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COUNTERCYCLICAL REGULATION AND ITS CHALLENGES

Patricia A. McCoy*

Historically, U.S. financial regulation has normally been *procyclical*, with federal regulators and Congress relaxing oversight during bull markets and cracking down once financial crises hit. After 2008, the wisdom of this approach came under attack. Critics argued that procyclical regulation left financial institutions undercapitalized and unable to withstand panics. Other critics asserted that economic downturns could be mitigated and even averted if regulators took steps to puncture asset bubbles.

The concept of countercyclical regulation responds to both of these critiques. This new approach posits that financial regulation would be more effective if financial regulation clamped down during financial expansions and lightened up during economic slumps, when banks and other financial services firms are struggling financially and typically are at their most risk-averse. One objective of countercyclical regulation is to require financial firms to build up reserves during flush times, so that they can draw on those resources when downturns strike. A second potential objective is to modulate the growth of easy credit and the asset bubbles that it fuels in order to avoid a string of bank failures following a surge in loan delinquencies.

Countercyclical regulation is the single most important breakthrough in years to ending cycles of boom and bust. As such, it deserves serious consideration. Implementing countercyclical regulation, however, is not as easy as it seems. So far, discussions of countercyclical reforms have been mostly limited to identifying tools to address procyclicality and evaluating the efficacy of those tools. Institutional and legal impediments to the successful implementation of a countercyclical approach, however, have not been given sufficient consideration.

In this Article, I set out to describe the most pressing of those challenges. In my view, countercyclical regulation will not be successful unless serious attention is paid to the organizational and legal settings in which that regulation would operate. Consequently, I seek to shift the focus of the

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discussion of countercyclical regulation to the real-world context it would inhabit in the U.S. and to consider the implications of that context for the likelihood of its success. Throughout this discussion, my focus will be on real estate asset bubbles, which historically have been the most devastating type of bubbles.

The Article proceeds as follows. Section I explores the theoretical underpinnings of countercyclical regulation and the problems that it seeks to correct. Section II discusses the ongoing debate over the proper objectives of a countercyclical approach. For at least twenty years, macroeconomists have disagreed whether central banks should seek to deflate asset bubbles or simply assure that financial institutions are resilient whenever downturns hit. This debate has evolved over time as economists and policymakers have gained a growing appreciation of the broader set of countercyclical tools at regulators' disposal.

Section III examines those tools in detail. Countercyclical tools are an important part of the emerging field of macroprudential regulation, which focuses on the safety of the financial system as a whole instead of the safety of discrete financial firms.¹ As Section III observes, many countercyclical instruments are in their infancy and data are just starting to trickle in on their effectiveness. While many of these methods appear to be promising, the experience of 2008 showed that substantially more work is needed to refine those tools and to ensure that they are used on a timely basis. Nevertheless, there is reason to think that the new panoply of sectoral countercyclical tools is especially well suited to curbing credit-induced asset bubbles. This discussion also sheds light on the vital but wholly underappreciated role of market conduct regulators such as the Consumer Financial Protection Bureau in containing systemic risk through countercyclical regulation.

The heart of this Article is Section IV, where I discuss the impediments facing any serious attempt to institute countercyclical regulation in the United States. While some of these problems have been acknowledged in the

1. See Claudio Borio, *Implementing a Macroprudential Framework: Blending Boldness and Realism*, 6 CAPITALISM & SOC'Y 1, 3 (2011), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2208643 (follow "Open PDF in Browser" hyperlink); Douglas J. Elliott et al., *The History of Cyclical Macroprudential Policy in the United States*, at 6 (Fed. Res. Bd. Finance & Econ. Discussion Ser. No. 2013-29, 2013). Despite their name, many macroprudential tools operate at the microprudential level because they are applied to individual firms. Nevertheless, those tools serve macroprudential purposes because they apply to all financial institutions within a class based on macro indicators, without regard to an individual firm's financial condition. See GROUP OF THIRTY, ENHANCING FINANCIAL STABILITY AND RESILIENCE: MACROPRUDENTIAL POLICY, TOOLS, AND SYSTEMS FOR THE FUTURE 14 (Oct. 2010), http://group30.org/images/PDF/Macroprudential_Report_Final.pdf.

economics literature,² other major obstacles have not been adequately addressed. Ironically, for instance, there has been little discussion of the federal government's lagging efforts to improve its collection of financial system data, despite the key importance of data to systemic risk regulation. Similarly, too little attention has been paid to the need for agencies to institutionalize an early response system to address burgeoning financial threats. Financial innovations and how to monitor them pose special problems in that regard and ones that are not well appreciated. Justifying intervention when the risks are small is another challenge. While the age-old problems of regulatory capture and inertia persist, even resolute regulators may have difficulty withstanding legal challenges to certain countercyclical rules in the current judicial climate. There is virtually no understanding of these legal hurdles in economic circles today. Finally, countercyclical regulation, like all regulation, has to deal with the ever-present dynamic of industry arbitrage. Innovations introduced by the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act or Dodd-Frank) offer a partial but potentially powerful solution to that nagging problem.

Policymakers have more techniques than ever to tackle the challenges confronting countercyclical regulation, if they choose to use them. Those techniques include new tools that can strike an optimal mix of regulation while warding off regulatory capture and inertia. The introduction of these new tools also helped make the aims of countercyclical regulation more ambitious over time. Early discussions of countercyclical regulation focused on the use of monetary policy for countercyclical aims. Because monetary policy is not well suited for pricking asset bubbles, many commentators were pessimistic about countercyclical regulation's suitability for that task. But since 2008, economists have come to appreciate other, newer countercyclical techniques, such as sectoral regulation, that are better tailored to intervening in asset bubbles. The focus on these tools has reinvigorated the debate over the feasibility and wisdom of proactively deflating bubbles, as I will discuss.

2. See Borio, *supra* note 1, at 12–14; MARKUS K. BRUNNERMEIER ET AL., THE FUNDAMENTAL PRINCIPLES OF FINANCIAL REGULATION 33–37 (Geneva Reports on the World Economy 11, 2009), <http://www.princeton.edu/~markus/research/papers/Geneva11.pdf>; Gerard Caprio, Jr., *Safe and Sound Banking: A Role for Countercyclical Regulatory Requirements?*, at 23–30 (Paolo Baffi Centre Research Paper No. 2010-76, 2009), <https://www.tcd.ie/iis/documents/discussion/pdfs/iisd311.pdf>; Elliott et al., *supra* note 1, at 49 (providing a historical treatment of institutional impediments to past countercyclical initiatives in the United States).

I. PROBLEMS WITH PROCYCLICALITY

Procylical regulation refers to financial regulation that eases during expansions and tightens after financial crises.³ Since the 2008 debacle, critics have castigated procyclical regulation for intensifying the potential systemic harm from asset bubbles, especially bubbles fueled by easy credit.

Asset bubbles driven by loose credit pose a particular threat to the financial system and the economy because those bubbles are usually financed through lending by banks. When credit bubbles burst and loans default *en masse*, the losses can threaten the solvency of banks. That raises systemic concerns because banks are linked to one another through reciprocal deposit accounts, payments clearance, and interbank credit. The failure of one key bank can bring down other banks.⁴

In an effort to protect themselves from this type of contagion, banks usually respond by hoarding resources and severely tightening credit. As businesses and individuals who are otherwise creditworthy discover that they can no longer obtain credit to finance their operations, there is a growing chance of a recession. Because asset bubbles can inflict serious harm on finance and ordinary households in the process, these bubbles have serious implications for the health of the financial system and the wider economy.

In view of these problems, procyclical regulation has been singled out for criticism on at least two scores.⁵ First, “light touch” regulation during asset bubbles can leave financial institutions with insufficient capital and reserves to survive a market crash. Second, deregulation during times of easy credit can feed asset bubbles and cause them to overheat.

Countercyclical regulation seeks to reverse these dynamics by reducing the spillover effects from troubled financial institutions on the financial system and the economy.⁶ This new approach seeks to address at least three problems that have plagued financial regulation in the United States. The first

3. For an insightful analysis of different economic theories of financial cycles animating discussions of procyclical regulation, see generally Brett McDonnell, *Dampening Financial Regulatory Cycles*, 65 FLA. L. REV. 1597 (2013).

4. Kathryn Judge, *Interbank Discipline*, 60 UCLA L. REV. 1262, 1275–77 (2013). Panics by nonbank depositors and losses through a sudden drop in the value of common asset exposures can also trigger the failure of multiple banks. See generally Franklin Allen & Elena Carletti, *What Is Systemic Risk?*, 45 J. MONEY, CREDIT & BANKING 121, 123 (2013); Douglas W. Diamond, *Banks and Liquidity Creation: A Simple Exposition of the Diamond-Dybvig Model*, 93 ECON. Q. 189 (2007); George G. Kaufman & Kenneth E. Scott, *What Is Systemic Risk, and Do Bank Regulators Retard or Contribute to It?*, VII INDEP. REV. 371 (2003).

5. See BRUNNERMEIER ET AL., *supra* note 2, at 10–11; Haocong Ren, *Countercyclical Financial Regulation* (World Bank, Working Paper No. 5823, 2011).

6. BRUNNERMEIER ET AL., *supra* note 2, at 31.

is the boom-and-bust nature of the credit cycle, in which easy credit fuels asset sales and causes asset values to inflate and then collapse.⁷ The second is the procyclical nature of financial regulation, which typically recedes as the credit cycle heats up and overcorrects when lending contracts, thereby exacerbating swings in the credit cycle. Countercyclical regulation responds by designing rules that become binding at the top of the business cycle, when financial firms are profitable and catastrophic risks seem small, and by easing regulation at the bottom of the business cycle in order to stimulate the economy. The third problem, which is related to the second, is financial regulators' perennial aversion to intervention in financial markets in flush economic times. The following discussion elaborates on these problems in turn.

A. Credit Booms And Busts

Countercyclical regulation is mainly concerned with asset bubbles and their economic toll. Historically, the most damaging asset bubbles have been real estate bubbles fed by easy credit from banks.⁸ These types of bubbles often culminate in massive loan delinquencies and have triggered scores of banking crises around the globe over the years.⁹ Usually, banks respond to those crises by cutting back their lending in order to preserve capital, which spreads financial distress to the economy at large.¹⁰

Past experience shows that lenders relax their mortgage underwriting standards when employment and real estate values are rising.¹¹ Compensation systems fuel this dynamic by rewarding bankers for making more loans. The

7. This aspect distinguishes countercyclical regulation from structural regulation. Structural regulation addresses systemic risks that are constantly present, while its countercyclical counterpart seeks to address threats to financial stability that ebb and flow over time. See Elliott et al., *supra* note 1, at 3.

8. See CARMEN M. REINHART & KENNETH S. ROGOFF, THIS TIME IS DIFFERENT: EIGHT CENTURIES OF FINANCIAL FOLLY xlv–xlv, 158–62 (2009); Moritz Schularick & Alan M. Taylor, *Credit Booms Gone Bust: Monetary Policy, Leverage Cycles and Financial Crises, 1870–2008*, 102 AM. ECON. REV. 1029, 1032 (2012). Not all asset bubbles result in systemic threats to the financial system. For example, the technology bubble in the late 1990s and early 2000s resulted in a deep decline in the U.S. stock market, but did not put financial institutions in jeopardy because that bubble did not involve bank lending in any serious way. See BRUNNERMEIER ET AL., *supra* note 2, at 32; REINHART & ROGOFF, *supra* note 8, at xlv–xlv.

9. See, e.g., BRUNNERMEIER ET AL., *supra* note 2, at xi (“The crisis which began in the US sub-prime mortgage market in early 2007 and then spread broadly and deeply was not the first banking crisis. It was closer to the 100th.”); REINHART & ROGOFF, *supra* note 8, at 141–42, 147–55.

10. See, e.g., REINHART & ROGOFF, *supra* note 8, at 165–67, 171–73.

11. See, e.g., Caprio, *supra* note 2, at 3–7.

easiest way to make more mortgages is by loosening lending standards in order to qualify more borrowers.¹² So long as borrowers have the wherewithal to service the debt they incurred to finance their purchases of real estate—or so long as they can refinance out of unaffordable loans—the price of properties financed by those loans will soar. As the cycle nears its top, borrowers, lenders, and regulators typically fool themselves into thinking that the economy will not revert to the mean and the good times will never end.¹³ In the process, market discipline goes out the door.

As property values climb, those assets can eventually become so costly that the average borrower can no longer afford a large enough loan to finance an average purchase. The pool of qualified borrowers will shrink, demand for real estate will slump, and supply will exceed demand. Then, like Icarus, property prices will fall.

As prices drop, borrowers discover that the traditional escape routes for difficulties paying their loans—refinancing the loans or selling their collateral for enough to retire their debt—are closed off. Many in that situation will go delinquent, because some were poor credit risks to begin with or because the collateral is now worth less than the outstanding debt.¹⁴ As defaults precipitate foreclosures, asset prices will fall and inflict losses on lenders and the investors who bought the loans. Losses may start to ripple through the financial system as firms that extended credit to weakened lenders incur losses themselves.¹⁵ Most lenders will respond by severely tightening credit in order to preserve capital. At some point, however, the lenders who survive will realize they overcorrected and the cycle will begin anew.

Countercyclical regulation seeks to defuse this boom-and-bust cycle by making financial institutions more resilient during financial crises. Some argue that countercyclical regulation should also discourage lenders from loosening credit standards excessively as the credit cycle expands and from hoarding credit at the bottom of the cycle, as I will discuss.

12. See, e.g., Raghuram Rajan, *Has Financial Development Made the World Riskier?*, 12 EUROPEAN FIN. MGMT. 499, 504 (2006). See generally Steven L. Schwarcz, *Conflicts and Financial Collapse: The Problem of Secondary-Management Agency Costs*, 26 YALE J. ON REG. 457 (2009).

13. See, e.g., REINHART & ROGOFF, *supra* note 8, at 171–73.

14. Under the double-trigger theory of default, loans only default when both of two things occur: the outstanding loan balance exceeds the value of the collateral and the borrower suffers a significant income shock. See, e.g., CHRIS FOOTE ET AL., A PROPOSAL TO HELP DISTRESSED HOMEOWNERS: A GOVERNMENT PAYMENT-SHARING PLAN 1 n.1 (Fed. Res. Bank of Boston Public Policy Briefs No. 09-1, 2009).

15. See, e.g., Judge, *supra* note 4, at 1265.

B. Reversing Procyclical Design

Countercyclical regulation has a second goal, which is to correct the procyclical aspects of financial regulatory design. Procyclical design poses concerns because it under-regulates when the economy is expanding and over-regulates when the economy slumps, making the business cycle more volatile.

For an example of procyclical design, consider the much-maligned Basel II capital accord. Basel II governed the minimum amount of capital that banks must hold by requiring them to hold more capital against riskier assets and allowing them to hold less capital against safer ones. This design feature is referred to as “risk-weighting” because it assigns different risk weights to assets depending on the perceived risk of different asset classes.

Which risk weights to assign is not self-evident, however: the risk weights must be derived from somewhere. Basel II specified two methods for selecting risk weights, both of which are procyclical.¹⁶ First, Basel II instructed most banks to base their risk weights on external credit ratings issued by the leading rating agencies, notably Moody’s, Standard & Poor’s, and Fitch. During the bubble culminating in the 2008 crisis, the rating agencies inflated their ratings.¹⁷ As a consequence of Basel II’s decision to incorporate these inflated credit ratings into the risk weights, innumerable banks skimmed on capital and were undercapitalized when the financial crisis hit.¹⁸

The other way of deriving risk weights is similarly procyclical. Basel II had a different set of capital rules for the largest international banks. These megabanks were allowed to estimate their capital requirements using their own internal statistical models, based on as little as five years of data (the so-called Internal-Ratings-Based or IRB approach).¹⁹ Depending on the time period, this five-year look back did not always go back far enough to capture

16. For an evaluation of procyclicality in Basel II generally, see Rafael Repullo & Javier Suarez, *The Procyclical Effects of Bank Capital Regulation*, 26 REV. FINAN. STUD. 452 (2013).

17. See BASEL COMM. ON BANKING SUPERVISION, REVISIONS TO THE BASEL SECURITISATION FRAMEWORK 4 (Dec. 2012); Caprio, *supra* note 2, at 1–2, 8–9; *Justice Department and State Partners Secure \$1.375 Billion Settlement with S&P for Defrauding Investors in the Lead Up to the Financial Crisis*, U.S. DEP’T OF JUSTICE (Feb. 3, 2015), <http://www.justice.gov/opa/pr/justice-department-and-state-partners-secure-1375-billion-settlement-sp-defrauding-investors>.

18. See BASEL COMM. ON BANKING SUPERVISION, *supra* note 17, at 4, 6.

19. See generally BASEL COMM. ON BANKING SUPERVISION, THE INTERNAL RATINGS-BASED APPROACH (Jan. 2001), <http://www.bis.org/publ/bcbsca05.pdf>. Elsewhere, I described this approach as the “fox guarding the henhouse.” Patricia A. McCoy, *Musings on the Seeming Inevitability of Global Convergence in Banking Law*, 7 CONN. INS. L.J. 433, 456 (2000–2001).

data from downswings revealing the true risk of asset classes.²⁰ If the five-year period was too short to capture the full economic cycle—and in many cases it was—those banks ended up underestimating their risk and their minimum capital levels as well.

Accordingly, a second goal of countercyclical regulation is to identify design features that exacerbate procyclicality and excise them from financial regulations.²¹ In the Basel III initiative, the Basel Committee has undertaken a massive revision of the minimum capital rules designed, in part, to make those rules less procyclical.²² Similarly, there is vigorous discussion of other ways to remove or tamp down the procyclical aspects of financial regulation.²³ Dodd-Frank took a constructive step in that direction by purging federal banking laws of provisions requiring the use of private credit ratings,²⁴ in order to reduce cyclicity.

C. Overcoming Regulatory Inertia

Finally, countercyclical regulation concerns itself with regulatory inaction in the face of financial threats.²⁵ The United States has long struggled with inertia by federal prudential banking regulators, with limited success.²⁶ Only with the 2008 financial crisis did overcoming regulatory inertia become a high priority for financial policymakers.

Fifty years ago, complacency by regulators was not a pressing concern because command-and-control rules governed deposit-taking and lending by banks. But in the early 1980s, Congress and state and federal banking

20. See, e.g., Ren, *supra* note 5, at 21–22; Rafael Repullo, Jesús Saurina & Carlos Trucharte, *Mitigating the Pro-cyclicality of Basel II*, 64 *ECON. POL'Y* 659 (2010); Hugh Thomas & Zhiqiang Wang, *Interpreting the Internal Ratings-Based Capital Requirements in Basel II* 19–20 (Journal of Banking Reg., Working Paper, 2004).

21. Caprio, *supra* note 2, at 38–39.

22. See, e.g., Jaime Caruana, Gen. Manager of the Bank for Int'l Settlements, Speech at the 3rd Santander International Banking Conference: Basel III: Towards a Safer Financial System (Sept. 15, 2010), <http://www.bis.org/speeches/sp100921.pdf>.

23. See, e.g., Caprio, *supra* note 2, at 8–9, 32.

24. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, §§ 939–939A, 124 Stat. 1601 (2010) [hereinafter Dodd-Frank Act].

25. For a general theoretical treatment of the problem, see, for example, WILLIAM A. NISKANEN, JR., *BUREAUCRACY AND REPRESENTATIVE GOVERNMENT* (2007); R.L. Calvert et al., *A Theory of Political Control and Agency Discretion*, 33 *AM. J. POL. SCI.* 588 (1989); Antoine Faure-Grimaud & David Mortimort, *Regulatory Inertia*, 34 *RAND J. ECON.* 413 (2003).

26. See, e.g., Caprio, *supra* note 2, at 7.

regulators began dismantling this regulatory framework.²⁷ In 1980, Congress preempted state usury caps for first-lien home mortgages²⁸ and abolished interest rate caps on deposits.²⁹ The 1980 law also raised the federal deposit insurance limit from \$40,000 to \$100,000.³⁰ Finally, the law allowed troubled thrifts to mask insolvency, through phony accounting techniques that allowed regulators to lower the minimum net worth required of thrifts.³¹ This latter provision had the unfortunate added effect of relaxing the triggers for mandatory enforcement actions against undercapitalized thrifts.³²

More deregulation was on the way. In the Alternative Mortgage Transactions Parity Act (AMTPA) in 1982,³³ Congress gave the green light to banks and thrifts to offer home mortgages with variable rates, balloon payments, and negative amortization. This set the stage for the toxic mortgages that figured so prominently during the recent housing bubble. In the early 1980s, Congress and the states also liberalized the types of loans and investments that banks and thrifts could make, exposing those institutions to greater risk.³⁴

Many of these changes were set in motion when interest rates began to rise in 1978, placing banks and thrifts under heavy financial stress.³⁵ Back then,

27. See generally Patricia A. McCoy & Elizabeth Renuart, *The Legal Infrastructure of Subprime and Nontraditional Mortgage Lending*, in *BORROWING TO LIVE: CONSUMER AND MORTGAGE CREDIT REVISITED* 110 (Nicolas P. Retsinas & Eric S. Belsky eds., 2008).

28. Depository Institutions Deregulation and Monetary Control Act (DIDMCA), Pub. L. No. 96-221, Title V, § 501(a)(1), 94 Stat. 132 (1980) (codified at 12 U.S.C. § 1735f-7).

29. *Id.* §§ 202, 207(b)(4)–(b)(6), 501(a)(2)(A).

30. *Id.* Title III, § 308(a)(1).

31. *Id.* Title IV, § 407, 94 Stat. 132 (1980); see also Garn-St Germain Depository Institutions Act, Pub. L. No. 97-320, Title II, §§ 201–202 (1982), 96 Stat. 1469 (authorizing the issuance of net worth certificates). The phony accounting device consisted of permission for the Federal Home Loan Bank Board to issue promissory notes to failing thrifts and then allow those thrifts to count the notes as part of their net worth and reserves. Meanwhile, the Bank Board watered down its regulatory accounting rules for thrifts in other ways that allowed them to inflate their books. See LAWRENCE J. WHITE, *THE S&L DEBACLE: PUBLIC POLICY LESSONS FOR BANK AND THRIFT REGULATION* 82–87 (1991).

32. JAMES R. BARTH ET AL., *GUARDIANS OF FINANCE: MAKING REGULATORS WORK FOR US* 164–66 (2012).

33. 12 U.S.C. §§ 3801 *et seq.* (1982).

34. For example, Congress expanded the ability of savings and loan institutions to make credit card and other consumer loans, commercial real estate loans, and other commercial loans in the DIDMCA in 1980 and the Garn-St Germain Depository Institutions Act in 1982. Garn-St Germain Depository Institutions Act, Pub. L. No. 97-320, Title III, §§ 321–325, 328–330 (1982), 96 Stat. 1469; DIDMCA, Pub. L. No. 96-221, Title IV, §§ 401–402, 94 Stat. 132 (1980). In addition, Congress and the states started allowing thrifts to make direct equity investments in real estate. See generally WHITE, *supra* note 31, at 67–72.

35. See generally BARTH ET AL., *supra* note 32, at 160–63; WHITE, *supra* note 31, at 67–69.

Regulation Q capped interest rates on deposit accounts.³⁶ Depositors responded to the rise in interest rates by shifting their money out of banks and into money market funds in order to earn higher rates of return. Meanwhile, banks became reluctant to lend wherever strict state usury limits prevented them from earning market rates of interest on their loans.³⁷ Largely due to this loss of business, almost 4,000 U.S. thrift institutions were in the hole by the early 1980s.³⁸

Given these developments, in some ways it made sense for Congress to deregulate interest rates on deposit accounts and loans. However, the changes instituted in the early 1980s had the unfortunate effect of allowing banks and thrifts to expand into riskier activities. These activities included high-cost loans to less creditworthy borrowers, direct ownership of real estate that exposed banks to property value declines, and payment of high interest rates on deposits.

All of this deregulation put the onus on state and federal banking regulators to oversee bank safety and soundness more closely. But instead of exercising stricter oversight, for much of the 1980s, state and federal banking regulators sat on their hands, keeping failing depository institutions afloat in a doomed attempt to allow those institutions to earn their way back into the black. Even worse, between 1981 and 1984, the number of thrift examiners and supervisors was cut; between 1980 and 1983, so was the number of thrift examinations.³⁹ Over that period, on-site examinations of banks and thrifts became fewer and farther between, particularly in regions with the most troubled institutions.⁴⁰

Meanwhile, scores of thrifts took on too much risk and became insolvent. Those institutions should have been promptly shut down to avoid further losses.⁴¹ Instead, state and federal banking regulators delayed the closure of many of those institutions, sometimes due to political pressure⁴² and

36. Former Federal Reserve Board Regulation Q was promulgated pursuant to the provisions of the Banking Act of 1933, ch. 89, § 11(b), 48 Stat. 162, 181–82 (formerly codified at 12 U.S.C. §§ 371a–371b). *See also* former 12 U.S.C. § 1425b (repealed 1989) (governing interest on deposits paid by thrifts).

37. *See generally* WHITE, *supra* note 31, at 67–72.

38. BARTH ET AL., *supra* note 32, at 157.

39. *See* WHITE, *supra* note 31, at 88–89; *see also* FED. DEPOSIT INS. CORP., HISTORY OF THE EIGHTIES: AN EXAMINATION OF THE BANKING CRISES OF THE 1980S AND EARLY 1990S 426–27 (1997), <https://www.fdic.gov/bank/historical/history/vol1.html> [hereinafter FDIC HISTORY].

40. FDIC HISTORY, *supra* note 39, at 422–26, 428–30.

41. *See, e.g.*, FDIC HISTORY, *supra* note 39, at 428 fig.12.2 (showing numbers of problem banks in the 1980s); WHITE, *supra* note 31, at 99–115.

42. For example, pressure from five U.S. Senators—known as the “Keating Five”—delayed the closure of Lincoln Savings & Loan. *See Keating Five*, N.Y. TIMES,

sometimes because they were hoping for a turnaround. Those delays in closure—which dragged on for months or years—allowed insolvent institutions to gamble for broke, which increased the losses to U.S. taxpayers when the institutions eventually failed.⁴³ At some of those institutions, no formal enforcement actions were ever taken against them despite their deteriorating condition.⁴⁴

Putting off the inevitable inflicted a heavy toll. When the 1980s thrift and banking crisis came to a close, approximately 1,300 savings and loan institutions and 1,617 banks had failed.⁴⁵ It cost \$153 billion to resolve these institutions, much of that at taxpayer expense.⁴⁶

Regulatory inertia roared back during the lead-up to the 2008 financial crisis. The story dates back to 1994, when Congress enacted some modest legislation in response to the first signs of abuse in the fledgling subprime mortgage market. That year, Congress prohibited some of the worst subprime practices in the Home Ownership and Equity Protection Act (HOEPA).⁴⁷ However, these provisions of HOEPA covered less than one percent of subprime mortgages⁴⁸ and did not stop the growing tide of accusations about home loan abuses. By 2007, over thirty states and the District of Columbia had enacted anti-predatory lending statutes of their own in response to HOEPA's deficiencies.⁴⁹

These developments by the states triggered a counter-reaction from two powerful federal banking regulators in the form of aggressive preemption rulings. Previously, in 1996, the nation's federal thrift supervisor, the former U.S. Office of Thrift Supervision (OTS), had promulgated a sweeping regulation asserting federal preemption of state laws regulating residential mortgages with respect to federal thrift institutions.⁵⁰ In 2004, the Office of the Comptroller of the Currency (the OCC), which oversees national banks,

http://topics.nytimes.com/top/reference/timestopics/subjects/k/keating_five/index.html (last visited Jan. 17, 2016).

43. See, e.g., BARTH ET AL., *supra* note 32, at 159, 166–67; FDIC HISTORY, *supra* note 39, at 439, 454–61.

44. FDIC HISTORY, *supra* note 39, at 461. From this, the Federal Deposit Insurance Corporation concluded that there was something “lacking in the enforcement process.” *Id.*

45. *Id.* at 4 n.1, 15 tbl.1.1.

46. Timothy Curry & Lynn Shibut, *The Cost of the Savings and Loan Crisis: Truth and Consequences*, 13 FDIC BANKING REV. 26, 33 (2000).

47. Pub. L. No. 103-325, 108 Stat. 2160 (1994).

48. EDWARD M. GRAMLICH, SUBPRIME MORTGAGES: AMERICA'S LATEST BOOM AND BUST 28 (2007).

49. See KATHLEEN C. ENGEL & PATRICIA A. MCCOY, THE SUBPRIME VIRUS: RECKLESS CREDIT, REGULATORY FAILURE, AND NEXT STEPS 159, 161 fig.8.3 (2011).

50. 12 C.F.R. § 560.2 (1996).

issued a virtually identical preemption rule shielding national banks and their operating subsidiaries from state anti-predatory lending laws.⁵¹ Together, by 2004, the OTS and OCC were construing their preemption rules to allow national banks and federal saving associations to ignore most state consumer protection laws on mortgages. To make matters worse, neither federal agency replaced the state laws they preempted with equivalent mortgage regulations of their own for federally chartered banks and thrifts.⁵²

The one federal regulator with the power to remedy this situation and address reckless mortgage lending across the board was the Board of Governors of the Federal Reserve System. HOEPA had an additional provision that commanded the Federal Reserve to prohibit two types of abuses: (1) unfair or deceptive mortgage acts or practices; and (2) mortgage refinance loans that were associated with abusive lending practices or that were otherwise not in the interest of the borrower.⁵³ This power was extremely broad in nature because it applied to virtually all mortgage lenders, regardless of their charter type or location, and to mortgages regardless of the interest rate. However, under HOEPA's terms, the provision could only be activated by regulation or by order. Alan Greenspan, the Fed chairman at the time, refused to adopt a rule to trigger the provision during his tenure.⁵⁴ It was not until June 2008, after Ben Bernanke succeeded Greenspan as chair, that the Fed finally adopted a rule implementing the unfair and deceptive acts and practices provision of HOEPA.⁵⁵ This sequence of events was a classic case of procyclical regulation because the Federal Reserve tightened regulation only after crisis struck, not before lending problems spun out of control.

Admittedly, U.S. banking regulators did start voicing concerns about the mounting risks from risky home loans starting in late 2005.⁵⁶ But for the most part, until mid-2008, their response was muted and limited to non-binding guidances, confidential examination reports, and isolated enforcement actions against small institutions.⁵⁷ And, just as in the 1980s savings and loan crisis, the bank examination process was watered down or absent during the run-up to 2008. One regulator—the former OTS—cut its corps of consumer compliance examiners by 17.5 percent in 2002. Similarly, it later emerged

51. *Id.* §§ 34.3 (mortgage lending), 7.4008 (general lending) (2004).

52. ENGEL & MCCOY, *supra* note 49, at 158–59, 162, 164–68; McCoy & Renuart, *supra* note 27, at 110.

53. 15 U.S.C. § 1639(1)(2) (2006).

54. ENGEL & MCCOY, *supra* note 49, at 195–96.

55. Board of Governors of the Federal Reserve System, Official Staff Commentary on Truth in Lending—Part III: Final Rule, 73 Fed. Reg. 44522 (July 30, 2008).

56. *See* ENGEL & MCCOY, *supra* note 49, at 168–69.

57. *See id.* at 164–66, 169–84, 199–204.

that the Federal Reserve Board had declined *sub silentio* to regularly examine the nonbank mortgage lenders that were under its jurisdiction pre-crisis.⁵⁸

This account of the last thirty or so years shows that regulatory inertia is sometimes the result of discretionary decisions and sometimes the result of binding legal constraints. Self-preservation and regulatory capture are often reasons why regulators use their discretion to refrain from action.⁵⁹ Inaction can seem safer than action because the status quo usually attracts less immediate criticism than taking action. In other situations, inaction is the outcome of conscious deregulation by Congress and/or regulators resulting in laws or rules that prohibit intervention. Ideological opposition to government intervention is another source of government inaction that can manifest itself both through binding laws and discretionary decisions.⁶⁰

Countercyclical regulation approaches the problem of inertia in two ways. First, it seeks to correct the tendency of regulators to sit on their hands when action is needed. This objective intersects with the larger dialogue about rules versus standards⁶¹ and looks for ways to remove discretion in the regulatory system. Second, countercyclical regulation seeks to repeal deregulatory statutes that prohibit regulators from acting. There is significant debate, however, on exactly how countercyclical regulation should go about these tasks.

II. THEORIES OF COUNTERCYCLICAL REGULATION

Ultimately, countercyclical regulation seeks to avoid a systemic collapse from a series of financial institution failures.⁶² Its proponents disagree, however, on how to achieve that goal. Their disagreement goes to the heart of the theory underlying countercyclical regulation.

Some economists assert that the sole objective of countercyclical regulation should be to make financial institutions more resilient so that the financial system can better withstand economic shocks.⁶³ This line of thought emphasizes the need for financial firms to build higher capital reserves in

58. *See id.* at 175, 199.

59. *See, e.g.*, Calvert et al., *supra* note 25; MERTON H. MILLER, MERTON MILLER ON DERIVATIVES 44–45 (1997).

60. *See, e.g.*, ENGEL & MCCOY, *supra* note 49, at 175–76, 183, 189–96.

61. *See, e.g.*, Cass R. Sunstein, *Problems with Rules*, 83 CAL. L. REV. 953 (1995).

62. *See, e.g.*, BRUNNERMEIER ET AL., *supra* note 2, at 31–32; Caprio, *supra* note 2, at 3–7.

63. *See, e.g.*, Claudio Borio et al., *Procyclicality of the Financial System and Financial Stability: Issues and Policy Options*, in MARRYING THE MACRO- AND MICRO-PRUDENTIAL DIMENSIONS OF FINANCIAL STABILITY 2 (Bank for Int'l Settlements, Working Paper No. 1, 2001); Ren, *supra* note 5, at 4–5.

good economic times when profits are high, to cushion them from losses when downturns strike.⁶⁴

This goal is relatively uncontroversial, apart from any objections by regulated industries themselves. Minds differ, however, on whether countercyclical regulation should go further and prick asset bubbles. Advocates of this latter approach argue that countercyclical regulation should intervene when the credit cycle heats up to stop the growth of excessive credit and risk.⁶⁵ Under this theory, regulators should “lean against the wind” and take action while problems are small and can still be contained.

Initially, the debate over the wisdom of “leaning against the wind” revolved around two questions: whether regulators can detect asset bubbles accurately, and whether monetary tools are too blunt to deflate them.⁶⁶ As I will discuss,⁶⁷ there are substantial reservations on both scores. Over time, however, the debate has become more sophisticated and begun to ask whether other underlying factors that contribute to ruinous asset bubbles—most importantly, lax credit—could be the subject of successful early intervention. In a related vein, experts are examining other regulatory tools that could nip those contributing factors in the bud more successfully than monetary policy.⁶⁸

Former Federal Reserve Board Chairman Ben Bernanke’s own views on the wisdom of attempting to prick bubbles evolved over time. In 2002, while he was a Fed governor under Chairman Alan Greenspan, Bernanke asserted

64. Ren, *supra* note 5, at 5, 8. This movement is part of a larger renewed emphasis on higher minimum capital requirements for banks and other financial firms. See, e.g., ANAT ADMATI & MARTIN HELLMIG, *THE BANKERS’ NEW CLOTHES: WHAT’S WRONG WITH BANKING AND WHAT TO DO ABOUT IT* (Princeton Univ. Press 2013).

65. See, e.g., BRUNNERMEIER ET AL., *supra* note 2, at 32; Borio, *supra* note 1, at 5–6; Ren, *supra* note 5, at 4–5; Michael D. Bordo & Olivier Jeanne, *Boom-Busts in Asset Prices, Economic Instability, and Monetary Policy* (NBER, Working Paper No. 8966, 2002); Claudio Borio & Philip Lowe, *Asset Prices, Financial and Monetary Stability: Exploring the Nexus* (Bank of Int’l Settlements, Working Paper No. 114, 2002); Stephen Cecchetti et al., *Asset Prices in a Flexible Inflation Targeting Framework* (Nat’l Bureau of Econ. Research, Working Paper No. 8970, 2002); William Dupor, *Nominal Price Versus Asset Price Stabilization* (Wharton School, Working Paper, 2002); Stephany Griffith-Jones & José Antonio Ocampo, *Building on the Counter-Cyclical Consensus: A Policy Agenda 2–3* (Working Paper, 2009).

66. See, e.g., Ben S. Bernanke, Member, Fed. Reserve Bd. of Governors, Remarks Before the New York Chapter of the National Association for Business Economics: Asset-Price “Bubbles” and Monetary Policy (Oct. 15, 2002), <http://www.federalreserve.gov/boarddocs/speeches/2002/20021015/default.htm>; Asli Demirgüç-Kunt & Luis Servén, *Are All the Sacred Cows Dead? Implications of the Financial Crisis for Macro and Financial Policies 26–30* (World Bank Policy Research, Working Paper 4807, 2009).

67. See *infra* Section III.

68. See, e.g., BRUNNERMEIER ET AL., *supra* note 2, at 32; Demirgüç-Kunt & Servén, *supra* note 66, at 30; Griffith-Jones & Ocampo, *supra* note 65, at 2–3.

in a speech that “‘leaning against the bubble’ is unlikely to be productive in practice.”⁶⁹ Later though, in speeches and press conferences starting in 2010, his views changed. The Federal Reserve Board, he said in 2010, “must remain open to using monetary policy as a supplementary tool for addressing” systemic risk.⁷⁰ Later, in a 2013 press conference in which he expressed his preference for a “tripartite approach” of improved monitoring, supervision and regulation, and better communication with markets to deal with asset bubbles, Bernanke nevertheless hinted that he would consider interest rate hikes too if necessary.⁷¹

Bernanke was speaking from the trenches and no doubt his views were shaped by his harrowing personal experience as a top regulator during the 2008 financial crisis and its aftermath. His changing views also reflected the prior decade’s evolving thinking about countercyclical regulation and particularly data that were starting to stream in on the initial results of countercyclical approaches.⁷² Much of this evolution involved a new appreciation for the variety and breadth of possible regulatory tools for countercyclical intervention.

III. TECHNIQUES OF COUNTERCYCLICAL REGULATION

The overriding goal of countercyclical regulation is to address excessive build-ups of risk during the economic cycle.⁷³ Some countercyclical tools are *time-varying*, in that their parameters fluctuate according to the business cycle.⁷⁴ Other countercyclical tools maintain constant parameters throughout the business cycle and thus are *fixed*.⁷⁵ Despite their fixed nature, these latter

69. Bernanke, *supra* note 66.

70. Ben S. Bernanke, Chairman, Fed. Reserve Bd. of Governors, Speech at the Annual Meeting of the American Economic Association: Monetary Policy and the Housing Bubble (Jan. 3, 2010), <http://www.federalreserve.gov/newsevents/speech/bernanke20100103a.htm>.

71. Catherine Hollander, *What You Need to Know About Ben Bernanke’s Evolving Views on Asset Bubbles*, NAT’L J. (Mar. 20, 2013), <http://www.nationaljournal.com/s/82386/what-you-need-know-about-ben-bernankes-evolving-views-asset-bubbles>.

72. See Bernanke, *supra* note 70; Ben S. Bernanke, Chairman, Fed. Reserve Bd. of Governors, Speech at the Federal Reserve Bank of Boston 56th Economic Conference: The Effects of the Great Recession on Central Bank Doctrine and Practice (Oct. 18, 2011), <http://www.federalreserve.gov/newsevents/speech/bernanke20111018a.htm>.

73. Claudio Borio has referred to this as the *time dimension*, which deals “with how aggregate risk in the financial system evolves over time.” Borio, *supra* note 1, at 3.

74. This is also called the “variable approach.” See GROUP OF THIRTY, *supra* note 1, at 14, 42–43. Examples include countercyclical capital buffers and dynamic provisioning.

75. See *id.* Maximum debt-to-income ratios are one example.

tools are countercyclical in effect because they address incipient bubbles by becoming binding as credit conditions heat up.⁷⁶

Countercyclical regulation encompasses a variety of policy interventions, including monetary policy, capital adequacy regulation, provisioning, and liquidity regulation.⁷⁷ Other countercyclical tools have garnered less attention. Principal among them is sectoral regulation, which consists of regulatory techniques to address heightened risks in discrete sectors of the economy such as real estate. In this section, I explore these techniques and discuss the under-recognized potential of sectoral regulation in curtailing real estate bubbles.

Three themes emerge from this overview of countercyclical tools. First, over the past fifteen years, the search for countercyclical methods has wisely moved beyond monetary policy to other, more tailored regulatory approaches. Second, some countercyclical techniques, such as debt-to-income and loan-to-value ratios, seek to alter the demand for credit, while others, such as capital and reserve requirements, tackle the supply.⁷⁸ Finally, countercyclical design remains in its infancy. The 2008 financial crisis put a number of countercyclical tools to the test and their effectiveness was less than convincing. Other, newer techniques that were not in effect in 2008 have not been fully tested.⁷⁹ While the early returns from countercyclical tools are inconclusive, they drive home the need to refine those tools and strengthen them. In addition, the mixed results point to the need to identify and address institutional factors that could retard those tools' success.

A. Monetary Policy

Some of the earliest debates about countercyclical regulation involved the use of monetary policy to deflate asset bubbles.⁸⁰ Underpinning these debates

76. For this reason, these latter countercyclical tools are distinguished from *through-the-cycle tools* that seek to make financial institutions more resilient by addressing shared exposures and linkages that can jeopardize financial institutions simultaneously through exposure to identical risks. Borio refers to this latter issue of interlinkages as the *cross-sectional dimension* of macroprudential regulation. See Borio, *supra* note 1, at 3.

77. For a useful inventory of these tools in the United States, see OFFICE OF FIN. RESEARCH, 2013 OFR ANNUAL REPORT 35–38 & fig.27 (2013), <http://financialresearch.gov/annual-reports/files/office-of-financial-research-annual-report-2013.pdf>.

78. See Elliott et al., *supra* note 1, at 3.

79. See, e.g., Daniel K. Tarullo, Member, Fed. Reserve Bd. of Governors, Address at the 4th Annual Conference on Evaluating Macroprudential Tools: Advancing Macroprudential Policy Objectives (Jan. 30, 2015), <http://www.federalreserve.gov/newsevents/speech/tarullo20150130a.htm>.

80. See note 2 *supra* and accompanying text.

are concerns that looser monetary policy could intensify risks to financial stability.⁸¹ Accordingly, the debates have focused on two monetary tools for slowing down lending: interest rate hikes and, to a far lesser extent, tighter reserve requirements.⁸² Traditionally, central banks have moved interest rates in response to inflation in the price of goods, not to buildups in asset prices that could jeopardize financial stability.⁸³ Whether central banks should make financial stability an added goal of their discount rate models has proven vexing.

Federal Reserve Board chairmen have varied over the years in their willingness to puncture asset bubbles by raising interest rates. William McChesney Martin, Jr., Chairman of the Federal Reserve from 1951 to 1970, teed up the issue when he famously said: “I’m the fellow who takes away the punch bowl just when the party is getting good.”⁸⁴ Former Chairman Alan Greenspan was considerably less sanguine about monetary policy’s power to halt asset bubbles. In a 2002 speech in Jackson Hole, Wyoming, for instance, Greenspan asserted: “[I]t was far from obvious that bubbles, even if identified early, could be preempted short of the central bank inducing a substantial contraction in economic activity—the very outcome we would be seeking to avoid.”⁸⁵ His successor as Fed chairman, Ben Bernanke, was more receptive to addressing inflated asset prices through monetary tools, but regarded those tools as a second line of defense following monitoring, bank examinations, and dissemination of information to markets.⁸⁶

81. Tobias Adrian & Nellie Liang, *Monetary Policy, Financial Conditions, and Financial Stability* 1–13 (Fed. Res. Bank of N.Y. Staff Report No. 690, Sept. 2014), http://www.newyorkfed.org/research/staff_reports/sr690.pdf; cf. Markus K. Brunnermeier & Patrick Cheridito, *Measuring and Allocating Systemic Risk* 2 (Working Paper, 2014), <http://www.hec.unil.ch/documents/seminars/ibf/1264.pdf> (“Systemic risk can build up during economic booms but only materializes when a crisis erupts. If not taken into account by regulation, this can lead to the situation that a financial system is more vulnerable when observed volatility is low, a phenomenon coined as ‘volatility paradox’ . . .”).

82. For a history of the past use of reserve requirements in the United States to address bubbles, see Elliott et al., *supra* note 1, at 24–30.

83. See, e.g., BRUNNERMEIER ET AL., *supra* note 2, at 57; Ben S. Bernanke & Mark Gertler, *Should Central Banks Respond to Movements in Asset Prices?*, 91 AM. ECON. REV. 253, 253–254 (2001); Demirgüç-Kunt & Servén, *supra* note 66, at 26.

84. *Business: The Martin Era*, TIME MAGAZINE, Feb. 2, 1970, at 66, <http://time.com/vault/issue/1970-02-02/spread/70>.

85. Alan Greenspan, Chairman, Fed. Reserve Bd. of Governors, Remarks at a Symposium Sponsored by the Federal Reserve Bank of Kansas City: Economic Volatility (Aug. 30, 2002), <http://www.federalreserve.gov/boarddocs/speeches/2002/20020830/>; see also Ben S. Bernanke & Mark Gertler, *Inside the Black Box: The Credit Channel of Monetary Policy Transmission*, 9 J. ECON. PERSPECTIVES 27, 32–33 (1995).

86. Hollander, *supra* note 71.

As Greenspan noted, any attempt to prevent asset booms and busts through interest rate hikes presents a host of difficult issues. First is the problem of which asset bubbles to pop. Arguably, the ones to prick are those fueled by lending. But say securities lending on margin is becoming overheated, while real estate lending is not. Should the Federal Reserve raise interest rates or change the margin requirements in response?

Timing is also a concern. In real time, it can be difficult for a central bank to know whether rising asset prices represent an increase in fundamental values or a departure. This is particularly true in the early phases of an asset bubble, when intervention would be most useful.⁸⁷ Timing errors could come at a high cost, by stunting growth and thwarting the invisible hand of asset prices in properly allocating resources. Raising interest rates to prick asset bubbles, moreover, is a fairly crude method.⁸⁸ Doing so could depress values across the board, including numerous asset classes that present no imminent risk of a bubble.⁸⁹ Further, stopping a housing bubble could require such major interest rate hikes that output would fall.⁹⁰ Because monetary policy is such a diffuse tool for deflating asset bubbles and has such strong ancillary effects, using it for that purpose will often violate Mundell's assignment principle that counsels banking regulators to pair policy instruments with "the objectives on which [those tools] have the most influence." Otherwise, Mundell warned, "there will develop a tendency either for a cyclical approach to equilibrium or for instability."⁹¹

For these reasons, central banks remain skittish about their ability to accomplish both goals—fighting inflation and assuring financial stability—through monetary tools.⁹² Instead, much of central bankers' discussion of countercyclical regulation has shifted in recent years to other tools that are

87. See, e.g., Demirgüç-Kunt & Servén, *supra* note 66, at 29.

88. See, e.g., BRUNNERMEIER ET AL., *supra* note 2, at 57.

89. See, e.g., Demirgüç-Kunt & Servén, *supra* note 66, at 30.

90. See Bernanke & Gertler, *supra* note 83, at 257; Katrin Assenmacher-Wesche & Stefan Gerlach, *Ensuring Financial Stability: Financial Structure and the Impact of Monetary Policy on Asset Prices* (Univ. of Zurich Inst. for Empirical Research in Econ., Working Paper No. 361, 2008).

91. See Robert A. Mundell, *The Appropriate Use of Monetary and Fiscal Policy for Internal and External Stability*, 9 INT'L MONETARY FUND STAFF PAPERS 70, 76 (1962), <http://www.jstor.org/stable/3866082>.

92. See, e.g., Caprio, *supra* note 2, at 7–8; Eugenio Cerutti et al., *The Use and Effectiveness of Macroprudential Policies: New Evidence* 11 (Int'l Monetary Fund, Working Paper WP/15/61, 2015); Leonardo Gambacorta & Federico M. Signoretti, *Should Monetary Policy Lean Against the Wind? An Analysis Based on a DSGE Model with Banking 2* (Bank for Int'l Settlements, Working Paper No. 418, 2013); Demirgüç-Kunt & Servén, *supra* note 66, at 30–31; OFFICE OF FIN. RESEARCH, *supra* note 77, at 41–42.

better tailored to modulating boom and bust cycles, particularly by severing the feedback loop between easy credit and inflated asset prices.⁹³

B. *Capital Adequacy*

Minimum capital requirements are a mainstay of the countercyclical arsenal and take center stage in countercyclical financial reforms. The primacy of this approach is evident in the Dodd-Frank Act in 2010, where Congress ordered federal prudential banking regulators to overhaul the minimum capital rules to make them “countercyclical, so that the amount of capital required to be maintained . . . increases in times of economic expansion and decreases in times of economic contraction, consistent with the safety and soundness of the” holding company or bank.⁹⁴ Starting in 1989, congressional enactments have introduced counter cyclicity into capital adequacy in two distinct respects: one, by changing the capital requirements themselves and, two, by requiring prompt closure when banks become critically undercapitalized.

1. Countercyclical Capital Requirements

Capital adequacy requirements have two main objectives.⁹⁵ One is to ensure that financial institutions have sufficient capital—in the form of shareholders’ equity or other substitutes—to absorb unexpected losses. Capital, in this sense, provides a safety cushion to ensure that any losses fall first on the company’s shareholders. In addition, by helping to internalize losses, capital regulation strives to discourage shareholders from shifting the onus of a firm’s bad decisions to creditors such as depositors or lenders or, even worse, to the federal government and taxpayers.

This perverse incentive to shift losses arises from the fact that financial institutions, like all firms, can finance their operations through a mixture of contributions by shareholders (equity) and borrowed funds (debt).⁹⁶ Shareholders know that they can improve the return on their investment through leverage: that is, by funding the company’s activities less with equity

93. See, e.g., Bernanke, *supra* note 72.

94. Dodd-Frank Act, Pub. L. No. 111-203, § 616(a)–(c), 124 Stat. 1376 (2010) (amending 12 U.S.C. §§ 1467a(g)(1), 1844(b), 3907(a)(1)).

95. See generally ADMATI & HELWIG, *supra* note 64, at 81–99.

96. See, e.g., Merton H. Miller & Franco Modigliani, *Dividend Policy, Growth, and the Valuation of Shares*, 34 J. BUS. 411, 429–30 (1961).

and more with debt.⁹⁷ Commercial banks are much more leveraged than non-financial companies on average because banks finance most of their operations with debt in the form of deposits.

As leverage increases, shareholders are exposed to a smaller and smaller fraction of potential losses and the safety cushion available to protect creditors shrinks as well. When a company becomes too leveraged, shareholders have incentives to take outside risks because any profit will inure to them while any losses will be borne by the firm's creditors if the shareholders are wiped out. Capital adequacy rules seek to reverse these shareholder incentives by requiring financial firms to hold more equity compared to debt.⁹⁸

Early minimum capital requirements were confined to a simple leverage ratio, which is typically defined by dividing shareholders' equity by average total assets.⁹⁹ The beauty of this ratio is that all assets are weighted the same, making it hard to manipulate. In 1988, however, global financial regulators became enamored of the risk-based approach in the Basel I Capital Accord. Under the risk-based approach, financial institutions were allowed to hold less capital against "safer" assets. Basel I divided assets into four categories according to risk and each of those four "buckets" received a different risk weight (ranging from 0 percent for safer assets to 100 percent for the riskiest). Banks were required to hold capital of at least 8 percent of their total risk-weighted assets.

Over time, Basel I manifested a number of problems. Ironically, it reduced the total capital held in the financial system because less capital had to be held against assets that were deemed safe. Similarly, Basel I did not take

97. For example, take a \$10 million firm where shareholders contribute \$5 million of the working funds and debt makes up the other half. Assume that the shareholders decide to have the company invest \$1 million in a project with a certain 10% return. The profit on that project will be \$100,000. The return on equity will be \$100,000/\$5 million or 2%. Now imagine a scenario where the shareholders increase their leverage by investing only 10% or \$1 million in the same \$10 million firm, with debt contributing the other 90%. In that case, the same project will produce a return on equity of \$100,000/\$1 million or 10%. As this shows, shareholders can increase their potential returns by loading up the company with leverage in the form of debt.

98. Whether higher capital levels will reduce risk-taking by banks remains a matter of intense debate. Caprio argues, for instance, that if shareholders and managers have a target rate of return and supervisors cannot observe their decisions on a real-time basis, higher capital requirements might push them toward riskier decision-making. *Compare, e.g., ADMATI & HELLWIG, supra* note 64, at 115–28, *with* Caprio, *supra* note 2, at 23–24.

99. Brunnermeier et al. argue that the denominator should be limited to common equity, not total equity, to better align shareholders' incentives. BRUNNERMEIER ET AL., *supra* note 2, at 34–36.

account of systemic risk.¹⁰⁰ Finally, the Basel I risk weights were easy to manipulate.

There were numerous ways to game the risk weights.¹⁰¹ Those weights underestimated the risk that certain assets posed. For example, U.S. residential mortgages and sovereign debt were seriously underweighted in view of their actual risk, as the 2008 financial crisis and the European Union debt crisis showed. That encouraged banks to concentrate investments in those asset classes. In addition, Basel I's design encouraged banks to load up on the riskiest assets within a given risk weight bucket. Further, banks did not have to hold full capital against assets that they shifted off their balance sheets via securitization loans or structured investment vehicles (SIVs), even when banks retained exposure to those items through formal or informal guarantees.¹⁰² This last problem helped fuel the surge in mortgage-backed securities and collateralized debt obligations that nearly brought down the global financial system in 2008.

U.S. banking regulators responded to these problems by unveiling the Basel II approach in December 2007, unfortunately just in time for the financial crisis. Basel II took some initial steps to address operational risk and trading risk, but not systemic risk.¹⁰³ In addition, as mentioned earlier, Basel II altered the risk bucket system for assigning risk weights. Under Basel II, smaller banks had to base their risk weights on ratings by the credit rating agencies, while the largest international banks generated their own risk weights using their own internal risk models. These models were only as good as their economic assumptions and inputs and ended up severely

100. See DANIEL K. TARULLO, *BANKING ON BASEL: THE FUTURE OF INTERNATIONAL FINANCIAL REGULATION* 54–64 (Peterson Inst. for Int'l Econ., 2008).

101. For a general discussion of these problems, see Peter King & Heath Tarbert, *Basel III: An Overview*, BANKING & FINAN. SERVS. POL'Y REPORT, May 2011, at 1, 2; McCoy, *supra* note 19, at 452–53.

102. Banks that originated mortgages and then securitized them normally agreed to recourse clauses in which they would buy back any mortgages that involved early payment default or fraud. See Kathleen C. Engel & Patricia A. McCoy, *A Tale of Three Markets: The Law and Economics of Predatory Lending*, 80 TEX. L. REV. 1255, 1288, 1361 (2002); Robert T. Miller, *The RMBS Put-Back Litigations and the Efficient Allocation of Endogenous Risk Over Time*, 34 REV. BANKING & FIN. L. 255, 289–94 (2014). In a slightly different vein, for reputational reasons in 2007, Citibank voluntarily agreed to take \$49 billion in assets from troubled SIVs back onto its books. See Dan Gallagher, *Citigroup Says it Will Absorb SIV Assets*, MARKETWATCH (Dec. 13, 2007, 11:36 PM), <http://www.marketwatch.com/story/citi-plans-to-absorb-49-billion-in-siv-assets-onto-balance-sheet>.

103. See BASEL COMM. ON BANKING SUPERVISION, *BASEL II: INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS: A REVISED FRAMEWORK* 13–17 (2004), <http://www.bis.org/publ/bcbs107.htm>.

underestimating losses in the run-up to the recent crisis.¹⁰⁴ In addition, Basel II gave the largest financial institutions opportunities to rig their models in order to hold less capital.¹⁰⁵ Regulators' ability to detect these problems and evaluate the models was questionable.

The 2008 crisis revealed another problem, which was the procyclical bent of the Basel rules.¹⁰⁶ At best, Basel I was indifferent to the business cycle and did not require banks to accumulate additional capital when times were good. Basel II went further and was overtly procyclical. As discussed earlier, Basel II's decision to rely so heavily on private credit ratings and internal models encouraged financial institutions to underestimate their risks significantly in flush times.

For all of these reasons, Basel II came under attack in the aftermath of 2008. Chastened, regulators returned to the drawing board and the G20 endorsed higher capital levels in the new Basel III Accord in November 2010.

As this account suggests, minimum capital regulation has had a checkered history of success. The numbers tell the story. During the housing bubble, from 2005 through 2008, capital levels steadily declined at insured U.S. banks and thrifts. In 2006, overall core capital for the U.S. banking industry stood at 8.25 percent; by 2008, it had dropped to 7.48 percent.¹⁰⁷ Meanwhile, one of the reasons Henry Paulson, Jr., and Ben Bernanke argued so vehemently for TARP bailouts in the late fall of 2008 was that regulators suspected that almost all of the largest U.S. banks were insolvent.¹⁰⁸ Across-

104. See, e.g., King & Tarbert, *supra* note 101, at 3. Regulators had allowed major banks to phase in the Basel II system some time before that system was formally unveiled in December 2007.

105. See, e.g., Saul Hansell, *How Wall Street Lied to Its Computers*, N.Y. TIMES (Sept. 18, 2008, 7:52 AM), http://bits.blogs.nytimes.com/2008/09/18/how-wall-streets-quants-lied-to-their-computers/?_r=0; Paul Wilmott, *For Wall Street, Greed Wasn't Good Enough*, N.Y. TIMES (Sept. 18, 2008), <http://www.nytimes.com/2008/09/18/opinion/18wilmott.html?pagewanted=all>.

106. Cf. Joseph G. Haubrich, *How Cyclical is Bank Capital?* 15–16 (Fed. Res. Bank of Cleveland, Working Paper No. 15-04, 2015), <https://www.clevelandfed.org/newsroom-and-events/publications/working-papers/2015-working-papers/wp-1504-how-cyclical-is-bank-capital.aspx> (finding the Basel ratio of Tier 1 to risk-weighted assets “moderately pro-cyclical”).

107. *Statistics on Depository Institutions—Compare Banks*, FED. DEPOSIT INS. CORP., <https://www5.fdic.gov/sdi/> (last visited Jan. 17, 2016) (computations by author).

108. In a private interview with the Financial Crisis Inquiry Commission, then Federal Reserve Chairman Ben Bernanke stated that only one of the financial firms that came under pressure in fall 2008 “was not at serious risk of failure.” Richard Blackden, *Only One US Bank was Safe from Collapse During Financial Crisis, Says Fed's Ben Bernanke*, THE TELEGRAPH (Jan. 28, 2011, 1:25 PM), <http://www.telegraph.co.uk/finance/newsbysector/banksandfinance/8287381/Only-one-US-bank-was-safe-from-collapse-during-financial-crisis-says-Feds-Ben-Bernanke.html>. Citigroup and Bank of America Corporation were in such dire shape that they each eventually received two

the-board capital infusions to the nation's top banks gave regulators cover to bail out the sickest of those institutions without having to close them down. Despite these cash infusions, by the end of 2008, nearly one quarter of all insured U.S. depository institutions were losing money.¹⁰⁹

The severity of these losses forced supervisors to rethink capital supervision in Basel III. One of Basel III's overarching objectives is to boost the amount and quality of capital. In addition, Basel III consciously incorporates countercyclical elements in order to prod financial institutions to build up their capital during economic expansions. One such element requires banks to evaluate risks over the entire economic cycle, not just five years.¹¹⁰ Another element, called a *countercyclical buffer*, requires banks to hold added capital, over and above the ordinary minimum level, when credit conditions start to overheat.¹¹¹ On top of this, Basel III vests regulators with authority to impose an extra *capital conservation buffer* of up to 2.5 percent in order for global systemically important banks to avoid limitations on their dividend payments and bonuses.¹¹² The largest banks and bank holding companies also undergo macroprudential stress tests to determine whether they will have sufficient capital in times of financial stress.¹¹³ Basel III further

TARP bailouts, for a total of \$45 billion apiece. See *Bailout Recipients*, PRO PUBLICA, <http://projects.propublica.org/bailout/list> (last visited Jan. 17, 2016).

109. FED. DEPOSIT INS. CORP., *supra* note 107.

110. See Ren, *supra* note 5, at 21–23.

111. See *id.* at 23–27. In October 2013, the Federal Reserve and the Office of the Comptroller of the Currency adopted a final rule mandating a countercyclical buffer for large banks and bank holding companies that started phasing in in January 2016. 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: Final Rule, 78 Fed. Reg. 62018, 62031, 62171 (Oct. 11, 2013). For a general assessment of this tool, see Rafael Repullo & Jesús Saurina, *The Countercyclical Capital Buffer of Basel III: A Critical Assessment* 5–8 (Ctr. for Monetary and Fin. Studies, Working Paper No. 1102, 2011), <ftp://ftp.cemfi.es/wp/11/1102.pdf>. Some commentators have advocated sectoral capital requirements, which would be amassed and spent down like countercyclical buffers but would be tailored to certain asset classes, such as housing and housing-related instruments. See, e.g., Adrian & Liang, *supra* note 81, at 17. For a discussion of sectoral capital requirements in a handful of countries, see Ren, *supra* note 5, at 29.

112. 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: Final rule, 78 Fed. Reg. 62018, 62031, 62171 (Oct. 11, 2013).

113. See, e.g., GROUP OF THIRTY, *supra* note 1, at 45, 48–50.

superimposes a simple 3 percent leverage ratio¹¹⁴ on top of the risk-based capital ratio. The leverage ratio is an important step forward because it cannot be easily gamed.

In a similar vein, Basel III is the first global framework to impose minimum liquidity standards for risks posed by financial institutions to the financial system as a whole. The centerpiece of that approach is Basel III's directive to financial institutions to rely more heavily on long-term debt and to hold sufficient liquid assets to offset any runs on their short-term debt.¹¹⁵ The purpose of these requirements is to push financial institutions to fund their long-term assets with long-term sources of funds, instead of short-term loans of the kind that toppled Bear Stearns and Lehman Brothers.

Despite the Basel III initiative, the jury is out on whether it will succeed, especially given the incremental nature of its reforms. Basel III, for example, leaves the internal-ratings-based approach in place for the largest, too-big-to-fail banks. Meanwhile, precisely how much added capital it will require remains the subject of heavy lobbying.¹¹⁶ Some observers are concerned that banks will only be required to hold a measly 3 to 5 percent in total capital at the end of the day.¹¹⁷ The effectiveness of capital rules in curbing banks' risk-taking appetite remains in question. Finally, there are doubts about whether the countercyclical and capital conservation buffers will work if the decision

114. See Ren, *supra* note 5, at 11, 20–21. Under Basel III, the leverage ratio takes off-balance-sheet items and derivatives into account, in addition to total assets. See King & Tarbert, *supra* note 101, at 6.

115. See Liquidity Coverage Ratio: Liquidity Risk Measurement Standards: Final Rule, 79 Fed. Reg. 61440, 61440 (Oct. 10, 2014); BASEL COMM. ON BANKING SUPERVISION, BASEL III: THE LIQUIDITY COVERAGE RATIO AND LIQUIDITY RISK MONITORING TOOLS 1–3 (2013), <http://www.bis.org/publ/bcbs238.htm>; BASEL COMM. ON BANKING SUPERVISION, BASEL III: THE NET STABLE FUNDING RATIO 1–2 (2014), <http://www.bis.org/bcbs/publ/d295.htm>; see also GROUP OF THIRTY, *supra* note 1, at 50–51; Jeremy C. Stein, Member, Fed. Reserve Bd. of Governors, Speech at the “Finding the Right Balance” 2013 Credit Markets Symposium: Liquidity Regulation and Central Banking (April 19, 2013), <http://www.federalreserve.gov/newsevents/speech/stein20130419a.htm>. For a general discussion of minimum liquidity standards, see BRUNNERMEIER ET AL., *supra* note 2, at 39, 45–48; OFFICE OF FIN. RESEARCH, *supra* note 77, at 46; OFFICE OF FIN. RESEARCH, 2014 ANNUAL REPORT 50–52 (2014), <http://financialresearch.gov/annual-reports/files/office-of-financial-research-annual-report-2014.pdf>; INT'L MONETARY FUND, KEY ASPECTS OF MACROPRUDENTIAL POLICY—BACKGROUND PAPER (2013), <http://www.imf.org/external/np/pp/eng/2013/061013C.pdf>.

116. See, e.g., Gretchen Morgenson, *Bankers Are Balking at a Proposed Rule on Capital*, N.Y. TIMES (July 13, 2013), <http://www.nytimes.com/2013/07/14/business/bankers-are-balking-at-a-proposed-rule-on-capital.html>.

117. See, e.g., Anat R. Admati, *We're All Still Hostages to the Big Banks*, N.Y. TIMES (Aug. 25, 2013), <http://www.nytimes.com/2013/08/26/opinion/were-all-still-hostages-to-the-big-banks.html>.

when to trigger those requirements is left to regulators' discretion.¹¹⁸ Consequently, despite the enormous effort being put into capital reforms, these problems have prompted a search for other types of countercyclical tools.

2. Prompt Corrective Action Rules

Despite the Basel Accord's inherent procyclicality, surprisingly one of the earliest U.S. experiments with countercyclical design involved capital adequacy. In the aftermath of the 1980s savings and loan crisis, Congress was disturbed at regulators' protracted delay in closing down insolvent banks and thrifts. In response, in the Federal Deposit Insurance Corporation Improvement Act of 1989 (FDICIA), Congress enacted a general rule requiring federal banking regulators to close a failing depository institution within ninety days after the institution's leverage ratio falls below 2 percent.¹¹⁹ This rule—known as the prompt corrective action rule or PCA—was an early attempt by Congress to impose a binding, objective rule on federal regulators in order to constrain their discretion and *force* them to act. Prompt corrective action is countercyclical in that respect.

118. See, e.g., OFFICE OF FIN. RESEARCH, *supra* note 77, at 44–45; Larry D. Wall, *Measuring Capital Adequacy Supervisory Stress Tests in a Basel World* 18–19 (Fed. Res. Bank of Atlanta, Working Paper No. 2013-15, 2013), <https://www.frbatlanta.org/research/publications/wp/2013/15.aspx>. The Basel Committee has suggested using a standardized automatic trigger (consisting of deviations of the ratio of nonfinancial private-sector credit-to-GDP from long-term average trends) to circumvent this problem. See OFFICE OF FIN. RESEARCH, *supra* note 77, at 44; INT'L MONETARY FUND, *supra* note 115; Simo Kalatie et al., *Indicators Used in Setting the Countercyclical Capital Buffer* 1–6 (Bank of Finland Research Discussion Paper No. 8, 2015), http://www.suomenpankki.fi/en/julkaisut/tutkimukset/keskustelualoitteet/Documents/BoF_DP_1508.pdf. Wall recommends using stress tests to accomplish the same goal. Wall, *supra* note 118, at 19. For more optimistic forecasts of countercyclical bank capital requirements, see, for example, Paolo Angelini et al., *Basel III: Long-Term Impact on Economic Performance and Fluctuations*, 83 THE MANCHESTER SCHOOL 217, 217–19 (2015); Ignazio Angeloni & Ester Faia, *Capital Regulation and Monetary Policy with Fragile Banks*, 60 J. MONETARY ECON. 311, 311–12 (2013); Ian Christensen et al., *Bank Leverage Regulation and Macroeconomic Dynamics* 2–3 (Bank of Canada, Working Paper No. 2011-32, 2011), <http://www.bankofcanada.ca/2011/12/working-paper-2011-32/>; Papa N'Diaye, *Countercyclical Macroprudential Policies in a Supporting Role to Monetary Policy* 3–4 (Int'l Monetary Fund, Working Paper No. 257, 2009), <https://www.imf.org/external/pubs/ft/wp/2009/wp09257.pdf>; William Tayler & Roy Zilberman, *Macroprudential Regulation and the Role of Monetary Policy* 2–6 (Dynare Working Paper Series, Working Paper No. 37, 2014), <http://www.dynare.org/wp-repo/dynarewp037.pdf> and sources discussed therein.

119. 12 U.S.C. § 1831o(c)(3)(B), (h)(3) (2015).

During the recent financial crisis, prompt corrective action had some partial success. For the most part, federal banking regulators did close critically capitalized banks and thrifts according to the timetable laid out in the prompt corrective action statute.¹²⁰ This suggests that the 1989 law successfully insulated those regulators from political pressure to prolong ailing banks' survival.

At the same time, the hope was that mandatory closure would ensure that critically undercapitalized institutions were closed while they still had equity, thereby shielding the Deposit Insurance Fund from any losses. The reality proved otherwise. Although the use of prompt corrective action increased tenfold between 2008 and 2011, every bank closed under PCA during that period inflicted losses on the Deposit Insurance Fund,¹²¹ sending the Fund into the red in 2010.¹²² This suggests that the 2 percent tripwire for closure was set too low. If that tripwire was raised to a meaningful level, however, there is reason to think that prompt corrective action could work as it was intended.

C. Provisioning

Provisioning rules require banks to set aside reserves for losses on individual loans. These rules resemble capital requirements, except that capital rules address unexpected losses while provisioning rules address anticipated ones. The main purpose of provisioning is to increase the resilience of financial institutions in the event of a crisis.

Traditionally, provisioning rules have had a procyclical effect¹²³ because they have been computed based on losses *already incurred*, instead of on projected future losses. This backward-looking approach produces low

120. U.S. GOV'T ACCOUNTABILITY OFF., GAO-11-612, BANK REGULATION: MODIFIED PROMPT CORRECTIVE ACTION FRAMEWORK WOULD IMPROVE EFFECTIVENESS 1-6 (2011), <http://www.gao.gov/products/GAO-11-612>.

121. *Id.*; accord FED. DEPOSIT INS. CORP., EVAL-11-006, EVALUATION OF PROMPT REGULATORY ACTION IMPLEMENTATION 4-8 (2011), <http://www.treasury.gov/about/organizational-structure/ig/Agency%20Documents/OIG-CA-11-008.pdf>; cf. Julie Andersen Hill, *Bank Capital Regulation by Enforcement: An Empirical Study*, 87 IND. L.J. 645, 658 (2012) (documenting the increased use of prompt corrective action orders during this time period).

122. *Statistics At A Glance: Historical Trends As of March 31, 2013*, FED. DEPOSIT INS. CORP., <https://www.fdic.gov/bank/statistical/stats/2013mar/fdic.html> (last updated May 29, 2013).

123. See, e.g., Roy Zilberman & William Tayler, *Financial Shocks, Loan Loss Provisions and Macroeconomic Stability* 2-4 (Lancaster Univ. Mgmt. Sch. Dep't. of Econ., Working Paper No. 2014/023, Nov. 2014), <http://eprints.lancs.ac.uk/71600/>.

reserves when economic conditions are favorable and high reserves during economic declines. As a result, by the time that losses begin to mount, banks often have inadequate reserves to cover them. That was exactly what happened while the housing bubble was gathering steam from 2002 to mid-2006, when U.S. banks steadily slashed their loan loss reserves.¹²⁴

Countercyclical regulation attempts to reverse this sequence through a new approach known as *dynamic provisioning*. When the economy heats up, dynamic provisioning activates a component in the algorithm for loss reserves that calculates those reserves as if the economy was contracting. Later, if the economy takes a nosedive, that component is set to zero and banks can draw on the reserves that they accumulated during the upswing to absorb their losses.¹²⁵

It is not yet clear whether dynamic provisioning helps restrain asset bubbles. Spain adopted dynamic provisioning in 2000; later Colombia, Peru, Bolivia and Uruguay followed suit.¹²⁶ This new approach to loan loss reserves, however, was not enough to stop a credit bubble in the Spanish banking system from bursting after 2008.¹²⁷

The International Accounting Standards Board (IASB) and the U.S. Financial Accounting Standards Board (FASB) took a different approach to countercyclical provisioning when they issued their so-called “expected loss provisioning” proposal in 2011.¹²⁸ Under that proposal, accountants would estimate loan losses over the loan’s remaining life rather than basing their estimates on losses already incurred. However, a loan’s remaining life may not coincide with a full business cycle, which means that some degree of

124. See ENGEL & MCCOY, *supra* note 49, at 212 figs.11.1 & 11.2 (computations by authors).

125. Caprio, *supra* note 2, at 22; see also Ren, *supra* note 5, at 11–19.

126. See Caprio, *supra* note 2, at 13–14, 19 (Spain, Colombia, and Peru adopting dynamic provisioning); Griffith-Jones & Ocampo, *supra* note 65, at 4 (stating that Spain pioneered dynamic provisioning in 2000); Martha López et al., *Credit Cycles, Credit Risk and Countercyclical Loan Provisions* 9–10 (Borradores de Economía, Banco de la Republica, Working Paper No. 788, 2013) (discussing dynamic provisioning in Colombia).

127. Caprio, *supra* note 2, at 13–23; Ren, *supra* note 5, at 11–19; see also BRUNNERMEIER ET AL., *supra* note 2, at 37. But see Carlos Trucharte & Jesús Saurina, *Spanish Dynamic Provisions: Main Numerical Features*, 25 ESTABILIDAD FINANCIERA 11, 11, 46 (2013), <http://www.asbaweb.org/E-News/enews-36/CONTR/3%20Contrib.pdf> (concluding that the countercyclical provisions amassed by Spanish banks at the peak of the cycle “reduced in an equivalent amount the public capital injections required by these banks” during the later downturn).

128. Edith Orenstein, *FASB Further Develops Current Expected Credit Loss Model*, FIN. EXECES. INT’L (Sept. 14, 2012, 10:56 AM), http://www.financialexecutives.org/KenticoCMS/FEI_Blogs/Financial-Reporting-Blog/September-2012/FASB-Further-Develops-Current-Expected-Credit-Loss.aspx#ixzz3q6o9lcGr.

procyclicality may persist. Additionally, if companies obtain too much discretion under this new approach, they may use provisioning to smooth income in other, misleading ways.¹²⁹

Suffice it to say, it is too early to tell whether countercyclical reforms to traditional provisioning practices will have their intended effect. Ultimately, FASB elected not to adopt the IAIS proposal in the United States.¹³⁰ There is evidence that Colombia's provision helped to dampen the credit cycle,¹³¹ while Spain's experience with dynamic provisioning made domestic banks more resilient but did not curb the credit boom.¹³² More work is needed on how to design countercyclical provisioning for greater success.

D. Sectoral Regulatory Tools

A final set of countercyclical tools targets sectors that are prone to asset bubbles or are likely to exacerbate a bubble's effects. In the United States and many other countries, the most prominent of those sectors is real estate finance.

Real estate lending is an obvious sector to target because the most destructive asset bubbles historically have involved real estate. The 1980s savings and loan crisis was driven by real estate credit, as was the 2008 debacle, and both crises sparked prolonged recessions. Across the world and over the centuries, bubbles fueled by real estate loans have had the most devastating economic effects, both in advanced economies and emerging markets.¹³³

129. Caprio, *supra* note 2, at 12–13; Ren, *supra* note 5, at 11–13, 18–19.

130. See Hans Hoogervorst, Chairman, Int'l Accounting Standards Bd., Speech at the Asia-Oceanic Regional Policy Forum: Closing the Accounting Chapter of the Financial Crisis (March 8, 2014), at 1, 3–4, <http://www.ifrs.org/Alerts/Conference/Documents/2014/Speech-Hans-Hoogervorst-March-2014.pdf>.

131. López et al., *supra* note 126, at 10–11. Another, broader study of countercyclical provisioning measures around the world concluded that “increasing loan-loss provisioning requirements tend[s] to slow credit growth.” Kenneth Kuttner & Ilhyock Shim, *Taming the Real Estate Beast: The Effects of Monetary and Macroprudential Policies on Housing Prices and Credit*, in RESERVE BANK OF AUSTRALIA CONFERENCE VOLUME 231, 232 (Alexandra Heath et al. eds., 2012), <http://www.rba.gov.au/publications/confs/2012/pdf/kuttner-shim.pdf>.

132. Borio, *supra* note 1, at 6; Caprio, *supra* note 2, at 13–23; Ren, *supra* note 5, at 11–19; see also BRUNNERMEIER ET AL., *supra* note 2, at 37. But see Cerutti et al., *supra* note 92, at 13 (“[D]ynamic provisioning, used almost exclusively in emerging markets, has a negative relation with overall credit growth.”).

133. REINHART & ROGOFF, *supra* note 8, at 158–62; Schularick & Taylor, *supra* note 8, at 1032.

To date, sectoral tools have mostly been used to prevent real estate lending standards from deteriorating during business cycles. Some of these sectoral tools operate by constraining the demand for credit, including maximum loan-to-value ratios, debt-to-income caps, and other rules governing borrowers' ability to repay.¹³⁴ Other sectoral tools, especially higher capital risk weights for targeted sectors, seek to restrain the supply of credit.¹³⁵ By providing regulatory guardrails, these instruments seek to prevent reckless lending and ensuing booms and busts in real estate prices.

So far, sectoral tools have not received the attention they deserve. Most of the discussion of countercyclical regulation has focused on monetary policy and on minimum capital standards and rules governing provisioning. In the meantime, the Dodd-Frank Act drew attention to a new suite of sectoral tools that directly address the types of lax credit conditions that can cause asset bubbles to expand and explode.

These sectoral tools are a valuable addition to the countercyclical portfolio for at least two reasons. Unlike monetary policy, sectoral tools are specifically designed to prick asset bubbles while they are inflating. As such, sectoral tools attack incipient bubbles directly. Further, sectoral tools have the potential to dampen systemic risk by preventing imprudent lending and a resulting race to the bottom in credit standards. Initial findings have concluded that sectoral tools, when tightened, are effective in restraining the growth of credit during expansions but less successful in encouraging the growth of credit during downturns.¹³⁶

1. Loan-to-Value Limits

Of all the sectoral tools, maximum loan-to-value ratios have received the most attention. These caps limit how much a debtor can borrow against the value of a parcel of real estate. Where the maximum loan-to-value ratio is 80 percent, for example, the most that a homeowner can borrow is 80 percent of the appraised value of the home.

134. The federal government has a long history of using these and other techniques to regulate underwriting standards for loans, mostly directed at depository institutions but sometimes at nonbank lenders as well. While the normal purpose of those rules was safety and soundness or consumer protection, sometimes it was to contain credit bubbles. For a thorough history, see Elliott et al., *supra* note 1, at 9–17.

135. See, e.g., INT'L MONETARY FUND, *supra* note 115, at 18–19.

136. See Borio, *supra* note 1, at 6; Elliott et al., *supra* note 1, at 47.

It is well-established that higher loan-to-value ratios are positively associated with higher probabilities of default.¹³⁷ For this reason, federal banking regulators expect banks to limit their commercial real estate loans to stated maximum loan-to-value ratios.¹³⁸ Currently, however, the federal government has no legally mandated loan-to-value caps for residential real estate loans. Outside of the United States, a growing number of jurisdictions, including Canada, China, Colombia, the Hong Kong SAR, Malaysia, the Republic of Korea, Singapore, and a number of Eastern European nations, have adopted maximum loan-to-value ratios as part of their countercyclical arsenals.¹³⁹

Loan-to-value caps have strong potential as a countercyclical tool because lower loan-to-value ratios can keep housing prices in check and also credit

137. See, e.g., Credit Risk Retention, 78 Fed. Reg. 57928, 57994 n.96(a) (proposed Aug. 28, 2013), <https://www.gpo.gov/fdsys/pkg/FR-2013-09-20/pdf/2013-21677.pdf>; Kristopher Gerardi et al., *Decomposing the Foreclosure Crisis: House Price Depreciation versus Bad Underwriting 1* (Fed. Reserve Bank of Atlanta, Working Paper No. 2009-25, 2009), https://www.frbatlanta.org/research/publications/wp/2009/09_25.aspx; Min Qi & Xiaolong Yang, *Loss Given Default of High Loan-to-Value Residential Mortgages 1* (Office of the Comptroller of the Currency, Working Paper No. 2007-4, 2007), <http://www.occ.gov/publications/publications-by-type/economics-working-papers/2008-2000/wp2007-4.pdf> (reviewing literature).

138. Under federal bank regulatory guidelines dating back to 1992, loans secured by raw land are supposed to be limited to a highly conservative loan-to-value ratio of sixty-five percent, followed by seventy-five percent for land development loans. The top loan-to-value ratio for construction loans for commercial, other non-residential, and multi-family residences is eighty percent, while the maximum ratio for construction loans for 1 to 4 family residences and improved property is eighty-five percent. See 12 C.F.R. pts. 34 subpt. D, app. A, 208 app. C, 365 app. A.

139. See GROUP OF THIRTY, *supra* note 1, at Annex II (noting adoption of maximum LTV ratios in Hong Kong SAR, Malaysia, the Republic of Korea, and Singapore); INT'L MONETARY FUND, *supra* note 115, at 18–19, 22 (noting adoption of maximum LTV ratios in a number of countries, including Canada, China, and Colombia); Adrian & Liang, *supra* note 81, at 20–21 (noting adoption of maximum LTV ratios in Hong Kong and the Republic of Korea); Ren, *supra* note 5, at 11, 29 (noting adoption of maximum LTV ratios in a plethora of countries). In addition, some countries, including Australia, India, Israel, and Spain, attach higher risk weights to mortgages with higher loan-to-value ratios for purposes of calculating capital adequacy requirements. See, e.g., Ren, *supra* note 5, at 29.

growth.¹⁴⁰ Nevertheless, these caps are not failsafe.¹⁴¹ When collateral values are rising, borrowers can take on more debt because the cap normally remains constant. Similarly, a tough cap alone does not prevent a borrower from later incurring additional debt that could impair his or her ability to repay an earlier mortgage. Such debt could be unsecured or take the form of a junior mortgage. Such debt could be unsecured or take the form of a junior mortgage.¹⁴² In addition, loan-to-value ratios can be—and have been—rigged by inflating the underlying appraisals.¹⁴³

After 2008, the fate of a U.S. proposal to impose risk retention requirements on securitizers for all residential loans with loan-to-value ratios exceeding 70 percent illustrated the tough social tradeoffs involved in imposing those limits. The proposal provoked fierce controversy—both from realtors and from consumer groups—because of the adverse effect those limits would have had on access to credit.¹⁴⁴ Very few U.S. consumers of

140. See, e.g., INT'L MONETARY FUND, *supra* note 115, at 23–24; Cerutti et al., *supra* note 92, at 11–13; Kuttner & Shim, *supra* note 131, at 255–56; Chris McDonald, *When is Macroprudential Policy Effective?* 2 (Bank for Int'l. Settlements, Working Paper No. 496, 2015), <http://www.bis.org/publ/work496.pdf>; Peter Morgan et al., *Loan-to-Value Policy as a Macroprudential Tool: The Case of Residential Mortgage Loans in Asia* 3 (Asian Dev. Bank Inst., Working Paper No. 528, 2015), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2622433; Daan Struyven, *The Effects of Macroprudential and Fiscal Policy on Mortgage Debt: Evidence from the Netherlands* 2 (Mass. Inst. Tech., Working Paper, April 15, 2015), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2616472.

141. See, e.g., Adrian & Liang, *supra* note 81, at 20–21.

142. See BRUNNERMEIER ET AL., *supra* note 2, at 53.

143. See, e.g., Sumit Agarwal et al., *Collateral Valuation and Borrower Financial Constraints: Evidence from the Residential Real Estate Market* 2 (Nat'l Bureau of Econ. Research, Working Paper No. 19606, 2013), <http://www.nber.org/papers/w19606.pdf>. In the Dodd-Frank Act, Congress responded to this problem by mandating stricter oversight of home appraisals. See Dodd-Frank Act, Pub. L. No. 111-203, § 1601, 124 Stat. 1376, 2223 (2010) (codified at 26 U.S.C. § 1256(a) (2015)); Appraisals for Higher-Priced Mortgage Loans, 78 Fed. Reg. 10368, 10398 (Feb. 13, 2013).

144. Originally, the proposed qualified residential mortgage rule mandated by Dodd-Frank solicited comment on whether Wall Street banks and other securitizers should be required to keep more “skin in the game” in the form of a risk retention requirement for certain residential mortgages with loan-to-value ratios of higher than 70%. See Credit Risk Retention, 78 Fed. Reg. 57928, 57932 (proposed Aug. 28, 2013), <https://www.gpo.gov/fdsys/pkg/FR-2013-09-20/pdf/2013-21677.pdf>. The proposal ignited a firestorm of criticism from lenders and consumer groups and prompted regulators to issue a new proposed rule removing that requirement. The final rule dispensed with any risk retention requirement (whether keyed to loan-to-value ratios or otherwise) for residential mortgage loans that met the definition of a qualified mortgage. See Credit Risk Retention, 79 Fed. Reg. 77602, 77607, 77685, 77688–89 (Dec. 24, 2014), <https://www.gpo.gov/fdsys/pkg/FR-2014-12-24/pdf/2014-29256.pdf>. For the definition of a qualified mortgage, see 15 U.S.C. § 1639c(b)(2)(A) (2015); Ability to Repay and Qualified Mortgage Standards Under the Truth in Lending Act (Regulation Z), 78 Fed. Reg. 6408 (Jan. 30, 2013), <https://www.gpo.gov/fdsys/pkg/FR-2013-01-30/pdf/2013-00736.pdf>.

modest means can muster a down payment of even 20 percent.¹⁴⁵ These disparities are particularly pronounced for minority borrowers. Researchers at the University of North Carolina (Chapel Hill) and the Center for Responsible Lending concluded in 2012, for instance, that 75 percent of African-American borrowers and 70 percent of Latino borrowers with performing loans could not have afforded a 20 percent down payment requirement when they first obtained their mortgages.¹⁴⁶ Accordingly, a search has been underway in the United States for other, more finely tuned sectoral tools that could prevent real estate bubbles without impinging so heavily on access to credit.

2. Debt-to-Income Limits

Debt-to-income limits are another common way of reducing default risk. These caps restrict a borrower's monthly payments for mortgage debt and other extensions of credit to a set percentage of the borrower's gross income. Prior to the housing bubble, for example, under their manual underwriting guidelines, the housing finance giants Fannie Mae and Freddie Mac would not buy a mortgage unless the monthly payment for principal, interest, insurance and taxes was 28 percent or less of the borrower's monthly gross income. More recently, the Consumer Financial Protection Bureau (CFPB) imposed a much more liberal maximum debt-to-income ratio of 43 percent on mortgages known as "qualified mortgages" in its 2013 ability-to-repay rule.¹⁴⁷ Debt-to-income caps are also used in the Republic of Korea and in the Hong Kong SAR.¹⁴⁸

145. See, e.g., DARRYL E. GETTER, CONG. RESEARCH SERV., R7-5700, ABILITY TO REPAY, RISK-RETENTION STANDARDS, AND MORTGAGE CREDIT ACCESS 13–15 (2012), <http://www.fas.org/sgp/crs/misc/R42056.pdf>; ROBERTO G. QUERCIA ET AL., BALANCING RISK AND ACCESS: UNDERWRITING STANDARDS AND QUALIFIED RESIDENTIAL MORTGAGES 10–11 (2012), <http://www.responsiblelending.org/mortgage-lending/research-analysis/Underwriting-Standards-for-Qualified-Residential-Mortgages.pdf>; *Revitalizing the Private Mortgage Market: 'Skin in the Game' and the Consequences for Future Homebuyers*, KNOWLEDGE@WHARTON (May 11, 2011), <http://knowledge.wharton.upenn.edu/article.cfm?articleid=2775>.

146. QUERCIA, ET AL., *supra* note 145, at 10–11, 27–28.

147. Under that rule, home mortgages that meet the 43% cap and certain other requirements qualify the lender for protection from lawsuits by borrowers who claim that the lender failed to make a reasonable determination of the borrower's ability to repay. See Ability to Repay and Qualified Mortgage Standards Under the Truth in Lending Act (Regulation Z), 78 Fed. Reg. 6408; see also Dodd-Frank Act, § 1412 (giving regulators discretion to include a debt-to-income test in the definition of a qualified mortgage).

148. See Ren, *supra* note 5, at 11, 29.

Lower debt-to-income ratios are positively correlated with slower growth in housing credit¹⁴⁹ and better default rates.¹⁵⁰ But like loan-to-value caps, these ratios are relatively blunt. A high-income borrower may well be able to repay a loan even with a high ratio of debt to income. Meanwhile, a lower-income borrower who meets the debt-to-income test may still not have enough to live on after the monthly mortgage payment. As this suggests, the debt-to-income ratio does not address the central issue, which is how much *residual income* a borrower has left to work with each month after sending in the mortgage check. The only major lending program that uses a residual income test, however, is the Veterans Administration in its guaranteed loan program for military veterans.¹⁵¹

And like loan-to-value ratios, debt-to-income ratios can be gamed. One way to do that is to falsify the amount of income that is reported.¹⁵² Another way is to take on additional unsecured debt after the mortgage is incurred. Due to all of these concerns, attention in the United States has shifted to a third sectoral technique for constraining credit risk, namely, ability-to-repay rules.

3. Ability-to-Repay Rules

Dodd-Frank's biggest innovation involving sectoral rules was its adoption of an ability-to-repay requirement in 2010.¹⁵³ That provision states that "no creditor may make a residential mortgage loan unless the creditor makes a reasonable and good faith determination . . . that, at the time the loan is consummated, the consumer has a reasonable ability to repay the loan,"

149. Cerutti et al., *supra* note 92, at 11–13; Kuttner & Shim, *supra* note 131, at 254–56; McDonald, *supra* note 140, at 2–4.

150. *See* Ability to Repay and Qualified Mortgage Standards Under the Truth in Lending Act (Regulation Z), 78 Fed. Reg. 6408, 6566–67, 6574.

151. *Id.* at 6408, 6486–87 & n.117. In a somewhat different context, the Consumer Financial Protection Bureau's ability-to-repay rule provides that borrowers with subprime qualified mortgages can prove a violation of that rule "by showing that, at the time the loan was originated, the consumer's income and debt obligations left insufficient residual income or assets to meet living expenses." *Id.* at 6409; *see also id.* at 6462, 6479, 6485–87, 6511–16, 6525, 6528; 12 C.F.R. § 1026.43(e)(1). Preliminary research suggests that the VA residual income test is successful in lowering default rates. *See* Jun Zhu, *Is Residual Income the Key to the Superior Performance of VA loans?*, URBAN INST. (July 16, 2014), <http://blog.metrotrends.org/2014/07/residual-income-key-superior-performance-veterans-administration-loans/>.

152. *See, e.g.,* Wei Jiang et al., *Liar's Loan? Effects of Origination Channel and Information Falsification on Mortgage Delinquency* 24 (Feb. 2010) (unpublished manuscript), <http://kelley.iu.edu/BEPP/documents/Nelson.pdf>.

153. Dodd-Frank Act § 1411.

including all associated taxes, insurance, and homeowners' assessments.¹⁵⁴ The Consumer Financial Protection Bureau issued a final rule implementing this provision in January 2013.¹⁵⁵

The ability-to-repay rule is of landmark significance in a number of respects. It represents a radical departure from the attitude once held by many federal regulators and members of Congress that it was in lenders' self-interest to ensure the repayment of loans.¹⁵⁶ As the financial crisis sadly showed, that old incentive system broke down with the rise of securitization. Once lenders realized that they could make money upfront from the fees they charged to borrowers and their proceeds from selling loans, they slashed their lending standards, knowing that they could pass bad loans and the heightened default risk that those loans posed on to unsuspecting investors.

The rule also breaks new ground by operationalizing the meaning of a "reasonable determination" of the ability to repay in certain important respects. Now the loan underwriter's determination must be based on "verified and documented information" regarding the borrower's income and assets.¹⁵⁷ This rules out the dangerous practice of low-documentation and no-documentation loans that flourished during the housing bubble. As a result, a lender can no longer approve a mortgage based only on an assertion by a borrower or broker as to the borrower's wages or assets.¹⁵⁸ This will fundamentally reduce the opportunities for falsification and for rigging debt-to-income ratios and other underwriting tests. This should also cut default rates on home loans because stated income loans made during the housing boom were associated with markedly higher default rates.¹⁵⁹

Still another notable aspect of the rule is its command that lenders must take a borrower's other indebtedness and any other credit extensions secured by the home into account when ascertaining the ability to repay.¹⁶⁰ This means

154. *Id.* § 1411(a)(2).

155. Ability-to-Repay and Qualified Mortgage Standards Under the Truth in Lending Act (Regulation Z), 78 Fed. Reg. 6408.

156. *See, e.g.*, ENGEL & MCCOY, *supra* note 49, at 192–93.

157. Dodd-Frank Act § 1411(a)(2).

158. *Id.*

159. *See, e.g.*, Adam Ashcraft et al., *MBS Ratings and the Mortgage Credit Boom*, 449 FED. RES. BANK N.Y. STAFF REP. 1, 28 (2010), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr449.pdf (noting that mortgage-backed securities issues with higher rates of low-documentation loans performed worse); Michael LaCour-Little & Jing Yang, *Taking the Lie Out of Liar Loans: The Effect of Reduced Documentation on the Performance and Pricing of Alt-A and Subprime Mortgages*, 35 J. REAL EST. RES. 507, 508 (2013), http://pages.jh.edu/jrer/papers/pdf/past/vol35n04/05.507_554.pdf.

160. Dodd-Frank Act § 1411(a)(2).

that a lender cannot base its underwriting analysis solely on the amount of equity that the borrower has in the home¹⁶¹ in the cynical expectation of seizing that equity if the borrower ends up in foreclosure. Further, every time the borrower seeks to encumber the property with more debt, the new lender must evaluate the borrower's ability to repay anew. That will help prevent evasion of loan-to-value and debt-to-income tests, as well as a repeat of equity stripping scams that typified the subprime market in the 2000s.¹⁶²

A sister clause in Dodd-Frank works in tandem with this provision by outlawing the most common ways of artificially rigging the monthly payment to make it appear smaller for purposes of underwriting. Now underwriters must assume that all loans are fully amortizing when evaluating a borrower's ability to repay, which will have the effect of boosting the size of loan payments for purposes of that determination. Similarly, for adjustable-rate loans, underwriters must use the monthly payment based on the fully indexed rate and not on a low initial teaser rate in assessing ability to repay.¹⁶³

Dodd-Frank discouraged violations of the ability-to-repay rule through potentially strong oversight and sanctions. Compliance with the rule is subject to federal examination and enforcement.¹⁶⁴ In addition, Dodd-Frank authorized private relief under certain circumstances. Injured borrowers can bring a private right of action for violations of the ability-to-repay rule in the first three years following origination and can also raise a defense to foreclosure based on those violations without time limit.¹⁶⁵ However, lenders enjoy a presumption of compliance with the ability-to-repay rule so long as the loan is a qualified mortgage.¹⁶⁶

161. *Id.* (noting that a lender's determination of a consumer's ability to repay cannot be based on his or her "equity in the dwelling or real property that secures repayment of the loan").

162. "Equity stripping" refers to schemes where a lender urges a borrower to refinance repeatedly in order to generate successive rounds of closing fees. Usually, the closing fees are financed and tacked on to the principal, which can cause monthly payments to go up. Equity stripping schemes often occur during periods of rising home prices, where lenders look to the value of the collateral alone, and not to borrowers' financial capacity, for repayment of the loan.

163. Dodd-Frank Act § 1411(a)(2). The fully indexed rate is the rate produced by adding the index rate on the date the loan is made to the margin that goes into effect after the teaser rate expires. *Id.*

164. Authority for supervising institutions for compliance with the ability-to-repay rule is divided between the CFPB, which supervises non-depository institutions and depository institutions with total assets of more than \$10 billion, and state and federal prudential banking regulators, which supervise smaller depository institutions. *Id.* §§ 1024(a)(1)(A), 1025–26. In addition, state attorneys general may sue mortgage lenders, including banks, in court for violations of Bureau rules, including the ability-to-repay rule. *Id.* § 1042(a).

165. *Id.* §§ 1413, 1416(b).

166. *Id.* § 1412. The presumption is an irrebuttable presumption for all qualified mortgages except higher-priced qualified mortgages, which only provide a rebuttable presumption. In order

It is too early to know whether these sectoral tools will deflate real estate bubbles. However, there are reasons to think that sectoral tools might succeed where monetary policy, capital regulation, or provisioning rules might not. Sectoral tools directly target the volume of credit by prohibiting specific types of loans and underwriting practices that have been endemic to housing bubbles in the past. In addition, the ability-to-repay standards and the debt-to-income ratios adopted under the Dodd-Frank Act apply to all mortgage originators across the country, whether state- or federally-chartered and banks or nonbanks.¹⁶⁷ Consequently, mortgage lenders cannot shop regulators, jurisdictions, or legal regimes in order to escape those standards. Capital rules and provisioning rules, in contrast, are easier to arbitrage because they do not normally apply to nonbank lenders.

The importance of the ability-to-repay rule and the CFPB's exclusive role in promulgating that rule has another, very different ramification. It is a mistake to ignore the role of market conduct supervisors such as the CFPB in countercyclical regulation. The centrality of consumer financial protection in ensuring sensible loan underwriting standards—particularly for home mortgages—underscores the vital role that market conduct regulators such as

to rebut the presumption of a reasonable determination of ability to repay in a higher-priced covered transaction, a borrower must show that the lender did not make a reasonable and good-faith determination of his or her repayment ability at the time of consummation, by showing that the borrower's income, debt obligations, alimony, child support, and monthly payment (including mortgage-related obligations) on the mortgage at issue and on any simultaneous loans of which the lender was aware at consummation would leave the borrower with insufficient residual income or assets other than the value of the dwelling (including any real property attached to the dwelling) that secured the loan with which to meet living expenses, including any recurring and material non-debt obligations of which the lender was aware at the time of consummation. 12 C.F.R. § 1026.43(e)(1) (2015). A higher-priced covered transaction includes most home mortgages with an annual percentage rate that exceeds the average prime offer rate for a comparable transaction as of the date the interest rate is set by 1.5 or more percentage points for a first-lien covered transaction, or by 3.5 or more percentage points for a subordinate-lien covered transaction. *Id.* § 1026.43(b)(4).

Subject to certain exceptions for government-insured or government-guaranteed loans, in order for a mortgage to be a qualified mortgage, it must be fully amortizing, total points and fees must not exceed 3% of the total loan amount, the borrower's debt-to-income ratio may not exceed 43%, and the loan term may not exceed 30 years. In addition, the income and financial resources that the borrower relied on to qualify for the loan must have been verified and documented. Adjustable-rate loans must also be underwritten to the maximum interest rate during the first five years. Any prepayment penalties in qualified mortgages are subject to strong restrictions. Dodd-Frank Act §§ 1412, 1414(a); Ability-to-Repay and Qualified Mortgage Standards Under the Truth in Lending Act (Regulation Z), 78 Fed. Reg. 6408.

167. The ability-to-repay provisions apply to virtually all mortgage lenders, regardless of charter. Dodd-Frank Act §§ 1022(b)(1), (b)(4)(A), 1411(a)(2), 1412.

the CFPB will play in the federal government's efforts to prevent future, catastrophic real estate bubbles.

To summarize, the past fifteen years has ushered in an exciting period of exploration and experimentation regarding different types of regulatory techniques to dampen economic cycles. While initial results are generally promising, it is too soon to tell whether these tools will succeed at their task in their current or some modified form. The best way to design these tools—and the choice of the best tool for a given situation—will require more experimentation and evaluation in years to come.

Regulators are also grappling with the fact that the current kit of countercyclical tools is highly bank-centric.¹⁶⁸ Since the late 1980s, the majority of outstanding private debt held in the United States was originated in the capital markets or by other nonbanks.¹⁶⁹ Consequently, countercyclical requirements that are limited to commercial banks will not bind lending outside of that sector. The Financial Stability Board has floated the idea of time-varying margin or haircut requirements for short-term nonbank loans and repo transactions,¹⁷⁰ but so far the countercyclical aspects of that proposal have not gained traction.¹⁷¹

168. See, e.g., Adrian & Liang, *supra* note 81, at 19; OFFICE OF FIN. RESEARCH, *supra* note 77, at 34–35, fig.26. The tri-party repo agreement market is one major area of concern in this regard. See Jeremy C. Stein, Member, Fed. Reserve Bd. of Governors, Speech at Workshop on Fire Sales as a Driver of Systemic Risk in Triparty Repo and other Secured Funding Markets: The Fire-Sales Problem and Securities Financing Transactions (Oct. 4, 2013), <http://www.federalreserve.gov/newsevents/speech/stein20131004a.htm>. Collateral quality requirements and mandatory minimum haircuts (which limit the amount of leverage that borrowers can assume) for these and other short-term securities funding transactions are used on a voluntary basis but have not yet been mandated by law in the United States. See OFFICE OF FIN. RESEARCH, *supra* note 77, at 43–44; OFFICE OF FIN. RESEARCH, *supra* note 115, at 60–61.

169. See OFFICE OF FIN. RESEARCH, *supra* note 77, at 34–35.

170. See FIN. STABILITY BD., STRENGTHENING OVERSIGHT AND REGULATION OF SHADOW BANKING: REGULATORY FRAMEWORK FOR HAIRCUTS ON NON-CENTRALLY CLEARED SECURITIES FINANCING TRANSACTIONS 9 (Oct. 14 2014), http://www.financialstabilityboard.org/wp-content/uploads/r_141013a.pdf; see also Adrian & Liang, *supra* note 81, at 19–20.

171. In January 2015, Governor Daniel Tarullo aired plans by the Federal Reserve Board to issue a rule proposing minimum margin requirements for certain types of securities financing transactions used by shadow banks. See Tarullo, *supra* note 79. In the Securities Exchange Act of 1934, Congress authorized the Federal Reserve Board to limit the leverage on stock purchases by investors by establishing minimum margin requirements. Securities Exchange Act of 1934, 15 U.S.C. § 78(g) (1934). Before 1974, the Board routinely moved the margin requirement up and down in an effort to affect the amount of stock market credit. By the 1970s, however, equity investors were able to leverage themselves through other means, including derivatives, calling the efficacy of margin requirements in tempering stock market bubbles into question. Since then, starting in 1974, the Board has left the margin requirement at a constant 50%. See Elliott et al., *supra* note 1, at 17–21; 12 C.F.R. §§ 220.4(b)(1), 220.12(a) (2015).

These technical design and coverage considerations are pressing and real. Yet they are not the only challenges facing countercyclical initiatives. As the next section discusses, other, considerable hurdles must be surmounted before robust countercyclical regulation can become a reality.

IV. CHALLENGES

Today's focus on dampening financial cycles is long overdue and worth the effort. It is important to remember, however, that regulatory tools that look promising on paper can confront problems in implementation.¹⁷² In this section, I explore five major challenges to the successful execution of countercyclical regulation. These five challenges all involve the institutional settings in which countercyclical regulation would be implemented. If Congress and policymakers are deaf to these issues, countercyclical regulation could lack the institutional prerequisites to thrive.

The first of these challenges concerns the federal government's data collection initiatives. Those initiatives continue to lag and impede efforts to monitor the economy for emerging financial risks. For the most part, this is not for lack of statutory authority but due to delays in implementation.

Second, and in a related vein, financial regulators need to do more to institutionalize an early response system to nascent threats. How to track threats from new financial products and respond to them pose particular challenges.

Justifying intervention through rules when risks are small presents a third obstacle. Not only do regulators need to justify intervention to internal and external audiences, they may have to defend those decisions in court if challenged. The D.C. Circuit's recent spate of hostile decisions overturning rules by the Securities and Exchange Commission on cost-benefit grounds underscores the difficulty of that task.

The fourth problem, regulatory capture and inertia, goes hand-in-hand with the third. Countercyclical regulation offers some fresh ideas to deal with that problem, which I will explore.

Finally, countercyclical regulation—like all regulation—must anticipate the likelihood of regulatory arbitrage. As I discuss, the Dodd-Frank Act took some tentative steps toward a new organizing principle for financial regulation—oversight according to risk, instead of entity or product—that could significantly curb domestic arbitrage. Federal financial regulation needs to be reorganized according to that principle, however, in order for

172. See Tarullo, *supra* note 79.

arbitrage to be seriously taken in hand. International arbitrage remains a separate challenge.

These five challenges are not the only hurdles that regulators and society will face in moving to a countercyclical approach. But they are significant ones and have not received enough attention. While these obstacles are not insuperable, they must be squarely confronted in order for countercyclical regulation to be a success.

A. Knowledge Requires Data

Countercyclical regulation depends on intervention when risks are small. This sort of early intervention requires a robust ability to monitor the economy and quickly detect mounting risks.¹⁷³ That, in turn, requires data.

In the aftermath of the 2008 collapse, it became apparent how little data financial regulators had at their disposal in trying to contain the crisis. The two federal authorities at the controls—the Treasury Department and the Federal Reserve Board—were flying blind when Bear Stearns pleaded for a bailout in March 2008. They did not know who had financial exposure to the firm and whether those counterparties would fail if Bear Stearns reneged on its debts.¹⁷⁴ The government confronted another information black hole when it had to sort through the size and state of over-the-counter credit default swap exposures during AIG's bailout in the fall of 2008.¹⁷⁵

In 2008, the federal government also suffered from an information deficit involving residential mortgages. There was no one, comprehensive loan-level data set covering all residential mortgages made in the United States.¹⁷⁶ The government had not assembled those data. Nor could it buy the data in a single data set because the best available data sets each covered only part of the market. To monitor loans bought by Fannie Mae or Freddie Mac, federal agencies had to acquire one data set; to analyze loans packaged into private-label mortgage-backed securities, they had to buy another. Loans insured by the Federal Housing Administration (FHA) were covered by a third data set, while loans held in portfolio by national banks were the subject of a fourth.

173. See, e.g., COMM. ON THE GLOB. FIN. SYS., CGFS PAPERS NO. 38 MACROPRUDENTIAL INSTRUMENTS AND FRAMEWORKS: A STOCKTAKING OF ISSUES AND EXPERIENCES 6 (May 2010), <http://www.bis.org/publ/cgfs38.pdf>.

174. See, e.g., ENGEL & MCCOY, *supra* note 49, at 89–90.

175. See, e.g., *id.* at 106, 221–23.

176. See *Federal Housing Finance Agency and Consumer Financial Protection Bureau to Partner on Development of National Mortgage Database*, CONSUMER FIN. PROT. BUREAU (Nov. 1, 2012), <http://www.consumerfinance.gov/newsroom/federal-housing-finance-agency-and-consumer-financial-protection-bureau-to-partner-on-development-of-national-mortgage-database/>.

Home Mortgage Disclosure Act (HMDA) data afforded the closest thing to full market coverage, but those data lacked numerous crucial data fields on loan origination and did not report on loan performance at all. Accordingly, any regulator wanting an overview of the entire home mortgage market had to piece the picture together from multiple and sometimes incompatible sources.

These residential mortgage data sets had other problems. Publicly available data were scant and federal agencies with better data were not always willing to share those data with other agencies. As a result, federal agencies were heavily reliant on costly proprietary databases that were often subject to vendor restrictions. Vendors were known to try to intimidate the federal government from pursuing certain lines of mortgage research by threatening to cancel agencies' licenses if the research went forward.

In the Dodd-Frank Act, Congress responded to these problems by empowering and sometimes requiring federal financial regulators to improve the data that are mandatorily reported to the government. The new Financial Stability Oversight Council (FSOC), for instance, may require bank holding companies and nonbank financial companies to submit periodic or other reports in order to assess "the extent to which a financial activity or financial market in which the nonbank financial company or bank holding company participates, or the nonbank financial company or bank holding company itself, poses a threat to the financial stability of the United States."¹⁷⁷ Under Dodd-Frank, the Federal Reserve Board now requires reporting by securities holding companies.¹⁷⁸ Similarly, the Securities and Exchange Commission (SEC) has adopted final rules pursuant to Dodd-Frank requiring money market funds and investment advisers for hedge funds, private equity funds, venture capital funds, and other private funds to report on their holdings, trading, and exposures.¹⁷⁹ The Consumer Financial Protection Bureau has authority to collect information on "the organization, business conduct,

177. Dodd-Frank Act § 112(d)(3)(A); *see also id.* § 809(b)(2)–(b)(3). Any such data will be collected by the Office of Financial Research on behalf of FSOC. *Id.* §§ 112(d)(3)(A), 153(a)(1). The Federal Reserve Board or FSOC may require certain financial market utilities and clearing entities to submit similar reports. *Id.* § 809(b)(1), (b)(3).

178. *Id.* § 618(c)(1); Supervised Securities Holding Company Registration, 77 Fed. Reg. 32881, 32884 (June 4, 2012).

179. Dodd-Frank Act § 404(a); *see also id.* §§ 407–08; Money Market Fund Reform; Amendments to Form PF, 79 Fed. Reg. 47736 (Aug. 14, 2014); Reporting by Investment Advisers to Private Funds and Certain Commodity Pool Operators and Commodity Trading Advisors on Form PF, 76 Fed. Reg. 71128 (November 16, 2011); *see also* OFFICE OF FIN. RESEARCH, *supra* note 115, at 112–14.

markets, and activities of covered persons and service providers.”¹⁸⁰ Congress also instructed the Bureau to expand the mortgage origination data fields reported under HMDA¹⁸¹ and to establish a publicly available mortgage and default database in conjunction with the Secretary of Housing and Urban Development.¹⁸² Congress further imposed or expanded mandatory reporting requirements on swaps,¹⁸³ asset-backed securities,¹⁸⁴ and small business lending.¹⁸⁵

Ensuring that the government has adequate data to gauge systemic risks is a “moving target,” to quote the Office of Financial Research.¹⁸⁶ In the short run, creating or expanding mandatory government reporting is costly and time-intensive because doing so often requires research into data standards and privacy safeguards followed by a lengthy rulemaking proceeding. In part for these reasons, some of the data improvements that Dodd-Frank mandated are underway but not in place.¹⁸⁷ Other crucial data gaps still need to be addressed.¹⁸⁸ Those data gaps involve bilateral repo trading, securities lending, separately managed accounts, captive reinsurers, and mortgage servicing.¹⁸⁹

180. Dodd-Frank Act § 1022(c)(4). The Bureau promulgated the final HMDA rule implementing this provision in 2015. Home Mortgage Disclosure (Regulation C), 80 Fed. Reg. 66128 (Oct. 28, 2015).

181. Dodd-Frank Act § 1094(3).

182. *Id.* § 1447.

183. *Id.* §§ 721(a)(21), 723(a)(2), 725(e), 727–29, 733, 763(a), (c), (i), 766(a).

184. *Id.* § 942(b).

185. *Id.* § 1071(a).

186. See OFFICE OF FIN. RESEARCH, *supra* note 115, at 1, 105.

187. The Securities and Exchange Commission, for example, has not finalized its reporting requirements for security-based swaps. See OFFICE OF FIN. RESEARCH, FINANCIAL STABILITY REPORT 78 (2015).

188. *Cf.* GROUP OF THIRTY, *supra* note 1, at 59 (“some of the data that a macroprudential supervisor will require is not currently being collected by central banks, prudential supervisors, or any other entities”).

189. See OFFICE OF FIN. RESEARCH, *supra* note 115, at 107–12. There has been progress on the mortgage servicing front, however. In 2012, the CFPB and the Federal Housing Finance Agency (FHFA) announced plans to unveil the National Mortgage Database, which would include data “spanning the life of a mortgage loan from origination through servicing” See *Federal Housing Finance Agency and Consumer Financial Protection Bureau to Partner on Development of National Mortgage Database*, CONSUMER FIN. PROT. BUREAU (Nov. 1, 2012), <http://www.consumerfinance.gov/newsroom/federal-housing-finance-agency-and-consumer-financial-protection-bureau-to-partner-on-development-of-national-mortgage-database/>. FHFA stated in an update in August 2014 that the National Mortgage Database would take “several years to complete.” *FHFA Update About the National Mortgage Database*, FED. HOUSING FIN. AGENCY (Aug. 1, 2014), http://www.fhfa.gov/PolicyProgramsResearch/Programs/Documents/NMDB_Update_08012014.pdf. See also NAT’L MORTGAGE DATABASE, TECHNICAL REPORT 15-01 (Aug. 27, 2015).

These long rollout periods make it important to complete data reforms in one fell swoop. Because new reporting requirements will face inevitable industry pushback, it is important to make comprehensive changes expeditiously instead of repeatedly going back to the well. To pull off a comprehensive overhaul, regulators have to resist the pressure to omit the data fields that they need. In exchange, they should offer an olive branch to industry by limiting the need to alter the firms' data reporting systems to a one-time change.

Creating data that span the business cycle from peak to trough also takes time. This problem will slowly abate over the coming years as more data are collected. In the meantime, federal regulators will need to merge newly collected data sets with older data sets in order to have a proper historical perspective.

One important feature of Dodd-Frank's data collection provisions is that they allow federal regulators to address some of the reporting lags that plague the current systems. For instance, under the prior rule, Home Mortgage Disclosure Act data had long reporting lags, with some home mortgage transactions being over a year old by the time they were reported to the federal government. That is too long a delay for regulators to detect accumulating risks in a timely manner. Other reporting lags are not quite as severe, but should also be revisited. Reducing these lags will substantially improve the federal government's capacity to monitor systemic risk.¹⁹⁰

Until these Dodd-Frank reforms are in place and the data are collected, regulators will face the same obstacles in monitoring for early warning signs of problems that they faced in 2008. It is discouraging that so little progress has been made in implementing Dodd-Frank's data-gathering mandates. Until the quality of the data available to the federal government is substantially improved, there is the danger that the last cycle of regulatory inaction will breed another, as the next section discusses.

(updating progress),
http://www.fhfa.gov/PolicyProgramsResearch/Programs/Documents/NMDB_Technical_Report_15-01_082715.pdf.

190. The CFPB's final HMDA rule, issued in 2015, significantly reduced the lag time by requiring lenders making larger volumes of home mortgages to report data on a quarterly rather than annual basis. Home Mortgage Disclosure (Regulation C), 80 Fed. Reg. 66128, 66129, 66313 (Oct. 28, 2015).

B. Fast Response

Government action in the face of threats is the *sine qua non* of countercyclical regulation. That action requires not only data, but a well-functioning rapid response system as well.¹⁹¹ Establishing such a system and institutionalizing it will help ensure that senior agency management is apprised of imminent problems and summoned to action.

For a rapid response system to be effective, it must first integrate data flows, both from outside sources and across the agency, and mine those data for developments on a timely basis. Data analysis is not enough, however. In addition, the agency must establish a decision-making process to evaluate new and continuing threats¹⁹² and decide on the proper course of action. That process must be led by senior managers and report directly to the top. Unless agencies institutionalize a system for promptly examining trends and consciously evaluating the need for action, the danger will persist that data analysis will end up, unread, in the proverbial dustbin.

Of course, such a system assumes that regulators can even recognize threats. Many risks are well-known and eminently capable of tracking. But other hazards emanate from threats that are as yet unknown. Some new perils will catch even the most vigilant regulators unaware.

Nevertheless, there are several things agencies can do to watch out for stealth threats. Most importantly, regulators need to level with themselves about what they do not know and how to develop that information. Financial innovations, for instance, are a perennial source of unknown risks. Many financial innovations are socially beneficial, but some, such as securitization and derivatives, also have the potential for harm. Supervisors cannot blithely assume that new products are benign. Instead, they need to track those

191. I am indebted to Ethan Bernstein and Jared English for many long conversations in which we discussed and debated the elements of such a system.

192. The rapid evolution in systemic risk metrics is an important development in that regard. See, e.g., BRUNNERMEIER ET AL., *supra* note 2, at 32–33; Gabriele Galati & Richhild Moessner, *Macroprudential Policy—A Literature Review*, 27 J. ECON. SURVS. 846, 860–63 (2011), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2335778; Lex Hoogduin et al., *Macroprudential Instruments and Frameworks: A Stocktaking of Issues and Experiences* 17–19 (Comm. on the Glob. Fin. Sys. Papers No. 38, 2010), <http://www.bis.org/publ/cgfs38.htm>; Lucia Alessi et al., *Comparing Different Early Warning Systems: Results from a Horse Race Competition Among Members of the Macro-Prudential Research Network* 1, 19 (Feb. 1, 2015) (unpublished working paper) http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2566165. However, the metrics are still fairly crude. Borio notes, furthermore, that “it is not realistic to expect a single measure of systemic risk to cater for *all* purposes; in fact, it is actually dangerous to do so” because metrics that measure interlinkages “can provide the wrong signals” as to build-ups in risk over time. Borio, *supra* note 1, at 6–7.

innovations in order to understand their benefits and drawbacks.¹⁹³ In most cases, lack of statutory authority is not a problem because Dodd-Frank gave federal regulators such broad data collection authority. With those data, economists can run simulations to project the performance of new financial products under a wide range of economic conditions.

Market research is likewise essential for identifying new and troubling trends. Analyst reports, securities filings, industry publications, and interviews with industry players can alert supervisors to nascent risks. State and local officials, citizen groups, and outside researchers can also flag incipient harm. Agencies should similarly cull examination reports, complaint data and other citizen reports for warning signs of problems.

With regard to these types of individual reports, if countercyclical regulation is to work, regulators must avoid succumbing to certain instinctive fallacies. One such fallacy is the tendency of regulators to assume that anecdotal reports of harm are inconsequential. During the credit boom that led up to the near-meltdown of the financial system in 2008, there were ample anecdotal warnings of impending problems. Federal regulators were aware of many of those incidents, but dismissed them as isolated reports.¹⁹⁴ If regulators had started tracking those incidents and amassed the data to analyze their growth, the 2008 crisis might have been averted. The enormity of that fallout underscored the need to treat anecdotal reports as cause for further inquiry, not as something to be ignored.

Another, related fallacy is the failure to analyze or even consider the possibility of correlated risks. In recent years, the best example of this was former Federal Reserve Board Chairman Ben Bernanke's statement in June 2007 that "the troubles in the subprime sector seem unlikely to seriously spill over to the broader economy or the financial sector."¹⁹⁵ As his statement suggested, Bernanke was well aware that the subprime mortgage market was imploding in mid-2007. But he seemed blind to the fact that the default of one mortgage made other mortgage defaults more likely. Similarly, he was tone-deaf that June to the possible detrimental effect of cascading mortgage defaults on mortgage-backed securities, credit derivatives, financial asset prices, the solvency of banks, and the economy at large.

193. See, e.g., Daniel Carpenter & Patricia A. McCoy, *Keeping Tabs on Financial Innovation: Product Identifiers in Consumer Financial Regulation*, 18 N.C. BANKING INST. J. 195, 195–96 (2013), <http://www.law.unc.edu/journals/ncbank/volumes/volume18/18-nc-banking-inst-special-edition-2013/keeping-tabs-on-financial-innovation-product-identifiers-in-consumer-financial-regulation/>.

194. See, e.g., ENGEL & MCCOY, *supra* note 49, at 9, 61–64.

195. Ben S. Bernanke, Chairman, Fed. Reserve Bd. of Governors, Address to the 2007 International Monetary Conference: The Housing Market and Subprime Lending (June 5, 2007), <http://www.federalreserve.gov/newsevents/speech/bernanke20070605a.htm>.

The last fallacy is regulators' propensity to treat small-scale problems—and sometimes larger ones—as already under control due to their size and thus in no need of attention. As the subprime crisis demonstrated, however, some small problems can mushroom into crises of catastrophic proportions.

C. *Justifying Action When Problems Are Small*

Countercyclical regulation advises taking action when problems are manageable. However, when social harm is unknown or limited in size, federal banking regulators have displayed an almost visceral reluctance to taking action. Sometimes this may result from industry capture.¹⁹⁶ In other cases, though, regulators may be trying to balance legitimate tradeoffs between preventing systemic harm and stunting beneficial growth.

Regulators can have good reasons for a “hands-off” approach during economic upswings, particularly where intervention could distort an otherwise healthy market. Still, the truism “small is good” does not invariably hold. Subprime residential mortgages, for example, comprised only 7.4% of the U.S. mortgage market in 2002, but grew large enough by 2006 (reaching a market share of 23.5%)¹⁹⁷ to nearly topple the financial system. We do not want to repeat that gambit. Nevertheless, to the extent regulators use countercyclical tools to lean against the wind, questions will “naturally arise whether and how far [those tools are] stifling innovation and growth.”¹⁹⁸

Given these vagaries, taking countercyclical measures to deflate an asset bubble or advance other goals will present issues for regulators. Many countercyclical techniques require regulators, in the face of uncertainty, to decide which small problems are likely to grow. Prognostication of this sort is never assured. However, there are harbingers of later, major problems and supervisors should watch out for them. Rates of growth are key in that regard. Small risks that are growing at accelerating rates should be cause for concern. That is especially true for risks that pose a high degree of harm if they materialize. Additionally, regulators should look out for signs of a race to the bottom in which loose practices by questionable firms force reputable competitors to loosen their standards in order to preserve market share. We

196. *See infra* Section IV.D.

197. FIN. CRISIS INQUIRY COMM'N, THE FINANCIAL CRISIS INQUIRY REPORT 70 fig.5.2 (2011), <http://fcic.law.stanford.edu/report>.

198. COMM. ON THE GLOB. FIN. SYS., *supra* note 173, at 15. For concerns in this regard, see generally Steven L. Schwarcz, *Regulating Financial Change: A Functional Approach*, 100 MINN. L. REV. (forthcoming 2016), http://scholarship.law.duke.edu/faculty_scholarship/3309/.

saw such a race during the housing bubble, when risky hybrid adjustable-rate mortgages with lower initial payments crowded out safer fixed-rate loans.¹⁹⁹

In a related vein, regulators should keenly monitor correlated risks that could produce a domino effect of harm to the financial system if those risks materialize. We only need recall that trillions of dollars in mortgage-backed securities, collateralized debt obligations and credit default swaps depended on the performance of deteriorating home mortgages during the last run-up in credit. That edifice crumbled when droves of mortgages went into default.

Finally, certain lax loan underwriting practices are perennial in nature and crop up in virtually every real estate bubble. Sectoral tools are well-designed to identify and curb those practices.

Once regulators detect signs of a mounting asset bubble, there remains the question of what to do. Often they lack data on the underlying cause of the harm. Is it misaligned compensation? Flawed contracting mechanisms? Information asymmetries? Something else? If they cannot ascertain the cause, it may be hard to know what to fix. Similarly, data on the net effects of intervention versus inaction are even less common. The financial crisis revealed a dearth of data of this kind in retail credit markets and eventually propelled the prominence and growth of research on the economics of household finance.²⁰⁰ In the short run, however, that dearth of empirical findings is very real.

Figuring out whether and how to intervene is often just the start of the process. In some cases, the agency will still have to satisfy a statutory standard for the consideration of costs and benefits.²⁰¹ Doing so in the current judicial climate may be difficult and any regulations that are issued may attract legal challenge.

Recent case law developments on cost-benefit analysis of financial rules are not encouraging. In 2011, the Court of Appeals for the District of Columbia Circuit struck an activist stance and overturned the proxy access rule that had recently been adopted by the SEC for failing to satisfy the applicable statutory standard for review.²⁰² Even though Congress in the

199. See Patricia A. McCoy et al., *Systemic Risk Through Securitization: The Result of Deregulation and Regulatory Failure*, 41 CONN. L. REV. 1327, 1339–44 (2009).

200. See, e.g., John Y. Campbell et al., *Consumer Financial Protection*, 25 J. ECON. PERSPECTIVES 91, 91 (2011), <http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.25.1.91>.

201. For instance, the Commodity Futures Trading Commission is required to consider “the costs and benefits” of newly issued rules “in light of . . . considerations of the efficiency, competitiveness, and financial integrity of futures markets.” 7 U.S.C. § 19(a)(2) (2000).

202. *Bus. Roundtable v. SEC*, 647 F.3d 1144, 1148–49 (D.C. Cir. 2011). The standard in question required the SEC to “consider . . . in addition to the protection of investors, whether the action will promote efficiency, competition, and capital formation.” Securities Exchange Act of

Dodd-Frank Act expressly directed the SEC to adopt a proxy access rule, the D.C. Circuit ruled that the final rule was arbitrary and capricious because the Commission had failed to adequately assess the economic effects of that provision. In the view of the court:

[T]he Commission inconsistently and opportunistically framed the costs and benefits of the rule; failed adequately to quantify the certain costs or to explain why those costs could not be quantified; neglected to support its predictive judgments; contradicted itself; and failed to respond to substantial problems raised by commenters.²⁰³

The *Business Roundtable* decision later came under blistering attack for countermanding Congress' commands, for grafting a cost-benefit requirement onto the SEC's statutory review standard with no statutory authorization, and for privileging inaction.²⁰⁴

Now consider a countercyclical rule promulgated when the immediate harm is small and the likelihood and magnitude of later harm is large but not certain. Further assume that the D.C. Circuit—however wrongly—expects the agency to conclude that the benefits of that rule outweigh the costs, based on quantitative analysis, in order to survive attack. On that evidentiary record, it could be hard to persuade a skeptical D.C. Circuit that the benefits of

1934 § 3(f), 15 U.S.C. § 78c(f) (2010); *see also* Investment Company Act of 1940 § 2(c), 15 U.S.C. § 80a-2(c) (2010); Securities Act § 2(b), 15 U.S.C. § 77b(b). As James Cox and Benjamin Baucom have thoughtfully argued, this standard does not impose a cost-benefit test, one, because Congress considered and rejected imposing a cost-benefit test on the SEC when it first adopted this standard in 1996, and, two, because all the standard requires the Commission to do is “consider” the four factors, not to reach a conclusion about the rule’s likely effect. James D. Cox & Benjamin J.C. Baucom, *The Emperor Has No Clothes: Confronting the D.C. Circuit’s Usurpation of SEC Rulemaking Authority*, 90 TEX. L. REV. 1811, 1818–24 (2012).

203. *Bus. Roundtable*, 647 F.3d at 1148–49. This was not the first time the D.C. Circuit had invalidated an SEC rule under that standard. Previously, in *Chamber of Commerce of United States v. SEC*, 412 F.3d 133, 143–44 (D.C. Cir. 2005), the D.C. Circuit had struck down another SEC rule, this one on the makeup of mutual fund boards of directors, under the Administrative Procedure Act for failing to satisfy the same test. The *Business Roundtable* decision came as a surprise because there, the SEC adduced substantially more evidence in favor of its proxy access test than it had in the rulemaking overturned in *Chamber of Commerce* in 2005. Another D.C. Circuit case, *American Equity Investment Life Insurance Co. v. SEC*, 613 F.3d 166, 177 (D.C. Cir. 2010), invalidated the SEC’s attempt to regulate fixed indexed annuities for lack of a reasoned basis regarding its conclusion about the “competition” factor.

204. *See, e.g.*, Cox & Baucom, *supra* note 202, at 1837 (“the D.C. Circuit has not only flouted the [SEC’s] Review Standard, but has also essentially invalidated the will of Congress”); Jill E. Fisch, *The Long Road Back: Business Roundtable and the Future of SEC Rulemaking*, 36 SEATTLE U. L. REV. 695, 697–98 (2013); Bruce Kraus & Connor Raso, *Rational Boundaries for SEC Cost-Benefit Analysis*, 30 YALE J. REG. 289, 313–17 (2013).

intervention merit the expense. This is largely because countercyclical intervention presents a special case of the general evidentiary quandary that proof of benefits is harder to come by than proof of costs. Measuring future benefits in financial regulation is often intractable, particularly because a “crisis that is successfully averted by macroprudential policy leaves no traces.”²⁰⁵ Measuring costs, while easier, is by no means free from difficulty.²⁰⁶ Thus, it is hard in general to make a cost-benefit case for regulating existing problems and even harder when the data on those problems are scant.²⁰⁷ These evidentiary problems become even more protracted when there are new, emerging threats with little past data for analysis. Such threats could emanate from financial innovations with a short track record or little-understood changes in the structure of the financial landscape.

Countercyclical rules adopted in the throes of a crisis, when evidence of benefits is more plentiful, may be able to surmount these problems with cost-benefit tests. But when times are calm, rules addressing new perils may be more difficult to defend in court. Fortunately, some financial rules do not require cost-benefit analysis at all. For those that do, normally the statutory test only requires “consideration” of costs and benefits and not a conclusion as to their relative weight.²⁰⁸ However, if the D.C. Circuit continues to construe these and other statutory review standards aggressively to nevertheless impose a strict, quantitative cost-benefit test in derogation of the statutory text, regulators may not have enough solid proof of harm to satisfy the courts.

In the long run, Congress or the Supreme Court may have to resolve this conundrum in order for countercyclical regulation to fully work. In the short run, this problem may force agencies to resort to other, more limited regulatory tools—such as enforcement, non-binding guidances, or pilot projects²⁰⁹—in order to thwart unfamiliar threats before they spin out of control.

205. COMM. ON THE GLOB. FIN. SYS., *supra* note 173, at 6.

206. *See, e.g.*, Howell E. Jackson, *Variation in the Intensity of Financial Regulation: Preliminary Evidence and Potential Implications*, 24 YALE J. REG. 253, 255, 258–61 (2007).

207. *See* COMM. ON THE GLOB. FIN. SYS., *supra* note 173, at 6.

208. *See* 7 U.S.C. § 19(a)(2).

209. In this regard, Cox & Baucom recommend pilot projects where regulators could phase in regulation in order to generate data on an initial foray’s effects. *See* Cox & Baucom, *supra* note 202, at 1842–44. For a kindred proposal for “staged regulation,” *see* Charles K. Whitehead, *The Goldilocks Approach: Financial Risk and Staged Regulation*, 97 CORNELL L. REV. 1267, 1295–1307 (2012).

D. Capture and Regulatory Inaction

So far, I have assumed that the regulator in question is committed to a countercyclical course of action. But in halcyon times, industry capture²¹⁰ and lobbying by other affected constituencies²¹¹ can weaken regulators' resolve. It is hard enough to amass support for needed safeguards immediately after a crisis. Doing so when economic conditions are bright can threaten a regulator's career. When memories of disasters grow dim, officials who predict catastrophes based on limited problems are often dismissed as Cassandras. Under those circumstances, many officials take the path of least resistance and sit on their hands because any eventual harm will not appear on their watch.²¹² It takes a brave regulator to tighten regulation under these conditions.

Careful thought needs to be given to capture dynamics when overhauling regulation to dampen financial cycles. In this regard, it is helpful to view countercyclical tools along a continuum, ranging from self-executing techniques to those that require a discretionary decision by regulators (or even regulated entities) before they can be deployed. Dynamic provisioning is self-executing in nature because the level of provisioning it requires at any particular time is hard-wired into a mathematical algorithm.²¹³ Monetary policy, on the other hand, requires an exercise of judgment by the Federal Open Market Committee to intervene in an overheated economy, based on its evaluation of asset price movements. Still other tools fall—or could be designed to fall—in the middle of the continuum. Prompt corrective action, for instance, uses objective numerical triggers but relies on regulators to take the actions mandated by those triggers. Similarly, countercyclical capital buffers could fall on the discretionary end or in the middle of the spectrum, depending on how they are designed.²¹⁴

210. For an introduction to the literature on capture, see generally, PREVENTING REGULATORY CAPTURE (Daniel Carpenter & David M. Moss eds., Cambridge Univ. Press, 2013); Ernesto Dal Bó, *Regulatory Capture: A Review*, 22 OXFORD REV. ECON. POL'Y 203 (2006); George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3 (1971).

211. See, e.g., Arthur W.S. Duff, *Central Bank Independence and Macroprudential Policy: A Critical Look at the U.S. Financial Stability Framework*, 11 BERKELEY BUS. L.J. 183, 195, 204 (2014), <http://scholarship.law.berkeley.edu/bblj/vol11/iss1/4>.

212. See, e.g., Borio, *supra* note 1, at 12 (“Especially in the time dimension, the political economy pressures and the temptation to discount risks can be too powerful”); BARTH ET AL., *supra* note 32, at 113–14; Edward J. Kane, *Changing Incentives Facing Financial-Services Regulators*, 2 J. FIN. SERVS. RES. 265, 266 (1989); Ross Levine, *The Governance of Financial Regulation: Reform Lessons from the Recent Crisis*, 12 INT'L REV. OF FIN. 39, 39 (2011).

213. That is not to say that the algorithm cannot be manipulated. But if the algorithm is administered in good faith, it should be self-executing.

214. See Repullo & Saurina, *supra* note 111, at 4–5.

The most effective way to overcome regulators' propensity toward inertia at the top of the business cycle is to tie their hands in advance through rules that automatically kick in when markets heat up.²¹⁵ Some of these rules will be fixed rules that only become economically binding when credit conditions relax or losses mount.²¹⁶ Such rules will not constrain credit conditions during recessions, when lending is already tight; instead, whether those rules are binding will depend on the point in the business cycle. Other times, Congress or agencies can mandate time-varying statutes or rules that require regulators to take specific actions when objective tripwires go off. The prompt corrective action rules emulate this model and other examples can be envisioned.

When designing pre-commitment devices, consideration should also be given to incorporating objective tests. Any time-varying countercyclical device that requires supervisors to make judgments about whether and when to pull the trigger reintroduces the problem of regulatory discretion and likely inaction. Of course, objective triggers have potential drawbacks. They may over-regulate or under-regulate (the problem with the prompt corrective action triggers). And they may make regulatory arbitrage easier. But given the disastrous systemic harm from the last financial crisis, these risks may pale in contrast to doing nothing. And, with experience, objective triggers can be refined over time.

In order for pre-commitment devices to work best, they should be adopted in advance, in a favorable political climate.²¹⁷ Usually this is in the aftermath of a financial crisis. This approach works well for recurrent problems, such as the tendency to loosen lending standards. In other ways, though, this approach to regulation suffers from rear-view vision. It is not well suited to new and unknown perils, such as those posed by some new financial products.

215. See, e.g., Borio, *supra* note 1, at 11; BRUNNERMEIER ET AL., *supra* note 2, at 57.

216. Dynamic provisioning is one example; the ability-to-repay rule is another. When the ability-to-repay rule was introduced, private lending standards were so tight that the rule did not tighten them any further. However, as credit conditions loosen, the rule will exercise a real constraint on the market.

217. In a recent speech, Federal Reserve Board Governor Daniel Tarullo cast doubt on the practicality of time-varying countercyclical tools, in part because he doubted "the speed with which measures might realistically be implemented and take effect." See Tarullo, *supra* note 79. Careful implementation decisions, however, can address Governor Tarullo's concerns about speed. Designing time-varying provisions with objective triggers and authorizing them soon after a financial crisis through implementing legislation and rules can insure that the measures are available and activated when needed.

This means that our system will have to find other ways of reversing the traditional “hands-off” mentality towards new and unfamiliar financial products.²¹⁸ Requiring financial innovations to be registered and tracking their performance through mandatory reporting would not be terribly intrusive and would be a first step toward better risk assessment.²¹⁹ If a product proved harmful, mandatory reporting would allow regulators to detect that harm and justify action going forward. Reporting is not a panacea because informal rulemakings still require a long lead time.²²⁰ But not tracking the performance of new products would be worse.

Some types of countercyclical regulation may not be amenable to the pre-commitment devices that I describe. Monetary policy is one example. Similarly, Brunnermeier, et al., argue that executive pay reforms counsel a large dose of regulatory discretion in order to avoid distorting the healthy aspects of the market for executives and discouraging executives and employees from taking personal initiative.²²¹

All is not lost, however. Here, conscious use of other techniques to spur regulators into action can be helpful. Some regulatory standards, for example, establish a minimum federal floor that state regulators may exceed if they conclude that the floor is too low.²²² This type of statutory design encourages regulators to compete with one another for more optimal regulation (so long as the state and federal rules are not inconsistent) when federal rules under-regulate.

Checks and balances in the form of multiple centers of enforcement can also serve to prod laggard agencies into action. The U.S. federalist system affords a variety of different types of governmental actors—with varying incentives and degrees of susceptibility to influence—who can serve as checks and balances, if so empowered. In recent years, the New York Attorney General’s Office and the New York Department of Financial Services have served that role, taking an aggressive stance against financial

218. See, e.g., ALAN GREENSPAN, *THE AGE OF TURBULENCE: ADVENTURES IN A NEW WORLD* 48–51, 268–69 (Penguin Press 2007); Alan Greenspan, Chairman, Fed. Reserve Bd. of Governors, Remarks at the HM Treasury Enterprise Conference (Jan. 26, 2004), <http://www.federalreserve.gov/boarddocs/speeches/2004/20040126/default.htm>.

219. Daniel Carpenter and I proposed instituting prior registration and reporting requirements to track new financial products through unique product identifiers. See Carpenter & McCoy, *supra* note 193, at 220–21.

220. For example, witness the ability-to-repay rule. Even though it was a fast-track rule prescribed by Congress in July 2010, the rule was not promulgated in final form until January 2013 (in time for its statutory deadline).

221. BRUNNERMEIER ET AL., *supra* note 2, at 49–53.

222. See, e.g., Depository Institutions Deregulation and Monetary Control Act of 1980, Pub. L. No. 96-221, §§ 501(b)(2), (b)(4), 525, 94 Stat. 132; Dodd-Frank Act § 1041(a)(2).

sector misconduct and lighting a fire under the SEC and the federal prudential banking regulators in the process on more than one occasion.²²³ Dodd-Frank institutionalized a similar approach by giving state attorneys general and state banking regulators the power to enforce federal consumer financial protection statutes, on top of the enforcement authority vested in the federal government.²²⁴ Private rights of action can also have power to shame agencies into action.

The integrity of countercyclical regulation also underscores the importance of safeguarding the independence of the financial regulators who administer them.²²⁵ This is why the funding of every federal banking regulator is independent of the Congressional appropriations process. While there are campaigns from time to time to eliminate that independence,²²⁶ doing so would increase industry capture.

Agency independence, however, must go hand-in-hand with greater transparency. Such transparency can vest hard decisions with greater legitimacy and help obviate the back-room lobbying that causes agencies to drag their feet. Central banks and other prudential bank regulators balance independence with transparency in a number of ways, including solicitation of public comments on proposed rules, agency hearings, public release of deliberations and explanations of monetary and other decisions, and legislative testimony.²²⁷ Requiring agencies to timely publish online summaries of the contents of their private meetings with lobbyists²²⁸ is one more measure that could expose agency inaction to scrutiny.

Because countercyclical regulation is premised on early intervention, it has no chance of succeeding unless it comes to grips with regulatory inertia and capture. This is not a lost cause, however. Pre-commitment devices, monitoring of new financial products, multiple centers of regulation and enforcement, agency independence, and greater transparency are methods that can help turn inaction into action.

223. Examples include the mutual fund market timing scandals in the early 2000s, the mortgage servicing settlement in 2011 and 2013, and payday lending in 2013.

224. Pub. L. No. 111-203, §§ 1042, 1422, 124 Stat. 1601 (2010).

225. See Duff, *supra* note 211, at 202–08; GROUP OF THIRTY, *supra* note 1, at 61–63.

226. See, e.g., Bureau of Consumer Financial Protection Accountability Act of 2013, H.R. 3192, 113th Cong. (2013) (a bill to subject the CFPB to regular appropriations).

227. See GROUP OF THIRTY, *supra* note 1, at 62.

228. See, e.g., CONSUMER FIN. PROT. BUREAU, CFPB BULL. 11-3, CFPB POLICY ON EX PARTE PRESENTATIONS IN RULEMAKING PROCEEDINGS 2–3 (Aug. 16, 2011), http://files.consumerfinance.gov/f/2011/08/Bulletin_20110819_ExPartePresentationsRulemakingProceedings.pdf.

E. The Boundary Problem and Regulatory Arbitrage

The final hurdle to effective countercyclical regulation that I will discuss is the so-called boundary problem. This problem is endemic to financial regulatory schemes that supervise according to entity or product instead of risk.²²⁹ Federal prudential banking regulation, for example, regulates depository institutions and their parent companies and affiliates, but not other types of nonbank entities that offer banking services. Under this fragmented regulation, banks may seek to circumvent countercyclical requirements by shifting their business operations to other types of firms that escape those requirements.²³⁰ Possible tactics include outsourcing operations to special investment vehicles (known as SIVs) or less regulated nonbank affiliates.²³¹ Such arbitrage is of particular concern given the bank-centric nature of the current set of countercyclical tools.²³²

Regulating according to product in the U.S. is even more ubiquitous than regulating according to entity and also leaves space for arbitrage. For example, the Office of the Comptroller of the Currency (OCC) supervises “the business of banking” by national banks²³³ and the SEC regulates “securities,” while the Commodity Futures Trading Commission (CFTC) oversees “commodities.”

Recasting a financial product as something else may successfully evade a regulatory model based on product line. For instance, lenders can try to circumvent rules on lending by recharacterizing loans as sales. Examples include sale-leaseback arrangements and sale-repurchase transactions in the repo market, which are both the functional equivalent of loans.

Congress, agencies, and courts have struggled with circumvention of product boundary lines for years.²³⁴ To some extent, Congress can discourage such evasion by including anti-evasion clauses in legislation and by drafting

229. See Heidi Mandanis Schooner, *Regulating Risk Not Function*, 66 U. CIN. L. REV. 441, 443 (1998).

230. See OFFICE OF FIN. RESEARCH, *supra* note 77, at 40. In the United States, very few financial firms go completely unregulated these days. Instead, the intensity of regulatory oversight depends on the nature of the entity and product being regulated, the identity of the regulator, the types of rules that apply, and whether those rules are nationwide in scope.

231. See, e.g., Caprio, *supra* note 2, at 26–28.

232. See OFFICE OF FIN. RESEARCH, *supra* note 77, at 33–38.

233. 12 U.S.C. § 24 (Seventh) (2008).

234. See, e.g., NationsBank of N. C., N.A. v. Variable Annuity Life Ins. Co., 513 U.S. 251, 254–56 (1995); Int’l Brotherhood of Teamsters v. Daniel, 439 U.S. 551, 555–58 (1979); SEC v. W.J. Howey Co., 328 U.S. 293, 294–98 (1946); Blackfeet Nat’l Bank v. Nelson, 171 F.3d 1237, 1239 (11th Cir. 1999); M&M Leasing Corp. v. Seattle First Nat’l Bank, 563 F.2d 1377, 1379–80 (9th Cir. 1977).

statutes flexibly to place both traditional financial products and their functional substitutes under supervision. Courts have also repeatedly construed agency statutes to regulate according to a product's function and not just according to its form.²³⁵

While regulatory arbitrage cannot be completely eliminated, Congress and regulators can do more to discourage it. The most important step that Congress could take would be to scrap product and entity categories altogether and regulate solely according to risk.²³⁶ Extending regulation to all financial firms that present a given risk, without regard to the type of entity, charter or location, would substantially close the loopholes for outsourcing to domestic nonbanks.

Congress made a stab in that direction in the Dodd-Frank Act when it gave the Consumer Financial Protection Bureau jurisdiction to promulgate market conduct rules governing virtually all providers of consumer finance, regardless of entity type.²³⁷ This broad jurisdiction is nationwide and covers bank and nonbank providers alike. As a consequence, the CFPB has an important and unique role to play in stemming systemic risk—particularly in the residential mortgage market—which federal prudential banking regulators cannot fully replicate, given the statutory limitations on their jurisdiction.

Expanding regulation according to risk would require wholesale revamping of the federal government's financial services regulatory architecture. In the Dodd-Frank Act, Congress had that opportunity but passed it up. Dodd-Frank did not disturb the traditional division of federal bank regulatory power among the Federal Reserve Board, the OCC, and the Federal Deposit Insurance Corporation, apart from reassigning oversight of consumer financial protection to the CFPB. While Congress did fold the

235. See, e.g., *NationsBank of North Carolina*, 513 U.S. at 256–59; *W.J. Howey Co.*, 328 U.S. at 301; *M&M Leasing Corp.*, 563 F.2d at 1384–85.

236. Such risks would likely include solvency, market conduct abuses, and systemic risk. See Schooner, *supra* note 229, at 478–79. Former Treasury Henry Paulson, Jr., endorsed a similar approach in his blueprint for financial reform, issued in early 2008. DEP'T OF THE TREASURY, THE DEPARTMENT OF THE TREASURY BLUEPRINT FOR A MODERNIZED FINANCIAL REGULATORY STRUCTURE (2008), <http://www.treasury.gov/press-center/press-releases/Documents/Blueprint.pdf>; accord Elliott et al., *supra* note 1, at 9–40; cf. OFFICE OF FIN. RESEARCH, *supra* note 77, at 40 (“In earlier eras, the United States had success with demand-side tools like [loan-to-value] limits and margin requirements, but only when the Federal Reserve had authority to apply those tools to all or most lenders and borrowers”).

237. Dodd-Frank Act §§ 1002(6), 1022. This approach echoed Borio's suggestion to address procyclicality by applying macroprudential tools across-the-board to all extensions of credit to specific sectors of the economy, in order to make that regulation “less vulnerable to regulatory arbitrage.” Borio, *supra* note 1, at 10–11.

former and discredited Office of Thrift Supervision into the OCC, that change was of second-order importance. Similarly, Congress did not make fundamental changes to the messy division of product-line authority between the SEC and the CFTC, except for derivatives. If Congress declined to tackle this task in Dodd-Frank, in the wake of the worst U.S. financial crisis since the Great Depression, the prospects for future structural change are daunting.

Dodd-Frank's systemic risk provisions offer a way to bypass this problem. Under Dodd-Frank, FSOC has the authority to make recommendations to primary financial regulatory agencies to apply new or strengthened safeguards to financial activities or practices that could create a risk of financial contagion.²³⁸ While these recommendations are not binding, they have substantial practical force and can serve to trigger systemic risk regulation across product lines and industries.²³⁹

A final example of the boundary problem—international arbitrage—is arguably the most intractable. Many firms will try to escape the territorial jurisdiction of the United States by sending operations abroad. Bilateral cooperation is not a panacea because there will always be some jurisdiction that is willing to host those operations in exchange for revenue and jobs. To the extent that firms use overseas affiliates to market products in the United States, the government can intervene at the point of entry. Thwarting cross-border regulatory arbitrage is much harder where the foreign operations do not market themselves domestically, but nevertheless threaten systemic spillover effects that could harm large U.S. financial institutions.

The only immediate solution to such arbitrage lies in international cooperation and standards.²⁴⁰ In the financial arena, the Financial Stability Board (spearheaded by the leaders of the G20 nations), the Bank for International Settlements, and, to a lesser extent, the International Monetary Fund have become fora for harmonizing global macroprudential standards.²⁴¹ Nevertheless, absent a supranational regulator with binding enforcement

238. Dodd-Frank Act § 112(a)(2)(K).

239. Already, FSOC has invoked this authority to initiate changes on systemic risk regulation of the asset management area. FSOC used the threat of unilateral action to successfully lean on the SEC to adopt new money market fund rules on systemic risk and to consider analogous rules for other types of asset management activities.

240. One encouraging example of such cooperation is the reciprocity principle incorporated in the Basel Committee's countercyclical capital buffer. Under that principle, if U.S. banking regulators impose a countercyclical capital buffer requirement on U.S. banks, then foreign regulators must impose the same requirement on their regulated banks with respect to the banks' U.S. exposures. See INT'L MONETARY FUND, *supra* note 115, at 17; OFFICE OF FIN. RESEARCH, *supra* note 77, at 41. This reciprocity has its limits, however, because it does not require foreign regulators to impose a countercyclical capital buffer on non-U.S. exposures.

241. See GROUP OF THIRTY, *supra* note 1, at 63.

power, opportunities for overseas arbitrage will continue to abound. Complicating this challenge, imposing macroprudential measures cross-border may not always work because different jurisdictions may find themselves at different points in the business cycle.²⁴²

In closing, the boundary problem is palpably real and will live on without comprehensive reforms. While agencies and courts are not powerless to fight arbitrage through liberal interpretation of regulators' authorizing statutes, there are limits to that strategy. Dodd-Frank's decision to give rulemaking authority to the CFPB over consumer financial protection, regardless of entity or product type, was a step in the right direction. A more comprehensive approach to regulating according to risk, not to entity or product, is needed to seal off arbitrage opportunities effectively.

V. CONCLUSION

In financial regulation, true innovations come seldom if ever. Countercyclical regulation, however, is the rare exception. If countercyclical regulation is given the chance to take root and thrive, it has the potential to accomplish what procyclical regulation has never achieved: *i.e.*, modulating and even preventing future financial crises. As the 2008 financial crisis and the ensuing fallout showed, the stakes are too high to ignore the benefits of a countercyclical approach.

If countercyclical regulation is to succeed, any serious effort to implement it must confront and address the institutional hurdles to its success. In this Article, I have identified five major obstacles, including data gaps, the need for early response systems, issues in determining whether and when to take action, industry capture, and regulatory arbitrage. These obstacles are not insuperable. With each passing year, the necessary data to monitor systemic risk are improving and the new Office of Financial Research (OFR) has emerged as a powerful advocate for more change.²⁴³ Meanwhile, the annual systemic risk assessments by FSOC²⁴⁴ and OFR²⁴⁵ are informing early response initiatives across the federal government.

As for counteracting regulatory inertia and justifying action when problems are small, countercyclical regulation provides tools to address those issues. The expanding countercyclical toolkit makes it easier for regulators to

242. See COMM. ON THE GLOB. FIN. SYS., *supra* note 173, at 7.

243. OFR's annual reports, for instance, devote a lengthy section to existing data gaps and initiatives for improving data. See, e.g., OFFICE OF FIN. RESEARCH, *supra* note 115.

244. See, e.g., FIN. OVERSIGHT STABILITY COUNCIL, 2014 ANNUAL REPORT (2014), <http://www.treasury.gov/initiatives/fsoc/Documents/FSOC%202014%20Annual%20Report.pdf>.

245. See, e.g., OFFICE OF FIN. RESEARCH, *supra* note 115.

justify early intervention by deploying more tailored techniques, such as sectoral tools, that single out lax practices that are known to fuel credit bubbles without impairing healthy credit. Similarly, countercyclical regulation offers pre-commitment devices and objective tests to help insulate regulators from political pressure not to act. Empowering the states to exceed federal standards and to enforce federal laws can reinforce incentives for federal regulators to be proactive as well. Finally, regulation according to risk and greater international harmonization of systemic risk standards can make significant inroads into the ever-present problem of arbitrage.