscate, this Part begins with a stark overview of capital regulation using a typical household, as opposed to using a bank, as the running example.

With that broad view in mind, this Part moves on to highlight bank management's role in capital adequacy and then to discuss the minimum ratios which form the foundation for capital regulation. Next, this Part discusses the often ignored supervisory process of examination and enforcement and the important role it plays in capital regulation. Finally, this Part concludes with the formulation of an overall picture of how capital regulation functions through the combination of both rules and supervision—labeling the system "bottom-up capital regulation."

A. Captial Regulation: The Big Picture

Capital regulation limits the extent to which a bank can fund its activities with debt. The capital regulatory regime has become increasingly complex in the last thirty years. Before diving into examination of this complex regime, let us consider the fundamental principles of capital regulation through the application of the same principles to an individual household.

Consider Sam, a consumer who wants to purchase a home for $500,000. Sam may enjoy access to various sources to supply the purchase price for the home, such as: mortgage loans, loans from family members, savings, gifts, and other liquid investments. Suppose Sam wishes to finance the entire $500,000 purchase with borrowed money. Funding the purchase of the home entirely with debt raises a number of issues. Most importantly, Sam's bank will not typically be willing to lend Sam the entire purchase price. Instead, the bank may require Sam to come up with a "down payment" based on a percentage of the purchase price. That required down payment operates as a form of capital regulation.

In this case, Sam's bank (as opposed to bank regulators as discussed below), is requiring Sam to finance the acquisition of the home with some "equity"—non-borrowed funds. Why might the bank insist on a down payment? First, if Sam finances the purchase entirely with borrowed money, then Sam may be more likely to walk away from

the loan obligation if Sam, at some future date, has difficulty making the monthly payments. Sam might be willing to simply walk away because Sam has no "stake" (i.e., equity) in the home. If Sam defaults on the mortgage loan, the bank will foreclose on the home and there will be nothing left over for Sam from the sale of the house once the bank's debt is paid.[45] Second, suppose the value of the house declines. Nothing much will happen if Sam continues to make the required monthly loan payments. But, if Sam can no longer make those payments, then the value of the home no longer matches the value of the outstanding debt (often referred to as an "underwater mortgage").[46] This means that unless Sam has additional assets to make up the difference, Sam is rendered insolvent.

A required down payment provides Sam and the lender with a cushion against Sam's insolvency. Had the lender required Sam to make a down payment of, for example, 5% (in this case, $25,000), then a decline in the value of the house would not create the financial instability described above. Sam would be less likely to simply walk away from the mortgage loan (allowing the bank to foreclose) because that would mean giving up Sam's equity. Additionally, Sam would not face insolvency in the event that the house declined in value. That is, of course, unless the value of the home declined by more than 5%.[47]

B. Capital Regulation: Who is Responsible

Continuing with the example of Sam, it is important to recognize that even if Sam's bank allows Sam to purchase a house with a very low down payment, Sam will be liable if Sam ends up unable to pay the mortgage payments when they come due. Sam's bank may be "regulating" Sam's ability to fund the home purchase with too much debt, but Sam is ultimately responsible for those debts. The regulation of banks' capital operates in the same way. While the remainder of this

45. Of course, this would not be true if the value of the house had appreciated. So, if the consumer borrowed $500,000 to purchase a home with a $500,000 purchase price, and now the house is worth $550,000, then the consumer would not likely be indifferent to the $50,000 gain in equity. Still, stories about capital regulation are not as important under circumstances in which asset prices are rising. In such cases, if our consumer was having difficulty paying the mortgage payments, the consumer could simply sell the house, pay off the mortgage balance, and pocket the equity. Capital regulation is salient when assets prices are falling.

46. Following the Financial Crisis, ten million mortgaged properties were underwater, representing approximately one-fifth of all mortgaged properties. JENNIFER TAUB, OTHER PEOPLE'S HOUSES: HOW DECADES OF BAILOUTS, CAPTIVE REGULATORS, AND TOXIC BANKERS MADE HOME MORTGAGES A THRILLING BUSINESS 282 (2014).

47. Note that from the peak in 2006, U.S. housing prices fell by 28%. FINANCIAL CRISIS INQUIRY COMMISSION, FINAL REPORT OF THE NATIONAL COMMISSION ON THE CAUSES OF THE FINANCIAL AND ECONOMIC CRISIS IN THE UNITED STATES 215 (2011). Thus, the 5% down payment in this hypothetical would not have done much to save many homeowners from the adverse effects of falling home prices.

Part will focus on the role of banking agencies in regulating capital, *the responsibility for maintaining adequate bank capital rests with bank management*.

Bank management's responsibility for capital adequacy derives not only from their statutory obligations, but also from corporate governance policies.[48] Sound corporate governance practices emphasize the role of managers in ensuring adequate capital. The Federal Reserve Bank of Kansas City highlights this point in its publication "Basics for Bank Directors":

> As a bank director, you are responsible for making sure your bank's capital is adequate for safe and sound operation. Fulfilling this responsibility entails evaluating and monitoring your bank's capital position and planning for its capital needs.[49]

Bank managers' independent responsibility to ensure adequate levels of capital may explain why banks do not always operate close to the regulatory minimum and, at times, hold much more capital than required by regulators.[50]

C. Capital Regulation: Rulemaking

In the absence of government support, banks would face the same obstacles and risks that Sam faced when Sam wished to finance an asset purchase primarily with debt. The existence of government support sets banks apart from other borrowers. While all firms borrow money to fund investments (as opposed to funding those investments with capital contributions from shareholders or retained earnings), financial institutions rely much more heavily on debt than other non-financial firms.[51] Banks are more highly leveraged (i.e., borrow more money) than other firms because they can borrow money at lower rates than other firms.[52] Banks' ability to borrow at low rates derives from the

48. As discussed in Part III, bank officers and directors can be held liable for violations of statute, regulation or for engaging in unsafe or unsound banking practices.

49. FEDERAL RESERVE BANK OF KANSAS CITY, BASICS FOR BANK DIRECTORS 24 (5th ed. 2010).

50. *See* ALLEN BERGER ET AL., FEDERAL RESERVE BANK OF KANSAS CITY, ECONOMIC RESEARCH DEPARTMENT, RWP 08-01, HOW DO LARGE BANKING ORGANIZATIONS MANAGE THEIR CAPITAL RATIOS? (Apr. 2008) (finding that large banking organizations during the period of 1992 to 2006 held significantly more equity capital than required by regulators).

51. According to a New York Federal Reserve Bank staff report: "a typical non-financial firm has equity that exceeds 50% of its assets. By contrast, in mid 2010, the median capital ratio of commercial banks was about 8.5%." VIRAL ACHARYA ET AL., FEDERAL RESERVE BANK OF NEW YORK STAFF REPORTS, NO. 490, ROBUST CAPITAL REGULATION, 2 (Apr. 2011).

52. *See* Kenichi Ueda & Beatrice Weder di Mauro, *Quantifying Structural Subsidy Values for Systemically Important Financial Institutions*, 37 J. OF BANKING & FIN., 3830, 3830–42 (2013); Andreas A. Jobst & Dale F. Gray, *Systemic Contingent Claims Analysis—Estimating Market-Implied Systemic Risk*, (Washington: International Monetary Fund, Working Paper No. 13/54, 2013); Stefan Jacewitz & Jonathan Pgach *Deposit Rate Advantages at the Largest Banks*, (Washington: Federal Deposit Insurance Corporation, FDIC Working Paper No. 2014-02, 2014). If post Financial Crisis reforms prove successful, however, banks' funding advantage may decline. *See* Eric Platt &

government's explicit (e.g., deposit insurance) or implicit (e.g., bailouts) guarantees of their solvency.[53] Banks' high leverage makes government bailouts necessary to avoid widespread economic fallout. And, most infuriatingly, because banks enjoy government support, they can use cheap borrowed funds to grow their balance sheets even larger, which in turn, makes government support in a crisis all the more inevitable. In other words, the TBTF problem feeds on itself.[54] For all of these reasons, various rules (primarily found in agency regulations as opposed to statutes) limit the extent to which banks can fund their activities with debt. The simplest of these, and the focus of this Article, is the leverage ratio. The leverage ratio (sometimes referred to as the "simple leverage ratio") is calculated by dividing a bank's equity[55] by its assets.[56] The lower the ratio of equity to assets, the higher the bank's leverage because, like in the example involving Sam, the bank has made a lower down payment on its asset investments. U.S. banks have long been required under Federal Deposit Insurance Corporation ("FDIC") regulations to maintain a ratio of capital (equity) to total assets of 4%.[57] More recently, bank holding companies[58] have also been required to comply with a leverage ratio of 4%.[59] Again, like in the case of Sam, this is equivalent to requiring a bank to make a 4% down payment on the purchase of all of its assets.

The simplicity of the leverage ratio proved attractive in reform efforts following the Financial Crisis. The international standard setting body, the Basel Committee on Bank Supervision[60] ("Basel Committee")

Ben McLannahan, *S&P Downgrades Raft of US Banks*, FIN. TIMES, Dec. 3, 2015, (credit rating agency's downgrade of the eight largest U.S. bank holding companies is seen as evidence of decline in government support).

53. Acharya et al., *supra* note 51, at 8. Banks' preferences for debt represents a deviation from the Modigliani and Miller model. For further discussion on this point, see SCHOONER & TAYLOR, *supra* note 34, at 133–34.

54. *See* INT'L MONETARY FUND, GLOBAL FINANCIAL STABILITY REPORT: MOVING FROM LIQUIDITY- TO GROWTH-DRIVEN MARKETS 103 (April 2014) ("Thus, countries emerged from the financial crisis with an even bigger problem: many banks were even larger than before and so were the implicit government guarantees.").

55. The amount of "equity" is really an accounting fiction which is derived by subtracting total liabilities from total assets.

56. Specifically, the leverage ratio is derived by dividing Tier 1 capital by total assets. 12 C.F.R. § 325.3(b)(1) (2015). Tier 1 capital is essentially made up of common and certain noncumulative preferred stock with various adjustments. *Id.* § 325.2.

57. 12 C.F.R. § 325.3(b)(2). Certain highly rated institutions are held to a 3% leverage ratio. *Id.* § 325.3(b)(1). But that rule must be balanced against prompt corrective action rules (triggering certain agency action as bank capital deteriorates), which require an adequately capitalized bank to have a 4% or greater leverage ratio. *Id.* § 325.103(b)(2)(iii).

58. A bank holding company is any company which has control over a bank. 12 U.S.C. § 1841(a)(1).

59. 12 C.F.R. § 217.10(a)(4) provides that a leverage ratio of 4% applies to a "board-regulated institution." 12 C.F.R. § 217.2 defines a "board-regulated institution" to include, among other institutions, a bank holding company.

60. The Basel Committee was established in 1974 by the central bank governors of the G-10 countries. For information on the Basel Committee, see Basel Committee on Banking Supervision, ABOUT THE BASEL COMMITTEE, (Sept. 30, 2015),

added a supplementary leverage ratio[61] to its Basel III reforms.[62] More demanding than the leverage ratios described above, a supplementary leverage ratio incorporates both on- and off-balance sheet assets and requires the ratio of capital to such assets of 3%.[63]

Consistent with the Basel III reforms, the United States has incorporated supplemental leverage ratios since the Financial Crisis. Bank holding companies with assets equal to or greater than $250 billion or on-balance sheet foreign exposures equal to $10 billion must comply with a supplementary leverage ratio of 3%.[64] Consistent with Basel III, the supplementary leverage ratio includes on-balance sheet and many off-balance sheet exposures in the calculation of assets.[65] In addition, going beyond the standards set under Basel III, beginning on January 1, 2018, bank holding companies with assets greater than $700 billion[66] must maintain an enhanced supplementary leverage ratio of 5% to avoid restrictions on dividends and discretionary bonus payments.[67] Note that more capital is required to meet the supplemental leverage ratio than the simple (generally-applicable) leverage ratio.[68] As the notice of final rulemaking explains: "a 5 percent supplementary leverage ratio corresponds to roughly a 7.2 percent generally applicable leverage ratio and a 6 percent supplementary leverage ratio corresponds to roughly an 8.6 percent generally applicable leverage ratio."[69]

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https://www.bis.org/bcbs/about.htm?m=3%7C14%7C573 [https://perma.cc/49E3-BR3B].

61. *See* BASEL COMMITTEE ON BANKING SUPERVISION, BASEL III LEVERAGE RATIO FRAMEWORK AND DISCLOSURE REQUIREMENTS, (January 2014) http://www.bis.org/publ/bcbs270.pdf [https://perma.cc/L9A6-G2XQ].

62. *See* BASEL COMMITTEE ON BANKING SUPERVISION, BASEL III: A GLOBAL REGULATORY FRAMEWORK FOR MORE RESILIENT BANKS AND BANKING SYSTEMS (Dec. 2010), http://www.bis.org/publ/bcbs189.htm [https://perma.cc/XA2Z-BVD7].

63. The addition of off balance sheet assets makes this ratio harder to comply with since assets are in the denominator of the ratio and, thus, more capital is required in the numerator to meet the percentage minimum requirement.

64. 12 C.F.R. § 217.10(a)(5) (supplementary leverage ratio of 3% applies to "advanced approaches Board-regulated institutions," which is defined in 12 C.F.R. § 217.100(b) through 12 C.F.R. § 217.2).

65. 12 C.F.R. § 217.10(c)(4).

66. This captures the eight U.S. bank holding companies considered to be "global systemically important banks." Specifically, it includes: Bank of America, Bank of New York Mellon, Citigroup, Goldman Sachs, JPMorgan Chase, Morgan Stanley, State Street, and Wells Fargo. *Global Capital Index: Capitalization Ratios for Global Systemically Important Banks (GSIBs)*, FED. DEPOSIT INS. CORP. (Mar. 30, 2015) https://www.fdic.gov/about/learn/board/hoenig/capitalizationratios4q14.pdf [https://perma.cc/49P9-3QHP].

67. 12 C.F.R. § 217.11(c). In addition, the FDIC-insured bank subsidiaries of such large institutions must maintain a supplementary leverage ratio of 6% to be considered well capitalized under prompt corrective action rules. 12 C.F.R. § 324.403.

68. The Federal Reserve explained as follows: "Because total leverage exposure includes off-balance sheet exposures, for any given company with material off-balance sheet exposures, the minimum amount of capital required to meet the supplementary leverage ratio would substantially exceed the amount of capital that would be required to meet the generally applicable leverage ratio, assuming that both ratios were set at the same level." Regulatory Capital Rules: Regulatory Capital, Enhanced Supplementary Leverage Ratio Standards for Certain Bank Holding Companies and Their Subsidiary Insured Depository Institutions, 79 Fed. Reg. 24528, 24530 (May 1, 2014).

69. *Id.*

While the leverage ratio has enjoyed a resurgence in recent years, other capital ratios were all the rage prior to the Financial Crisis and continue to be an essential part of the regulatory regime. In fact, prior to the Financial Crisis, other capital ratios developed in direct reaction to the limitations of the leverage ratio. The problem with the leverage ratio is that it does not account for the relative riskiness of banks' assets. If a leverage ratio were applied in the opening example above, Sam would be required to make the same percentage down payment on any asset purchase, regardless of whether the purchase is the $500,000 home or a painting to hang over the sofa in that home. By treating all assets the same, the leverage ratio can encourage banks to hold relatively more risky assets (because riskier assets have a higher rate of return), which increases the bank's risk of insolvency. This limitation of the leverage ratio was the basis for the Basel Committee's original capital accord, which came to be known as Basel I,[70] in which it endorsed a risk-weighted capital requirement.

Thinking back to the household example, a risk-weighted capital requirement requires different down payments for different assets: the riskier the asset, the higher the down payment. Thus, Sam might be required to come up with a 20% down payment in purchasing a house (because real estate fluctuates in value) but could purchase a savings bond (a low risk asset) with no down payment at all, meaning Sam could make this purchase with all borrowed money.

Under Basel I, capital is compared to risk-weighted assets (this ratio is generally referred to as the "capital ratio"), and must be greater than or equal to 8%. With respect to the denominator of the capital ratio, Basel I has four risk-weighted buckets corresponding to certain classes of assets (or, four different down payments). For example, under Basel I, certain loans carry a 20% risk-weight, which means that a bank must make such a loan with only 80% borrowed funds.[71] With respect to the numerator of the capital ratio, capital has two components: core capital and supplementary capital.[72] Core capital

70. BASEL COMMITTEE ON BANKING SUPERVISION, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS (July, 1988), http://www.bis.org/publ/bcbs04a.pdf [https://perma.cc/6AUL-5CNC].

71. On the other hand, cash assets carry a zero risk weight which, in effect, allows a bank to set aside no capital against its cash assets. Basel I relies on membership in the Organization for Economic Development and Cooperation ("OECD") to determine certain risk weights. For example, a loan to an OECD bank with a maturity of greater than a year carries a 20% risk weight, whereas the same loan to a non-OECD bank country carries a 100% risk weight. Residential mortgages are weighted under Basel 1 at 50%. For further discussion of Basel I capital ratios, see SCHOONER & TAYLOR, *supra* note 34, at 137–43.

72. In effect, the definition of capital is really about the defining a bank's liabilities. This is because capital is calculated by subtracting total assets from total liabilities. In determining what constitutes total liabilities, a judgment as to the nature of contractual instruments must be made: is the instrument fundamentally an equity claim entitled to only residual assets or does the instrument

(Tier 1) comprises, primarily, paid-up capital and reserves. Supplementary capital (Tier 2) includes, among other things, various forms of subordinated debt and hybrid debt-equity instruments. Thus, the capital ratio not only adjusts assets for their risk (the denominator), but also allows certain types of debt to count as capital (the numerator).

While the Basel I capital ratio was adopted around the world, including in the United States, its limitations were soon apparent. Among other things, the four risk-weight buckets were crude measurements of asset risk. Also, many off-balance sheet exposures were not reflected in the ratio. These and other criticisms of Basel I led to Basel II, completed in 2004,[73] which attempted further refinement of the risk-weighting categories and introduced the use of risk management tools for regulatory purposes.[74] Basel II retained the same approach to the definition of capital in the numerator as originally established under Basel I. Regarding the denominator, Basel II replaced the Organisation for Economic Co-operation and Development category approach with risk-weighted categories based on external credit ratings, often referred to as the standardized approach. In a more radical departure from Basel I, Basel II also adopted an alternative internal-ratings based approach which relies on banks' internal estimates of the key risk elements that determine their required capital.

Basel II was controversial[75] and was never fully implemented in the United States before the Financial Crisis. The Basel Committee responded to the Crisis with various new standards, including the supplemental leverage ratio discussed above.[76] Also, the Basel Committee proposed revisions to the risk-weighted capital ratio. Basel III places a strong emphasis on the sources of capital and raised the minimum capital requirement significantly. While the ratio of capital to

represent a contractual payment claim.

73. BASEL COMMITTEE ON BANKING SUPERVISION, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS: A REVISED FRAMEWORK (June, 2004), http://www.bis.org/publ/bcbs107.pdf [https://perma.cc/V495-E4UV].

74. For further discussion of Basel II, see SCHOONER & TAYLOR, *supra* note 34, at 148–82.

75. The Quantitative Impact Studies conducted by the Basel Committee shows that large internationally active banks would have lower capital requirements under Basel II than under Basel I. BASEL COMMITTEE ON BANKING SUPERVISION, QUANTITATIVE IMPACT STUDY 3 – OVERVIEW OF GLOBAL RESULTS (May 5, 2003), http://www.bis.org/bcbs/qis/qis3results.pdf [https://perma.cc/KR8E-UGR6] (the study showed some increases in capital requirements for banks using the standardized approach).

76. One of the most immediate responses to the Financial Crisis was Basel II.5. Basel II.5 was designed to discourage exploitation of the designation of bank assets into the banking book versus the trading book. *See* BASEL COMMITTEE ON BANKING SUPERVISION, REVISIONS TO THE BASEL II MARKET RISK FRAMEWORK (July, 2009), http://www.bis.org/publ/bcbs158.pdf [https://perma.cc/WN8C-UVX7]; BASEL COMMITTEE ON BANKING SUPERVISION, GUIDELINES FOR COMPUTING CAPITAL FOR INCREMENTAL RISK IN THE TRADING BOOK (July, 2009), http://www.bis.org/publ/bcbs159.pdf. [https://perma.cc/JE9L-4FDH].

risk-weighted assets remains—as it has been since Basel I—at 8%, the composition of capital (the numerator) requires much more high quality capital and core capital.[77] Basel III includes additional capital requirements in the form of conservation[78] and countercyclical buffers.[79] While a point by point comparison of Basel III and the United States' implementation thereof is beyond the scope of this Article, the United States has implemented most of Basel III.[80] Most important to this Article, recall that, with regard to the supplemental leverage ratio, the U.S. standard exceeds that set under Basel III.[81]

While the risk-weighted capital ratio remains an important element of capital regulation[82] both at the international level, as reflected in Basel III, and in U.S. rules, the leverage ratio and supplementary leverage ratios have attracted special attention. While all leverage ratios suffer from the fact that assets remain undifferentiated, this fact remains fundamental to the leverage ratios' strength. The counterpoint to the leverage ratio—the risk-based capital ratio—suffers under its own weight. The attempt to quantify the risk of assets becomes, virtually, an

77. Basel II set common equity (the highest quality capital) to risk-weighted assets at 2% and Basel III increases that ratio to 4.5%. Basel II set Tier 1 capital to risk-weighted assets at 4% and Basel III increases that ratio to 6%. Hervé Hannoun, Deputy General Manager, Bank for International Settlements, The Basel III Capital Framework: a Decisive Breakthrough (Nov. 22, 2010) at 9, http://www.bis.org/speeches/sp101125a.pdf [https://perma.cc/6WJG-FJZS].

78. The conservation buffer requires an additional 2.5% of common equity Tier 1 capital to risk-weighted assets to be built up during good times and available to draw down during times of stress. BASEL COMMITTEE ON BANKING SUPERVISION, BASEL III: A GLOBAL REGULATORY FRAMEWORK FOR MORE RESILIENT BANKS AND BANKING SYSTEMS 54–57 (Dec. 2010), http://www.bis.org/publ/bcbs189.pdf [https://perma.cc/87F5-F2UN].

79. The countercyclical buffer requires an additional 1% to 2.5% of common equity Tier 1 or other loss absorbing capital to risk-weighted assets during times of excess aggregate credit growth. *Id.* at 57–60. For a full discussion of countercyclical buffers, see *Brett H. McDonnell, Designing Countercyclical Capital Buffers*, 18 N. C. BANKING INST. 123 (2013).*Id.*

80. Regulatory Capital Rules: Regulatory Capital, Implementation of Basel III, Capital Adequacy, Transition Provisions, Prompt Corrective Action, Standardized Approach for Risk-weighted Assets, Market Discipline and Disclosure Requirements, Advanced Approaches Risk-Based Capital Rule, and Market Risk Capital Rule, 78 Fed. Reg. 62018 (October 11, 2013). The Basel Committee has determined that the U.S. implementation of Basel III is largely consistent, stating:

> Overall, and given the planned adoption and implementation of some amendments described in this report that the US regulatory agencies agreed to take and proposed publically, the assessment team finds the risk-based capital requirements in the US to be largely compliant with the minimum standards agreed under the Basel framework.

BASEL COMMITTEE ON BANKING SUPERVISION, REGULATORY CONSISTENCY ASSESSMENT PROGRAMME (RCAP) ASSESSMENT OF BASEL III REGULATIONS – UNITED STATES OF AMERICA 5 (Dec., 2014), http://www.bis.org/bcbs/publ/d301.pdf [https://perma.cc/8YB6-KBUW].

81. *See supra* notes 64–69 and accompanying text.

82. "RWAs are an important part of both the micro- and macro-prudential toolkit, and can (i) provide a common measure for a bank's risks; (ii) ensure that capital allocated to assets is commensurate with the risks; and (iii) potentially highlight where destabilizing asset class bubbles are arising." Vanessa Le Leslé & Sofiya Avramova, *Revisiting Risk-weighted Assets* 5 (Int'l Monetary Fund Working Paper No. 12/90, 2012). Even very recently, the Basel Committee continues to issue standards regarding the risk weighting of assets. *See e.g.*, BASEL COMMITTEE ON BANKING SUPERVISION, STANDARDS: MINIMUM CAPITAL REQUIREMENTS FOR MARKET RISK (January, 2016) http://www.bis.org/bcbs/publ/d352.pdf [https://perma.cc/Q5T7-EVTF] (discussing capital requirements for trading book assets).

impossible exercise. Vice Chairman of the FDIC Thomas Hoenig observes:

> If risk weights could be assigned that anticipate and calibrate risks with perfect foresight, adjusted on a daily basis, then perhaps risk-weighted capital standards would be the preferred method for determining how to deploy capital. However, they cannot. To believe they can is a fallacy that puts the entire economic system at risk.[83]

The observation of Hoenig and others,[84] along with the observation that the FDIC's leverage ratio helped insulate U.S. banks during the Financial Crisis over their European counterparts, led to the resurgence of the leverage ratio. Of course, significant guesswork is endemic in the calculation of all capital ratios. Risk-weighting assets (as Hoenig describes above), calculating core capital and determining the size of on- and off-balance sheet assets, all rely on estimation.

D. Capital Regulation: Supervision

Note that the ratios described above are often referred to as "minimum" ratios. Institutions that comply with the various ratios are not necessarily safe or unlikely to fail in a crisis. In fact, experience suggests that minimum capital ratios are a lagging indicator of a bank's financial stability such that declines in capital ratios are typically not evident until the institution is well on its way to insolvency.[85] Thus, the firm-specific supervisory process is meant to correct the deficiencies of the one-size-fits all rule-based regulation. The Federal Reserve Board's capital rules explain:

> Notwithstanding the minimum requirements in this part, a Board-regulated institution must maintain capital commensurate with the level and nature of all risks to which the Board-regulated institution is exposed. The supervisory evaluation of the Board-regulated institution's capital adequacy is based on an individual assessment of numerous factors, including the character and condition of the institution's assets and its existing and prospective liabilities and other corporate responsibilities.[86]

The supervisory process plays a significant role in the regulation of banks' capital. Capital adequacy is a key measure in the supervisory process; it is listed as the first factor under the supervisory rating system,

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83. Thomas Hoenig, *Basel III Capital: A Well-Intended Illusion, Remarks to the International Association of Deposit Insurers 2013 Research Conference in Basel, Switzerland*, FED. DEPOSIT INS. CORP. (April 9, 2013), https://www.fdic.gov/news/news/speeches/spapr0913.html [https://perma.cc/8VUZ-VKGZ].

84. The process of risk-weighting is also undermined by the fact that the same assets are sometimes assigned different weights. Leslé & Avramova, *supra* note 82.

85. *See* Heidi Mandanis Schooner, *U.S. Bank Resolution Reform: Then and Again*, *in* CROSS BORDER INSOLVENCY 411 (Oxford, Rosa Lastra, ed., 2011).

86. 12 C.F.R. § 217.10(d) (2015). *See also* 12 U.S.C. § 3907(a)(2)(2014) ("Each appropriate Federal banking agency shall have the authority to establish such minimum level of capital for a banking institution as the appropriate Federal banking agency, in its discretion, deems to be necessary or appropriate in light of the particular circumstances of the banking institution.").

CAMELS.[87] Therefore, through the process of bank examination, regulators can (and do) determine that a particular bank must hold capital in excess of the minimum capital ratios set in applicable rules. Such higher levels of capital are imposed, formally, through the administrative enforcement mechanisms described in Part III, or informally through negotiation.

Professor Julie Hill conducted a comprehensive empirical study of all publicly available formal capital enforcement actions between 1993 and 2010, a total of 2,350 actions.[88] Hill's study found an increase in capital enforcement actions between 2008 and 2010, which corresponded with the Financial Crisis.[89] According to Hill's study, such enforcement actions most often rely on the leverage ratio as the mechanism for imposing higher capital.[90] The mean leverage ratio imposed in such actions was 8%—double the leverage ratio of 4% set under agency rules.[91] Hill's study included one bank that was required to meet a 28% leverage ratio (clearly, as Hill notes, an outlier), but also twenty-three banks that were required to meet leverage ratios of between 12% and 17%.[92] In all, Hill's study found that bank regulators had imposed a leverage ratio of between 4.5% and 28% through formal enforcement actions during the period studied.[93] Note that Hill's study included only banks—not bank holding companies—and that of the 2,350 enforcement actions studied, only two involved "large" banks.[94]

While Hill's study involved almost exclusively smaller banks, large bank holding companies are also subject to significant capital supervision. Large bank holding companies with assets of fifty billion dollars or more are required by the Federal Reserve to submit an annual capital plan[95] and are subject to the Federal Reserve's annual Comprehensive Capital Analysis and Review ("CCAR") process. The capital plan is a "written presentation of a bank holding company's capital planning strategies and capital adequacy process . . . ."[96] The Federal Reserve may object to a bank holding company's capital plan

87. CAMELS is an acronym for the examiners assessment of six key areas: Capital adequacy, Asset quality, Management, Earnings, Liquidity, and Sensitivity to market risk.

88. Julie Andersen Hill, *Bank Capital Regulation by Enforcement: Am Empirical Study*, 87 IND. L.J. 645 (2012).

89. *Id.* at 672–73.

90. 1,691 of the 2,350 actions imposed an increased leverage ratio. *Id.* at 679.

91. *See supra* notes 53–57 and accompanying text (describing the leverage ratio rules for banks).

92. Hill, *supra* note 88, at 680.

93. *Id.* at 681. Hill's study includes data for enforcement actions that relied on other ratios as well, including risk-based capital ratios. *Id.*

94. Hill's study relied on the FDIC's classification of the fifty largest banks to serve as the measure of large banks. *Id.* at 691.

95. Capital Planning, 12 C.F.R. § 225.8 (2016).

96. 12 C.F.R. § 225.8(c)(3).

and thereby prohibit the bank holding company from making capital distributions (i.e., among other things, paying dividends to shareholders).[97] CCAR is a supervisory process that, among other things, assesses the capital plan. CCAR is an annual assessment that complements supervisory stress testing mandated under Dodd-Frank.[98] The Federal Reserve describes CCAR as follows:

> The Comprehensive Capital Analysis and Review (CCAR) is an annual exercise by the Federal Reserve to assess whether the largest bank holding companies operating in the United States have sufficient capital to continue operations throughout times of economic and financial stress and that they have robust, forward-looking capital-planning processes that account for their unique risks.[99]

The CCAR includes both a qualitative assessment of a bank holding company's capital planning process and, more relevant here, a quantitative assessment of the bank holding company's ability to maintain post-stress capital ratios above the applicable minimum ratios in effect.[100] By testing banks' regulatory capital under both expected and stressed (hypothetical) conditions,[101] the CCAR, in effect, results in higher minimum capital requirements for large bank holding companies. For example, with regard to the leverage ratio, while the minimum requirement under the Federal Reserve's rules is 4%, the CCAR

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97. 12 C.F.R. § 225.8(e)(2). "Capital distribution" means:

> [A] redemption or repurchase of any debt or equity capital instrument, a payment of common or preferred stock dividends, a payment that may be temporarily or permanently suspended by the issuer on any instrument that is eligible for inclusion in the numerator of any minimum regulatory capital ratio and any similar transaction that the Federal Reserve determines to be in substance a distribution of capital.

12 C.F.R. § 225.8(d)(4).

98. 12 U.S.C. § 5365(i)(1) (2012).

99. *Stress Tests and Capital Planning*, BOARD OF GOVERNORS OF THE FED. RES. SYS. (June 25, 2014), http://www.federalreserve.gov/bankinforeg/stress-tests-capital-planning.htm [https://perma.cc/LKD9-FU5V]. For further discussion of the Federal Reserve's supervisory process regarding bank holding company capital, see BD. OF GOVERNORS OF THE FED. RESERVE SYS., CAPITAL PLANNING AT LARGE BANK HOLDING COMPANIES: SUPERVISORY EXPECTATIONS AND RANGE OF CURRENT PRACTICE (Aug. 2013).

100. BD. OF GOVERNORS OF THE FED. RESERVE SYS., COMPREHENSIVE CAPITAL ANALYSIS AND REVIEW 2015: ASSESSMENT FRAMEWORK AND RESULTS 9 (Mar. 2015).

101. Stressed conditions are provided both by the Federal Reserve and developed by the bank holding company itself. 12 C.F.R. § 225.8(d)(2)(i)(A). Regarding the development of stressed conditions, the Federal Reserve explains:

> [Bank holding company ("BHC")] stress scenarios should reflect macroeconomic and financial conditions that are tailored specifically to stress a BHC's key vulnerabilities and idiosyncratic risks, based on factors such as its particular business model, mix of assets and liabilities, geographic footprint, portfolio characteristics, and revenue drivers. . . .
>
> BHCs with stronger scenario-design practices clearly and creatively tailored their BHC stress scenarios to their unique business-model features, emphasizing important sources of risk not captured in the supervisory severely adverse scenario. Examples of such risks observed in practice included a significant counterparty default; a natural disaster or other operational-risk event; and a more acute stress on a particular region, industry, and/or asset class as compared to the stress applied to general macroeconomic conditions in the supervisory adverse and severely adverse scenarios.

BD. OF GOVERNORS OF THE FED. RESERVE SYS., CAPITAL PLANNING AT LARGE BANK HOLDING COMPANIES: SUPERVISORY EXPECTATIONS AND RANGE OF CURRENT PRACTICE 17 (Aug., 2013).

requires, in effect, higher leverage ratios for all thirty-one individual bank holding companies reviewed. The 2015 CCAR projects a minimum leverage ratio of between 4.1% to 11% under severely adverse scenarios and between 4.5% to 11.8% for adverse scenarios.[102]

E. Bottom-Up Capital Regulation

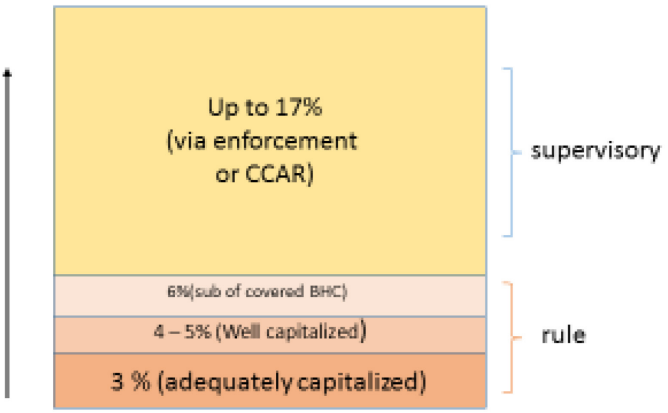
Capital regulation becomes a more complex picture when both rulemaking and supervisory practices are considered together. Using the simple leverage ratio as the point of reference, the minimum required ratio is not, in fact, the standard to which many banks or bank holding companies are held. The supervisory process imposes higher—in some cases much higher—capital requirements on banks on a case-by-case basis. This happens, as discussed above, either through formal enforcement actions or, for large bank holding companies, through the capital planning and CCAR process.

Thus, it becomes clear that bank regulators use their supervisory discretionary power to impose capital ratios significantly higher than the standards set by regulation. The result is a system of bottom-up regulation with the rules providing the foundation on which the supervisory process builds as illustrated below in Figure 1. The bottom-up regulatory regime begins with the leverage ratio of between 3 and 6%, as discussed in Part IV.C,[103] and builds up to almost 12% through capital planning or the CCAR, and as high as 17% based on the critical mass from Hill's study.

102. BD. OF GOVERNORS OF THE FED. RESERVE SYS., COMPREHENSIVE CAPITAL ANALYSIS AND REVIEW 2015: ASSESSMENT FRAMEWORK AND RESULTS 15–18 (Mar., 2015). The Federal Reserve has completed Comprehensive Capital Analysis and Review ("CCARs") every year since 2011. Results from year to year during that time are somewhat difficult to compare. This is because the CCAR quantitative assessment focuses on a bank holding company's ability to maintain required minimum ratios during stress periods and the required minimum ratios have changed during this time period. BD. OF GOVERNORS OF THE FED. RESERVE SYS., COMPREHENSIVE CAPITAL ANALYSIS AND REVIEW 2014: ASSESSMENT FRAMEWORK AND RESULTS 10, Box 2 (Mar., 2014).

103. I have used the simple leverage ratio numbers for purposes of comparison rather than the supplementary and enhanced supplementary leverage ratio discussed above. This is because neither Hill's study nor the CCAR provide data on the supplementary leverage ratios.

Figure 1: Bottom Up Leverage Ratio



V. EVALUATING CAPITAL REGULATION

Part IV examined the nature of capital regulation with a particular focus on the leverage ratio. That discussion combined both rulemaking and supervisory elements of the regulatory process to illustrate the bottom-up nature of capital regulation. This Part considers the prominence of capital in the overall context of prudential regulation. What are the benefits of capital regulation and are they sufficient to live up to its important place in prudential regulation? In addition, this Part considers the limitations of capital regulation.

Capital has emerged as the cornerstone of modern bank regulation because study after study confirms that better capitalized banks perform better during crises.[104] Studies by the Basel Committee and the United Kingdom's Financial Services Authority support the benefits of higher capital even when balanced against the costs (although, as discussed below, true cost-benefit analysis may prove elusive).[105] In addition, the leverage ratio has been shown to have countercyclical benefits because

104. Sebastien Gay & Balthazar D. Bergkamp, *Does Basel Save Our Banks? The Effect of Basel I Capital Requirements on Bank Failures* (2015), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2629268 [https://perma.cc/5PMZ-BAKQ]; Andrea Beltratti & René M. Stulz, *The Credit Crisis Around the Globe: Why Did Some Banks Perform Better?*, 105 J. Fin. Econ. 1, 8–10 (2012); Allen Berger & Christa H.S. Bouwman, *How Does Capital Affect Bank Performance During Financial Crises?*, 109 J. FIN. ECON. 146 (2013). An International Monetary Fund ("IMF") study found that banks with higher and better-quality capital were able to continue lending during the Financial Crisis. Tümer Kapan & Camelia Minoiu, *Balance Sheet Strength and Bank Lending During the Global Financial Crisis*, (Int'l Monetary Fund IMF Working Paper No.13/102 May 2012).

105. BASEL COMMITTEE ON BANKING SUPERVISION, AN ASSESSMENT OF THE LONG-TERM ECONOMIC IMPACT OF STRONGER CAPITAL AND LIQUIDITY REQUIREMENTS (Aug., 2010) http://www.bis.org/publ/bcbs173.pdf [https://perma.cc/45VF-TTSM]; Ray Barrell et al., *Optimal Regulation of Bank Capital and Liquidity* (Fin. Services Authority Occasional Paper Series No. 38, July 2009) http://www.fsa.gov.uk/pubs/occpapers/op38.pdf [https://perma.cc/39ED-A88A].

"it is a tighter constraint for banks in booms and a looser constraint in recessions."[106]

Given the importance of capital to protecting banks in crisis, positive regulation of bank capital serves all the various normative views of bank regulation discussed in Part II. According to the functional view, capital regulation serves the purpose of preserving the functioning of banks that provide unique services to the economy. Under the economist's view of market failure, capital regulation serves as less intrusive mechanism for reducing negative externalities than more direct activities prohibitions like the Volcker rule.[107] While capital regulation may create incentives to invest in certain types of assets, it does not require banks to do so and thereby defers to management discretion.[108] Naturally, capital regulation supports the view of banks as government instrumentalities that should be operated safely to promote the public interest.

Despite the manifold positive and normative claims supporting capital regulation, it suffers from limitations. First and foremost is the reality that the international regulation of capital, which began in the 1980s, did not prevent the devastating Financial Crisis in 2008. Using this measure, capital regulation is a failure. And yet, the attacks on the effectiveness of capital regulation boil down to a regulatory regime that allowed banks to operate with far too little capital. The standard criticism of the leverage ratio is that it does not distinguish between types of assets. Yet if the minimum ratio is set sufficiently high, the

106. Michael Brei & Leonardo Gambacorta, *The Leverage Ratio over the Cycle*, (Bank of Int'l Settlements Working Papers No. 471 Nov. 2014). The leverage ratio is also a good predictor of bank failure. Arturo Estrella et al., *Capital Ratios as Predictors of Bank Failure*, 6 FRNY ECON. POL'Y REV. 33 (July 2000).

107. Nothing herein is meant to suggest that regulating capital is effective on its own or, in particular, that the leverage ratio is effective on its own. For example, financial instability can emanate from short-term debt and capital regulation does not directly address that particular problem (but, liquidity ratios do). *See* Gary B. Gorton, MISUNDERSTANDING THE FINANCIAL CRISIS: WHY WE DON'T SEE THEM COMING (Oxford Univ. Press, 2012) (demonstrating that financial crises begin with a run on short-term bank debt). Moreover, as discussed above in Part IV, the leverage ratio when standing alone can create perverse risk incentives—the risk based capital ratio is intended to counteract those incentives. Stefan Ingves, Basel Committee on Banking Supervision Chairman, writes:

> The leverage ratio, by placing an absolute cap on borrowings relative to a bank's capital, is an important component of the Basel III framework, and complements the risk-based capital adequacy regime. But neither of these parts of the framework stands alone: it is important to look at Basel III as a package of constraints that mutually reinforce prudent behaviour.

Stefan Ingves, Chairman, Basel Comm. on Banking Supervision, Keynote Address to the 10th Asia-Pacific High-Level Meeting on Banking Supervision: Banking on Leverage 5 (Feb. 2014), http://www.bis.org/speeches/sp140226.pdf [https://perma.cc/C7JA-HSAS].

108. Alan Greenspan writes, "Lawmakers and regulators, given elevated capital buffers, need to be far less concerned about the quality of the banks' loan and securities portfolios since any losses would be absorbed by shareholders, not taxpayers." Alan Greenspan, Opinion, *More Capital is a Less Painful Way to Fix the Banks*, FIN. TIMES (August 17, 2015 5:24 p.m.), http://www.ft.com/cms/s/0/4d55622a-44c8-11e5-af2f-4d6e0e5eda22.html#axzz3z8LZto9d [https://perma.cc/95TS-892C].

nature of the mix of assets held by the institution will be less important to its solvency (in fact, that is the whole point of the leverage ratio). The typical criticism of the risk-weighted capital ratio is that it attempts to measure the riskiness of assets but does so poorly. But, again, this type of error is much less important if the minimum required is not so minimal.

We are left with a situation in which we know that more capital is good but we do not know how much capital is enough. Quantifying adequate capital is fraught with potential error. With regard to the denominator of both the leverage ratio and the risk-weighted capital ratio, potential errors are evident in valuing assets, determining their risk weights, and corralling off-balance sheet exposures. With regard to the numerator, while Basel III made significant improvements in defining the nature of capital, significant issues remain with regard to the loss absorbing nature of capital.[109] Perhaps most striking is the lack of any principled basis for the current minimum capital rules. The Basel Committee never demonstrated support for setting the original risk based capital ratio at 8% and yet that number continues to serve as a key reference point.

An obvious solution to the simultaneous importance and error-prone nature of capital regulation is to simply require more of it. A growing number of authoritative commentators are urging just that.[110] Economists Admati and Hellwig argue for levels in the 20 to 30% range.[111] In advance of rulemaking to implement Dodd-Frank, an eminent group of economists and former policymakers wrote to urge the Federal Reserve to adopt a leverage ratio of 20%.[112] Researchers at the Bank of England and Bank of International Settlements, David Miles, Jing Yang, and Gilberto Marcheggiano, suggest doubling the

109. Professor Arthur Wilmarth has criticized current Federal Reserve proposals regarding total loss absorbing capital (which is intended to absorb losses in the event of a bank insolvency) because such capital would likely be held by pensions and mutual funds, thus placing the loss of insolvency on ordinary investors. Arthur E. Wilmarth, Jr., *The Fed's TLAC Propose Would Impose the Cost of Resolving Failed Megabanks on Ordinary Investors and Taxpayers*, THE CLS BLUE SKY BLOG (Dec. 16, 2015) http://clsbluesky.law.columbia.edu/2015/12/16/the-feds-tlac-proposal-would-impose-the-costs-of-resolving-failed-megabanks-on-ordinary-investors-and-taxpayers/ [https://perma.cc/BXQ6-7L86].

110. Note that the variation in percentages among commentators is likely not really about different levels of capital, but more about which ratio the particular commentator has chosen as the basis for their proposal.

111. ANAT ADMATI & MARTIN HELLWIG, THE BANKERS' NEW CLOTHES: WHAT'S WRONG WITH BANKING AND WHAT TO DO ABOUT IT 182 (Princeton Univ. Press, 2013).

112. Letter from Sheila Bair, Former Chairman of the FDIC, et al., to the Board of Governors of the Federal Reserve System (Mar. 30, 2012), http://www.federalreserve.gov/SECRS/2012/April/20120403/R-1438/R-1438_033012_107166_399897884753_1.pdf [https://perma.cc/5JNX-UK93]. Specifically, they recommend that large bank holding companies "should be required to have ratios of 20% of common and preferred equity and subordinated debt to total (non-risk weighted) consolidated assets and 30% of total equity and unsecured long-term debt to such assets." *Id.*

requirements set by Basel III. Martin Wolf, chief economics commentator for The Financial Times, recommends a leverage ratio of at least 10% and "ideally more."[113] Even former free-market-apologist, Alan Greenspan favours capital at "20 or even 30 percent of assets."[114]

The objections to higher capital requirements focus on the resulting increased cost to banks which in turn would increase the cost of credit. This claim is controversial.[115] In addition, studies which attempt to measure costs and benefits are far from perfect. Professor John Coates challenges the conclusions of studies on the net benefits of capital and other financial regulations because they all suffer from, among other limitations, insufficient data, casual inference challenges, and reliance on imperfect models.[116] Of course, the same objections apply to claims that capital regulation generates a net cost. And yet, the key benefit of capital remains uncontroversial: better capitalized banks are more resilient in an economic downturn.

VI. TOP-DOWN CAPITAL REGULATION

Current capital regulation relies on a supervisory process of estimating adequate capital for individual firms supported by bare minimum, apply-to-all, rules that hang perilously close to the ground. This places a heavy burden on the effectiveness of CCAR and agency enforcement to ensure the safety of our financial system. Therefore, the calls for significantly higher capital requirements discussed in Part V come as no surprise. This Part makes no attempt to settle any debate about whether, for example, the leverage ratio should be set at 20 or 30%. This Part does, however, support significantly higher minimum capital requirements based on observations regarding current regulatory practice.

As demonstrated in Part IV, the reality of capital regulation must take into account both minimum ratios set by rule and the ratios

113. Martin Wolf, *'Too Big to Fail' is Too Big to Ignore*, FIN. TIMES, April 15, 2014, http://www.ft.com/intl/cms/s/0/f755c450-c3c2-11e3-870b-00144feabdc0.html#axzz3z8LZto9d [https://perma.cc/UL6X-Y86R]. He goes on to say that at very least, "equity should be raised until all measures of the subsidy are zero." *Id.* In other words, suggesting that banks should be forced to build their equity until they no longer benefit from any funding advantage based on government subsidies.

114. Greenspan, *supra* note 108.

115. Malcolm Baker & Jeffrey Wurgler, *Would Stricter Capital Requirements Raise the Cost of Capital? Bank Capital Regulation and the Low Risk Anomaly* (Mar. 15, 2013), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2233906 [https://perma.cc/V5ZT-B3DA]; Douglas Elliott et al., *Assessing the Cost of Financial Regulation* (Int'l Monetary Fund Working Paper No. 12/233 Sept. 2012).

116. John C. Coates, IV, *Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications*, 124 YALE L.J. 882, 997 (2015); *but see* Eric A. Posner & E. Glen Weyl, *The Case for Cost-Benefit Analysis of Financial Regulations*, REG. Mag. 30 (Winter 2013-2014) (arguing in favor of cost-benefit analysis and using capital regulation as a running example).

imposed through the exercise of supervisory discretion. Taken together, the current regime is a bottom-up approach to capital regulation in which rule-based minimum ratios are applied to all institutions and higher requirements are imposed on a firm-by-firm basis through various supervisory mechanisms. This bottom-up approach speaks volumes regarding minimum capital rules. Minimum ratios are truly, barely minimum. They do not serve as a benchmark for adequate capital but, instead, perhaps serve only at the rock bottom starting point for the supervisory process by which capital levels are ultimately set.[117]

So-called "dynamic capital supervision"[118] like CCAR responds to the deficiencies of minimum ratios which have been shown time and again to serve as lagging indicators of financial trouble within a financial institution.[119] Yet, reliance on the supervisory process to set appropriate capital level when the minimum rules are inadequate places all of the risk of error at the feet of the regulatory agencies—thus, ultimately, the public. This is because if the CCAR process does not reliably serve to prepare institutions for the economic bust, government subsidies (either explicit or implicit) will be tapped to protect such institutions, and the public will suffer from greater damage to the economy.[120]

In evaluating the current bottom-up approach to capital regulation, it is useful to consider the types of error that regulators might make in either setting minimum ratios or exercising their supervisory discretion. Since regulators are attempting to identify weak banks through capital regulation, a false positive (type one error) would occur if the bank regulator thought a bank was undercapitalized when it was not. On the other hand, a false negative (type two error) would occur if the bank regulator thought a bank was adequately capitalized and it actually was not. The risks associated with the false negative should be, and are, the primary concern of a bank regulator, and the current system seems ill suited to avoid that type of error. Moreover, the false positive should not be ignored to the extent that there remains controversy over the costs of capital.

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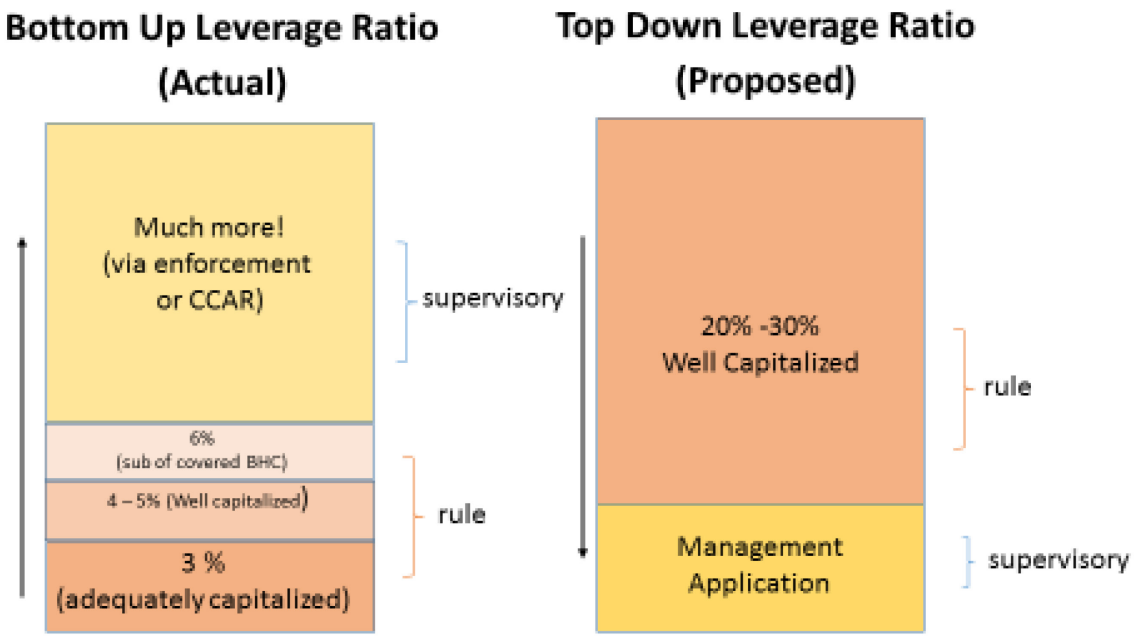
117. Hill asserts that, "[s]tatements from bank regulators show that they believe the minimum capital ratios established by regulation are insufficient." Hill *supra* note 88, at 700. Of course, Hill's study was conducted prior to the implementation of new, Basel III and Dodd-Frank capital ratios.

118. *See* Daniel K. Tarullo, *Developing Tools for Dynamic Capital Supervision*, BOARD OF GOVERNORS OF THE FED. RES. SYS. (April 10, 2012), http://www.federalreserve.gov/newsevents/speech/tarullo20120410a.htm [https://perma.cc/ADV8-V8N4].

119. *See* discussion *supra* Part IV.C.

120. And, while it is true that this is largely a concern with regard to very large institutions and their persistent status as too big to fail, we must not forget that small banks are also important to our economy and have access to government subsidies. Heidi Mandanis Schooner, *Regulating Angels*, 50 GA. L. REV. 143 (2015).

The potential risks of both types of error could be more sensibly addressed by flipping the current practice from a bottom-up to a top-down system of capital regulation. In a top-down system, capital ratios applying to all banks would be set high—high enough so that the risk of a false negative is very small.[121] The risk of a false positive would be addressed through a supervisory process, in which banks could be permitted, on a firm-by-firm basis, to operate below capital levels set by rule. The move from the bottom-up to the top-down regime is illustrated below in Figure 2.



Flipping the supervisory and rulemaking process requires further exploration. Consider a hypothetical, very large bank called MegaBank. If the leverage ratio is set at 20%, then MegaBank would be required to comply with that ratio. Under the top-down scenario, the CCAR process could be used to establish that MegaBank needs only, say, 11% to survive an adverse or severely adverse scenario. Such a simple flip would leave us with virtually the same system as the current one in which the risk of error in allowing that bank to operate with an 11% ratio would be borne by the public (via regulator error). The problem

121. *See supra* Part V (discussing proposals for high capital ratios).

ultimately is that the system does not place the risk of loss on those who are in the best position to avoid the risk—bank management. As discussed in Part IV, bank managers are ultimately responsible for capital adequacy and appropriately so given their superior knowledge of their firms' operations and risk management. Thus, the top-down system would access that superior knowledge and provide incentives to avoid error by relying on bank managers to determine appropriate capital adequacy levels. In this way, if MegaBank wished to operate at a leverage ratio lower than required under applicable rules (which now serve as a safe harbor), MegaBank's management could apply regulators for exemption from the rules. Such an application would require management to certify that MegaBank could operate safely at lower levels of capital. To create appropriate incentives for a meaningful application (as opposed to a pro forma statement that lower capital is adequate), such application would serve as the basis for personal liability (including appropriate fines and other penalties) against managers if their assertions regarding capital adequacy proved wrong (a false negative).

The exact parameters of the personal liability of management are beyond the scope of this Article and could be the subject of further study. The basis for such individual liability exists in the current administrative enforcement regime.[122] If, for example, executive management of Megabank applied to the Federal Reserve for the authority to operate below safe harbor rules, they would be required to assert that the bank's solvency would not be at risk. If assertions in that application proved false, the Federal Reserve's administrative enforcement powers would be triggered so that, for example, the Federal Reserve could impose a cease and desist order on the bank and its managers, including an order of restitution, reimbursement, or indemnification.[123]

And yet, existing administrative enforcement authority often requires a showing of personal gain or culpability which would undermine the usefulness of such recourse.[124] Therefore, the top-down capital regulation proposal is most complemented by those who argue in favor of greater personal liability for bank managers.[125] Often such

122. *See supra* Part III (discussing administrative enforcement powers).

123. 12 U.S.C. § 1818(b) (2012) provides for cease and desist authority "in connection with any action on any application, notice, or other request . . . by the institution-affiliated party . . . ."

124. For example, agency cease and desist authority included the ability to seek restitution against bank managers but only of such party was "unjustly enriched in connection with such violation or practice," *Id.* § 1818(b)(6)(A)(i),or if "the violation or practice involved reckless disregard for the law . . . ." *Id.* § 1818(b)(6)(A)(i)–(ii).

125. Schwarcz, *Keynote Reflections*, *supra* note 16 (arguing that [systematically important financial institution] managers should have a "public governance duty"); Lyman Johnson, *Corporate Officers and the Business Judgment Rule*, 60 BUS. L.J. 865 (2005); Donald Langevoort, *On Leaving*

proposals harken back to the days when Wall Street banks were formed as partnerships and the partners enjoyed none of the liability protections afforded corporate shareholders and, ultimately, managers.[126] Professors Claire Hill and Richard Painter offer a thoughtful exploration of a system of strict liability for certain bank managers in the event of insolvency.[127] High capital ratios that allow for managers to apply for authority to operate at lower levels of capital would work well within such a system of personal accountability.

The top-down system benefits bank management since it depends on the determination of a leverage (or other) ratio set high enough that it acts as a safe harbor. As such, banks and bank managers would not be subject to liability if the bank met the ratio. Under the current system, banks cannot be sure that meeting minimum rules is adequate and, as discussed, very often it is not. Under the top-down system, the regulatory ratios would have more meaning in that management could rely on achieving compliance at that level. On the other hand, managers with the confidence that their bank can be safely operated at lower levels of capital would be given the flexibility to do so. Appropriately, the risk of error in such situations would be borne by management, through personal liability, which would assure that such an important determination was made with deliberation and appropriate confidence.

VII. CONCLUSION

Better capitalized banks are more sustainable during financial crises. Therefore, the regulation of bank capital is an essential element in efforts to reduce the threat of systemic crisis. The current system, however, does not properly account for the risk of error in determining appropriate levels of capital. The proposed system of top-down capital regulation is a superior approach which balances the benefits of mandating precautionary levels of capital against the informed wisdom of bank management in determining the viability of safe operations at lower levels of capital. In this way, capital regulation is better positioned to deliver on its promise of safer banks and a more resilient financial system.

Corporate Executives Naked, Homeless and Without Wheels: Corporate Fraud, Equitable Remedies and the Debate over Entity Versus Individual Liability, 42 WAKE FOREST L. REV. 627 (2007).

126. William D. Cohan, *How We Got the Crash Wrong*, THE ATLANTIC, June 2012, ("[t]o prevent another crisis, Wall Street's top executives, bankers, and traders should once again have something close to their full net worth on the line every day . . . .").

127. CLAIRE A. HILL & RICHARD W. PAINTER, BETTER BANKERS, BETTER BANKS: PROMOTING GOOD BUSINESS THROUGH CONTRACTUAL COMMITMENT 149–171 (2015).