

The Puzzling Divergence of the Lender of Last Resort Regimes in the US and UK

Dan Awrey*

Central bank lender of last resort (LOLR) regimes are the last line of defense before governments are forced to resort to taxpayer-funded bailouts of the financial system. Yet despite this important role, along with a rich theoretical literature examining the function and design of LOLR regimes, there has been remarkably little comparative research examining the design of these regimes across jurisdictions. This paper seeks to close this gap by tracing the historical development of the LOLR regimes in two jurisdictions at the heart of the global financial system: the United States and United Kingdom. This historical record reveals an important and intriguing puzzle. Despite deeply-rooted similarities in their legal, political, and economic systems, the LOLR regimes in the United States and United Kingdom have evolved at remarkably different speeds and, increasingly, in different directions. Even more remarkably, cutting against the global trend toward greater regulatory harmonization, this divergence has actually accelerated in the decade following the global financial crisis.

Having traced the historical development of the LOLR regimes in the United States and United Kingdom, this paper seeks to explain this puzzling divergence. Three potential explanations stand out. First, while debates about the function and design of LOLR regimes almost universally revolve around the writings of 19th century journalist Walter Bagehot, the subsequent 150 years have witnessed the emergence of two distinct schools of thought on financial crisis management. While U.S. policymakers have been heavily influenced by the highly theoretical “monetarist” school, their counterparts in the United Kingdom have been influenced by the more pragmatic “financial stability” school. Second, differences in the political culture of the United States and United Kingdom, along with the domestic political economy of financial regulation, have put very different pressures on policymakers responsible for the design and use of LOLR regimes. Third, and perhaps most importantly, the United States and United Kingdom have vastly different historical experiences with financial crisis management. Most importantly, while the frequent crises of the 19th century left the Bank of England deeply skeptical of strict legal constraints on LOLR regimes, U.S. policymakers have embraced precisely these type of constraints in response to the financial crisis. This last explanation has potentially enormous implications for U.S. policy: suggesting that its new LOLR regime will buckle—and potentially break—under the strains of the next crisis.

I. INTRODUCTION	102
-----------------------	-----

* Professor of Law, Cornell Law School; Research Member, European Corporate Governance Institute. I would like to thank Michael Dorf, Bob Hockett, Rosa Lastra, Joshua Macey, Morgan Ricks, Michael Salib, Christina Skinner, and Paul Tucker, along with participants of workshops held at Cornell Law School, Vanderbilt Law School, and the University of Stockholm, for their extremely helpful comments and suggestions. All errors remain my own.

II. CENTRAL BANKS AS LENDERS OF LAST RESORT: THEORY AND PRACTICE	108
<i>A. The Function of LOLR Regimes</i>	109
<i>B. The Mechanisms for Delivering LOLR</i>	113
<i>C. Eligibility to Receive LOLR</i>	114
<i>D. How to Constrain Moral Hazard</i>	116
III. THE DEVELOPMENT OF THE UK LENDER OF LAST RESORT REGIME	119
<i>A. The Bank of England as “Dernier Resort”</i>	120
<i>B. The Bank Charter Act of 1844</i>	123
<i>C. Bagehot’s Key Insight</i>	127
<i>D. The Bank’s Response to the Financial Crisis</i>	128
IV. THE DEVELOPMENT OF THE US LENDER OF LAST RESORT REGIME.....	133
<i>A. Financial Crisis Management without a Central Bank</i>	134
<i>B. The Establishment and Early Years of the Federal Reserve</i>	136
<i>C. The Fed’s Response to the Financial Crisis</i>	141
V. EXPLAINING THE GROWING DIVERGENCE	146
<i>A. Ideological Influences</i>	146
<i>B. Political Culture and Economy</i>	152
<i>C. Historical Experience</i>	157
VI. LESSONS FOR US POLICY	158
VII. CONCLUSION	162

I. INTRODUCTION

It is often said that the United States and United Kingdom share a “special relationship.”¹ This relationship is founded on a body of shared values and institutions: a commitment to democracy, the common law, and an enduring belief in free markets as the best mechanisms for allocating society’s resources.² At different points in history, both countries have been the world’s factory, the world’s bank, and the issuer of the world’s dominant reserve currency.³ Today, both continue to have large, diverse, and globally interconnected financial systems that are home to some of the world’s largest banks and

1. While the origins of the phrase are lost to history, Winston Churchill is often credited with popularizing the term after using it on a U.S. lecture tour in 1946. See *A Point of View: Churchill and the Birth of the Special Relationship*, BBC (Mar. 11, 2012), <https://www.bbc.com/news/magazine-17272610> [<https://perma.cc/SK8S-795Z>].

2. For a survey of academic literature exploring the relationship between legal, political, and economic institutions in the United States, United Kingdom, and elsewhere, see, e.g., Rafael La Porta et al., *The Economic Consequences of Legal Origins*, 46:2 J. ECON. LITERATURE 285 (2008).

3. For a historical overview of the centrality of the United States and United Kingdom within the international financial system, see BARRY EICHENGREEN, *GLOBALIZING CAPITAL: A HISTORY OF THE INTERNATIONAL MONETARY SYSTEM* (3d ed. 2019).

other financial institutions.⁴ And, of course, both were devastated by the global financial crisis of 2007-09 and—more than a decade later—continue to experience its destabilizing economic and political aftershocks.

In the aftermath of the crisis, the United States and United Kingdom have been at the forefront of efforts to promote greater global harmonization of financial regulation.⁵ These efforts have spurred the development of new global bank capital and liquidity rules,⁶ the introduction of mandatory central clearing for many derivatives,⁷ and the creation of new “macroprudential” regulatory frameworks targeting systemically important markets and institutions.⁸ Underpinning this drive has been the implicit assumption that financial regulation can be distilled down to a series of technical policy challenges: with policymakers simply identifying and addressing perceived market failures.⁹ This technocratic view is reflected in the delegation of many of the most important questions in financial regulation to international organizations such as the Financial Stability Board (FSB), Basel Committee on Banking Supervision (BCBS), and International Organization of Securities Commissions (IOSCO).¹⁰ These highly expert but politically unaccountable organizations are responsible for the development of international regulatory standards that are then implemented by policymakers at the domestic level. This delegation is premised on the view that countries like the United States and United Kingdom face common problems for which there will inevitably be common solutions.

This Article explores an important and too often neglected pillar of financial regulation that cuts against this trend toward greater global harmonization. Central bank lender of last resort (LOLR) regimes are a fundamental tool of financial crisis management. These regimes provide collateralized loans and other forms of financial support to solvent but illiquid banks and other financial institutions during periods of widespread panic and

4. As of 2018, 3 of the 4 most systemically important banks (and 11 of the top 29) were domiciled in either the United States or United Kingdom. See *2018 List of Globally Systemically Important Banks (G-SIBs)*, FIN. STABILITY BOARD (Nov. 21, 2018), <http://www.fsb.org/wp-content/uploads/P161118-1.pdf> [<https://perma.cc/RJ8E-3AFN>].

5. In particular, the United States and United Kingdom played a leading role within the G20 in terms of setting the agenda and priorities for post-crisis reforms. See U.S. DEP’T OF THE TREASURY, LEADERS’ STATEMENT: THE PITTSBURGH SUMMIT (2009), https://www.treasury.gov/resource-center/international/g7-g20/Documents/pittsburgh_summit_leaders_statement_250909.pdf [<https://perma.cc/Y24S-5NZA>]. Thereafter, they also played an influential role within the FSB, BCBS, and IOSCO in designing these reforms.

6. These reforms are known as the “Basel III” framework. See BCBS, *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems*, BANK INT’L SETTLEMENTS (June 1, 2011), <http://www.bis.org/publ/bcbs189.htm> [<https://perma.cc/2HQK-QULH>].

7. See, e.g., Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 727, 124 Stat. 1376 (2010); Council Regulation 648/2012, 2012 O.J. (L 201) (regulating OTC Derivatives, Central Counterparties, and Trade Repositories) (EMIR).

8. See, e.g., Dodd-Frank Act, Pub. L. No. 111-203, 124 Stat. 1376, tit. I (2010) (establishing the Financial Stability Oversight Council); Financial Services Act 2012, c. 21, § 4(1) (UK) (establishing the Financial Policy Committee of the Bank of England).

9. This technocratic view is also reflected in leading textbooks on financial regulation. See, e.g., JOHN ARMOUR ET AL., *PRINCIPLES OF FINANCIAL REGULATION* (2016).

10. For a more detailed description of the role played by these international organizations in the design of international regulatory standards, see Chris Brummer, *How International Financial Law Works (and How it Doesn’t)*, 99 GEO. L.J. 257 (2011); CHRIS BRUMMER, *SOFT LAW AND THE GLOBAL FINANCIAL SYSTEM: RULE MAKING IN THE 21ST CENTURY* (2d ed. 2012); Stavros Gadinis, *Three Pathways to Global Standards: Private, Regulator, and Ministry Networks*, 109 AM. J. INT’L L. 1 (2015).

instability.¹¹ LOLR regimes are thus often viewed as the last line of defense before governments are forced to resort to taxpayer-funded bailouts of the financial system. During the global financial crisis, both the United States and United Kingdom dramatically expanded their LOLR regimes, establishing a range of ad hoc facilities designed to support vast swathes of the global financial system.¹² This massive expansion of the financial safety net is often credited with having helped avert an even deeper and more destructive crisis.¹³ It was also highly controversial.¹⁴

Despite this important and controversial role, along with a rich literature exploring the function and design of LOLR regimes, there has been remarkably little comparative research examining the design of these regimes across jurisdictions.¹⁵ More importantly, what little research does exist often fails to explore the historical, intellectual, political, and other factors that have influenced the development and use of these regimes.¹⁶ This Article seeks to close this gap by tracing the historical development of the LOLR regimes in the United States and United Kingdom. This historical record reveals an important and intriguing puzzle. Despite deeply-rooted similarities in their legal, political, and economic systems, the LOLR regimes in these two countries have evolved at remarkably different speeds and, increasingly, in different directions. Even more remarkably, especially given the recent trend toward greater regulatory harmonization, this divergence has actually accelerated in the decade following the financial crisis. In the United States, Congress has abolished the lending facilities created during the crisis and imposed strict legal constraints on the authority of the Federal Reserve to provide financial support to institutions outside

11. The function and design of LOLR regimes are described in greater detail in Part II.

12. These ad hoc liquidity facilities are described in greater detail in Parts III and IV.

13. See, e.g., Andrew Hauser, *Between Feast and Famine: Transparency, Accountability and the Lender of Last Resort*, Speech to the Committee on Capital Markets Regulation Conference (Feb. 10, 2016), <https://www.bankofengland.co.uk/-/media/boe/files/speech/2016/between-feast-and-famine-transparency-accountability-and-the-lender-of> [https://perma.cc/865C-3MAF] (describing how lender of last resort mechanisms were used to prevent a more serious crisis); Dietrich Domanski et al., *Central Banks as Lender of Last Resort: Experiences During the 2007–2010 Crisis and Lessons for the Future*, (Fed. Res. Board, Working Paper No. 2014–110, 2014) (describing how central banks provided emergency liquidity assistance during the crisis); WILLIAM A. ALLEN, *INTERNATIONAL LIQUIDITY AND THE FINANCIAL CRISIS* (2013) (describing how central banks provided emergency liquidity assistance during the crisis).

14. See generally *supra* note 13.

15. For the most relevant prior research, see Hal Scott, *The Federal Reserve: The Weakest Lender of Last Resort Among Its Peers*, 18 INT'L FIN. 321 (2015) (describing the regimes in the United States, United Kingdom, European Union, and Japan); Charles Calomiris et al., *Political Foundations of the Lender of Last Resort: A Global Historical Narrative*, 28 J. FIN. INTERMEDIATION 48 (2016) (describing the evolution of central bank lender of last resort regimes across different countries), and Andrew Campbell & Rosa Lastra, *Revisiting the Lender of Last Resort*, 24 BANKING & FIN. L. REV. 453 (2009). See also CHARLES CALOMIRIS & STEPHEN HABER, *FRAGILE BY DESIGN: THE POLITICAL ORIGINS OF BANKING CRISES AND SCARCE CREDIT* (2014) (describing the impact of politics and political institutions on banking crises across countries). While this paper draws on this important prior research, it goes farther than its predecessors in several important respects. First, in addition to examining the impact of politics and history on the development of LOLR regimes across jurisdictions, this paper examines the role of both economic ideology and domestic political economy. Second, this paper traces how these factors contributed to the acceleration of the divergence between the United States and United Kingdom in the wake of the financial crisis. Finally, this paper highlights how the United Kingdom's historical experience may hold out important lessons for the United States in terms of the impact of recent regulatory reforms on the authority of the Federal Reserve to effectively respond to the next crisis.

16. The notable exceptions being Calomiris et al., *supra* note 15, and Calomiris & Haber, *supra* note 15, who trace some of the relevant historical and political factors.

the conventional banking system.¹⁷ In the United Kingdom, meanwhile, the facilities created by the Bank of England have become the foundations of a stronger, more flexible, and expanded LOLR regime that encompasses banks, securities dealers, and derivative clearinghouses.¹⁸ These divergent approaches toward the design of LOLR regimes ultimately reflect different answers to the same fundamental question: did central banks lend too little or too much in response to the financial crisis?

Having traced the historical development of the LOLR regimes in the United States and United Kingdom, this Article seeks to explain this puzzling divergence. Three potential explanations stand out. The first stems from the different ideological influences on policymakers in the United States and United Kingdom. For almost 150 years, debates around the function and design of LOLR regimes have revolved around Walter Bagehot's famous rule calling on central banks to lend freely, against good collateral, and at a penalty rate of interest, to solvent but illiquid banks.¹⁹ Yet strict observance of Bagehot's Rule—even in its breach—has obscured the fact that there are actually two competing schools of thought regarding the function and design of LOLR regimes.²⁰ The first—"monetarist"—school views LOLR regimes as counterweight to destabilizing contractions in the money supply. The second—"financial stability"—school views LOLR regimes as designed to support banks and other inherently fragile financial institutions whose failure might trigger widespread disruption to the supply of credit, payments, or other key financial services. In addition to viewing LOLR regimes as performing different functions, these competing schools of thought also offer radically different views about the optimal mechanisms for delivering LOLR, the identity of eligible recipients, and how to resolve the resulting moral hazard problems.

Policymakers in both the United States and United Kingdom famously experimented with monetarist policies in the late 1970s and early 1980s. While these experiments would prove short-lived, monetarist thinking would continue to influence the theory and practice of central banking over the subsequent decades. Perhaps most importantly, the monetarist school would articulate what has become the dominant interpretation of Bagehot's Rule: emphasizing the importance of collateral, the penalty rate, and the prohibition against lending to fundamentally insolvent institutions as prophylactics against potential moral hazard problems. This interpretation has been particularly influential in the United States, where leading monetarists both within and outside the Federal Reserve System have argued that LOLR regimes should target wholesale money markets and avoid lending to individual banks or other financial institutions. These arguments had a profound influence on Congress as it sought to design new constraints on the Federal Reserve's LOLR authority in the wake of the financial crisis.

A second possible explanation for this divergence stems from differences in both the prevailing political culture in the United States and United Kingdom, along with the domestic political economy of financial regulation. The political culture in the United States has long been characterized by an ingrained distrust of large concentrations of economic power—whether in the form of Big Government or Big Banks. This distrust

17. These reforms are described in greater detail in Part IV.

18. These reforms are described in greater detail in Part III.

19. WALTER BAGEHOT, *LOMBARD STREET: A DESCRIPTION OF THE MONEY MARKET* (John Wiley & Sons ed. 1999) (1873).

20. These competing schools of thought are described in greater detail in Part II.

doomed early attempts to establish a central bank and ultimately had enormous influence on the creation, structure, and powers of the Federal Reserve. This distrust was also reflected in calls from populist movements on both the right and left to curtail the powers of the Fed following the financial crisis. Importantly, these populist movements found a powerful ally in the community and regional banks that make up a significant segment of the U.S. banking industry. Many of these smaller banks shared the populist opposition toward unlimited government support for the banking system, essentially on the grounds that it provided “too-big-to-fail” banks with a competitive advantage over their smaller rivals. Even more importantly, these smaller banks were in the position to exert political influence on Congress through industry trade associations such as the American Bankers Association, and through their principal prudential regulator, the Federal Deposit Insurance Corporation (FDIC). This coalition helped tip the political balance in favour of the imposition of strict legal constraints on the Federal Reserve’s emergency lending authority.

While the United Kingdom is certainly no stranger to populist politics, the prevailing political culture is far less suspicious of government intervention. This culture reflects a fundamentally different political settlement, whereby government has long played an important role in protecting its citizens from economic shocks. This culture, together with the structure of government support for the banking system, served to blunt at least some of the criticism directed at the Bank of England following the crisis. This criticism may have been further blunted by the structure of the U.K. banking system. This system is dominated by four extremely large and interconnected banks: HSBC, Barclays, Lloyds, and Royal Bank of Scotland (RBS). As the most likely recipients of government support, these banks have a clear interest in preserving the authority of the Bank of England to determine the timing, nature, and scope of any LOLR operations. At the same time, the rescues of Northern Rock and Bradford & Bingley sent a strong signal that even smaller banks would receive LOLR assistance, thereby creating a community of interest with their systemically important competitors. In sharp contrast with the United States, these factors undercut the emergence of a highly motivated, coordinated, and influential coalition opposed to government support—thus paving the way for the strengthening and expansion of the Bank of England’s LOLR regime.

The third and perhaps most important potential explanation is history. While often unappreciated, the United States and United Kingdom have had vastly different historical experiences with financial crisis management. In the United Kingdom, Parliament experimented with the imposition strict legal constraints on the Bank of England’s emergency lending authority under the Bank Charter Act of 1844.²¹ Over the next quarter-century, the United Kingdom experienced three major financial crises—each necessitating the suspension of the 1844 Act in order to permit the Bank to provide financial support to London’s paralyzed money markets. For the United Kingdom, the key lesson from this period was that binding legal constraints on central bank LOLR regimes are simply not credible in the face of widespread panic and financial instability.

This same lesson does not leap off the pages of U.S. financial history. Indeed, for most of its history, the United States has survived without a fully-fledged central bank—leaving financial crisis management to the U.S. Treasury Department, regional clearinghouses, and private financiers such as J.P. Morgan. Even after the creation of the Federal Reserve, the United States has often adopted a more cautious approach toward the use of LOLR regimes.

21. Bank Charter Act 1844, 7 & 8 Vict. c. 32 (1844).

During the Great Depression, for example, the Federal Reserve stood by while over 9000 banks—almost 40% of the U.S. banking system—closed their doors over a four-year period.²² During the global financial crisis, the Fed similarly failed to save the beleaguered investment bank Lehman Brothers.²³ Whether or not we think these decisions were correct, the key point is that little in U.S. financial history leads inexorably to the conclusion that strict legal constraints on LOLR regimes will inherently lack credibility in the chaos and uncertainty of a financial crisis.²⁴

These three intertwined explanations for the growing divergence between the LOLR regimes in the United States and United Kingdom hold out a number of important insights. First, the influence of Bagehot's Rule as a conceptual framework in academic and public policy debates has obscured a growing rift between the monetarist and financial stability schools regarding the function, delivery mechanisms, eligible recipients, and potential costs of LOLR regimes. These schools of thought reflect fundamentally different outlooks and priorities that should be debated in the full light of day. Second, notwithstanding the technocratic framing of most post-crisis policy debates, there are still important areas of financial regulation where ideology, politics, and history play an influential role in shaping domestic policy choices. Third, while ideology, politics, and history may influence the design of LOLR regimes, this does not mean that it is entirely a question of different horses for different courses. Most importantly, the imposition of strict legal constraints on a central bank's emergency lending authority, combined with gridlocked or dysfunctional domestic politics, is almost certainly a recipe for inflexible and ineffective financial crisis management.

Ultimately, this paper is *not* about which LOLR regime is better. Indeed, both the U.S. and U.K. regimes can be effective given the right financial system, regulatory framework, and broader political institutions. In countries with predominantly bank-based financial systems, blessed with rational and responsive political institutions, strict legal constraints on central bank LOLR lending may be both credible and socially desirable. The problem, of course, is that this not an accurate description of the United States in 2019. Against this backdrop, the comparison with the United Kingdom has potentially enormous implications in terms of the likely effectiveness of U.S. policy. Specifically, the Bank of England's experience during the 19th century suggests that the imposition of strict legal constraints on the Federal Reserve's LOLR regime is likely to undermine its ability to effectively respond to the unusual and exigent circumstances of the next crisis. If this historical precedent holds true, the question then becomes whether an increasingly polarized Congress will be in a position to pass legislation relaxing these constraints. If Congress is unable or unwilling to act, the combination of ideology, politics, and the failure to learn the lessons of history could have a devastating impact on the stability of the U.S. financial system—and potentially beyond.

This Article proceeds as follows. Part I provides an overview of the theory and

22. Board of Governors of the Federal Reserve System, *Federal Reserve Board, Banking and Monetary Statistics: 1914–1941*, FED. RES. (1943), <https://fraser.stlouisfed.org/title/38> [<https://perma.cc/UJ8K-ZPB6>].

23. Although, as we shall see, the question of whether this “failure” was attributable to legal constraints on the Fed's authority is hotly contested. LAURENCE M. BALL, *THE FED AND LEHMAN BROTHERS: SETTING THE RECORD STRAIGHT ON A FINANCIAL DISASTER* (2018).

24. An important counterpoint is provided by Eric Posner, who argues that federal agencies frequently violated the law in order to mount an effective response to the financial crisis. ERIC POSNER, *LAST RESORT: THE FINANCIAL CRISIS AND THE FUTURE OF BAILOUTS* (2018).

practice of central bank LOLR regimes. It also describes the competing views of the monetarist and financial stability schools regarding their function, delivery mechanisms, and eligibility requirements, along with each school's approach to addressing the potential moral hazard problems generated by the expectation of government support. Parts II and III trace the historical evolution of the LOLR regimes in the United States and United Kingdom, highlighting important differences in the nature, pace, and trajectory of their development and their growing divergence in the wake of the financial crisis. Part IV then examines the possible explanations for this divergence: highlighting the impact of ideology, politics, and history on the development of these regimes. Part V concludes by considering what lessons this examination holds for U.S. policy and, specifically, whether its new LOLR regime is likely to buckle—and potentially break—under the strains of the next crisis.

II. CENTRAL BANKS AS LENDERS OF LAST RESORT: THEORY AND PRACTICE

The concept of a “lender of last resort” has a long and storied history. In technocratic terms, the concept refers to the role played by central banks in providing financial support to banks and other financial institutions during idiosyncratic or market-wide liquidity shocks.²⁵ In layman's terms, this involves loaning these institutions money (or close substitutes) for the purpose of making sure that they can continue to pay their liabilities to depositors and other creditors during periods when private sources of financing are unavailable. This support goes by a number of different names: including central bank liquidity support, emergency liquidity assistance, or simply LOLR.

The universal starting point for debates about LOLR is Walter Bagehot's 1873 book *Lombard Street*.²⁶ Bagehot's masterpiece includes a number of important insights about the operation of the 19th century London money market that have since been woven together into what is often called as “Bagehot's Rule.” Bagehot's Rule states that central banks should respond to financial crises by lending freely, against good collateral, and at a penalty rate of interest, to solvent but illiquid banks and other financial institutions.²⁷ Over time, this Rule has gained almost universal acceptance as a fundamental principle of financial crisis management. Yet upon closer examination, the Rule raises far more questions than it provides clear, unconditional, or easy to implement policy directions. What constitutes a financial crisis? Which financial institutions should be eligible to receive LOLR? How do you determine what qualifies as “good” collateral? Or calculate a “penalty” rate of interest? And how can central banks distinguish between illiquidity and insolvency in a world where the two are fundamentally intertwined? The answers to these questions have been a source of heated debate for almost 150 years, leading to a

25. XAVIER FREIXAS ET AL., *BANK OF ENG. FIN. STABILITY REV., LENDER OF LAST RESORT: A REVIEW OF THE LITERATURE* 151 (1999), <https://www.bankofengland.co.uk/financial-stability-report/financial-stability-reports> [<https://perma.cc/FKJ3-DBTV>]. Although this liquidity support need not necessarily be provided by central banks. See generally Kathryn Judge, *Three Discount Windows*, 99 CORNELL L. REV. 795 (2014) (describing various sources of U.S. dollar liquidity support other than the Federal Reserve System).

26. See generally BAGEHOT, *supra* note 19.

27. As we shall see, while often attributed to Bagehot, several aspects of Bagehot's Rule do not actually appear in *Lombard Street* (for example, the distinction between illiquid and insolvent institutions), while others have been reinterpreted in a manner which, while consistent with contemporary economic theory, is clearly not what Bagehot had in mind (for example, lending at a “penalty” rate of interest).

fundamental “lack of clarity,”²⁸ contributing to the creation of several “unhelpful myths,”²⁹ and rendering LOLR something of a “vague concept.”³⁰ Accordingly, before tracing the development of the LOLR regimes in the United States and United Kingdom, we must first lay down some important theoretical and practical foundations.

A. The Function of LOLR Regimes

While seldom acknowledged in academic or policy debates, there are actually two distinct schools of thought regarding the function of LOLR regimes.³¹ The first—“monetarist”—school views these regimes as a counterweight to contractions in the money supply stemming from the widespread conversion of bank deposits and other money market instruments into cash. Proponents of the monetarist school are typically less concerned about the causes of these contractions than they are about their potential consequences—and specifically the risk that large and sudden flows of capital out of the banking system might trigger a deflationary spiral characterized by a general decline prices, economic output, and employment.³² Reflecting this concern, monetarists view the function of LOLR regimes as to inject “high-powered”³³ base money into the financial system, thereby offsetting the withdrawal of liquidity from banks and wholesale money markets and preventing the build-up of deflationary pressures.³⁴ Viewed from this perspective, LOLR regimes are simply an extension of a central bank’s traditional macroeconomic role in the maintenance of price stability.³⁵

One of the central tenets of the monetarist school is that LOLR regimes should target money markets as a whole and not individual banks or other financial institutions.³⁶ This

28. Thomas Humphrey & Robert Keleher, *The Lender of Last Resort: A Historical Perspective*, 4 CATO J. 275, 275 (1984).

29. C.A.E. Goodhart, *Myths About the Lender of Last Resort*, 2 INT’L FIN. 339, 339 (1999).

30. George Kaufman, *Lender of Last Resort: A Contemporary Perspective*, 5 J. FIN. SERV. RES. 95, 95 (1991).

31. For a brief survey of these and other schools of thought, see Paul Tucker, *The Lender of Last Resort and Modern Central Banking: Principles and Reconstruction*, 79 BANK INT’L SETTLEMENTS PAPERS 10, 16–24 (2014) (describing the “free banking,” “Richmond Fed,” “New York Fed,” and “classical Bagehot” approaches to LOLR intervention); and Marvin Goodfriend & Robert King, *Financial Deregulation, Monetary Policy, and Central Banking*, 74 FED. RES. BANK RICH. ECON. REV. 3 (1988).

32. The monetarist school is often associated with the work of Milton Friedman and Anna Schwartz. See generally MILTON FRIEDMAN & ANNA SCHWARTZ, *A MONETARY HISTORY OF THE UNITED STATES, 1867-1960* (5th ed. 1971). However, the origins of the school date back to some of the earliest writing on the function of LOLR. See generally HENRY THORNTON, *AN ENQUIRY INTO THE NATURE AND EFFECTS OF THE PAPER CREDIT OF GREAT BRITAIN* (1802).

33. Typically, central bank reserves. Central bank reserves and other forms of base money are often described as “high-powered” because an increase in the stock of base money can, when intermediated through the banking system, generate a far greater increase in the money stock. See Michael McLeay et al., *Money Creation in the Modern Economy*, BANK ENG. Q. BULL. (2014), <https://www.bankofengland.co.uk/-/media/boe/files/quarterly-bulletin/2014/money-creation-in-the-modern-economy.pdf> [<https://perma.cc/E69U-UKC9>].

34. See FRIEDMAN & SCHWARTZ, *supra* note 32; Goodfriend & King, *supra* note 31; see also Mike Anson et al., *The Bank of England as Lender of Last Resort: New Historical Evidence from Daily Transaction Data* 54–55 (Bank of Eng. Staff, Working Paper No. 691, 2017).

35. FREIXAS ET AL., *supra* note 25, at 157; Goodfriend & King, *supra* note 31, at 16–17; Humphrey & Keleher, *supra* note 28, at 277–78, 305–06; see also Anson et al., *supra* note 34, at 54–55.

36. See Anna Schwartz, *The Misuse of the Fed’s Discount Window*, 74 FED. RES. BANK ST. LOUIS ECON. REV. 58 (1992) (discussing why LOLR regimes should target money markets); see also Michael Bordo, *The Lender of Last Resort: Alternative Views and Historical Experience*, 76 FED. RES. BANK RICH. ECON. REV. 18

tenet rests, often implicitly, on two key assumptions. The first assumption is that—even in the thick of a crisis—wholesale money markets will continue to efficiently allocate funding to creditworthy institutions.³⁷ Where an institution is unable to obtain funding in the money market, monetarists would therefore interpret this as evidence that the institution in question is fundamentally insolvent. The second assumption is that the failure of one or more financial institutions will not trigger broader instability that might itself trigger or exacerbate a contraction in the money supply or disrupt the provision of credit to the real economy.³⁸ Instead, monetarists predict that surviving firms will simply absorb the business of their failed competitors, thereby ensuring that these failures do not have any longer-term impact on the capital allocation, payment, or other functions performed by these institutions.³⁹

The second—financial stability—school views LOLR regimes as a form of liquidity insurance necessitated by the inherent fragility of bank balance sheets. This fragility is a by-product of the fact that banks combine the issuance of highly liquid demand deposits with the extension of longer-term, risky, and illiquid loans. As first modelled by economists Douglas Diamond and Philip Dybvig, this combination renders banks vulnerable to destabilizing depositor runs.⁴⁰ For proponents of the financial stability school, the resulting threat of bank failure gives rise to two important risks. The first risk is that the failure of a bank could undermine the solvency of its creditors, the stability of other financial institutions, or the smooth and efficient functioning of the payment system.⁴¹ This contagion can take several forms: from the classic ‘domino’ effect on contractual counterparties, to balance sheet contagion generated by fire sales of illiquid assets,⁴² to so-called ‘information’ contagion stemming from perceived similarities between the business model or assets of the failed bank and those of other banks within the financial system.⁴³

(1990); Goodfriend & King, *supra* note 31, at 16–17; Humphrey & Keleher, *supra* note 28, 277–78 (supporting the strategy of targeting money markets as a whole).

37. See Goodfriend & King, *supra* note 31, at 13–15; see also FREIXAS ET AL., *supra* note 25, at 7; Tucker, *supra* note 31, at 18. As described in Part II(b), this assumption is in part necessitated by the fact that most central banks only transact in the open market with a very small number of eligible counterparties: typically just primary dealers in government debt. As a result, the monetarist school relies on the existence of a functioning wholesale funding market to ensure that central bank liquidity finds its way from this small cohort of financial institutions to the rest of the financial system.

38. See Anna Schwartz, *Real and Pseudo-Financial Crises*, in *MONEY IN HISTORICAL PERSPECTIVE* 271, 271 (1987) (as an example of analysis reflecting this implicit assumption).

39. See, e.g., FRIEDMAN & SCHWARTZ, *supra* note 32 (describing this long run equilibrium); see also Schwartz, *supra* note 36 (explaining how surviving firms will absorb the business of their failed competitors).

40. Alternative models, advanced by scholars such as Gary Gorton and Bengt Holmstrom, emphasize the information problems associated with banks deposits and other money market instruments (relative to cash) in contributing to this fragility. See GARY GORTON, *SLAPPED IN THE FACE BY THE INVISIBLE HAND: THE PANIC OF 2007* (2009); see also Bengt Holmstrom, *Understanding the Role of Debt in the Financial System* (Bank for Int’l Settlements, Working Paper No. 479, 2015), <https://www.bis.org/publ/work479.pdf> [<https://perma.cc/62VH-EB6R>].

41. See Franklin Allen & Douglas Gale, *Financial Contagion*, 108 J. POL. ECON. 1 (2000); see also Xavier Freixas et al., *Systemic Risk, Interbank Relations and Liquidity Provision by the Central Bank*, 32 J. MONEY BANKING & CREDIT 611 (2000) (explaining how the failure of one or more banks could affect the stability of the wider financial system).

42. See Rodrigo Cifuentes et al., *Liquidity Risk and Contagion*, 3 J. EUR. ECON. ASS’N 556 (2005) (explaining the various channels via which the failure of banks could spread to other parts of the financial system).

43. See Varadarajan Chari & Ravi Jagannathan, *Banking Panics, Information, and Rational Expectations Equilibrium*, 43 J. FIN. 749 (1988); see also Diane Docking et al., *Information and Contagion Effects of Bank*

The second risk is that the failure of one or more banks could disrupt the provision of credit and other financial services to the real economy. Crucially, the existence of this risk rests on the assumption that banks possess valuable private information about the creditworthiness of their borrowers—and thus the value of their loans and other assets—that may be lost in the event of their failure.⁴⁴ In contrast with the monetarist school, the financial stability school predicts that the loss of this private information can introduce significant costs, thereby undercutting the ability of surviving banks to absorb the business of their failed competitors, and potentially leading to a contraction in the supply of credit and a disruption to other key financial services.⁴⁵

The observation that banks possess private information about the creditworthiness of their borrowers also helps explain why LOLR regimes might be necessary in order to maintain financial stability. As described above, one of the central tenets of the monetarist school is that fundamentally solvent banks will always be able to access funding within wholesale money markets. However, where banks possess private information about the quality of their assets, these markets become vulnerable to acute adverse selection—or “lemons”—problems characterized by the indiscriminate and paralyzing withdrawal of market liquidity.⁴⁶ Indeed, this is precisely what we observed during the financial crisis: where repo, commercial paper, and other wholesale money markets effectively broke down in response to doubts about the creditworthiness of market participants and the quality of posted collateral.⁴⁷ Where these markets break down, central banks may possess a comparative informational advantage over private market participants. Specifically, where central banks have access to information gathered by bank supervisors, this information can be used to evaluate the quality of a bank’s assets and, ultimately, determine whether it is temporarily illiquid or fundamentally insolvent.⁴⁸ Whereas the monetarist school takes the view that LOLR regimes should be restricted to providing support to the market as a

Loan-Loss Reserve Announcements, 43 J. FIN. ECON. 219 (1997); George Kaufman, *Bank Contagion: A Review of Theory and Evidence*, 8 J. FIN. SERV. RES. 123 (1994) (describing information contagion).

44. See Ben Bernanke, *Non-Monetary Effects of the Financial Crisis in the Propagation of the Great Depression*, 73 AM. ECON. REV. 257 (1983) (identifying widespread bank failures and the resulting loss of private information about borrowers as an important driver of the contraction of credit and economic growth observed during the Great Depression); see also FREIXAS ET AL., *supra* note 25, at 154–55.

45. Bernanke, *supra* note 44; FREIXAS ET AL., *supra* note 25 at 154–55.

46. There are at least three reasons why this private information might lead to the withdrawal of liquidity from wholesale money markets. First, the existence of private information can give rise to doubts about the creditworthiness of market participants. FREIXAS ET AL., *supra* note 25, at 153. Second, information problems may make market participants more risk adverse during periods of market uncertainty. Mark Flannery, *Financial Crises, Payment System Problems, and Discount Window Lending*, 28 J. MONEY, CREDIT & BANKING 804 (1996). Third, market participants may refuse to lend into wholesale money markets where they are not confident that they would be able to borrow from these markets to meet any future liquidity demands. Freixas et al., *supra* note 41.

47. See Gary Gorton & Andrew Metrick, *Securitized Banking and the Run on Repo*, 104 J. FIN. ECON. 425 (2012); see also Marcin Kacperczyk & Philipp Schnabl, *When Safe Proved Risky: Commercial Paper During the Financial Crisis of 2007–2009*, 24 J. ECON. PERSP. 29 (2010) (describing the breakdown of these markets during the financial crisis).

48. See FREIXAS ET AL., *supra* note 25, at 153–54 (describing how the supervisory process can generate valuable information that can be used by supervisors in the context of decisions about whether and on what terms to provide central bank liquidity support); see also Allen Berger et al., *Comparing Market and Regulatory Assessments of Bank Performance: Who Knows What When?*, 32 J. MONEY, CREDIT & BANKING 641 (2000) (providing empirical support for the proposition that well-informed supervisors are more effective than wholesale funding markets at screening banks).

whole, the financial stability school thus envisions an important role for central banks in providing targeted support to individual banks.

Figure 1: The Monetarist School versus the Financial Stability School

	Monetarist School	Financial Stability School
Economic Problem	Reduction in aggregate money supply leading to deflationary spirals	The failure of financial institutions leading to systemic instability and disruption in the supply of credit and other key financial services
Function of LOLR	Maintaining monetary (price) stability	Maintaining financial stability
Delivery Mechanism	Open market operations	Discount window
Target	Money markets as a whole (but typically through banks)	Banks and other financial institutions
Key Assumption	Well-functioning money markets	Central banks have private information about borrower and asset quality

Perhaps not surprisingly, the sharp theoretical distinctions between the monetarist and financial stability schools are somewhat blurred in practice. Given the central role of banks in both money creation and financial intermediation, there is a strong case for viewing monetary and financial stability as fundamentally intertwined. It is perhaps for this reason that even some of the most vocal supporters of the monetarist school have countenanced providing targeted support to individual banks when staring down the barrels of a full-scale panic.⁴⁹ The line has been further blurred by the recent development of so-called “market maker of last resort” (MMLR) mechanisms. These mechanisms enable central banks to respond to the withdrawal of market liquidity by purchasing financial assets on the open market, thereby pursuing the dual objectives of supporting systemically important prices and promoting financial stability.⁵⁰ Nevertheless, understanding the divergent positions of these competing schools of thought can help us better understand the policy choices that have been made around the design of LOLR regimes on both sides of the Atlantic.

B. The Mechanisms for Delivering LOLR

Reflecting their divergent views regarding the function of LOLR regimes, the monetarist and financial stability schools contemplate very different mechanisms for

49. For specific examples, see Kaufman, *supra* note 30, at 95–96; and also Anson et al., *supra* note 34, at 55–56.

50. The term MMLR was first coined by Willem Buiter and Anne Sibert. Willem Buiter & Anne Sibert, *The Central Bank as the Market Maker of Last Resort: From Lender of Last Resort to Market Maker of Last Resort*, VOX (Aug. 13, 2007), <https://voxeu.org/article/subprime-crisis-what-central-bankers-should-do-and-why> [<https://perma.cc/M8HT-Z65P>]. For a more detailed discussion about the objectives and mechanics of MMLR mechanisms, see Tucker, *supra* note 31, at 28–32; PERRY MEHLING, *THE NEW LOMBARD STREET: HOW THE FED BECAME THE DEALER OF LAST RESORT* (2011); and Robert C. Hockett & Saule T. Omarova, *Systemically Significant Prices*, 2 J. FIN. REG. 1 (2016).

delivering LOLR. Consistent with the position that LOLR regimes should be restricted to providing liquidity support to money markets as a whole, the monetarist school envisions that support should be provided through a central bank's normal open market operations (OMO).⁵¹ OMO involves the purchase and sale of both government and private debt securities on the open market with the objective of influencing the aggregate money supply and, ultimately, prevailing market interest rates. By purchasing government securities, for example, a central bank can use OMO to increase the money supply, thereby putting downward pressure on interest rates.⁵² Viewed from this vantage point, the only difference between OMO and LOLR is the underlying policy objective: whereas OMO is designed to incrementally move markets toward a target interest rate, LOLR is designed to respond to large and potentially destabilizing monetary contractions.⁵³

In theory, OMO offers several advantages as a delivery mechanism. Where the market for government or other securities is informationally efficient, the purchase of these securities eliminates the need for a central bank to independently price its liquidity support.⁵⁴ The provision of this support through arm's length purchases also saves the central bank from any ongoing exposure to counterparty default or insolvency. Furthermore, the fact that OMO takes place on a regular basis means that central banks can respond relatively quickly to an emerging crisis. This same regularity may also help central bank liquidity support fly below the political radar, thus reducing the risk of government intervention designed to steer support to specific institutions.⁵⁵

In practice, the principal drawback of OMO stems from the fact that central banks typically only transact with an extremely limited number of market participants. The monetarist construction that liquidity support should only be provided to the market as a whole is therefore something of an illusion. In the United States, for example, the Federal Reserve conducts OMO through just 23 financial institutions known as "primary dealers."⁵⁶ The Bank of England similarly relies heavily, although not exclusively, on just 18 Gilt-edged market makers.⁵⁷ The upshot of this exclusivity is that the effectiveness of OMO as a mechanism for delivering LOLR hinges on the existence of a healthy wholesale money market. More specifically, a well-functioning money market is necessary to ensure that central bank liquidity support finds its way from these dealers to the far broader universe of financial institutions that might need this support during a crisis. By the same token, where these dealers are themselves under threat, the impulse to hoard central bank liquidity may undermine their willingness to serve as effective conduits for the redistribution of this liquidity to the rest of the financial system.

51. See CHARLES GOODHART & GERHARD ILLING, *FINANCIAL CRISES, CONTAGION, AND THE LENDER OF LAST RESORT: A READER 2* (2002).

52. By selling securities, in contrast, a central bank can reduce the money supply, thereby putting upward pressure on interest rates.

53. For this reason, Charles Goodhart has objected to the idea that central bank liquidity support provided through OMO should be viewed as LOLR. Goodhart, *supra* note 29, at 344.

54. See Kaufman, *supra* note 30, at 105 (describing central banks can use market prices as a substitute for its own due diligence under certain conditions).

55. See *id.* (observing that OMO tends to be less politically salient than other forms of intervention).

56. For a list of current primary dealers, see *Primary Dealers*, FED. RES. BANK N.Y., <https://www.newyorkfed.org/markets/primarydealers> [https://perma.cc/3BP9-RGT3] (last visited Feb. 1, 2020).

57. For a list of current Gilt-edged market makers, see *Market Participants*, U.K. DEBT MGMT. OFF., <https://www.dmo.gov.uk/responsibilities/gilt-market/market-participants/> [https://perma.cc/425B-3ENR] (last visited Feb. 1, 2020).

In contrast with the monetarist school, the financial stability school envisions an important role for central bank discount windows in the delivery of LOLR. Discount windows enable central banks to extend short-term collateralized loans to banks and other eligible financial institutions, typically in order to meet short-term liquidity demands. Like all collateralized loans, discount window lending exposes central banks to fluctuations in the value of posted collateral and the prospect that the borrower might default on their obligations before the loan is repaid. In addition to charging interest on the loans, central banks will typically seek to manage these risks by applying a discount—or “haircut”—to the market value of posted collateral. Thus, for example, after taking into account the riskiness of the collateral, a central bank might decide to extend a loan of \$95 against collateral with a current market value of \$100.

The effectiveness of discount window lending hinges on whether central banks have access to detailed information about the creditworthiness of potential recipients and the quality of posted collateral. This, in turn, serves to highlight the important relationship between discount window lending and the prudential supervision of banks and other financial institutions eligible to receive central bank liquidity support.⁵⁸ Specifically, where central banks have access to granular data about an institution’s balance sheet through the supervisory process, this information can be used to proactively monitor its creditworthiness and calculate the value of assets that might be used as collateral at the discount window. In theory, this enables central banks to extend loans against a far broader range of assets than the government and other debt securities typically targeted through OMO. Simultaneously, of course, where central banks do not have access to this information (or the resources needed to effectively evaluate it), discount window lending can expose central banks to significant market and counterparty credit risks. As described below, it can also exacerbate the potential moral hazard problems stemming from the provision of central bank liquidity support.

C. Eligibility to Receive LOLR

A third important question upon which the monetarist and financial stability schools diverge is the identity of the financial institutions that should be eligible to receive LOLR.⁵⁹ Theoretically, proponents of the monetarist school should be open to central banks providing support to any financial institution that issues liabilities that serve as a form of money. As we shall see, this position was perhaps most clearly reflected in 19th century England, where the Bank of England routinely provided assistance to the diverse array of banks, bill brokers, discount houses, and merchant firms that collectively made up London’s money market.⁶⁰ By the late 20th century, however, structural changes to the financial system—combined with the rising influence of monetarist thinking—led to an increasingly restrictive view of LOLR regimes as exclusively targeting conventional

58. See Goodfriend & King, *supra* note 31, at 3 (emphasizing the role of prudential supervision as replicating the credit screening and monitoring performed by banks on their loan portfolios).

59. See Richard Grossman & Hugh Rockoff, *Fighting the Last War: Economists on the Lender of Last Resort* 5 (Nat’l Bureau of Econ. Research, Working Paper No. 20832, 2015) (“The range of markets and institutions that should be protected by the LOLR remains one of the fundamental controversies in the theory of the LOLR.”).

60. Anson et al., *supra* note 34, at 53 (describing the evolution in type of firms eligible to receive discount window loans from the Bank of England); see also *infra* Part III.

deposit-taking banks.⁶¹ On one level, this makes perfect sense: bank deposits represent the vast majority of the money supply in countries like the United States and United Kingdom.⁶² The correlated withdrawal of deposits from the banking system is therefore the most likely source of the destabilizing monetary contractions that monetarists view as justifying the existence of LOLR regimes. Yet on another level, this restrictive approach effectively ignores the important role played by other markets and institutions in creating financial instruments that serve as functional substitutes for bank deposits.⁶³

In theory, the financial stability school envisions the provision of central bank liquidity support to a far broader range of financial institutions. As exposed by the global financial crisis, conventional deposit-taking banks are not the only institutions with fragile balance sheets combining short-term, liquid liabilities within longer term, risky, and illiquid assets.⁶⁴ Nor are they the only firms whose failure could potentially destabilize other financial markets or institutions, or disrupt the flow of credit or other financial services to the real economy. The key question for proponents of the financial stability school is thus not whether a financial institution is involved in money creation, but whether its failure could trigger or exacerbate wider financial instability.

This question highlights an important practical challenge: how can central banks identify *ex ante* the range of financial markets and institutions that could, either individually or collectively, pose a threat to financial stability? This is an especially important challenge for the financial stability school given that the effectiveness of its preferred delivery mechanism—the discount window—hinges on the availability and quality of information collected as part of the ongoing process of supervising the activities and balance sheets of eligible institutions. Where central banks are unable to identify these institutions and successfully bring them within the regulatory perimeter, LOLR regimes may fail to encompass the entire universe of potential threats. Where central banks then provide liquidity support to institutions outside this perimeter in order to prevent or contain an emerging crisis, the improvised expansion of these regimes will also foment potential moral hazard problems.

D. How to Constrain Moral Hazard

Perhaps the most controversial question surrounding the design of LOLR regimes has been how to address the inevitable moral hazard problems generated by the expectation of central bank liquidity support. By design, LOLR regimes shift at least some of the risks associated with correlated withdrawals by depositors or liquidity shocks within wholesale money markets from eligible financial institutions to the central bank. This risk shifting

61. See Robert Solow, *On the Lender of Last Resort*, in GOODHART & ILLING, *supra* note 51, at 203.

62. *Compare Assets and Liabilities of Commercial Banks in the United States: H.8*, FED. RES. SYS. (May 25, 2018), <https://www.federalreserve.gov/releases/h8/current/default.htm> [<https://perma.cc/HS9L-D2TY>] (reporting deposit liabilities), with *Aggregate Reserves of Depositary Institutions and the Monetary Base: H.3*, FED. RES. SYS. (May 24, 2018), <https://www.federalreserve.gov/releases/h3/current/default.htm> [<https://perma.cc/9CB2-DSJ5>] (reporting reserves and other elements of the monetary base). The Federal Reserve also publishes weekly “Money Stock Measures” (H.6) that report slightly different figures.

63. For a description of the role of these other markets and institutions in creating money-like claims, see Morgan Ricks, *Regulating Money Creation After the Crisis*, 1 HARV. BUS. L. REV. 75, 79–80 (2011).

64. See ZOLTAN POSZAR ET AL., FED. RESERVE BANK OF N.Y. STAFF REPORT, SHADOW BANKING 1–3 (2010) (demonstrating that entities that function as “shadow banks,” such as finance companies and structured investment vehicles, also share these qualities).

can reduce the incentives of these institutions to hold sufficient reserves of cash or other highly liquid assets—leaving them more vulnerable to destabilizing runs and, ultimately, increasing both the probability and potential severity of market-wide liquidity shocks.⁶⁵ This problem is then exacerbated by the time inconsistency problem facing central banks. Specifically, while central banks understandably want to establish credible *ex ante* rules around matters such as the identity of eligible institutions and the terms upon which liquidity support will be provided, there will always be cases where relaxing these rules *ex post* will be desirable in order to protect monetary and/or financial stability.

Concerns about moral hazard are as old as LOLR itself. Writing in 1802, Henry Thornton observed that the extension of central bank liquidity support to banks and other financial institutions “might encourage their improvidence.”⁶⁶ Nevertheless, the issue of how to constrain moral hazard has been the source of some of the most significant, divisive, and enduring controversies in the centuries-old debate over the design of LOLR regimes. Both the monetarist and financial stability schools explicitly acknowledge these potential moral hazard problems. Predictably, however, the two schools envision starkly different ways of addressing them. For the monetarist school, moral hazard is one of the principal justifications for restricting central bank liquidity support to the market as a whole.⁶⁷ Moreover, by restricting support to purchases of government securities on the open market, the monetarist position is that central banks can incentivize prudent banks to hold these relatively safe securities in anticipation of selling them to the central bank during periods of institutional or market turmoil. By necessary implication, of course, this restriction also ensures that central banks do not provide assistance to less prudent banks that have failed to adequately self-insure against these liquidity shocks.

For the financial stability school, the burden of constraining moral hazard falls on three mechanisms. The first is liquidity regulation. Historically, this included reserve ratios designed to ensure that banks held sufficient vault cash and central bank reserves to protect their balance sheets against potential liquidity shocks.⁶⁸ More recently, these reserve ratios have been supplemented by more sophisticated measures such as the Basel III liquidity coverage ratio (LCR) that are designed to ensure that banks hold a sufficient stock of high-quality liquid assets to survive a hypothetical stress scenario.⁶⁹ The second mechanism is prudential supervision. As we have already seen, intensive prudential supervision enables central banks to monitor the activities and balance sheets of regulated institutions—theoretically putting them in an advantageous position to identify and constrain any socially excessive-risk taking engendered by the availability of central bank liquidity support. The third mechanism consists of the rules identifying which assets can be pledged as collateral at a central bank’s discount window, along with the frameworks for imposing

65. See CHARLES KINDLEBERGER, *MANIAS, PANICS, AND CRASHES: A HISTORY OF FINANCIAL CRISES* 6, 163 (1978).

66. THORNTON, *supra* note 32, at 236.

67. Where central banks undertake OMO with a limited range of counterparties, the assumption is that these counterparties will act as intermediaries through which other financial institutions sell government securities in order to secure liquidity.

68. See, e.g., *Reserve Requirements*, BD. GOVERNORS FED. RES. SYS., <https://www.federalreserve.gov/monetarypolicy/reservereq.htm> [<https://perma.cc/5URG-BXM3>] (last updated Nov. 20, 2019).

69. See BASEL III: THE LIQUIDITY COVERAGE RATIO AND RISK MONITORING TOOLS (Basel Committee on Banking Supervision, 2013), <http://www.bis.org/publ/bcbs238.htm> [<https://perma.cc/NJN4-LFYE>].

risk-based haircuts on this collateral. Through the imposition of strict terms around the availability and cost of credit at the discount window, these rules effectively reward firms for holding high quality liquid assets while, conversely, penalizing those that fail to self-insure against liquidity shocks. The imposition of risk-based haircuts can also protect central banks against the market and counterparty credit risks associated with discount window lending, thereby limiting the amount of risk that banks and other eligible financial institutions can shift to the central bank.

Conspicuous in their absence from the list are two key elements of Bagehot's Rule that are often viewed as responding to potential moral hazard problems. The first is the requirement that central banks only provide support to temporarily illiquid but fundamentally solvent institutions. Bagehot never explicitly identified institutional solvency as a condition of central bank liquidity support.⁷⁰ Indeed, conditioning support on institutional solvency would seem redundant in light of Bagehot's requirement to lend only against good collateral. The second is the requirement that central banks lend at a "penalty" rate of interest. While it is often suggested that the prospect of paying a penalty rate was designed to incentivize financial institutions to hold sufficient reserves,⁷¹ Bagehot himself appears to have had something different in mind. Specifically, Bagehot viewed the penalty rate as "a heavy fine on unreasonable timidity"⁷²—as an inducement for private market participants to lend to the market during a crisis at prices just below the penalty rate.⁷³ In Bagehot's view, it was this inducement that ensured that the central bank functioned as a true lender of *last* resort.⁷⁴ Accordingly, while central banks have often been criticized for failing to faithfully observe these elements of Bagehot's Rule, the reality is that these mechanisms are not as essential to effective crisis management as is conventionally thought.

This is not to suggest that the mechanisms envisioned by either the monetarist or financial stability schools completely eliminate moral hazard. OMO relies on well-functioning wholesale money markets to redistribute central bank liquidity support. Where these markets break down, central banks face a stark choice between relaxing restrictions on the provision of this support to individual institutions or stoking the fires of financial instability. Liquidity regulation, meanwhile, can be difficult to calibrate and distorts the flow of credit to the real economy; prudential supervision is costly, imperfect, and vulnerable to capture; and the imposition of risk-based haircuts on posted collateral necessitates that central banks continuously monitor and independently value a wide range of sophisticated financial assets. And perhaps most importantly: how should central banks respond when the failure of fundamentally insolvent firms, or firms residing outside the regulatory perimeter, threaten to unleash widespread monetary or financial instability?

In the decades leading up to the financial crisis, the risk that these mechanisms might not completely eliminate moral hazard led central banks in many jurisdictions to adopt a policy of "constructive ambiguity." The policy of constructive ambiguity involves a

70. Goodhart, *supra* note 29, at 343–48. Although it is equally clear that he was not a fan of the practice.

71. See, e.g., Andrew Crockett, *The Theory and Practice of Financial Stability*, 144 DE ECON. 531, 550 (1996); Solow, *supra* note 61, at 240; FREIXAS ET AL., *supra* note 25, at 159.

72. FREIXAS ET AL., *supra* note 25, at 159.

73. In effect, the higher the penalty rate, the larger the profits market participants stand to make from lending into wholesale money markets. Bagehot also saw high interest rates as a way of stemming any foreign drain on the central bank's gold reserves. *Id.*

74. BAGEHOT, *supra* note 19, at 197.

conscious attempt to cultivate a degree of uncertainty around the availability, timing, and terms of any LOLR operations.⁷⁵ As former President of the Federal Reserve Bank of New York Gerald Corrigan has explained, by introducing an element of uncertainty, constructive ambiguity seeks to leverage the threat that the central bank will not intervene in order to compel banks and other institutions to self-insure against potential liquidity shocks.⁷⁶ In theory, the informal, discretionary nature of this policy avoids the calibration, valuation, and other technocratic challenges associated with more formal regulatory mechanisms. In practice, however, this discretion still gives rise to a familiar time inconsistency problem. While adhering to a policy of constructive ambiguity may seem optimal *ex ante*, continuing to follow this policy *ex post*—in the thick of a crisis—will often yield suboptimal outcomes. Accordingly, in circumstances where central banks cannot reasonably be expected to stay on the sidelines, adhering to a policy of constructive ambiguity is likely to be neither particularly ambiguous nor very constructive.

The policy of constructive ambiguity stands in stark contrast with the position of Bagehot, Thornton, and others, who were firmly of the view that announcing the availability of central bank liquidity support in advance of a crisis was necessary in order to remove any uncertainty that might itself contribute to monetary or financial instability.⁷⁷ The key question thus boils down to whether we think central banks can ever credibly commit not to provide liquidity support where the stability of the wider monetary or financial system is at stake. If we think this commitment is credible, then a policy of constructive ambiguity makes sense. Indeed, we could make this policy even more credible by imposing strict legal constraints around LOLR regimes. Conversely, if we think this commitment lacks credibility, there is a strong argument for explicitly acknowledging this fact—however unpalatable—and then using it as a justification for designing a regulatory and supervisory architecture that supports the provision of this support and attempts—however imperfectly—to address the resulting moral hazard problems. As we shall see, it is precisely at this critical point that we observe the divergence of the LOLR regimes in the United States and United Kingdom.

III. THE DEVELOPMENT OF THE UK LENDER OF LAST RESORT REGIME

War! The history of finance is inextricably intertwined with the business of warfare.⁷⁸ Established in 1694, the Bank of England was originally incorporated to facilitate the extension of a loan to the government of King William III in order to finance its war against France.⁷⁹ The Bank would come to the government's rescue again in 1708 during the War of Spanish Succession, in exchange for which it was granted an exemption from laws prohibiting firms with more than six partners from operating a bank.⁸⁰ This gave the Bank

75. FREIXAS ET AL., *supra* note 25, at 160.

76. Gerald Corrigan, Statement Before the U.S. Senate Committee on Banking, Housing and Urban Affairs, Washington, D.C. (May 3, 1990).

77. See, e.g., BAGEHOT, *supra* note 19, at 65, 71.

78. For a detailed account of the relationship between the English state and its bankers in financing the wars of the 17th and 18th centuries, see JOHN BREWER, *THE SINEWS OF POWER: WAR, MONEY AND THE ENGLISH STATE 1688–1783* (1988).

79. See J. MILNES HOLDEN, *THE HISTORY OF NEGOTIABLE INSTRUMENTS IN ENGLISH LAW* 132–88 (1955); RICHARD RICHARDS, *THE EARLY HISTORY OF BANKING IN ENGLAND* 87–88 (AM Kelley ed. 1965).

80. See Bank of England Act 1708, 7 Ann. c. 30 (Eng.); see also Bank of England Act 1709, 8 Ann. c. 1 (Eng.).

an effective monopoly on joint-stock banking in England.⁸¹ The Bank was also appointed principal agent to the government with responsibility for the origination and distribution of government debt known as “gilt-edged” securities or “gilts.”⁸² From its imposing neoclassical headquarters on Threadneedle Street, this privileged status put the Bank at both the geographic and operational heart of the City of London’s vast financial empire.

The first decades of the Bank’s history were dominated by the demands of government financing.⁸³ The Bank raised and provided this financing through a variety of different channels, including the issuance of notes in exchange for deposits of gold and silver, the extension of advances to merchants and wealthy individuals, and the discounting of both government and private debt securities.⁸⁴ Bank notes were receipts representing the Bank’s obligation to repay deposited funds on demand to either the original depositor or the bearer of the note.⁸⁵ Advances were loans collateralized by packages of bankers’ acceptances, gilts, or other securities.⁸⁶ Discounting, meanwhile, involved the purchase of these securities from merchant banks, bill brokers, and other eligible firms on the open market.⁸⁷ In these respects, the activities of the Bank in the 18th and early 19th centuries were broadly similar to those of many other firms operating within London’s vibrant and diverse money market.

A. The Bank of England as “Dernier Resort”

Only slowly and with great reluctance did the Bank of England begin to assume the responsibilities of a modern central bank. The first explicit reference to the Bank’s role as

81. While the 1708 Act does not expressly prohibit “joint-stock banking,” Parliament’s intention was nevertheless to give the Bank a monopoly in this area. See BENJAMIN GEVA, *THE PAYMENT ORDER OF ANTIQUITY AND THE MIDDLE AGES: A LEGAL HISTORY* 486 (2011).

82. *Id.*

83. See Michael C. Lovell, *The Role of the Bank of England as Lender of Last Resort in the Crises of the Eighteenth Century*, 8 *EXPLORATIONS ENTREPRENEURIAL HIST.* 8, 8 (1957) (“In its early years the most important function [of the Bank] was to furnish fiscal assistance to the British treasury.”). Patrick O’Brien and Nuno Palma have estimated that approximately 80% of the Bank’s lending before 1793 was to the English government. See Patrick O’Brien & Nuno Palma, *Danger to the Old Lady of Threadneedle Street? The Bank Restriction Act and the Regime Shift to Paper Money, 1797–1821* 6–7 (European Historical Econ. Soc’y, Working Paper in Economic History No. 100, 2016).

84. See JOHN CLAPHAM, *THE BANK OF ENGLAND: A HISTORY: VOLUME 1* 169, 172, 204–05 (Cambridge University Press ed. 2008); see also John Clapham, *The Private Business of the Bank, 1744–1800*, 11 *ECON. HIST. REV.* 77, 83–84 (1941); see also O’Brien & Palma, *supra* note 83, at 6–7.

85. For a detailed description of the historical development, legal treatment, and use of these notes, see GEVA, *supra* note 81, ch. 10 & 11.

86. The raw material for the bankers’ acceptances used as collateral within this market were bills of exchange or promissory notes issued by merchants. These bills and notes had typically been endorsed—or “accepted”—by at least two merchant banks who, in exchange for a fee, assumed responsibility for repayment. These acceptances could then be purchased—or “discounted”—by other firms, which in turn accepted responsibility for repayment. If any acceptor failed to pay when due, the payee could pursue its claim against other, earlier acceptors. Where these acceptances were packaged together, the packager would typically guarantee repayment. For a detailed description of these advance and discount markets, see Anson et al., *supra* note 34, at 8–11; and also Vincent Bignon et al., *Bagehot for Beginners: The Making of Lender-of-Last-Resort Operations in the Mid-Nineteenth Century*, 65 *ECON. HIST. REV.* 580, 586–89 (2012).

87. Only eligible firms were permitted to access the Bank’s discount window. See Bignon et al., *supra* note 86, at 587–89. However, firms could often access the Bank’s discount window indirectly by entering into transactions with eligible firms. See O’Brien & Palma, *supra* note 83, at 6.

a lender of last resort dates to the observations of Sir Francis Baring in 1797.⁸⁸ Once again, the historical backdrop was a war on the Continent. England's declaration of war against France in 1793 was followed by a series of financial panics. These panics put significant pressure on the Bank's balance sheet—both from merchant and country banks, bill brokers, and other mercantile clients experiencing liquidity problems, and from holders of the Bank's notes who, under the prevailing Gold Standard, were entitled to convert them into bullion.⁸⁹ In order to protect its dwindling reserves, the Bank responded by rationing credit at its discount window: rejecting applications for financing regardless of an applicant's creditworthiness or the quality of their proposed collateral.⁹⁰ This policy had the effect of exacerbating the mounting liquidity squeeze, contributing to a pronounced increase in interest rates, and undermining the ability of the government to finance its war with France.⁹¹ In Barings' view, this counterproductive policy reflected the failure of the Bank to acknowledge its unique position at the apex of the English financial system and its corresponding responsibility to act as the "dernier resort" in a crisis.⁹² Parliament eventually responded by passing the Bank Restriction Act of 1797, suspending the convertibility of the Bank's notes into gold, and relieving the pressure on its fragile balance sheet.⁹³

The next real test for the Bank of England was the financial crisis of 1825. Only four years after the resumption of the Gold Standard, the crisis is perhaps best remembered for Poyais, a fictional Latin American country that was able to float a very real and sizable bond issue on the London Stock Exchange.⁹⁴ The crisis followed what would become a familiar pattern: rapid monetary expansion, followed by the flow of capital into speculative investments in emerging markets, followed by a stock market crash and bank runs throughout England.⁹⁵ Once again, the impact of the crisis could be observed on the Bank's

88. FRANCIS BARING, OBSERVATIONS ON THE ESTABLISHMENT OF THE BANK OF ENGLAND AND ON THE PAPER CIRCULATION IN THE COUNTRY (1797). Notably, however, while Barings no doubt deserves some credit for articulating the principle that the Bank should lend freely during liquidity crises, empirical data suggests that the Bank may have already been following this principle in the latter half of the eighteenth century. See Lovell, *supra* note 83, at 8–15. Comparing the number of reported bankruptcies (as a proxy for financial panics) with the volume of the Bank's discount business, Lovell identifies a policy shift beginning with the financial crisis of 1763 consistent with the hypothesis that the Bank was acting as a lender of last resort.

89. As the total face value of the Bank's deposit and other liabilities were several times the value of its bullion and note reserves, there existed the ever present threat that correlated liquidity demands could undermine the Bank's solvency. Notably, the ability of the Bank to use interest rate policy to prevent the flight of bullion and note reserves was at the time constrained by applicable usury laws. See Lovell, *supra* note 83, at 12. The source of these correlated liquidity demands in the crises of the 1790s included both the liquidity squeeze experienced by merchant and country banks and France's return to a commodity money system. See O'Brien & Palma, *supra* note 83, at 14–17.

90. See BARING, *supra* note 88, at 20–22.

91. See Michael Bordo & Eugene White, *A Tale of Two Currencies: British and French Finance During the Napoleonic Wars*, 51 J. ECON. HIST. 303, 311 (1991); see also O'Brien & Palma, *supra* note 83, at 7–8.

92. BARING, *supra* note 88, at 22.

93. 37 Geo. III. c. 45. O'Brien and Palma argue that Parliament's adoption of the Bank Restriction Act of 1797 marked the decisive moment in the United Kingdom's long-term shift toward the widespread acceptance of paper money as a medium of exchange. O'Brien & Palma, *supra* note 83.

94. See Donald Morgan & James Narron, *Crisis Chronicles: The Panic of 1825 and the Most Fantastic Financial Swindle of All Time*, FED. RES. BANK N.Y. (Apr. 10, 2015), <http://libertystreeteconomics.newyorkfed.org/2015/04/crisis-chronicles-the-panic-of-1825-and-the-most-fantastic-financial-swindle-of-all-time.html> [https://perma.cc/GQN5-2B9N].

95. For a detailed description, see Larry Neal, *The Financial Crisis of 1825 and the Restructuring of the*

balance sheet: between March 1824 and December 1825, the Bank's reserves fell from over £13.9 million to just over £1 million.⁹⁶ As it had in the 1790s, the Bank's initial response was to protect its remaining reserves by rationing credit at its discount window.⁹⁷ While the thinking behind this policy remains unclear, senior Bank officials may have expected the government to intervene, either by once again suspending the convertibility of the Bank's notes into gold, or by issuing exchequer bills that would have served as a universally acceptable form of collateral within London's paralyzed money market.⁹⁸ At least initially, however, the government did not oblige and by December 1825 it appeared to many observers as though the entire English financial system was on the verge of collapse.⁹⁹ Then, on 14 December, 1825, the Bank abruptly reversed course—lending freely to a wide range of counterparties on the basis of an even wider range of collateral. As famously described by Jeremiah Harman, one of the Bank's directors at the time:

We . . . lent money by every possible means, and in modes which we had never adopted before; we took in stock on security, we purchased Exchequer Bills, we made advances on Exchequer Bills, we not only discounted outright, but we made advances on deposits of bills of Exchange to an immense amount – in short, by every possible means consistent with the safety of the Bank . . . Seeing the dreadful state in which the public were, we rendered every assistance in our power.¹⁰⁰

The Bank's unprecedented intervention promptly halted the panic.¹⁰¹ To many, this intervention—and specifically the willingness to do whatever it took to restore financial stability—stands out as a turning point in the Bank's development into a modern lender of last resort.¹⁰²

The Parliamentary debates around the renewal of the Bank's charter in 1832 presented the government with an opportunity to examine the lessons from the crisis of 1825, along with the Bank's delayed but ultimately successful response.¹⁰³ The result was the Bank Charter Act of 1833.¹⁰⁴ The 1833 Act introduced a series of reforms to both the competitive

British Financial System, 80 FED. RES. BANK ST. LOUIS REV. 53 (1998); and also FRANK FETTER, *DEVELOPMENT OF BRITISH MONETARY ORTHODOXY, 1797-1875* 111–20 (1965).

96. See COMMITTEE OF SECRECY ON THE BANK OF NEW ENGLAND CHARTER, REPORT, London, House of Commons, Vol. VI (1832), App. 28.

97. Denis O'Brien, *The Lender-of-Last-Resort Concept in Britain*, 35 HIST. POL. ECON. 1, 5–6 (2003).

98. See 2 JOHN CLAPHAM, *THE BANK OF ENGLAND: A HISTORY*. 108 (1944) (speculating as to the expectation of senior Bank officials); see also E. VICTOR MORGAN, *THE THEORY AND PRACTICE OF CENTRAL BANKING 1797-1913* (Frank Cass, 2d ed. 1965); see also FETTER, *supra* note 95, at 116.

99. See O'Brien, *supra* note 97, at 5 (“By 13 December 1825, a day on which the lending by the Bank as significantly lower than on previous days, the whole financial system seemed poised on the edge of an abyss.”).

100. BAGEHOT, *supra* note 19, at 48, 158 (internal quotation marks omitted).

101. See W.T.C. KING, *HISTORY OF THE LONDON DISCOUNT MARKET* 35–70 (1936); see also Laurent Le Maux & Laurence Scialom, *Central Banks and Financial Stability: Rediscovering the Lender-of-Last-Resort Practice in a Finance Economy*, 37 CAMBRIDGE J. ECON. 1, 5 (2012); Neal, *supra* note 95 (although bankruptcies of banks and other firms continued into 1826).

102. See RALPH HAWTREY, *THE ART OF CENTRAL BANKING* 122 (1932); see also O'Brien, *supra* note 97, at 5–6; FETTER, *supra* note 95, at 116.

103. See O'Brien, *supra* note 97, at 8. Between 1694 and 1844, the Bank's charter was renewed by Parliament on nine separate occasions. See Lawrence Broz & Richard Grossman, *Paying for Privilege: The Political Economy of Bank of England Charters, 1694-1844*, 41 EXPLORATIONS ECON. HIST. 48 (2004).

104. Bank Charter Act of 1833, 3 & 4 Will. 4 c. 98 (the 1833 Act).

structure of the English banking system and the status of the Bank itself. The Act permitted joint-stock banks to operate in the City of London for the first time, thereby breaking up the Bank's century old monopoly.¹⁰⁵ At the same time, the Act strengthened the position of the Bank by prohibiting other joint-stock banks from issuing bank notes, while giving the Bank's own notes the status of legal tender.¹⁰⁶ The Act also exempted the Bank's discount business from applicable usury laws, giving it considerably more flexibility in its lending operations.¹⁰⁷ The Parliamentary debates around these reforms—and specifically the decision to make the Bank's notes legal tender—make it clear that they were designed to establish the Bank as a more effective lender of last resort.¹⁰⁸

The 1833 Act put the Bank of England squarely within the political crosshairs. Many observers, including many of the Bank's own directors, objected to the idea that the Bank should act as a lender of last resort.¹⁰⁹ Their argument, which will be familiar to modern readers, was essentially that the expectation of central bank liquidity support would undermine the incentives of banks to hold sufficient reserves—thereby increasing (rather than decreasing) the probability of a liquidity shock.¹¹⁰ This moral hazard argument gained momentum following the Bank's subsequent interventions during the panics of 1836–37 and 1839.¹¹¹ This set the stage for what is arguably the most important piece of legislation in the history of English central banking.

B. The Bank Charter Act of 1844

The objective of the Bank Charter Act of 1844¹¹² was to curb the monetary expansion and speculative excesses associated with the widespread use of Bank of England notes as a form of money.¹¹³ As described by Prime Minister Sir Robert Peel, the Act was designed to:

inspire just confidence in the medium of exchange . . . put a check on improvident speculation, and . . . ensure, as far as legislation can ensure, the just reward of industry, and the legitimate profit of commercial enterprise, conducted with integrity and controlled by provident calculation.¹¹⁴

In order to achieve this objective, the 1844 Act split the Bank into two separate and independent departments: the Issue Department and the Banking Department. The Issue Department was responsible for the issuance of Bank of England notes. With the exception of a limited “fiduciary” issue of £14 million backed by government securities, the Act

105. Joint-stock banks had already been permitted to operate outside a 65-mile perimeter of London pursuant to the Country Bankers Act 1826, 7 Geo. IV. c. 46. For a detailed discussion of the impact of the 1833 Act, see CALOMIRIS & HABER, *supra* note 15.

106. See CALOMIRIS & HABER, *supra* note 15, at 116–17.

107. See *id.*

108. See *id.*

109. For an example on the views of Bank director George Norman, as reported in O'Brien, see O'Brien, *supra* note 97, at 11–12.

110. See *id.*

111. See CLAPHAM, *supra* note 98, at 152–70; see also O'Brien, *supra* note 97, at 11–12.

112. Bank Charter Act 1844, 7 & 8 Vict. c. 32 (Eng.).

113. John Wood, *Bagehot's Lender of Last Resort: A Hollow Hallowed Tradition*, 7 INDEP. REV. 343, 344 (2003); see also Anson et al., *supra* note 34, at 23 (briefly describing the objective of the 1844 Act).

114. JAMES WILSON, CAPITAL, CURRENCY, AND BANKING 107 (1847) (quoting Peel).

dictated that all notes issued by the Bank were to be fully backed by bullion.¹¹⁵ The Banking Department, meanwhile, was responsible for the Bank's traditional deposit-taking, lending, and discount window operations. This included responsibility for managing a dedicated reserve of notes and bullion that could be used in response to an emerging liquidity crisis.¹¹⁶

The most important feature of the 1844 Act was the strict, mechanical relationship it established between the amount of gold in the Bank's vaults and its legal authority to issue new bank notes. Specifically, beyond the £14 million fiduciary issue, the ability of the Bank to issue new notes was limited by the size of its existing reserves and, in theory, its ability to acquire additional bullion on the open market.¹¹⁷ On the one hand, this rule was designed to constrain the growth of the money supply, along with what were seen as the inevitable booms and busts generated by rapid monetary expansion and contraction. On the other hand, strict adherence to this rule would prevent the Bank from using its lending and discount window operations—both of which would have the effect of expanding the money supply—to support the London money market during an incipient liquidity crisis. To its credit, Parliament was well aware of this trade-off:¹¹⁸ with Thomas Tooke, John Fullarton, and Henry Bosanquet, amongst others, warning the government that placing strict legal constraints on note issuance would undermine the Bank's ability to provide liquidity to the market during a crisis.¹¹⁹ Even Prime Minister Peel himself was rumored to have conceded in private that it might be necessary to suspend the Act in response to widespread financial instability.¹²⁰

Critics of the 1844 Act would not have to wait long for a measure of vindication. Widespread crop failures and the collapse of the railway boom of the 1840s precipitated a crisis in 1847.¹²¹ The Bank responded by expanding its discount window operations on short-term bills, the practical effect of which was to reduce its reserves of notes and bullion.¹²² Simultaneously, however, the Bank reportedly refused to extend longer-term advances against even the safest government securities—ostensibly in order to protect its remaining reserves which, by October 1847, had fallen to approximately £2 million.¹²³ The result was a severe liquidity squeeze on all but the most short-term money market instruments, precipitating a sharp increase in longer-term interest rates, and pushing many financial and commercial firms to the brink of insolvency.¹²⁴ As critics had predicted, this eventually forced the government to introduce legislation permitting the Bank to issue new

115. Bank Charter Act 1844, 7 & 8 Vict. c. 32, § II (Eng.).

116. *Id.*

117. In practice, of course, the Bank's ability to acquire gold on the open market would be constrained by the 1844 Act's limit on note issuance.

118. See Wood, *supra* note 113, at 344–45.

119. See Grossman & Rockoff, *supra* note 59; see also Wood, *supra* note 113, at 344–45; FETTER, *supra* note 95, at 187–91.

120. Grossman & Rockoff, *supra* note 59, at 11.

121. Wood, *supra* note 113, at 344.

122. The funds received by the seller of the discounted bill would typically be credited to the seller's account with the Bank. These deposits could then be withdrawn from the Bank in the form of Bank notes, which in turn could be converted into gold.

123. Kenneth Kuttner, *Victorian Financial Crises and their Implications for the Future*, 45 BUS. ECON. 102, 104 (2010).

124. For a more detailed empirical description, see Bignon et al., *supra* note 86, at 589–96.

bank notes in excess of the strict limits imposed under the 1844 Act.¹²⁵ Ultimately, knowledge that the Bank was authorized to issue new notes was sufficient to stem the panic and, in the end, the Bank was never required to exercise this authority.¹²⁶ Nevertheless, both the government and many senior Bank officials continued to hold the view that ex ante rules permitting the Bank to relax the strict limits imposed under the 1844 Act would only serve to increase the frequency and severity of financial crises.¹²⁷

This view would be put to the test once again almost exactly ten years later. The panic of 1857 is often described as the first “global” financial crisis.¹²⁸ As in 1847, the crisis was triggered by a railway boom gone spectacularly bust—this time in the United States.¹²⁹ The boom had been financed largely by investors in England and Continental Europe.¹³⁰ Following the gold rush and economic boom of the early 1850s, England faced significant economic headwinds: growing inflation, falling production, a persistent trade deficit, and the lingering effects of its war with Russia in the Crimea.¹³¹ The sharp fall in share and bond prices accompanying the bust thus hit the English financial system and economy at a point when it was particularly vulnerable to external shocks. Between October and early November, the crisis claimed several high profile casualties, including Liverpool Borough Bank, steelmakers Naylor Vickers & Co., and the large London discount house Sanderson, Sandeman & Co.¹³² As it had in 1847, the Bank’s initial response was to dramatically expand its discount window operations.¹³³ By early November, however, the Bank’s reserves stood at a meagre £581,000—down nearly 90% from their pre-crisis levels.¹³⁴ On 12 November, requests for discounts and advances from reputable counterparties exceeded the Bank’s remaining reserves, compelling the Prime Minister and Chancellor of the Exchequer to write to the Bank informing it of their intention to suspend the 1844 Act and authorize the issuance of new notes.¹³⁵ Unlike 1847, however, knowledge that the government planned to authorize the Bank to issue new notes did not stem the tide and the Bank was actually forced to issue £928,000 of new (and technically illegal) notes.¹³⁶ On 4

125. The Bank was notified of this decision on October 25 by way of a letter from the First Lord of the Treasury and the Chancellor of the Exchequer that recommended that the directors of the Bank “enlarge the amount of their discounts and advances upon approved security; but that, in order to retain this operation within reasonable limits, a high rate of interest should be charged.” Important Resolution of the Bank of England, *THE TIMES OF LONDON* (Oct. 16, 1847).

126. Wood, *supra* note 113, at 344; O’Brien, *supra* note 97, at 13–14; Kuttner, *supra* note 123, at 105.

127. See Wood, *supra* note 113, at 345 (quoting Charles Wood, Chancellor of the Exchequer, who argued against the introduction of an ex ante rule relaxing the strict limits under the 1844 Act in times of crisis); see also O’Brien, *supra* note 97, at 13–14 (describing the subsequent Parliamentary debates on this issue).

128. J.R.T. Hughes, *The Commercial Crisis of 1857*, 8 *OXFORD ECON. PAPERS* 194 (1956); Tobias Neumann, *The Nightmare Before Christmas: Financial Crises Go Global in 1857*, *BANK UNDERGROUND* (Dec. 20, 2016), <https://bankunderground.co.uk/2016/12/20/the-nightmare-before-christmas-1857-financial-crises-go-global/> [https://perma.cc/NA6G-8LQ4].

129. Neumann, *supra* note 128.

130. *Id.*

131. For a detailed examination of the economic environment in England at the time, see Hughes, *supra* note 128.

132. For a detailed list of major failures, see *id.* at 215–17.

133. See Neumann, *supra* note 128 (describing the Bank’s response to the crisis).

134. See *id.* (detailing the decrease in the Bank’s reserves).

135. See Letter from the Prime Minister and Chancellor to the Governor of the Bank of England (Nov. 12, 1857), available at Bank of England Archive G6/397, <https://bankunderground.co.uk/2016/12/20/the-nightmare-before-christmas-1857-financial-crises-go-global/> [https://perma.cc/E2VW-TZYK].

136. See Hughes, *supra* note 128, at 216.

December, the government finally tabled a bill indemnifying the Bank for breaching the 1844 Act.¹³⁷ This bill was passed on 11 December and the crisis—at least in England—was essentially over by Christmas Eve, 1857.¹³⁸

The financial crisis of 1857 revived the debate over the role of the Bank of England as the United Kingdom's lender of last resort.¹³⁹ The Parliamentary committee responsible for investigating the crisis acknowledged that, irrespective of whether or not it had the authority to exceed the limits imposed by the 1844 Act, the Bank's unique position meant that it would inevitably be called upon to provide liquidity support during periods of widespread panic.¹⁴⁰ The Bank itself, however, was still reluctant to acknowledge this role. The Governor of the Bank informed the committee that it would no longer lend to the bill brokers and discount houses that, in its view, had contributed to the crises of both 1847 and 1857.¹⁴¹ In March 1858, the Bank followed through on this threat by introducing a new rule prohibiting these firms from accessing the Bank's discount window and severely restricting their access to advances.¹⁴² This so-called "Rule of 1858" would have profound implications in the context of the Bank's response to the next crisis.

The Rule of 1858 was designed to force bill brokers and discount houses to hold higher reserve balances as a substitute for their historical reliance on the Bank's discount window and advances as sources of liquidity.¹⁴³ Predictably, however, stockpiling additional reserves reduced the profitability of these firms, forcing many of them into more speculative investments.¹⁴⁴ This included London's largest discount house, Overend Gurney & Co. Once considered the model of prudence, between 1855 and 1865 Overend Gurney made a series of risky investments in shipping, railways, and industrial firms.¹⁴⁵ As these investments turned sour, the firm's increasingly jittery short-term creditors demanded the return of their capital.¹⁴⁶ While firms facing these types correlated withdrawals would have normally sought accommodation at the Bank's discount window, the Rule of 1858 effectively prohibited Overend Gurney from accessing central bank liquidity support.¹⁴⁷ Instead, the firm made a direct appeal to the Bank for emergency

137. See Neumann, *supra* note 128 (discussing the tabling of the new bill allowing the Bank to breach the 1844 Act).

138. Although the crisis continued to rage on in the United States and Continental Europe well into the following year. See Neumann, *supra* note 128.

139. O'Brien, *supra* note 97, at 15.

140. See Parliamentary Papers (1857–58) at viii, cited in O'Brien, *supra* note 97, at 16.

141. See *id.*; see also KING, *supra* note 101, at 196–200.

142. See Marc Flandreau & Stefano Ugolini, *Where It All Began: Lending of Last Resort and the Bank of England During the Overend-Gurney Panic of 1866* 11 (Norges Bank, Working Paper 2011-03, 2011) (describing what would become known as the Rule of 1858).

143. See John Lewis, *Unto Us a Lender of Last Resort is Born: Overend Gurney Goes Bust in 1866*, BANK UNDERGROUND (Dec. 21, 2016), <https://bankunderground.co.uk/2016/12/21/unto-us-a-lender-of-last-resort-is-born-overend-gurney-goes-bust-in-1866/> [<https://perma.cc/G8CD-8S8K>] (explaining the intent behind the Rule of 1858).

144. For a detailed description of the business model and risks of bill brokers and discount houses during this period, see Hammond Chubb, *The Bank Act and the Crisis of 1866*, 35 J. STAT. SOC'Y 171, 179–85 (1872) (describing how, despite the increasing riskiness of their portfolios, the short-term liabilities issued by these firms were still widely regarded as money).

145. See Flandreau & Ugolini, *supra* note 142, at 12 (describing the shift in Overend's investments).

146. Lewis, *supra* note 143.

147. The answer to the question of whether Overend Gurney was technically prohibited is somewhat unclear. While Overend Gurney was still on the Bank's list of eligible discounters in 1866, the relationship between the

liquidity assistance.¹⁴⁸ However, after reviewing Overend Gurney's books, the Bank concluded that it was "rotten" and—despite its size and importance—refused to throw it a lifeline.¹⁴⁹

The failure of Overend Gurney on 10 May, 1866 triggered widespread panic, with depositors lining up in the streets to withdraw their money from London's banks.¹⁵⁰ *The Banker* magazine described the "terror and anxiety"¹⁵¹ that gripped the City. *The Times* reported that the police had to be called to Overend Gurney's offices on Lombard Street in order to restore order.¹⁵² Predictably, as London's money market ground to a halt, the Bank was swamped with requests for discounts and advances—reducing the Bank's reserves from more than £5.75 million to £3 million in the course of a single day.¹⁵³ Fearing that the Bank's remaining reserves would soon be exhausted, the Governor wrote to the Chancellor requesting the suspension of the 1844 Act.¹⁵⁴ The Chancellor agreed¹⁵⁵ and, as it had in 1847, the expectation that the Bank would provide unlimited liquidity support to the entire market—including the previously excluded bill brokers and discount houses—was sufficient to put an end to the panic.

C. Bagehot's Key Insight

It is against the backdrop of the 1844 Act, the Rule of 1858, and the Panic of 1866 that Walter Bagehot wrote his seminal treatise, *Lombard Street*, describing the operations of the London money market and the role of the Bank of England as lender of last resort.¹⁵⁶ Bagehot's argument was not simply that the Bank should act as a lender of last resort. This argument had already been forcefully made by others, most notably Henry Thornton.¹⁵⁷ Rather, Bagehot's key insight was that—despite the strictures of the 1844 Act and Rule of 1858—the Bank's response to the succession of financial crises that engulfed England during the 19th century demonstrated that it was already performing this important role.¹⁵⁸ At the time, Bagehot's argument was vehemently rejected by the Bank itself. Thomson Hankey, for example, one of the Bank's directors and author of a leading textbook on banking, referred to Bagehot's Rule as "the most mischievous doctrine ever broached in the monetary or [b]anking world"¹⁵⁹ and argued that acknowledging the existence of such

two firms had deteriorated significantly following the adoption of the Rule of 1858. See Flandreau & Ugolini, *supra* note 142, at 11.

148. Lewis, *supra* note 143.

149. *Id.*; Flandreau & Ugolini, *supra* note 142, at 12–13.

150. See The Panic, *TIMES* (LONDON) (May 12, 1866) [hereinafter *TIMES*].

151. Lewis, *supra* note 143 (describing the *Banker Magazine* article from August 1866).

152. *TIMES*, *supra* note 150.

153. See Lewis, *supra* note 143.

154. *Id.*

155. Lewis, *supra* note 143 (citing a letter from the Chancellor to the Governor (May 11, 1866) found in the Bank of England Archive G6/432).

156. *Lombard Street* built upon a series of articles that appeared in *The Economist* magazine, of which Bagehot was editor, in the aftermath of the Overend Gurney crisis. The core elements of Bagehot's argument were thus in the public domain well in advance of the book's publication in 1873.

157. See THORNTON, *supra* note 32.

158. See Bignon et al., *supra* note 86, at 2–3; see also Anson et al., *supra* note 34, at 6.

159. THOMSON HANKEY, *THE PRINCIPLES OF BANKING, ITS UTILITY AND ECONOMY; WITH REMARKS ON THE WORKING AND MANAGEMENT OF THE BANK OF ENGLAND* 25 (1867).

a role would encourage socially excessive risk-taking.¹⁶⁰

In Bagehot's view, what Hankey failed to grasp was that the question was not whether the Bank should act as a lender of last resort, but whether it could ever credibly commit not to perform this role during a crisis.¹⁶¹ In the cut and thrust of the exchange between Bagehot and Hankey we can thus see the genesis of contemporary debates around the design of LOLR regimes.¹⁶² On one side were those, echoing Hankey, who viewed central bank liquidity support as fomenting moral hazard and potential systemic risks—thus necessitating strict legal constraints on the provision of LOLR. On the other side were those who, having witnessed the suspension of the 1844 Act in 1847, 1857, and 1866, viewed these constraints as lacking credibility in the face of a full-scale financial crisis.

The century and a half that followed the crisis of 1866 did little to establish a clear winner between these competing views.¹⁶³ In at least one important respect, Bagehot can claim victory: with subsequent empirical research having conclusively demonstrated that the Bank acted as a lender of last resort during the crises of 1825, 1847, 1857, and 1866.¹⁶⁴ In other more fundamental respects, however, it was still not entirely clear whether the Bank had fully embraced this role, or what impact, if any, this had on financial stability. While the Bank played a central role in orchestrating the bailout of Barings in 1890, this intervention did not fit the mold of earlier LOLR operations.¹⁶⁵ The same can be said of the Bank's response to both the so-called "secondary" banking crisis of 1973–75 and small banks crisis of the early 1990s.¹⁶⁶ Proponents of central bank intervention could point to the relative stability of this period as evidence of both the Bank's acceptance of its role as lender of last resort and, importantly, that markets had come to expect central bank liquidity support during idiosyncratic and market-wide liquidity shocks.¹⁶⁷ Critics, meanwhile, could point to the dramatic increase in the size of financial markets and institutions over this same period as evidence that this expectation had generated rampant moral hazard. Ultimately, it would take a crisis of truly global proportions to reveal the true influence of

160. *Id.* at 25–38; BAGEHOT, *supra* note 19, at 169.

161. BAGEHOT, *supra* note 19, at 171.

162. See Bignon et al., *supra* note 86, at 3 ("The exchange has come to be seen among economic historians and economists of thought as the mother of all controversies on the challenges of lending of last resort, and the debate still rages today.").

163. While the crisis of 1866 led once again to proposals for the introduction of ex ante rules enabling the suspension of the 1844 Act in times of crisis, such rules would only become law with the enactment of the Currency and Bank Notes Act of 1928, Geo. 5 c. 13, 18, 19. See Wood, *supra* note 113, at 346. Ultimately, the restrictions imposed by the 1844 Act would be rendered moot by the abandonment of the Gold Standard in 1931.

164. See Michael Collins, *The Bank of England as Lender of Last Resort, 1857-1878*, 45 ECON. HIST. REV. 145 (1992); Anson et al., *supra* note 34; see also Bignon et al., *supra* note 86.

165. See Grossman & Rockoff, *supra* note 59, at 45. In the case of Barings, the Bank actually refused the government's offer to suspend the 1844 Act and instead coordinated the creation of a guarantee fund contemplating the mutualization of losses between the Bank (in a senior position) and private market participants (in a junior position). See Calomiris et al., *supra* note 15, at 54. Eventually, Barings was split into a "good" bank and a "bad" bank, with the latter managed and eventually sold by the Bank itself. See Eugene White, *Rescuing a SIFI, Halting a Panic: The Barings Crisis of 1890*, BANK UNDERGROUND (Feb. 10, 2016), <https://bankunderground.co.uk/2016/02/10/rescuing-a-sifi-halting-a-panic-the-barings-crisis-of-1890/> [https://perma.cc/2KE4-K8B7].

166. This crisis was precipitated by a real estate crash that threatened to bankrupt a number of smaller, "secondary" lenders. As it had in the case of Barings, the Bank coordinated a rescue package involving private market participants. See Calomiris et al., *supra* note 15, at 41.

167. However, as Wood observes: "It is conceivable that the market came to rely on the Bank to behave as Bagehot had advised, but any such confidence was not put to a test." Wood, *supra* note 113, at 348.

Bagehot's thinking on the Bank's approach to financial crisis management.

D. The Bank's Response to the Financial Crisis

On 14 September, 2007, the Bank of England extended an emergency loan to struggling mortgage lender Northern Rock.¹⁶⁸ Northern Rock had been extremely reliant on wholesale funding and mortgage securitization markets, thus exposing it to the widespread breakdown of these markets in the summer of 2007.¹⁶⁹ As the crisis deepened in the autumn of 2007 and into 2008, the Bank introduced a series of ad hoc mechanisms designed to provide liquidity support to the market as a whole.¹⁷⁰ This included the Special Liquidity Scheme (SLS), which enabled counterparties to swap a wide range of collateral—including whole loans and mortgages—for high liquidity government securities that could be sold into the market.¹⁷¹ Introduced in April 2008, the SLS was explicitly designed to provide temporary liquidity support for a period of no more than six months.¹⁷² However, the failure of Lehman Brothers in September 2008 forced the Bank to extend the SLS, and to provide targeted liquidity support to two of the country's largest banks: Halifax Bank of Scotland (HBOS) and RBS.¹⁷³ At its peak, the Bank's liquidity support under the SLS reached approximately £185 billion,¹⁷⁴ with another £61.5 billion provided to HBOS and RBS.¹⁷⁵ In the case of HBOS and RBS, this support was accompanied by large-scale recapitalization packages that effectively nationalized these besieged lenders.¹⁷⁶

The Bank's response to the financial crisis of 2007-09 is often viewed as having played an important role in preventing an even deeper economic and financial collapse.¹⁷⁷ By the same token, the Bank's initially slow, largely improvised response highlighted some of the shortcomings of its approach to financial crisis management.¹⁷⁸ While some of these

168. News of this support was leaked by the press the evening before, sparking a panic amongst the bank's depositors. See TREASURY COMMITTEE, *THE RUN ON THE ROCK*, 2007-8, HC 56-I, at 5 (UK).

169. The Treasury Select Committee characterized Northern Rock's problems as follows: "The high-risk, reckless business strategy of Northern Rock, with its reliance on short- and medium-term wholesale funding and an absence of sufficient insurance and a failure to arrange standby facility or cover that risk, meant that it was unable to cope with the liquidity pressures placed upon it by the freezing of international capital markets in August 2007." *Id.* at 19.

170. Andrew Hauser, *Lender of Last Resort Operations During the Financial Crisis: Seven Practical Lessons from the United Kingdom* 84-85 (Bank for Int'l Settlements, Working Paper No. 79, 2014).

171. Press Release, Bank of England, Special Liquidity Scheme (Apr. 21, 2008), <https://www.bankofengland.co.uk/-/media/boe/files/economy/2008/april/special-liquidity-scheme> [<https://perma.cc/8LE9-EBDY>].

172. *Id.*

173. While the extended SLS was closed in December 2009 and wound down through 2011 and 2012, the liquidity problems generated by the European sovereign debt crisis spurred the Bank to establish two new facilities: the Funding for Lending Scheme and Extended Collateral Term Repo facility. See Hauser, *supra* note 170, at 83.

174. IAN PLENDERLEITH, REVIEW OF THE BANK OF ENGLAND'S PROVISION OF EMERGENCY LIQUIDITY ASSISTANCE IN 2008-09, at 17-18 (2012).

175. See *id.* at 48.

176. For further information regarding the terms of these recapitalization packages, see *UK Government interventions in the financial sector 2007 to 2016*, OFF. NAT'L STAT., <https://www.ons.gov.uk/methodology/methodologicalpublications/specificmethodology/economy/articles/ukgovernmentinterventionsinthefinancialsector2007to2016> [<https://perma.cc/9K3G-SMNA>] (last visited Jan. 27, 2020).

177. See, e.g., Hauser, *supra* note 13, at 3.

178. *Id.* at 2.

shortcomings had been identified in advance of the crisis,¹⁷⁹ the crisis prompted some serious soul searching within the Bank,¹⁸⁰ along with an independent review of the Bank's LOLR regime by financial services industry veteran Ian Plenderleith.¹⁸¹ A parallel review of the Bank's discount window and other (non-emergency) liquidity facilities was undertaken by Bill Winters.¹⁸² This soul searching resulted in the introduction of a new LOLR regime, unveiled by the Bank in October 2013.

The majority of the United Kingdom's new LOLR regime is set out in what is known as the Sterling Monetary Framework (SMF).¹⁸³ That the Bank has formally articulated and publicly disclosed this regime is itself a noteworthy development: with the Bank's adherence to the principle of constructive ambiguity having previously dictated that it disclose very little about when, how, or on what terms it would provide liquidity support.¹⁸⁴ The SMF identifies three standing mechanisms through which the Bank can provide this support: Indexed Long-term Repo (ILTR) operations, the Discount Window Facility (DWF), and the Contingent Term Repo Facility (CTRF). ILTR operations consist of regular monthly auctions of central bank reserves designed to support financial institutions with predictable liquidity demands.¹⁸⁵ The interest rates charged under ILTR operations are indexed against "Bank Rate:" the rate commercial banks receive on reserves held with the Bank.¹⁸⁶ The DWF, meanwhile, is designed to support institutions experiencing unexpected liquidity demands by enabling them to borrow cash or highly liquid assets on

Facility	Frequency	Term structure	Key terms
ILTR	Monthly	6 months	<ul style="list-style-type: none"> Regular market-wide auctions Pricing indexed to Bank Rate Amount depending on the degree of stress within financial markets
DWF	Continuous on demand	30 days (5 days for clearinghouses)	<ul style="list-style-type: none"> Bilateral collateral swaps Pricing based on loan size and collateral quality Delayed aggregate disclosure to the market
CTRF	Upon activation by the Bank	At the discretion of the Bank	<ul style="list-style-type: none"> Terms determined at the discretion of the Bank Eligible participants must submit bids Liquidity allocated on the basis of uniform pricing format

179. Indeed, the Bank had been scheduled to unveil a series of proposed reforms to its LOLR regime in September 2008.

180. Hauser, *supra* note 170, at 82 ("Few countries can have reviewed the exercise of lender of last resort (LOLR) operations during the financial crisis more thoroughly, or more self-critically, than the United Kingdom.").

181. See generally PLENDERLEITH, *supra* note 174.

182. BILL WINTERS, REVIEW OF THE BANK OF ENGLAND'S FRAMEWORK FOR PROVIDING LIQUIDITY TO THE BANKING SYSTEM (2012).

183. BANK OF ENGLAND, THE BANK OF ENGLAND'S STERLING MONETARY FRAMEWORK (2015), <https://www.bankofengland.co.uk/-/media/boe/files/markets/sterling-monetary-framework/red-book.pdf?la=en&hash=307B77F74A02B0A469CF44BD5DD7FF405849517F> [https://perma.cc/PG9U-SHYQ] [hereinafter SMF].

184. Hauser, *supra* note 170, at 83.

185. SMF, *supra* note 183, ¶ 33.

186. *Id.* ¶ 71.

demand.¹⁸⁷ The cost of borrowing under the DWF is based on the size of the loan relative to the borrower's eligible liabilities and the quality of posted collateral.¹⁸⁸ Finally, the CTRF enables the Bank to provide liquidity at any time, and on any terms, in response to "actual or prospective market-wide stress of an exceptional nature."¹⁸⁹ Once activated by the Bank, financial institutions can access the CTRF by submitting bids indicating both a nominal amount and spread above Bank Rate.¹⁹⁰ Liquidity is then allocated using a "uniform price" format whereby all successful bidders pay the lowest accepted (or "clearing") spread.¹⁹¹

Figure 2: Standing Facilities under the SMF

Facility	Frequency	Term structure	Key terms
ILTR	Monthly	6 months	<ul style="list-style-type: none"> Regular market-wide auctions Pricing indexed to Bank Rate Amount depending on the degree of stress within financial markets
DWF	Continuous on demand	30 days (5 days for clearinghouses)	<ul style="list-style-type: none"> Bilateral collateral swaps Pricing based on loan size and collateral quality Delayed aggregate disclosure to the market
CTRF	Upon activation by the Bank	At the discretion of the Bank	<ul style="list-style-type: none"> Terms determined at the discretion of the Bank Eligible participants must submit bids Liquidity allocated on the basis of uniform pricing format

These standing mechanisms are available to all SMF-eligible market participants, including commercial banks, securities dealers, and derivative clearinghouses.¹⁹² Under each of these mechanisms, market participants are also permitted to post a wide range of eligible collateral: from high quality government debt and investment grade corporate bonds, to tranches of mortgage securitizations, to raw mortgage and other loan portfolios.¹⁹³ This collateral is divided into three levels—A, B, and C—based on the quality and risk profile of the underlying assets, with different pricing structures and haircuts applicable to each level.¹⁹⁴

A second important development alongside the SMF has been the Bank's increasing emphasis on pre-positioning collateral for potential use under the DWF.¹⁹⁵ Originally

187. *Id.* ¶ 33.

188. *Id.* ¶ 71, 81–82.

189. *Id.* ¶ 87.

190. SMF, *supra* note 183, ¶ 88.

191. *Id.*

192. *Id.* ¶ 35–41 (although clearinghouses are only eligible to use the DWF).

193. As explained in the SMF: "The Bank's collateral list is broad and extends in principle to any asset that it judges can be effectively and efficiently risk managed, subject to appropriate haircuts." *Id.* ¶ 44.

194. *Id.* ¶ 45.

195. To this end, the Bank has published a detailed guide for financial institutions looking to pre-position collateral. BANK OF ENGLAND, LOAN COLLATERAL: GUIDANCE FOR PARTICIPANTS IN THE STERLING MONETARY

borrowed from the Federal Reserve Bank of New York, pre-positioning enables the Bank to screen the quality of collateral assets before they are used by SMF participants to secure discount window loans, thereby enabling the Bank to calculate applicable pricing and haircuts in advance of the chaos and uncertainty of a crisis.¹⁹⁶ This proactive approach toward crisis management has been made possible by the Bank's recent resumption of its historical role in overseeing the prudential supervision of banks and other SMF participants.¹⁹⁷ The Bank has also made significant investments in its risk management capacity with a view to conducting more granular assessments of both the creditworthiness of its counterparties and the quality of posted collateral.¹⁹⁸ As of 2016, the amount of pre-positioned collateral stood at almost £450 billion, three quarters of which consisted of raw loan portfolios that had been independently assessed by Bank staff.¹⁹⁹

The new standing mechanisms under the SMF provide both the Bank and market participants with a range of options for responding to idiosyncratic and market-wide liquidity shocks. Yet there will inevitably be circumstances where these mechanisms collectively prove ineffective in preventing or containing an emerging crisis. Reflecting the benefits of flexibility in these circumstances, the Bank and HM Treasury have entered into a memorandum of understanding (MoU) that sets out the conditions under which the Bank will be permitted to provide emergency liquidity assistance outside the parameters of the SMF.²⁰⁰ As a starting point, the MoU allocates responsibility to the Bank for protecting and enhancing the stability of the U.K. financial system—including operational responsibility for crisis management and the provision of liquidity support.²⁰¹ Where the Bank can discharge these responsibilities without resorting to public funds, the MoU envisions that it will have complete operational autonomy in terms of how it pursues these objectives.²⁰² Where there exists a material risk to public funds, however, the Bank will be required to notify and then coordinate closely with HM Treasury.²⁰³ Reflecting the Treasury's ultimate responsibility for the use of public funds, the Chancellor will then have the authority to authorize or direct the Bank to provide support that goes beyond the standing mechanisms under the SMF.²⁰⁴

The SMF and MoU reflect a sea change in the Bank's approach to financial crisis management. As we have already seen, the first big change is that the Bank has, at long last, publicly embraced its role as lender of last resort and clearly articulated when, how,

FRAMEWORK 3 (2018), <https://www.bankofengland.co.uk/-/media/boe/files/markets/eligible-collateral/loan-prepositioning-guide> [https://perma.cc/E5BD-DNC5].

196. It also enables the Bank to monitor changes in the value of posted collateral on a daily basis, monitor the level of diversification within collateral packages, and adjust the relevant haircuts. *See* SMF, *supra* note 183, ¶ 46, 48, 49.

197. Hauser, *supra* note 170, at 85–86 (between 2000 and 2013, responsibility for prudential supervision of banks and other financial institutions fell to the now defunct Financial Services Authority).

198. *Id.* at 86.

199. *Id.*

200. *See* HM TREASURY, MEMORANDUM OF UNDERSTANDING ON RESOLUTION PLANNING AND FINANCIAL CRISIS MANAGEMENT 1, 2 (2017), <https://www.bankofengland.co.uk/-/media/boe/files/memoranda-of-understanding/resolution-planning-and-financial-crisis-management.pdf> [https://perma.cc/N2KD-3HP6] [hereinafter MoU].

201. *Id.* at 1–2.

202. *Id.* at 4, 6.

203. *Id.* at 5–6.

204. *Id.* at 2, 5, 7.

and on what terms it will provide liquidity support. The second change is a significant expansion in the types of market participants eligible to receive this support. While the Bank provided liquidity support to a wide range of financial and commercial firms during the crises of the 19th century, by the eve of the financial crisis of 2007-09, the number of eligible market participants had shrunk to less than 20—all of them conventional deposit-taking banks.²⁰⁵ Yet as the crisis clearly illustrated, banks are not the only financial institutions vulnerable to systemic liquidity shocks. Nor are they the only institutions whose failure could conceivably undermine financial stability. Reflecting this, the list of SMF participants has been expanded to include both securities dealers and derivative clearinghouses.²⁰⁶ The SMF also contemplates that the Bank may intervene as “market maker” of last resort: buying financial assets on a short-term, catalytic basis to support the orderly functioning of systemically important markets.²⁰⁷ Taken together, the establishment of these standing mechanisms, along with the expansion of access to a wider range of institutions and markets, can be seen as strengthening the credibility of the Bank’s commitment to follow Bagehot’s prescription to lend freely in response to a financial crisis.²⁰⁸

Importantly, the introduction of the SMF has been accompanied by substantive and procedural safeguards designed to address any potential moral hazard problems stemming from the strengthening and expansion of the Bank’s LOLR regime. The return of responsibility for prudential supervision to the Bank provides it with direct access to information about the creditworthiness of SMF participants and the quality of posted collateral. It also gives the Bank the power to use prudential tools such as the LCR to compel banks to hold more and higher quality reserves, thereby ensuring a degree of self-insurance against potential liquidity shocks.²⁰⁹ Along a similar vein, the Bank’s new collateral framework and emphasis on pre-positioning facilitate ex ante assessments of credit risk, whilst simultaneously providing SMF participants with the certainty necessary to undertake meaningful contingency planning.²¹⁰ Collectively, these safeguards serve to reduce at least some of the burden on the SMF to address the potential moral hazard problems stemming from the provision of central bank liquidity support.²¹¹

The Bank of England’s approach toward financial crisis management has thus come a long way since Bagehot’s day. Whereas the Bank was once reluctant to publicly acknowledge its role as lender of last resort, today it has clearly embraced this role and established a robust framework for the provision of LOLR. This framework has enabled the Bank to be more proactive in preparing for potential crises, and in designing a regulatory and supervisory architecture that addresses potential moral hazard problems. Underpinning this evolution is Bagehot’s key insight—drawn from the Bank’s experiences during the recurrent crises of the 19th century—that strict legal constraints on LOLR regimes are simply not credible in the face of impending financial Armageddon. Put

205. See WINTERS, *supra* note 182, at 83.

206. With the authorization of the Chancellor, the Bank can also provide emergency liquidity assistance to firms outside the perimeter of prudential regulation and supervision. MoU, *supra* note 200, at 1–2, 7.

207. See SMF, *supra* note 183, at 2. Whether a market qualifies as systemically important will be determined on the basis of its “size, substitutability and interconnectedness with other markets.” *Id.* ¶ 28.

208. See Hauser, *supra* note 170, at 84.

209. SMF, *supra* note 183, at 2.

210. See Hauser, *supra* note 170, at 87.

211. SMF, *supra* note 183, at 2.

differently: once we reconcile ourselves to the fact that we cannot prevent the occasional rainstorm, it makes sense to invest in a reliable umbrella.

IV. THE DEVELOPMENT OF THE US LENDER OF LAST RESORT REGIME

While the Bank of England was establishing itself as the United Kingdom's lender of last resort during the 19th century, the United States was operating without a fully-fledged central bank. The creation of the First Bank of the United States was one of the most hotly contested issues in the early Republic, pitting Federalists George Washington and Alexander Hamilton against Republicans Thomas Jefferson and James Madison. Despite its important role in quelling the panic of 1792,²¹² the Republican-led Senate allowed the First Bank's charter to expire in 1811.²¹³ Almost immediately, however, shifting political winds—fueled by lax state bank regulation, a series of financial panics, and the government's ballooning debt following the War of 1812—forced Congress to reconsider, leading to the authorization of the Second Bank of the United States in 1816.²¹⁴ Amongst other roles, the Second Bank was responsible for monitoring the note issuance of other banks and, importantly, for providing these banks with emergency liquidity assistance.²¹⁵ The Second Bank was thus arguably the first federal institution to be charged with some measure of responsibility for maintaining the stability of the U.S. banking system.²¹⁶ Lamentably, however, the Second Bank became a casualty of the same political dynamics as its predecessor and was gradually dismantled following the re-election of President Andrew Jackson in 1832.²¹⁷

A. Financial Crisis Management without a Central Bank

Between 1832 and the creation of the Federal Reserve in 1913, the United States thus found itself without a public bulwark against financial panics. The resulting fragility was compounded by what was known as the National Banking System. Established under the National Bank Acts of 1863 and 1864,²¹⁸ the objective of the National Banking System was to create a single national currency “licensed, manufactured, and guaranteed by the federal government” and issued by federally chartered banks.²¹⁹ The system envisioned a three-tiered system: with central reserve city—or “money center”—banks in New York (and later Chicago and St. Louis) at the apex, followed by reserve city banks in other major

212. See David Cowen et al., *The U.S. Panic of 1792: Financial Crisis Management and the Lender of Last Resort* (Working Paper, May 30, 2006) (describing the First Bank's role in responding to the panic and arguing that Hamilton, in directing the actions of the First Bank, acted consistently with the core tenets of Bagehot's Rule).

213. See Calomiris et al., *supra* note 15, at 28–29.

214. For a detailed discussion of the political dynamics leading to the establishment of the Second Bank, see generally Raymond Walters, *The Origins of the Second Bank of the United States*, 53 J. POL. ECON. 115 (1945); and also RALPH CATTERALL, *THE SECOND BANK OF THE UNITED STATES* (1903).

215. Calomiris et al., *supra* note 15, at 28–29.

216. *Id.*

217. See generally BRAY HAMMOND, *BANKS AND POLITICS IN AMERICA FROM THE REVOLUTION TO THE CIVIL WAR* 251–405 (1957).

218. National Bank Act of 1863, 12 Stat 665, superseded by the National Bank Act of 1864 § 62, 13 Stat 99, 118; National Bank Act of 1864 § 16, 13 Stat at 104.

219. Charles W. Calomiris & Charles M. Kahn, *The Efficiency of Self-Regulated Payment Systems: Learning from the Suffolk System*, 28 J. MONEY, CREDIT & BANKING 766, 770 (1996).

metropolitan areas, and then a large number of relatively small country banks. Importantly, both reserve city and country banks were permitted to hold a proportion of their required reserves in the form of deposits with banks higher up in the system.²²⁰ The resulting “pyramiding” meant that reserves tended to gravitate towards New York, where money center banks would, amongst other things, use them to finance the extension of call loans to investors purchasing shares and other securities on margin.²²¹

The fragility of the National Banking System was a function of two dynamics. First, many parts of the United States reliant on agriculture experienced predictable spikes in loan and currency demand during the spring and fall planting seasons. This localized seasonal demand would often force reserve city and country banks to call in loans or withdraw deposits from other banks, thereby amplifying and transmitting shocks throughout the system and potentially triggering more widespread banking crises.²²² Second, where this dynamic reached money center banks in New York, it could force banks to call in margin loans, necessitating the sale of borrowed securities and putting downward pressure on stock prices.²²³

The absence of a central bank forced private actors to find innovative ways of addressing the frequent panics that gripped the U.S. banking system throughout the 19th century. One of the most important innovations was the clearinghouse.²²⁴ Clearinghouses were private firms, owned by member banks, that were established to facilitate interbank clearing and settlement of banknotes, checks, drafts, bills of exchange, and other payment instruments. In order to protect themselves against default, clearinghouses established strict criteria for the admission of new members. They also subjected members to basic capital and liquidity requirements, imposed financial reporting and audit obligations, and placed restrictions on the interest rates that members could charge their customers. The first clearinghouse was established in New York in 1853.²²⁵ Within a few short years, clearinghouses had also sprung up in Boston (1856), Philadelphia (1858), Baltimore (1858), and Chicago (1865).²²⁶

Clearinghouses performed several important functions that would now typically be performed by central banks. These functions included interbank clearing and settlement,

220. Reserve city banks could hold up to 50% of their reserves as demand deposits in money center banks. Country banks, meanwhile, could hold up to 60% of their reserves as deposits in either reserve city or money center banks. Holding reserves in the form of demand deposits was an attractive option: while vault cash did not bear any interest, banks could earn as much as two percent on reserves held in the form of demand deposits.

221. O.M. Sprague, *History of Crises under the National Banking System*, in THE NATIONAL BANKING SYSTEM 5–35 (1910).

222. See *id.* (describing the spread of crises under the national bank system); see also Asaf Bernstein et al., *Identifying the Effects of a Lender of Last Resort on Financial Markets: Lessons from the Founding of the Fed*, 98 J. FIN. ECON. 40, 42 (2010) (describing the drivers of demand during the fall and spring seasons); see also Jeffrey A. Miron, *Financial Panics, the Seasonality of the Nominal Interest Rate, and the Founding of the Fed*, 76 AM. ECON. REV. 125 (1986) (describing the relationship between seasonal demand spikes and financial panics).

223. See generally *supra* note 222.

224. Richard Timberlake, *The Central Banking Role of Clearinghouse Associations*, 16 J. MONEY, BANKING & CREDIT 1, 2 (1984).

225. Gary Gorton, *Private Clearinghouses and the Origins of Central Banking*, FED. RES. BANK PHILA. BUS. REV., Jan.-Feb. 1984 at 3, 4.

226. *Id.* at 5. In addition to major banking and commercial centers, clearinghouses were also established in smaller cities and towns across the United States. See Grossman & Rokoff, *supra* note 59, at 18 (stating that clearinghouses were established in Topeka, Kansas and St. Joseph, Missouri).

along with the prudential regulation and supervision of member banks. Most importantly, clearinghouses played a pivotal role in coordinating the response of member banks to incipient panics.²²⁷ In response to a panic, clearinghouses would authorize the issuance of loan certificates that were designed to serve as a form of emergency reserve currency.²²⁸ Member banks facing correlated demands from depositors could apply for these certificates, pledging their portfolio assets as collateral. Banks could then use the certificates to satisfy their obligations to other member banks, thereby freeing up currency for the purpose of honoring their commitments to depositors. Other banks were willing to accept these certificates not only because they were backed by collateral but also, and perhaps more importantly, because they represented the *joint* obligations of member banks. Where a clearing member defaulted and the posted collateral was insufficient to cover its obligations, surviving members would thus be required to cover the residual losses in proportion to their capital in the clearinghouse.²²⁹ Initially, loan certificates were only issued in large denominations and circulated exclusively amongst member banks. By the 1890s, however, clearinghouses had begun issuing small denomination certificates that entered public circulation.²³⁰ In effect, the issuance of these certificates enabled clearinghouses to expand the money supply during panics, providing much needed liquidity to the banking system and preventing both widespread bank failures and disruptive contractions in the money supply.²³¹

While clearinghouses played an important role in managing banking panics, they did little to address the underlying fragility of the U.S. banking system. Indeed, in the 50 years after the establishment of the New York clearinghouse, the United States experienced no less than eight major banking crises: in 1857, 1861, 1873, 1884, 1890, 1893, 1896, and 1907.²³² It was the Panic of 1907, in which J.P. Morgan organized an ad hoc consortium to bailout New York trust companies, that ultimately spurred Congress into action.²³³ Congress's initial response to the panic was the Aldrich-Vreeland Act of 1908.²³⁴ The Aldrich-Vreeland Act marked a turning point in U.S. banking policy for two reasons. First, the Act called for the creation of national currency associations that could issue emergency currency backed by both the federal government and the assets of member banks.²³⁵ Unlike clearinghouses, however, the issuance of this emergency currency was to be under the

227. For a detailed description of the crisis management function performed by 19th century U.S. clearinghouses, see Gary Gorton, *Clearinghouses and the Origin of Central Banking in the United States*, 45 J. ECON. HIST. 277 (1985). See also Timberlake, *supra* note 224 (describing the functions of clearinghouses).

228. These certificates carried an interest charge and were typically issued at fixed maturities between one and three months. See generally *supra* note 227.

229. While defaulting banks were typically not permitted to fail during a panic, they were often expelled from the clearinghouse once the panic subsided. The threat of expulsion was thus a powerful enforcement mechanism. See Gorton, *supra* note 227, at 281–82.

230. During the Panic of 1893, for example, clearinghouses issued approximately \$100 million in small denomination certificates (equivalent to approximately 2.5% of the money supply). During the Panic of 1907, this figure jumped to approximately \$500 million (or 4.5% of the money supply). *Id.* at 282.

231. See Timberlake, *supra* note 224, at 14 (describing the use of clearinghouse loan certificates); see also Gorton, *supra* note 227, at 280–81 (describing the role of loan certificates during the Panic of 1857).

232. Calomiris et al., *supra* note 15, at 29.

233. These trust companies were lightly regulated deposit taking institutions that, crucially, were not members of the New York clearinghouse.

234. Aldrich-Vreeland Act of 1908, 12 U.S.C. ch. 2 § 104.

235. *Id.* § 1.

administration of the U.S. Treasury Secretary.²³⁶ Second, and more significantly, the Act established the National Monetary Commission to study the U.S. banking system and compare it with the systems in the United Kingdom, Canada, and Continental Europe.²³⁷

B. The Establishment and Early Years of the Federal Reserve

The National Monetary Commission identified three principal defects in the structure of the U.S. banking system. First, unlike the United Kingdom, the United States did not benefit from a fully developed and well-functioning money market. As a result, there was no market mechanism by which the excess reserves of one bank could easily be redistributed to another bank in need of liquidity. Second, the highly fragmented U.S. banking system made it difficult to marshal reserves in response to an incipient panic. Paul Warburg, an early advocate for the creation of the Federal Reserve, likened this system to providing each citizen with a few buckets of water instead of establishing a city fire department.²³⁸ Third, and most importantly, the National Monetary Commission observed that the U.S. money supply was particularly “inelastic.”²³⁹ This inelasticity was a function of the National Banking System, which required federally chartered banks to purchase government bonds as collateral against the issuance of new bank notes. During a panic, banks were unlikely to use their remaining reserves to purchase additional bonds, thereby limiting the ability of the banking system to expand the money supply in response to a crisis. Collectively, these defects rendered the U.S. banking system particularly vulnerable to bouts of paralyzing illiquidity and the resulting contractions in the supply of both money and credit. The Commission’s findings would ultimately provide the blueprint for the Federal Reserve Act of 1913 and the creation of the Federal Reserve System.²⁴⁰

Economist and historian Allan Metzler has argued the designers of the Federal Reserve System were highly influenced by the theory and practices developed by the Bank of England.²⁴¹ While this is undoubtedly the case, the structure and mandate of the Fed as enshrined in the Federal Reserve Act represented a marked departure from those of the Bank of England in two crucial respects. The first was the system’s highly decentralized structure: with power split between a seven-member Federal Reserve Board and 12 regional reserve banks. The second was that, from its inception, the Fed was given a clear statutory mandate to act as the U.S. lender of last resort. As described above, one of the principal findings of the National Monetary Commission had been the U.S. banking system lacked a sufficiently elastic currency that could easily expand to meet the seasonal demands of depositors or effectively respond to monetary contractions triggered by banking panics and widespread financial instability.²⁴² The Preamble to the Federal Reserve Act thus

236. *Id.*

237. The complete collection of the Commission’s publications is available from the Federal Reserve Bank of St. Louis, *Publications of the National Monetary Commission Series*, <https://fraser.stlouisfed.org/series/1493> [<https://perma.cc/S39R-8L4V>] (last visited Feb. 4, 2020).

238. Paul Warburg, *The Discount System in Europe: Report for the National Monetary Commission*, S. Doc. No. 402, at 33 (1910).

239. *Id.* at 31–41.

240. Federal Reserve Act, 12 U.S.C. §§ 221–522.

241. Warburg, Senator Nelson Aldrich, and Harvard professor Piatt Andrew had made a first-hand study of the Bank of England and other European central banks on behalf of the National Monetary Commission. ALLAN MELTZER, *A HISTORY OF THE FEDERAL RESERVE: VOLUME 1: 1913–1951* 19 (2003).

242. Gary Gorton & Andrew Metrick, *The Federal Reserve and Panic Protection: The Roles of Financial*

specifically identified Congress's ambition to "furnish an elastic currency" as one of the primary rationales behind the creation of the Federal Reserve System.²⁴³

The Federal Reserve Act gave the newly created Fed two principal powers for the purposes of supporting the development of a more elastic currency. First, pursuant to what is now Section 10B, the Act authorized each regional reserve bank to make advances to commercial banks through their discount windows.²⁴⁴ As originally drafted, reserve banks were only permitted to make these advances against "notes, drafts, and bills of exchange arising out of actual commercial transactions" that had been "issued or drawn for agricultural, industrial or commercial purposes."²⁴⁵ Today, these advances need only be secured to the satisfaction of the relevant reserve bank.²⁴⁶ Second, pursuant to Section 14, the Federal Reserve Board was authorized to purchase or sell gold and U.S. treasury securities on the open market, along with any cable transfers, bankers' acceptances, or bills of exchange eligible for discounting under Section 10B.²⁴⁷ Importantly, while discount window lending under Section 10B was restricted to banks that were members of the Federal Reserve System, Section 14 permitted the Fed to engage in open market operations with "banks, firms, corporations or individuals."²⁴⁸

By most accounts, the founding of the Federal Reserve System had an almost immediate impact on the stability of the U.S. banking system. Recent empirical research by Asaf Bernstein, Eric Hughson, and Marc Weidenmier, for example, finds that the establishment of Fed was followed by a significant decrease in the seasonal volatility of both interest rates and stock prices.²⁴⁹ This suggests that the creation of the Federal Reserve System successfully eliminated the destabilizing feedback loops that had characterized the National Banking System. Ultimately, however, it would be the economic and financial turmoil unleashed by the Great Depression that would represent the first real test of the Fed's credentials as a lender of last resort.

The Fed's response to the Great Depression has been euphemistically described as one of "direct pressure."²⁵⁰ With a few notable exceptions,²⁵¹ this pressure was imposed

Regulation and Lender of Last Resort, 27 J. ECON. PERSP. 45, 47 (2013).

243. Federal Reserve Act, Preamble. That the Fed acknowledged this crisis management role from the outset is evident from its first annual report, which states that "its duty plainly is not to await emergencies but by anticipation to do what it can to prevent them." ANNUAL REPORT OF THE FEDERAL RESERVE SYSTEM 17 (1914).

244. Federal Reserve Act, § 10B; *Id.* § 13(2), 13A.

245. Federal Reserve Act, § 13(2). The original text also excluded from discounting any notes, drafts, or bills covering "merely investments or issued or drawn for the purpose of carrying or trading in stocks, bonds, or other investment securities." *Id.*

246. *Id.* § 10B. The current version of Section 10B then imposes a number of limitations on advances to "undercapitalized" or "critically undercapitalized" depository institutions.

247. *Id.* § 14.

248. *Id.*

249. Bernstein et al., *supra* note 222, at 40; Gorton & Metrick, *supra* note 242, at 45; *see also* A. Steven Holland & Mark Toma, *The Role of the Federal Reserve as "Lender of Last Resort" and the Seasonal Fluctuation of Interest Rates*, 23 J. MONEY, BANKING & CREDIT 659 (1991) (measuring the reduction in seasonal fluctuations in interest rates following the creation of the Fed).

250. *See* A. C. Miller, *Responsibility for Federal Reserve Policies: 1927-1929*, 25 AM. ECON. REV. 442, 454 (1935).

251. *See, e.g.*, Mark Carlson et al., *Arresting Banking Panics: Federal Reserve Liquidity Provision and the Forgotten Panic of 1929*, 119 J. POL. ECON. 889 (2011) (chronicling the role of the Federal Reserve Board of Atlanta in responding to a localized banking panic in Florida). The Federal Reserve Banks of New York, Boston, and San Francisco also provided support to local banks at various points in the 1930s. *See* Mark Carlson & David

through tight restrictions on discount window lending to the member banks that Fed officials believed were responsible for the speculative credit expansion at the root of the boom and subsequent bust.²⁵² The results were calamitous. Between December 1929 and the end of 1933, the Federal Reserve Board has estimated that the number of banks in the United States fell from 24,633 to 15,015—a 39% decrease in four years.²⁵³ While the banks that failed tended to be smaller banks, many of which were not members of the Federal Reserve System, the losses to depositors still amounted to approximately \$1.3 billion (roughly \$17.3 billion in today's terms).²⁵⁴ Even more importantly, the resulting loss of confidence in the U.S. banking system wreaked havoc on the money supply: with Milton Friedman and Anna Schwartz estimating a contraction of 33% between 1929 and 1933.²⁵⁵ While the causal impact of this contraction has been hotly debated, there is little doubt that it contributed to the marked decline in prices, investment, and economic output during this period.²⁵⁶

Several different explanations have been advanced for the Fed's failure to provide liquidity support to the U.S. banking system during the Great Depression. Friedman and Schwartz identified a lack of effective leadership following the death of New York Fed Chairman Benjamin Strong in October 1928.²⁵⁷ Strong had been an influential figure in the early years of the Fed and instinctively understood the importance of central bank liquidity support in preventing financial panics.²⁵⁸ Alan Metzler, Charles Calomiris, and David Wheelock, meanwhile, have separately argued that the Fed was lulled into a false sense of security by low nominal interest rates and borrowed reserves—interpreting this as evidence of abundant credit and liquidity instead of as warning signs of liquidity hoarding, falling investment, and mounting deflation.²⁵⁹ Others have identified the coordination problems generated by the Fed's fragmented governance structure,²⁶⁰ legal constraints against lending to non-member banks,²⁶¹ and strictures imposed by the Gold Standard as potential factors.²⁶² Whatever the explanation, the Fed's policy of direct pressure served

Wheelock, *The Lender of Last Resort: Lessons from the Fed's First 100 Years* 5–6 (Federal Res. Bank of St. Louis, Working Paper No. 202-056B, 2013).

252. Miller, *supra* note 250, at 454; Thomas Humphrey, *Lender of Last Resort: What It Is, Whence It Came, and Why the Fed Isn't It*, 30 CATO J. 333, 353–54 (2010). As documented by Gorton and Metrick, this policy of discouraging banks from borrowing at the discount window could be observed as early as the mid-1920s. *See* Gorton & Metrick, *supra* note 242, at 47.

253. Federal Reserve Board, *Banking and Monetary Statistics: 1914–1941*, at 16 (Board of Governors of the Federal Reserve System, Washington, 1943).

254. *See id.*

255. FRIEDMAN & SCHWARTZ, *supra* note 32, at 15–17.

256. For a recent contribution to this debate, see Christina Romer & David Romer, *The Missing Transition Mechanism in the Monetary Explanation of the Great Depression*, 103 AM. ECON. REV. 66 (2013).

257. FRIEDMAN & SCHWARTZ, *supra* note 32, at 412–16.

258. In this regard, Strong's thinking had perhaps been influenced by his long-time friendship with Bank of England Governor Montagu Norman. *See generally* LIAQUAT AHAMED, *LORDS OF FINANCE: THE BANKERS WHO BROKE THE WORLD* (2009).

259. Each of Meltzer, Calomiris, and Wheelock associate the Fed's focus on nominal interest rates and borrowed reserves as a product of its reliance on the so-called “real bills” doctrine. *See* MELTZER, *supra* note 241, ch. 5; *see* Charles Calomiris, *The Political Lessons of Depression Era Banking Reform*, 26 OXFORD REV. ECON. POL'Y 540, 549 (2010); *see also* DAVID WHELOCK, *THE STRATEGY AND CONSISTENCY OF FEDERAL RESERVE MONETARY POLICY, 1924–1933* (1991).

260. Carlson & Wheelock, *supra* note 251, at 10; Carlson et al., *supra* note 251, at 922.

261. Carlson & Wheelock, *supra* note 251, at 7.

262. *See generally* BARRY EICHENGREEN, *GOLDEN FETTERS: THE GOLD STANDARD AND THE GREAT*

to seriously damage its credibility as a lender of last resort.

The tide of bank failures would eventually turn following the imposition of a national bank holiday by President Roosevelt in March 1933.²⁶³ The Roosevelt Administration then set about implementing an ambitious program of reforms to both the structure and regulation of the U.S. financial system. These reforms included the creation of the Securities and Exchange Commission to enforce newly enacted federal securities laws,²⁶⁴ the separation of commercial and investment banking,²⁶⁵ and the introduction of federal deposit insurance.²⁶⁶ They also included several measures designed specifically to bolster the Fed's credibility as a lender of last resort. The first was a shift in the balance of power away from the regional reserve banks and toward the Federal Reserve Board in Washington, thereby facilitating a more coordinated federal response to future crises.²⁶⁷ Second, the Fed was given explicit legal authority to lend to banks that were not members of the Federal Reserve System.²⁶⁸ This was accompanied by an expansion in the range of collateral that banks could pledge in exchange for loans at the Fed's discount window.²⁶⁹ Last but not least, the Fed was given the power under Section 13(3) of the Federal Reserve Act to extend discount window loans to individuals and firms other than conventional deposit-taking banks.²⁷⁰

The newly created Section 13(3) authorized the Fed's regional reserve banks to lend to "any individual, partnership, or corporation"²⁷¹ in "unusual and exigent circumstances."²⁷² Consistent with the view that this new authority should only be used in the rarest and most pressing cases, its exercise was then subject to three procedural safeguards. First, authorization required an affirmative vote of at least five members of the Federal Reserve Board. Second, any loans needed to be made against notes, drafts, or bills of exchange "of the kinds and maturities made eligible for discounting for member banks" under the Federal Reserve Act and be endorsed or secured "to the satisfaction" of the relevant reserve bank.²⁷³ Third, the reserve bank was required to obtain evidence that the

DEPRESSION, 1919–1939 (1996); PETER TEMIN, *LESSONS FROM THE GREAT DEPRESSION* (1991).

263. A bank holiday involves closing banks, inspecting their books, and then only permitting fundamentally solvent banks to re-open their doors to the public. *See generally* Board of Governors of the Federal Reserve System, *supra* note 22.

264. *See* Securities Act of 1933, 15 U.S.C. § 77a; *see also* Securities Exchange Act of 1934, 15 U.S.C. § 78a.

265. *See* Banking Act of 1933 §§ 5, 16, 20, 32, Pub. L. 73-66, 12 U.S.C. § 227.

266. *See id.* § 8.

267. This shift was reflected in, amongst other measures, the creation of the Federal Open Market Committee to coordinate the purchase and sale of securities on the open market.

268. *See* Emergency Banking Relief Act of 1933, 48 Stat. 1, § 404. Section 404 was added shortly after the Act came into force. *See* Federal Reserve Bulletin, at 247 (Apr. 1933).

269. *See* Emergency Banking Relief Act of 1933, Public Law 1, 48 Stat. 1 § 402 (Mar. 9, 1933).

270. This power was originally introduced as a temporary measure pursuant to Section 210 of the Emergency Relief and Reconstruction Act of 1932, 47 Stat. 709.

271. Federal Reserve Act § 13(3).

272. *Id.*

273. *Id.* The words "of the kinds and maturities made eligible for discount for member banks under other provisions of this Act" were subsequently deleted. Federal Deposit Insurance Corporation Improvement Act of 1991, Pub. L. No. 102-242, § 473, 105 Stat. 2236 (1991). From that point forward, all notes, drafts, and bills of exchange thus became eligible for discount, so long as they were endorsed or secured to the satisfaction of the relevant reserve bank.

intended recipient of the loan was unable to secure adequate liquidity from other banks.²⁷⁴

The Fed made little use of this new emergency authority during the Great Depression.²⁷⁵ Nor would it make any loans under Section 13(3) between 1936 and 2008. Nevertheless, the Fed's record over this period provides at least some evidence of a growing willingness to act as a lender of last resort.²⁷⁶ In June 1970, the Fed threw open its discount window, engaged in significant open market operations, and suspended interest rate ceilings on bank deposits in order to prevent the breakdown of the commercial paper market following the bankruptcy of Penn Central Railroad.²⁷⁷ The Fed's response included actively encouraging member banks to borrow at the discount window for the purpose of extending loans to customers that relied on the commercial paper market for short-term financing.²⁷⁸ In 1974, the Fed provided more conventional liquidity support to Franklin National Bank and eventually purchased the struggling bank's foreign exchange positions.²⁷⁹ And in 1984, the Fed agreed to provide liquidity support in connection with the rescue of Continental Illinois, then the country's eighth largest bank.²⁸⁰ In addition to these targeted LOLR operations, the Fed also provided market-wide liquidity support in response to the 1987 stock market crash, the Y2K threat, and in the days following the 9/11 terrorist attacks.²⁸¹ While none of these interventions took place in the thick of a major crisis, the provision of liquidity support in each of these cases foreshadowed the important role that the Fed would play during the global financial crisis.

C. The Fed's Response to the Financial Crisis

The Fed's response to the global financial crisis has already been the subject of considerable analysis and debate.²⁸² Three features of this response are salient for our purposes. The first was its scale. Research conducted by Fed economists has estimated that its liquidity support peaked at over \$1.5 trillion in December 2008.²⁸³ Others, adopting a

274. Federal Reserve Act § 13(3), 12 U.S.C. § 343 (2010).

275. The Fed used its power under Section 13(3) to make only 23 loans for a total of \$1.5 million between 1932 and 1936. David Fettig, *Lender of More Than Last Resort*, FED. RES. BANK MINNEAPOLIS (Dec. 1, 2002), <https://www.minneapolisfed.org/publications/the-region/lender-of-more-than-last-resort> [<https://perma.cc/467M-DNGZ>].

276. As Anna Schwartz has observed, the Fed also refused to intervene in a number of cases over this period. See Schwartz, *supra* note 38, at 283–86.

277. See generally Charles W. Calomiris, *Is the Discount Window Necessary? A Penn Central Perspective*, 76:3 FED. RES. BANK ST. LOUIS REV. 31 (1994) (describing the Penn Central episode). For a critical view of this intervention, see Schwartz, *supra* note 36.

278. Calomiris, *supra* note 277, at 41–42. While the Fed did not release a statement in this regard, the Wall Street Journal reported that a Fed official had indicated “that the circumstances imply a liberal stance towards any banks finding it necessary to borrow temporarily from a district Reserve Bank.” See *Reserve Suspends Interest Limits on Some Big Deposit Certificates*, WALL ST. J. (June 24, 1970). Ultimately, the anticipated breakdown of the commercial paper market never materialized and the Fed was not required to provide liquidity support.

279. See Carlson & Wheelock, *supra* note 251, at 23–25 (describing the Fed's intervention and subsequent purchase of the bank's foreign exchange positions).

280. *Id.*

281. Humphrey, *supra* note 252, at 354.

282. See, e.g., Domanski et al., *supra* note 13; Colleen Baker, *The Federal Reserve as Last Resort*, 46 U. MICH. J.L. REFORM 69 (2012); Alexander Mehra, *Legal Authority in Unusual and Exigent Circumstances: The Federal Reserve and the Financial Crisis*, 13 U. PA. J. BUS. L. 221 (2011); Calomiris, *supra* note 277; Carlson & Wheelock, *supra* note 251; Tucker, *supra* note 31; Humphrey, *supra* note 251.

283. See Mark Carlson et al., *Why Do We Need Both Liquidity Regulations and a Lender of Last Resort? A*

more expansive definition, have estimated that the total amount of assistance provided by the Fed over the course of the crisis was likely in excess of \$29 trillion.²⁸⁴ This assistance included not only almost a trillion dollars in liquidity support to the U.S. financial system, but also more than \$500 billion to foreign banks and other financial institutions through a series of U.S. dollar swap lines with other major central banks.²⁸⁵

The scale of the Fed's response underscores just how far it had come since the Great Depression in embracing its role as the U.S. lender of last resort. So too did its scope. Indeed, one of the most remarkable features of the Fed's response was the lengths that it went to provide liquidity support across the entire U.S. financial system (see Figure 3). The Fed's initial response was to relax the terms upon which banks could secure funding at its discount window. This involved gradually reducing the interest rate on discount window loans, increasing the maximum duration of these loans (from overnight, to 30, and then 90 days), and giving recipients the option to renew these loans at their discretion.²⁸⁶ In order to combat the potential stigma associated with discount window lending,²⁸⁷ the Fed subsequently established the Term Auction Facility as an alternative source of short-term financing.²⁸⁸ As the crisis deepened, the Fed also established a number of ad hoc mechanisms designed to provide liquidity support to financial markets and institutions outside the perimeter of the regulated banking system. This included mechanisms targeting primary dealers, money market mutual funds, and both the asset-backed commercial paper (ABCP) and asset-backed securities (ABS) markets.

Perspective from the Federal Reserve Lending during the 2007-09 U.S. Financial Crisis 2 (Fed. Res. Sys., Division of Research & Stat. & Monetary Affairs, Fin. & Econ. Discussion Series, Working Paper No. 2015-011, 2015).

284. See James Felkerson, *\$29,000,000,000,000: A Detailed Look at the Fed's Bailout by Funding Facility and Recipient 1*, 11 (Levy Econ. Institute, Working Paper No. 698, 2011), http://www.levyinstitute.org/pubs/wp_698.pdf [<https://perma.cc/XV2E-3FK2>].

285. See ALLEN, *supra* note 13, at 113 (reporting the number at over \$557 billion).

286. See Carlson et al., *supra* note 283, at 15.

287. See Domanski et al., *supra* note 13, at 10–11 (discussing the stigma attaching to conventional discount window lending during the financial crisis); see also Carlson & Wheelock, *supra* note 251, at 32–33 (describing the perceived stigma); Carlson et al., *supra* note 283 (describing the stigma).

288. Carlson et al., *supra* note 283, at 15–16.

Figure 3: The Fed's Response to the Financial Crisis

Facility	Target recipients	Description/ key terms
Primary Credit Facility (Discount Window)	Banks	<ul style="list-style-type: none"> Interest rate on loans decreased from 100 to 25 bps Maximum duration increased from overnight to 90 days
Term Auction Facility (TAF)	Banks	<ul style="list-style-type: none"> Auctions of credit with a duration of up to 3 months Interest rates determined by the auction process, subject to a floor
Primary Dealer Credit Facility (PDCF)	Primary dealers	<ul style="list-style-type: none"> Overnight loans, with eligible collateral initially including US government securities, along with agency and investment grade debt Eventually expanded to include all collateral eligible for use in the triparty repo market, including some whole loans and below investment grade debt
Term Securities Lending Facility (TSLF)	Primary dealers	<ul style="list-style-type: none"> Auctions of loans of US government securities, initially in exchange for US government securities, agency debt, agency mortgage-backed securities, and private label mortgage-backed securities with a triple-A rating Eventually expanded to cover all investment grade debt securities
Commercial Paper Funding Facility (CPFF)	Commercial paper market	<ul style="list-style-type: none"> Extended credit to SPV to purchase three-month unsecured paper from eligible ABCP issuers.
Asset-backed Commercial Paper Market Mutual Fund Liquidity Facility (AMLF)	Commercial paper market Money market mutual funds	<ul style="list-style-type: none"> Extended credit to banks to finance purchase of asset-backed commercial paper
Money Market Investor Funding Facility (MMIFF)	Money market mutual funds	<ul style="list-style-type: none"> Extended credit to SPV to finance purchase of eligible certificates of deposit, bank notes, and commercial paper from eligible money market funds
Direct Money Market Mutual Fund Lending Facility (DMLF)	Money market mutual funds	<ul style="list-style-type: none"> Direct purchases of eligible certificates of deposit, bank notes, and commercial paper from eligible money market funds
Term Asset-Backed Securities Loan Facility (TALF)	ABS markets	<ul style="list-style-type: none"> Extended credit to investors to finance purchases of eligible ABS

The other significant feature of the Fed's response was the extensive use of its authority under Section 13(3). The Fed used Section 13(3) as the legal basis for providing emergency liquidity assistance to primary dealers (under the TSLF), money market funds (under the AMLF and MMIFF), and to both the asset-backed commercial paper (CPFF) and ABS (TALF) markets.²⁸⁹ The Fed also used its Section 13(3) authority to provide targeted support to individual markets and institutions. This included the \$29 billion dollar overnight loan that enabled J.P. Morgan to purchase Bear Stearns in March 2008.²⁹⁰ Six months later, the Fed would again use Section 13(3) as the legal basis for establishing and funding the special purpose vehicles through which it rescued struggling insurance giant AIG.²⁹¹ The extensive use of Section 13(3) reflected the importance of non-bank financial intermediation—shadow banking—in credit and money creation, along with the susceptibility of the shadow banking system to the same type of destabilizing liquidity problems as conventional deposit-taking banks.²⁹²

This is not to suggest that the Federal Reserve used its emergency lending authority

289. See Gorton & Metrick, *supra* note 242, at 59.

290. See *Actions by the New York Fed in Response to Liquidity Pressures in Financial Markets: Hearing Before the U.S. Comm. on Banking, Housing, and Urban Affairs*, 110th Cong. (2008), <https://www.newyorkfed.org/newsevents/speeches/2008/gei080403.html> [<https://perma.cc/MK8L-3XRQ>] (testimony of Timothy Geithner).

291. See Congressional Oversight Panel, *The AIG Rescue, Its Impact on Markets, and the Governments Exit Strategy* 56–60 (June 10, 2010), https://fraser.stlouisfed.org/files/docs/historical/fct/cop_report_20100610.pdf [<https://perma.cc/WW7F-QTUS>].

292. See Zoltan Pozsar et al., *Shadow Banking*, 19 FED. RES. BANK N.Y. ECON. POL'Y REV. 1, 13 (2013).

indiscriminately. Indeed, the Fed's most controversial loan was the one that it never made. Precisely why the Fed elected not to rescue Lehman Brothers is a matter of some debate. In his best-selling account of the crisis, *Too Big To Fail*, journalist Andrew Ross Sorkin suggests that the decision was motivated by the desire to constrain moral hazard and avoid the inevitable political fallout from bailing out the embattled investment bank.²⁹³ Senior Fed officials, meanwhile, have often pointed to the failure to identify a suitable private sector purchaser for Lehman, along with legal constraints on its emergency lending authority. In his 2010 testimony before the Financial Crisis Inquiry Commission, for example, Thomas Baxter, then General Counsel to the Federal Reserve Bank of New York, stated that Lehman was not in a position to pledge sufficient collateral to secure a loan from the Fed.²⁹⁴ In Baxter's view, this served to distinguish Lehman from the rescues of both Bear Stearns and AIG.²⁹⁵ As explained by former Federal Reserve Board Chairman Ben Bernanke, Lehman's inability to pledge collateral to the satisfaction of the Fed—as required by Section 13(3)—thus made its failure essentially “unavoidable.”²⁹⁶

The Fed's response to the global financial crisis marked the highpoint for convergence between the LOLR regimes in the United States and United Kingdom. Reflecting the spirit (if not always the technical letter) of Bagehot's Rule, both the Fed and Bank of England lent freely during the crisis—not only to banks, but, especially in the case of the Fed, to a diverse range of dealers, money market funds, and other financial institutions. This lending was provided through a combination of discount window lending, ad hoc liquidity facilities such as the SLS and TAF, and more bespoke facilities targeting individual institutions. As the crisis intensified, the Fed also resorted to direct purchases of “toxic” assets. While the Bank of England did not follow suit, it has since acknowledged that these MMLR operations could play an important role in responding to future crises. Accordingly, while the two central banks may have travelled very different paths, they both arrived at essentially the same response to the devastating panic that struck the global financial system between 2007 and 2009.

This convergence would prove short-lived. Unlike the United Kingdom, the ad hoc liquidity facilities established in the United States were dismantled at the end of the crisis.²⁹⁷ More importantly, and notwithstanding the fact that its emergency lending had been fully collateralized and not resulted in any losses,²⁹⁸ the Fed found itself the target of

293. ANDREW ROSS SORKIN, *TOO BIG TO FAIL: INSIDE THE BATTLE TO SAVE WALL STREET* 282, 303 (2009).

294. *Too Big To Fail: Expectations and Impact of Extraordinary Government Intervention and the Role of Systemic Risk in the Financial Crisis: Testimony before the Financial Crisis Inquiry Commission*, Washington, D.C., 111th Cong. (2010), <https://www.newyorkfed.org/newsevents/speeches/2010/bax100901> [<https://perma.cc/Q3UN-UUEH>] (statement of Thomas Baxter).

295. *Id.* In the former case, the Fed's \$29 billion loan was secured by \$30 billion in collateral, with J.P. Morgan taking a first loss position of \$1 billion. In the latter case, the Fed's loans were collateralized by AIG's assets: including most importantly its profitable insurance operations.

296. See Ben Bernanke, Chairman, *Federal Reserve Policies in the Financial Crisis*, FED. RES. (Dec. 1, 2008), <http://www.federalreserve.gov/newsevents/speech/bernanke20081201a.htm> [<https://perma.cc/6T83-9UUQ>].

297. An important exception being the U.S. dollar swap lines with other major central banks.

298. Where liquidity support was provided through the discount window or TAF, the Fed required recipients to pledge collateral in excess of the loan amount. The Fed was also a senior creditor with full recourse to the assets of the recipient beyond the pledged collateral. See Carlson et al., *supra* note 283, at 16–17. While seven recipients of discount window or TAF loans eventually defaulted, the Fed was fully repaid in each case. *Id.* Similarly, the Fed did not experience any losses—and indeed realized notional profits—in connection with the

a fierce political backlash.²⁹⁹ Many observers objected on principled grounds: arguing that the Fed's actions had not complied with Bagehot's Rule,³⁰⁰ that they had strayed into the realm of fiscal policy,³⁰¹ or that they generated moral hazard problems that would sow the seeds of future crises.³⁰² Others objected on the grounds that the Fed had exceeded its legal authority—in particular under Section 13(3).³⁰³ Others still objected to the allegedly clandestine way that the Fed had provided liquidity support during the crisis.³⁰⁴ And then there was the general public, who were understandably angry with both Wall Street and Washington, but who did not necessarily draw a sharp distinction between LOLR operations and taxpayer-funded bailouts. At the root of each of these criticisms was the same fundamental diagnosis: the Fed had too much power, exercised too much discretion, and needed to be brought to heel.

This political backlash emboldened Congress to introduce significant new constraints on the Fed's emergency lending authority. Pursuant to Section 1101 of the Dodd-Frank Act, the Fed is now prohibited from providing support under Section 13(3) without the prior approval of the Treasury Secretary.³⁰⁵ This prohibition is accompanied by an obligation to provide reports to Congress disclosing the justification for the Fed's decision to exercise its authority under Section 13(3), the identity of any recipients, and the amount and material terms of each loan.³⁰⁶ These procedural requirements are designed to subject Fed decision-making to a higher level of political oversight in the context of any future crisis.

The Dodd-Frank Act also imposes a series of substantive requirements designed to ensure that loans under Section 13(3) are made exclusively for the purpose of providing liquidity support and not bailing out fundamentally insolvent institutions. To this end, the Act requires the Fed to establish ex ante policies and procedures governing its emergency lending programs.³⁰⁷ This includes an obligation to ensure that the collateral packages pledged in exchange for emergency loans are sufficient to protect taxpayers from losses.³⁰⁸ To ensure that taxpayers are sufficiently protected, the Fed is then required to calculate a

liquidity facilities established under Section 13(3).

299. See Gorton & Metrick, *supra* note 242, at 61.

300. See, e.g., Marvin Goodfriend, *The Elusive Promise of Independent Central Banking*, MONETARY & ECON. STUD. 39, 40–41 (2012).

301. See, e.g., Marvin Goodfriend, *Central Banking in the Credit Turmoil: An Assessment of Federal Reserve Practice*, 58 J. MONETARY ECON. 1 (2011).

302. See Goodfriend, *supra* note 300, at 41, 48–49.

303. See, e.g., Chad Emerson, *The Illegal Actions of the Federal Reserve: An Analysis of How the Nation's Central Bank has Acted Outside the Law in Responding to the Current Financial Crisis*, 1 WM. & MARY BUS. L. REV. 109 (2010); see also Thomas Porter, *The Federal Reserve's Catch-22: A Legal Analysis of the Federal Reserve's Emergency Powers*, 13 N.C. BANK. INST. 483 (2009); see also Mehra, *supra* note 282.

304. See, e.g., *An Examination of the Extraordinary Efforts by the Federal Reserve Bank to Provide Liquidity in the Current Financial Crisis: Hearing Before the House Committee on Financial Services*, 111th Cong. 72 n.1 (2009) (Rep. Spencer Bachus criticizing the “unprecedented interventions into the financial markets” with “no disclosure” and “little oversight or accountability”).

305. Dodd-Frank Act, Pub. L. No. 111-203, 124 Stat. 1376, § 1101 (2010).

306. *Id.*

307. *Id.*

308. *Id.* This obligation is arguably less onerous than an earlier draft bill that would have required the board of a reserve bank to conclude that there was “a 99% likelihood” that both the principal and interest on any loan would be repaid. See The Wall Street Reform and Consumer Protection Act of 2009, H.R. 4173, 111th Cong. § 1701 (2010). The same draft bill would have also capped total lending under Section 13(3) at \$4 trillion. *Id.*

“lendable value” for all collateral: necessitating both an evaluation of its riskiness and a determination of the appropriate haircut.³⁰⁹ Unlike the Bank of England, however, the Fed is not required to ensure that eligible financial institutions pre-position this collateral. Lastly, the Dodd-Frank Act prohibits the Fed from using its Section 13(3) authority to provide targeted liquidity support to individual institutions. Instead, the Fed is now only permitted to extend loans under Section 13(3) as part of a “program or facility with broad-based eligibility.”³¹⁰ Section 716 of the Act also prohibits the Fed from providing any assistance to derivatives dealers or other major counterparties outside the confines of these programs or facilities.

These new requirements impose significant constraints on the ability of the Fed to provide liquidity support outside the conventional banking system. Had these restrictions been in place before the crisis, they would have almost certainly prevented the Fed from extending emergency loans to Bear Stearns and AIG.³¹¹ They might have also prevented the Fed from providing liquidity support to both the ABCP and ABS markets.³¹² Despite its clear legal mandate to act as the U.S. lender of last resort, the Federal Reserve will thus enter the next crisis with significantly less authority than it wielded at the height of the global financial crisis.

V. EXPLAINING THE GROWING DIVERGENCE

How did we get here? Two financial superpowers. The namesakes of the Anglo-American model of financial capitalism. Both rocked by the global financial crisis. Both publicly committed to greater regulatory harmonization in order to prevent the next one. And yet somehow the paths of these two countries have diverged on perhaps the single most fundamental question in all of financial regulation: the scope of the financial safety net. This Part explores some of the possible explanations for this growing divergence: concentrating on the role of ideology, politics, and history as potential drivers. Collectively, these drivers may not tell the whole story. Nor is it possible to accurately measure their relative influence or, indeed, the complex and interdependent relationship between them. Nevertheless, these drivers tell a fundamentally compelling, consistent, and interwoven story that sheds significant light on this important and intriguing puzzle.

A. Ideological Influences

The first possible explanation for the divergence stems from the relative influence of monetarist thinking on the development of the LOLR regimes in the United States and United Kingdom. While there are several strands of monetarist thought, the foundations of monetarism reside in the Quantity Theory of Money. The Quantity Theory states that the money supply multiplied by the rate (or velocity) at which money changes hands equals the number of goods and services sold in an economy (GDP) multiplied by the average

309. Dodd-Frank Act, § 1101.

310. *Id.* A notable exception being Section 806, which grants the Federal Reserve the authority to provide credit or liquidity assistance in “unusual or exigent circumstances” to clearinghouses and other designated financial market utilities.

311. On the basis that this support was not part of a program or facility with broad-based eligibility under the revised Section 13(3).

312. On the basis that the Fed might not be able to calculate a “lendable value” for the assets that recipients would be required to post as collateral.

price paid for these good and services.³¹³ Importantly, many early monetarists viewed the velocity of money as stable, thus implying that both short-term GDP and long-term price levels are a function of the money supply.³¹⁴ Where the money supply increases, we should therefore observe an increase in the price of goods and services—known more commonly as inflation. For monetarists, this relationship between the money supply and inflation has several important policy implications. First, insofar as central banks are able to exercise control over the money supply, they should be able to influence the level of inflation within an economy.³¹⁵ Second, large spikes in the supply of money are the cause of rampant inflation, while large contractions are the cause of deflation and economic downturns. Central banks should therefore target a slow and steady increase in the money supply over time and, as we have already seen, combat any widespread contractions in the money supply by pumping high-powered base money into the financial system.³¹⁶ Lastly, and most controversially, if inflation is ultimately a monetary phenomenon, there is little or no constructive role for discretionary fiscal policy in stabilizing an economy.

While the origins of the Quantity Theory can be traced back to the writings of David Hume³¹⁷ and Irving Fisher,³¹⁸ the rise of monetarism is typically associated with economist Milton Friedman. In 1956, Friedman published a paper attempting to mathematically model the Quantity Theory.³¹⁹ This was followed by a series of publications exploring the theory and its application, culminating in the 1966 publication of his highly influential treatise, co-authored with Anna Schwartz, *A Monetary History of the United States, 1867–1960*.³²⁰ Consistent with the core predictions of the Quantity Theory, Friedman and Schwartz found a strong relationship between the money supply and the health of the U.S. economy. These findings were sharply at odds with the conventional Keynesian wisdom that viewed inflation as primarily demand-driven, interest rates as the correct target of monetary policy, and discretionary monetary and fiscal policy as important and complementary tools for economic stabilization.³²¹

313. Expressed more formally, the Quantity Theory states that $mv=py$, where m is money supply, v is the velocity of money, p is the price level, and y is national income (GDP).

314. An increase in the money supply would have a short-term impact on GDP because wages and prices typically take time to adjust. Once this adjustment takes place, however, the Quantity Theory implies that there would be no lasting impact on GDP.

315. In order to ensure that central banks were able to exercise control over the money supply, leading monetarists proposed the elimination of fractional reserve banking—i.e. 100% reserve requirements—designed to eliminate shifts in deposit-reserve and deposit-currency ratios. See MILTON FRIEDMAN, *A PROGRAM FOR MONETARY STABILITY* (Fordham University Press, New York, 1960) (discussing the shortcomings of fractional reserve banking).

316. Milton Friedman, for example, proposed a hard and fast rule whereby the central bank would increase the money supply by a fixed percentage each year. *Id.*

317. See David Hume, *Of Money*, in WRITINGS ON ECONOMICS (2017).

318. See IRVING FISHER, *THE PURCHASING POWER OF MONEY* (1912); see also IRVING FISHER, *THE RATE OF INTEREST* (1907); see also IRVING FISHER, *APPRECIATION AND INTEREST* (1896).

319. See Milton Friedman, *The Quantity Theory of Money: A Restatement*, in STUDIES IN THE QUANTITY THEORY OF MONEY (1956).

320. FRIEDMAN & SCHWARTZ, *supra* note 32; see also Milton Friedman, *A Monetary and Fiscal Framework for Economic Stability*, 38 AM. ECON. REV. 245 (1948).

321. Rik Hafer & David Wheelock, *The Rise and Fall of a Policy Rule: Monetarism at the St. Louis Fed, 1968-1986*, 83 FED. RES. BANK ST. LOUIS ECON. REV. 1 (2001). Many Keynesians, in turn, believing that the velocity of money was inherently unstable, argued in favor of activist monetary and fiscal policy and against the adoption of rigid money supply targets.

Within a few short years, however, the ideological tide would begin to ebb toward monetarist thinking. As early as 1966, the Federal Open Market Committee (FOMC) stated that its policy was “to resist inflationary pressures by . . . restricting growth in the reserve base, bank credit, *and the money supply*.”³²² In 1968, the Federal Reserve Bank of St. Louis published an econometric study examining the relative impact of monetary versus fiscal policy on economic growth, finding that changes in the money stock exerted a far greater influence on GDP than fiscal stimulus.³²³ And from March 1970 onward, the FOMC explicitly acknowledged its “desire”—echoing monetarist thinking—to “see moderate growth in money and bank credit.”³²⁴ As Rik Hafer and David Wheelock have observed, this shift reflected what was by this time a growing body of empirical evidence supporting the Quantity Theory.³²⁵ Equally important, many observers viewed monetarism as accurately diagnosing the underlying cause of the dramatic spike in inflation in the United States and elsewhere during the 1970s. Ultimately, it was this rampant inflation that compelled Paul Volcker to launch the Federal Reserve’s famous “monetarist experiment”³²⁶ in October 1979: abandoning the Fed’s historical policy of targeting interest rates within wholesale money markets in favour of strict and restrictive money supply targets.³²⁷

Volcker’s experiment would be the high point for monetarist influence on U.S. monetary policy. While the Fed’s restrictive money supply targets would eventually tame inflation, they also plunged the United States into a painful recession.³²⁸ Compounding matters, the previously stable relationship between the money supply, the velocity of money, inflation, and economic growth started to break down in the early 1980s.³²⁹ This seriously undermined the rationale for using the money supply as the lodestar of monetary policy.

The influence of monetarism over the subsequent decades has been a matter of considerable—and often heated—debate. This debate essentially boils down to what we mean by “monetarism.”³³⁰ If we define monetarism narrowly as advocating the use of

322. Report of the Federal Reserve Board (1966), *cited in* Andrew Brimmer, *The Political Economy of Money: Evolution and Impact of Monetarism in the Federal Reserve*, 62 AM. ECON. REV. 344, 348 (1972) (emphasis added).

323. See Leonall Andersen & Jerry Jordan, *Monetary and Fiscal Actions: A Test of Their Relative Importance in Economic Stabilization*, FED. RES. BANK ST. LOUIS REV. 11 (1968).

324. Report of the Federal Reserve Board (1970) at 110, *cited in* Brimmer, *supra* note 322, at 348.

325. Hafer & Wheelock, *supra* note 321, at 16.

326. For his part, Milton Friedman saw the Fed’s monetarist experiment as not reflecting the monetarist objective of gradual and steady increases in the money supply. See Milton Friedman, *Lessons from the 1979-82 Monetary Experiment*, 74 AM. ECON. REV. 397 (1984).

327. For a discussion of this experiment, see Marvin Goodfriend & Robert King, *The Incredible Volcker Disinflation*, 52 J. MONETARY ECON. 981 (2005).

328. Hafer & Wheelock, *supra* note 321, at 16.

329. See, e.g., Kundan Kishor & Levis Kochin, *The Success of the Fed and the Death of Monetarism*, 45 ECON. INQUIRY 56 (2007); see also Arturo Estrella & Frederic Mishkin, *Is There a Role for Monetary Policy Aggregates in the Conduct of Monetary Policy*, 40 J. MONETARY ECON. 279 (1997); James Stock & Martin Feldstein, *Measuring Money Growth When Financial Markets are Changing*, 37 J. MONETARY ECON. 3 (1994); see also Gerald Dwyer & Rik Hafer, *Is Money Irrelevant?*, 70 FED. RES. BANK ST. LOUIS REV. 3 (1988). Possible explanations for this shift include changes in banking regulation in the early 1980s, along with the introduction of financial innovations such as interest bearing checking accounts and money market funds that competed with traditional bank deposits. See Hafer & Wheelock, *supra* note 321.

330. For a flavor of this debate, see Robert Hetzel, *Does Monetarism Retain Relevance?*, 98 ECON. Q. 77

strict money supply targets, then monetarist thinking has had almost no lasting impact on the theory or practice of central banking.³³¹ Alternatively, if we view monetarism more broadly as encompassing a conscious acknowledgement of the influence of the money supply on inflation, economic growth, and financial stability, then its impact has been more pervasive and enduring.³³² Thus, for example, the adoption of explicit inflation targets by the Fed, Bank of England, and other major central banks in recent decades can arguably be viewed as reflecting core monetarist principles.³³³ And perhaps most importantly, the Fed's response to the global financial crisis—which involved pumping trillions of dollars into the financial system—drew heavily on the insights of the monetarist school.³³⁴

While the influence of monetarist thinking may now be somewhat limited—or at least more subtle—in the realm of monetary policy, it has had a far more lasting impact on how we think about the function and design of LOLR regimes. As described in Part I, the monetarist school views these regimes as designed to prevent broad-based contractions in the money supply. For this reason, monetarists argue that LOLR operations should generally take the form of OMO targeting money markets as a whole. As a corollary, monetarists often express a strong antipathy towards the extension of liquidity support to individual banks, or to financial institutions that are not large and active participants within wholesale money markets. This position is then often bolstered by the argument that targeted support to individual institutions will encourage socially excessive risk-taking. Monetarist thinking thus provides a degree of intellectual cover for “moral hazard fundamentalists”³³⁵ that reflexively object to government support for the financial system. As we shall see, it also dovetails with the U.S. political culture that includes an engrained distrust of both Big Government and Big Banks.

Viewed from this vantage point, the influence of monetarist thinking on Congress's

(2012); see also Michael Woodford, *How Important is Money in the Conduct of Monetary Policy?*, 40 J. MONEY, CREDIT & BANKING 1561 (2008); see also Edward Nelson & Anna Schwartz, *The Impact of Milton Friedman on Modern Monetary Economics: Setting the Record Straight on Paul Krugman's "Who Was Milton Friedman?"*, 55 J. MONETARY ECON. 835 (2008); see also Brad DeLong, *The Triumph of Monetarism?*, 14 J. ECON. PERSP. 83 (2000).

331. See Paul Krugman, *Who was Milton Friedman?*, 54 N.Y. REV. BOOKS 27 (2007) (describing monetarism).

332. See generally Woodford, *supra* note 330 (arguing that the money supply continues to be incorporated into economic models used by central banks, but as only one of several important variables); see also Nelson & Schwartz, *supra* note 330 (arguing that many core monetarist principles are now reflected in New Keynesian approaches to monetary policy); see also DeLong, *supra* note 330 (arguing that New Keynesian approaches are based on core monetarist principles); see also Alexandre Reichart & Abdelkader Slifi, *The Influence of Monetarism on Federal Reserve Policy During the 1980s*, 70 CAHIERS D'ECONOMIE POLITIQUE 107 (2016).

333. Nelson & Schwartz, *supra* note 330, at 15 (“While much of the discussion of monetarism in the 1970s policy debates was formulated in terms of monetary aggregates, it was clear even in the 1970s that a distinguishing feature of monetarism was the responsibility it assigned to monetary policy for the control of inflation.”).

334. That Ben Bernanke's approach to financial crisis management was heavily influenced by monetarist thinking can be seen in his remarks at Milton Friedman's 90th birthday party: “Let me end my talk by abusing slightly my status as an official representative of the Federal Reserve. I would like to say to Milton and Anna: Regarding the Great Depression. You're right, we did it. We're very sorry. But thanks to you, we won't do it again.” Ben Bernanke, Governor, Fed. Res., On Milton Friedman's Ninetieth Birthday, Remarks at the Conference to Honor Milton Friedman, University of Chicago (Nov. 8, 2002).

335. See Lawrence Summers, *Beware Moral Hazard Fundamentalists*, FIN. TIMES (Sept. 23, 2007), <https://www.ft.com/content/5ffd2606-69e8-11dc-a571-0000779fd2ac> [https://perma.cc/Y2RJ-K5XU] (“In the financial arena the spectre of moral hazard is invoked to oppose policies that reduce the losses of financial institutions that have made bad decisions.”).

recent reforms to the Federal Reserve's emergency lending authority come into sharp relief. As described in Part III, Section 1101 of the Dodd-Frank Act amended Section 13(3) of the Federal Reserve Act to require that emergency liquidity assistance to institutions other than conventional deposit-taking banks take place under a "program or facility with broad-based eligibility."³³⁶ This requirement reflects monetarist thinking in two important respects. First, it reflects the monetarist conviction that LOLR operations should target money markets as a whole and not individual institutions. Second, and as a consequence, it goes some distance toward addressing monetarist concerns that LOLR operations will be used to bailout systemically or politically important institutions, thereby encouraging socially excessive risk-taking, and fomenting potential moral hazard problems.

Monetarist fingerprints are also reflected in the Dodd-Frank Act's approach to the provision of liquidity support to derivatives clearinghouses and other financial market utilities (FMUs). Pursuant to 806(b) of the Dodd-Frank Act, for example, the Fed is now only authorized to provide emergency liquidity assistance to clearinghouses and other FMUs in "unusual or exigent circumstances."³³⁷ This liquidity assistance is subject to a majority vote by the Fed Board of Governors and contingent upon the relevant FMU establishing that it is unable to secure adequate liquidity from private sources. At first glance, this restriction may seem somewhat puzzling given the enormous size, interconnectedness, and systemic importance of clearinghouses, payment systems, and other FMUs. After all, designated FMUs are those which the Financial Stability Oversight Council has deemed to pose a significant threat to U.S. financial stability. Viewed from a monetarist perspective, however, the rationale is both logical and relatively straightforward. Specifically, since FMUs generally play little or no role within wholesale money markets, and cannot readily purchase or sell government securities as part of the Fed's OMO, it makes little sense to target them as part of any LOLR operations. Put simply: since FMUs do not influence the money supply, they should not generally be eligible to receive emergency liquidity assistance.

In many respects, the rise and fall of monetarism in the United Kingdom closely mirrored its trajectory in the United States. Indeed, the United Kingdom flirtation with monetarism actually began somewhat earlier: attracting serious attention from both the financial press and policymakers in the late 1950s.³³⁸ Like the Fed, both HM Treasury³³⁹ and the Bank of England then began explicitly incorporating monetarist thinking in the late 1960s.³⁴⁰ As inflation rose during the 1970s, successive Labour and Conservative governments experimented with monetarist policies.³⁴¹ The height of monetarist influence in the United Kingdom would then arrive in 1979 with the election of Margaret Thatcher, who introduced medium-term money supply targets in March 1980 that contemplated a

336. Dodd-Frank Act, Pub. L. No. 111-203, 124 Stat. 1376, § 1101 (2010).

337. *Id.*

338. See Edward Nelson, *Milton Friedman and U.K. Economic Policy: 1938-1979*, FED. RES. BANK ST. LOUIS REV. 465, 480 (2009) (describing Financial Times coverage, along with speeches by Harold Macmillan and various Treasury officials).

339. Unlike the Federal Reserve, the Bank of England did not achieve operational independence from government until 1997. The United Kingdom government, and specifically HM Treasury, thus played an important role in setting United Kingdom monetary policy.

340. See Aled Davies, *The Evolution of British Monetarism: 1968-1979* 1, 5-5 (U. of Oxford, Discussion Papers in Econ. & Soc. Hist. No. 104, 2012) (describing the influence of monetarism on British policy).

341. See *id.* at 3 (describing monetarist policies to combat inflation).

steady decline in the growth of the money supply over a four year period.³⁴² As it had in the United States, this policy successfully tamed inflation, but also triggered a deep recession. In response, the Thatcher government introduced more discretionary targets in 1982, before abandoning money supply targets altogether in 1985.

In other important respects, however, the United Kingdom's monetarist experiment has had a far less lasting impact. As a preliminary matter, the United Kingdom was home to some of monetarism's most high profile and effective critics, including economists Nicholas Kaldor, John Hicks, Richard Kahn, and Alec Cairncross.³⁴³ This may have helped foster an intellectual environment that was less prone to ideological capture. Perhaps more importantly, as observed by Aled Davies, Peter Hall, and others, the adoption of monetarist policies by HM Treasury and the Bank of England during the 1970s ultimately reflected highly pragmatic policy considerations.³⁴⁴ Specifically, as participants in Sterling money markets began using money supply measures as a benchmark for evaluating the United Kingdom's commitment to tackling rising inflation, the government's failure to adopt money supply targets served to erode market confidence in its fiscal and monetary policies.³⁴⁵ This put pressure on the government to either adopt money supply targets or pay the political costs of being painted as too slow in responding to mounting inflationary pressures.³⁴⁶ Accordingly, while there was no shortage of free market ideologues in Thatcher's government, the shift toward monetarism in the United Kingdom—which in any event began well before the 1979 election—was not driven by a deep-seated belief in core monetarist principles.³⁴⁷

As we shall see, the monetarist position regarding the relative impotence of fiscal policy was also at odds with the prevailing political culture in the United Kingdom which saw an important role for government intervention in economic stabilization. When market conditions changed in the early 1980s, the government thus had little reason to continue its experiment in pragmatic monetarism. Over the course of the next three decades, monetarist thinking would continue to exert some influence on the Bank of England's approach to monetary policy, especially under former Governor Mervyn King. Yet the Bank's pragmatic approach prevented monetarist principles from dictating how it approached its responsibilities as the United Kingdom's lender of last resort. In the aftermath of the financial crisis, this pragmatism was reflected in the lack of institutional support within Parliament or the Bank for the type of strict legal constraints that Congress ultimately imposed on the Federal Reserve's emergency lending authority.

342. The Medium Term Financial Strategy launched in March 1980 included a target for steadily declining growth in money supply over four years: from 7-11% in 1980-1981 to 4-8% in 1983-1984. This was combined with a targeted reduction in the budget deficit from 3.75% of GDP in 1980-1981 to 1.5% by 1983-1984. For further details, see Marcus Miller, *The Medium Term Financial Strategy: An Experiment in Coordinating Monetary and Fiscal Policy*, 2 FISCAL STUD. 50, 53 (1981).

343. Nelson, *supra* note 338, at 466.

344. See FORREST CAPIE, *THE BANK OF ENGLAND: 1950S TO 1979* (2010); see also Peter Hall, *Policy Paradigms, Social Learning, and the State: The Case of Economic Policymaking in Britain*, 25 COMP. POL. 275, 283-84 (1993); see also Davies, *supra* note 340, at 3.

345. Davies, *supra* note 340, at 19.

346. *Id.* at 23.

347. See CAPIE, *supra* note 344, at 452; see also Davies, *supra* note 340, at 8.

B. Political Culture and Economy

The second possible explanation for the divergence stems from differences in both the prevailing political culture in the United States and United Kingdom,³⁴⁸ along with the domestic political economy of financial regulation.³⁴⁹ Central bank policy decisions have enormous distributional consequences: pitting creditors against debtors, savers against spenders, and “too big to fail” banks and other financial institutions against their smaller, less systemically important competitors. These distributional consequences make the decisions of central banks inherently political.³⁵⁰ While central banks typically enjoy a high degree of operational independence, thus somewhat insulating them from the cut and thrust of day-to-day politics, political forces can still influence central bank policymaking in at least two ways. First, the politicians responsible for appointing central bank governors and other senior officials can use this power to appoint candidates that are predisposed to advancing the interests of politically important constituencies: whether it be bankers, small businesses, homeowners, or even the politicians themselves. Second, as we have seen, these politicians can impose binding legal constraints on the ability of central banks to pursue policies that are viewed as politically unpopular.

It is almost impossible to overstate the historical importance of money and banking in U.S. politics. As described in Part III, the debate over the First Bank of the United States was one of the most controversial tests for the early Republic, creating the schism that would ultimately lead to the establishment of the first modern political parties.³⁵¹ Debates over money and banking would also feature prominently during the Progressive Era of the late 19th and early 20th centuries.³⁵² In 1896, a young firebrand, William Jennings Bryan, won the Democratic nomination for President largely on the strength of his famous “Cross of Gold” speech condemning the twin evils of the Gold Standard and National Banking System.³⁵³ After the Panic of 1907, the 1908 Presidential election featured vigorous debates about whether to expand the role of government in finance: including proposals for national deposit insurance, a postal bank, and a lender of last resort.³⁵⁴ This was followed by the Pujo investigation, which served to shine a spotlight on the “money trust”—the concentration of financial and economic power within a small network of Wall Street firms—famously described by future Supreme Court Justice Louis Brandeis in his popular and influential book *Other People’s Money*.³⁵⁵ A generation later, the Pecora

348. As described by Gabriel Almond and Sidney Verba, a country’s “political culture” includes the “attitudes toward the political system and its various parts, and attitudes toward the rule of the self in the system. It is a set of orientations toward a special set of social objectives and processes.” GABRIEL ALMOND & SIDNEY VERBA, *THE CIVIC CULTURE: POLITICAL ATTITUDES AND DEMOCRACY IN FIVE NATIONS* 4 (1963).

349. The term “political economy” is used to describe models that view regulation and its enforcement as reflecting the power dynamic between competing (and sometimes cooperating) constituencies within a given polity. See generally Marco Pagano & Paolo Volpin, *The Political Economy of Finance*, 17 OXFORD REV. ECON. POL’Y 502 (2001).

350. See Adam Levitin, *The Politics of Financial Regulation and the Regulation of Financial Politics: A Review Essay*, 127 HARV. L. REV. 1991, 1998, 2000 (2014) (book review) (stating “this sort of redistribution of wealth is a political act”).

351. See KATHRYN LAVELLE, *MONEY AND BANKS IN THE AMERICAN POLITICAL SYSTEM* 55 (2013).

352. *Id.* at 42–46.

353. *Id.*

354. See Levitin, *supra* note 350, at 2050–51 (describing the relevant elements of the 1908 Democratic and Republican party platforms).

355. See generally LOUIS BRANDEIS, *OTHER PEOPLE’S MONEY: AND HOW THE BANKERS USE IT* (1914).

hearings would expose the excesses of Wall Street financiers and help galvanize public support for President Roosevelt's New Deal reforms to the structure and regulation of the U.S. banking system.³⁵⁶

Each of these episodes reflected one of the most powerful undercurrents in U.S. political culture: an engrained and enduring distrust of large concentrations of economic and political power.³⁵⁷ While many of the Founding Fathers, most notably Hamilton, saw the First Bank as a means of forging a strong national economy,³⁵⁸ they were also sensitive to the potential problems stemming from the concentration of power in any single institution.³⁵⁹ Similar concerns—combined with a laissez faire frontier philosophy and personal distrust of bankers—motivated President Andrew Jackson's decision to dismantle the Second Bank in 1832.³⁶⁰ Half a century later, the real villain in Bryan's Cross of Gold Speech was not the Gold Standard or National Banking System, but rather the East Coast financial elite that he viewed as wielding power over the small farmers and businesses of the American heartland.³⁶¹ Both the Pujo investigation and Pecora hearings would also tap into this popular distrust of large financial institutions, as would Louis Brandeis, Woodrow Wilson, and FDR.³⁶² Over time, the object of this distrust has oscillated between Wall Street, Big Business, and Washington.³⁶³ What has remained constant, however, is the American public's deeply held suspicion of institutions—whether public or private—that hold power over their right to life, liberty, and the pursuit of happiness.

This entrenched antipathy toward large concentrations of power had an enormous influence on the creation and structure of the Federal Reserve System.³⁶⁴ Senator Nelson Aldrich, one of the early architects of the Fed, once remarked that one of the biggest obstacles to its creation was the ghost of Andrew Jackson.³⁶⁵ Indeed, so sensitive were bankers, Congress, and other constituencies to the prevailing political culture that Aldrich and others insisted that the new institution be described as neither "central" nor as a "bank."³⁶⁶ The same political sensitivities also dictated the Fed's fragmented governance structure: with a central board in Washington and 12 regional reserve banks spread across

356. See Mark Roe, *A Political Theory of American Corporate Finance*, 91 COLUM. L. REV. 10, 38 (1991) (explaining "[t]he Pecora hearings were a conduit for populist sentiment to punish Wall Street").

357. Alexis de Tocqueville observed this feature of the American political landscape during his 1831–32 tour of the United States. See ALEXIS DE TOCQUEVILLE, *DEMOCRACY IN AMERICA* (1835).

358. LAVELLE, *supra* note 351, at 34.

359. In *The Federalist Papers*, Hamilton, James Madison, and John Jay repeatedly raise concerns about concentrations of economic and political power. Others, most notably Jefferson, viewed large financial institutions as anathema to their vision of the United States as a predominantly agrarian society. *Id.* at 43.

360. *Id.*

361. See, for example, the following passage from Bryan's speech to the Democratic National Convention: "On the one side stand the . . . moneyed interests, aggregated wealth and capital, imperious, arrogant, compassionless. . . . On the other side stand an unnumbered throng." Roe, *supra* note 356, at 33 (quoting Bryan's speech).

362. *Id.* at 34–35, 37–38, 43.

363. See *id.* at 32–33 (explaining that Americans prefer that no institution, whether public or private, acquire significant power).

364. As Mark Roe has observed, this distrust is also reflected in various New Deal reforms limiting the power of banks, insurance companies, mutual funds, and other financial institutions to exert influence or control over commercial enterprises. *Id.* at 16–31.

365. ROGER LOWENSTEIN, *AMERICA'S BANK: THE EPIC STRUGGLE TO CREATE THE FEDERAL RESERVE* 101, 187 (2016).

366. *Id.* at 101.

the continental United States. As Charles Calomiris has observed, this structure reflected a delicate political compromise designed to minimize concerns about the centralization of power while ensuring sufficient buy-in from both the executive and legislative branches of the federal government.³⁶⁷ The location of the regional reserve banks also reflected concerns about the balance of power between north and south, east and west, bankers and farmers, and urban and rural constituencies.³⁶⁸ Even then, it took the rise of the Progressive Movement, the Crash of 1907, and the election of President Wilson (a former politics professor who had built his academic career studying American federalism), to cobble together the political coalition necessary to create the Federal Reserve System.

Never far from the headlines, the salience of money and banking in U.S. politics has increased dramatically in the wake of the global financial crisis. The crisis and its aftermath provoked widespread anger at both ends of the political spectrum. On the right, resentment about the government bailouts and President Obama's subsequent stimulus package contributed to the emergence of the Tea Party.³⁶⁹ Republican Senator Ron Paul even wrote a book calling for the end of the Federal Reserve: arguing that it is a fundamentally corrupt institution that, from its inception, has consistently advanced the interests of Wall Street at the expense of Main Street.³⁷⁰ On the left, Occupy Wall Street and other similar movements were born out of a parallel concern that large financial institutions had gained control over the political process, along with strong objections to the asymmetric distributional impact of the bailouts.³⁷¹ In particular, Occupy and other movements objected to the fact that government support had been directed to many of the same institutions that they believed had caused the crisis, while providing affected homeowners with little or no relief.³⁷² As Adam Levitin has observed, both the Tea Party and Occupy movements can thus be understood as "sharp repudiations of the financial regulatory system as failing to produce normatively acceptable distributions of wealth in society."³⁷³ Importantly, they also reflect the U.S. preoccupation with large concentrations of economic and political power.

The effects of this political maelstrom were felt by the Fed on at least two levels. First, citing the Fed's response to the financial crisis, several Senators threatened to block the reappointment of Ben Bernanke when his first term expired in January 2010.³⁷⁴ In the end, Bernanke was confirmed by the Senate with only 70 votes: the smallest margin for any Fed chair since its inception.³⁷⁵ Second, and perhaps more importantly, the political pressure from both the right and left almost certainly emboldened Congress to push through the provisions of the Dodd-Frank Act—including the revised Section 13(3)—limiting the authority of the Federal Reserve to respond to future crises.

While the United Kingdom is no stranger to the type of populist politics that has

367. Calomiris, *supra* note 259, at 547.

368. LOWENSTEIN, *supra* note 365, at 270.

369. See LAVELLE, *supra* note 351, at 265; Levitin, *supra* note 350, at 1993, 2022–23.

370. See generally RON PAUL, *END THE FED* (2009).

371. See LAVELLE, *supra* note 351, at 265.

372. See Levitin, *supra* note 350, at 1993, 2007.

373. *Id.* at 1993.

374. See Edmund Andrews, *Bernanke, a Hero to His Own, Can't Shake Critics*, N.Y. TIMES (Aug. 19, 2009), <https://www.nytimes.com/2009/08/20/business/20bernanke.html> [<https://perma.cc/TAA2-ZKEN>]; see also LAVELLE, *supra* note 351, at 96.

375. See LAVELLE, *supra* note 351, at 96.

gripped the United States following the financial crisis, the primary targets of public anger and resentment have been very different. Instead of targeting the excesses of the financial services industry or the government's response to the crisis, these populist movements have largely focused on what they perceive as a distant and bloated E.U. bureaucracy and the threat of uncontrolled immigration from Eastern Europe.³⁷⁶ There are several possible reasons why the political backlash against the financial services industry and government in the United Kingdom was somewhat less pronounced than in the United States.³⁷⁷ The first is that the prevailing political culture is far less suspicious of large concentrations of economic or political power: whether in the form of big banks, Parliament, or the Bank of England. This attitude arguably reflects a fundamentally different political settlement whereby government has responded to the threat of economic dislocation associated with financial liberalization and the maintenance of an open economy by providing a relatively robust social safety net including universal healthcare, comprehensive unemployment insurance, and public housing assistance.³⁷⁸ This safety net—which necessarily envisions a large role for government—has served to insulate citizens from some of the adverse effects of the financial crisis, thereby reducing the political fallout from any government or central bank policy failures.³⁷⁹

A second possible reason why the political backlash has been less pronounced in the United Kingdom stems from key differences in the structure of its banking system, along with the impact of these structural differences on the domestic political economy of financial regulation. The trajectory of financial regulation is often a function of how successfully various constituencies can build and maintain political coalitions.³⁸⁰ In the United States, populist movements on both the left and right found a powerful ally in the community and regional banks that make up a fairly significant segment of the U.S. banking industry.³⁸¹ Many of these smaller banks shared the populist opposition toward bailouts for large financial institutions on the basis that they reinforced the expectation that these institutions would be bailed out in any future crisis. This expectation translated into a lower cost of capital, thereby providing big banks with a significant competitive advantage over their smaller rivals. Equally important, these smaller banks exercised significant political influence through industry trade associations such as the American Bankers Association, and through their primary federal supervisor, the FDIC. Both organizations lobbied Congress vigorously in connection with the Dodd-Frank Act,³⁸²

376. Dani Rodrik, *Populism and the Economics of Globalization*, 1 J. INT'L BUS. POL'Y 1, 13 (2018).

377. Or, at the very least, has taken a different form, targeting a different set of institutions.

378. Rodrik, *supra* note 376, at 16.

379. While post-crisis austerity policies in the United Kingdom have reduced the size and scope of this safety net, it still provides a level of protection against economic shocks that far exceeds that available to many, if not most, U.S. households. This also helps explain why populist elements have tended to focus on immigration: while banks and bankers tend not to be seen as direct competitors for scarce social benefits, there is a widespread (and erroneous) perception that new immigrants to the United Kingdom are a net burden on the social safety net.

380. See CALOMIRIS & HABER, *supra* note 15.

381. For concentration and other information collected by the FDIC relating to the U.S. banking industry, see *Bank Data and Statistics*, FED. DEPOSIT INS. CORP., <https://www.fdic.gov/bank/statistical/> [https://perma.cc/6BLV-783C] (last visited Feb. 5, 2020).

382. The American Bankers Association, for example, incurred lobbying expenses of \$9,417,000 in 2009 and \$7,760,000 in 2010 leading up to the passage of the Dodd-Frank Act. See *Client Profile: American Bankers Assn.*, CTR. FOR RESPONSIVE POL., <https://www.opensecrets.org/lobby/clientsum.php?id=D000000087&year=2010> [https://perma.cc/9VB4-UQKR] (last visited Feb. 5, 2020).

with the FDIC in particular arguing in favour of strict limits on the ability of the Treasury Department and Federal Reserve to undertake future rescue operations.³⁸³ Together, populist movements, community banks, and the FDIC were thus able to form a powerful coalition capable of influencing the direction of post-crisis regulatory reforms.

The fragmented structure of the U.S. banking industry stands in sharp contrast with the United Kingdom, where the four largest banks account for roughly 80% of deposits, mortgages, and commercial lending.³⁸⁴ As the most likely recipients of government support, these systemically important banks have a vested interest in preserving the authority of the Bank of England to determine the nature, timing, and scope of any LOLR operations. Compounding matters, the bailouts of both Northern Rock and Bradford & Bingley sent a strong signal that even smaller banks would receive state support during a crisis. Unlike their United States counterparts, populist movements in the United Kingdom thus found themselves without a powerful coalition partner that might have enabled them to exert a stronger influence on the trajectory of post-crisis reforms.

Lastly, differences in the intensity of the political backlash may reflect important differences in the structure of the bailouts themselves. In the United States, the bailouts were structured as a combination of investments in preferred stock, guarantees, and asset purchases—often on terms that were viewed as highly advantageous to their recipients. Viral Acharya and Raghu Sundaram, for example, estimate that the structure and pricing of FDIC guarantees during the crisis, which imposed a flat fee of 75 basis points on all recipients, generated an industry subsidy of somewhere between \$13-70 billion.³⁸⁵ In the United Kingdom, in contrast, the equivalent guarantees were priced using each recipient's 12-month trailing CDS spread: thus ensuring that the cost of these guarantees reflected a market-based assessment of each firm's risk profile.³⁸⁶ Perhaps more importantly, the structure of the bailouts in the United Kingdom ultimately involved large purchases of common stock—effectively taking many of the recipients into public ownership.³⁸⁷ Crucially, this enabled the government to exercise a relatively high degree of control over these institutions including, for example, removing the senior management teams at both Northern Rock and RBS. The government was also able to recoup at least some of its original investment when these institutions were sold back into private ownership. Whereas the structure of the U.S. bailouts is likely to have aggravated the public's already heightened sense of distributive injustice, the structure of the bailouts in the United Kingdom may have thus diffused some of the political pressure that would have otherwise been brought to bear on the government to introduce legislation that would limit the Bank's ability to provide liquidity support in the context of any future crises.

383. See Levitin, *supra* note 350, at 2016.

384. For a description of the concentration of the U.K. banking industry following the crisis, see UK INDEPENDENT COMMISSION ON BANKING, FINAL REPORT: RECOMMENDATIONS, 165–97 (2011), <https://webarchive.nationalarchives.gov.uk/20120827143059/http://bankingcommission.independent.gov.uk/> [<https://perma.cc/H9NR-Q3N9>].

385. See Viral Acharya & Raghu Sundaram, *The Other Part of the Bailout: Pricing and Evaluating the US and UK Loan Guarantees*, VOX (Oct. 26, 2008), <https://voxeu.org/article/other-part-bailout-pricing-and-evaluating-us-and-uk-loan-guarantees> [<https://perma.cc/8JEB-E667>].

386. Acharya & Sundaram estimate that this pricing structure did not generate a subsidy for recipient banks. *Id.*

387. At their peak, these ownership stakes included 100% of the outstanding common shares of Northern Rock and Bradford & Bingley, 83% of RBS, and 41% of Lloyds.

C. Historical Experience

The third and perhaps most compelling explanation for the growing divergence between the LOLR regimes in the United States and United Kingdom is their vastly different historical experiences. As described in Part II, the global financial crisis was followed by a period of critical self-reflection within the Bank of England. This included the publication of two separate reports evaluating the design of its liquidity support facilities: the Plenderleith Report examining the Bank's LOLR regime and the Winters Report examining its discount window and non-emergency lending facilities.³⁸⁸ The Bank also published a series of research papers exploring its historical experience as a lender of last resort. Several of these papers focused specifically on the Bank's role in responding to the financial crises of 1847, 1857, and 1866.³⁸⁹ As we have seen, these crises followed a predictable pattern. Each crisis was preceded by a period of rapid monetary expansion. This was followed by a shock—e.g. widespread crop failures, stock market crashes, or the failure of systemically important institutions—that triggered a sharp monetary contraction and subsequent liquidity squeeze. In each case, the Bank's initial response to the crisis was constrained by the strict, mechanical relationship between its gold reserves and its legal authority to issue new bank notes imposed by the Bank Charter Act of 1844. In each case, the crisis was only resolved when Parliament suspended the application of the 1844 Act, enabling the Bank to issue new bank notes, and thereby provide liquidity support to banks and other financial institutions.

From the Bank's perspective, the key lesson from this historical experience is that strict legal constraints on LOLR regimes are simply not credible in the face of widespread panic and financial instability. Indeed, this is precisely what Bagehot observed almost 150 years ago in his response to Thomas Hankey: regardless of whether or not we think central bank liquidity support represents good public policy, once the expected costs of a crisis cross a critical threshold, state support for the financial system is essentially inevitable.³⁹⁰ Put differently, Bagehot's Real Rule is that governments and central banks should not make promises they cannot keep.³⁹¹

The logical conclusion from this observation is that policymakers should work backwards from this inevitability to the design of regulatory frameworks that credibly commit to provide liquidity support, but on terms that ameliorate the potential moral hazard and other problems. This logic is reflected in the new SMF, which effectively guarantees this support to a broad cross-section of financial institutions in exchange for the imposition of intensive prudential regulation and supervision, along with relatively strict requirements governing, for example, collateral pre-positioning and the pricing and haircuts for eligible collateral. It is also reflected in the MoU between the Bank and HM Treasury, which—acknowledging the unavoidable incompleteness of these regulatory frameworks—shifts responsibility to elected politicians for authorizing emergency lending that poses a material

388. PLENDERLEITH, *supra* note 174; WINTERS, *supra* note 182.

389. See Anson et al., *supra* note 34; see also Neumann, *supra* note 128; Lewis, *supra* note 143; White, *supra* note 165; Hauser, *supra* note 170. Over the same period, at least two independent studies were also published examining the Bank's historical lender of last resort function. See Bignon et al., *supra* note 86; see also Flandreau & Ugolini, *supra* note 142.

390. See discussion *supra* notes 161–167 and accompanying text.

391. Indeed, Bagehot explores similar themes in his other highly influential book. See WALTER BAGEHOT, THE ENGLISH CONSTITUTION (1867).

risk to public funds.

The inevitability of government support for the financial system is not a lesson that leaps off the pages of U.S. financial history. The 19th century saw the emergence of private clearinghouses—and not a central bank—as institutions for containing, if not necessarily preventing, banking panics. It was another private market participant, J.P. Morgan, that bailed out the financial system during the Panic of 1907. Indeed, even after the creation of the Federal Reserve, U.S. policymakers have often been more reluctant than their counterparts in the United Kingdom to provide emergency liquidity assistance. During the Great Depression, the Federal Reserve elected not to exercise its legal authority to provide liquidity support to member banks. During the financial crisis, meanwhile, the Fed made the fateful decision not to rescue Lehman Brothers, ostensibly on the grounds that the investment bank did not possess sufficient collateral to secure an emergency loan under Section 13(3). Whether this decision was right or wrong is not important for our purposes: we will simply never know what would have happened had the Fed intervened. The key point is that the United States survived each of these crises and, in time and at great cost, returned to relative prosperity. Perversely, this may have reinforced the belief that strict legal constraints on LOLR regimes are still credible even in the midst of a full-blown financial crisis.

VI. LESSONS FOR US POLICY

One might be tempted to conclude that the influence of ideology, politics, and history on the design of LOLR regimes makes drawing any meaningful comparisons between the United States and United Kingdom almost impossible. This would then severely limit our ability to extract useful lessons from the experiences of one jurisdiction that might be usefully applied to advance public policy debates in the other. Yet in at least one critical respect, the Bank of England's historical experience holds out potentially valuable insights in terms of the likely effectiveness of the Federal Reserve's new LOLR regime. Specifically, the fact that Parliament was repeatedly forced to suspend the application of the Bank Charter Act of 1844 in order to arrest the frequent financial panics of the late 19th century suggests that the new U.S. LOLR regime is likely to buckle—and potentially break—under the strains of the next crisis.

Whether the new U.S. regime merely cracks or completely shatters will ultimately hinge on whether the principal political actors—the Treasury Secretary, Congress, and the President—are able to move swiftly and decisively to relax the constraints on the Fed's emergency lending authority. Where the Fed's Board of Governors simply recommends the creation of a “program or facility with broad-based eligibility” under Section 13(3), the Treasury Secretary will be in a position to take unilateral action.³⁹² Importantly, however, where the exigencies of the crisis demand legislative intervention—e.g. to authorize more flexible emergency lending programs,³⁹³ provide targeted support to failing institutions,³⁹⁴ or adopt a more comprehensive bailout package along the lines of the 2008 Troubled Asset

392. Federal Reserve Act, 12 U.S.C.A. § 13(3)(B)(iv).

393. By relaxing, for example, the requirement that any collateral accepted in exchange for emergency liquidity assistance be “sufficient to protect taxpayers from losses.” Federal Reserve Act, 12 U.S.C.A. § 13(3)(B)(i).

394. Thus relaxing the current prohibition against “aid[ing] a failing financial company.” Federal Reserve Act, 12 U.S.C.A. § 13(3)(B)(i).

Relief Program (TARP)³⁹⁵—the House of Representatives and Senate will be forced to negotiate a mutually acceptable response. The resulting legislation will then also need to survive any potential veto by the President.

It is at this critical point that we encounter yet another important difference between the United States and United Kingdom. In the United Kingdom, a sitting Prime Minister with a majority in the House of Commons will typically face relatively few obstacles when seeking to amend, appeal, or suspend the application of an Act of Parliament. Indeed, in 1847, Prime Minister John Russell was able to suspend the 1844 Act with a minority government.³⁹⁶ This relatively straightforward legislative path is the product of three intertwined features of the U.K. political system. The first is the principle of Parliamentary sovereignty, which recognizes Parliament as the supreme legislative authority in the United Kingdom and insulates most primary legislation from judicial review.³⁹⁷ Second, Parliament itself is comprised of a single elected legislative branch: the House of Commons. While the unelected House of Lords performs a myriad of important oversight functions, its role in the formulation and implementation of major policy decisions is severely constrained by both statute and constitutional convention.³⁹⁸ Third, and perhaps most importantly, there exists no formal separation between the legislative and executive branches of government.³⁹⁹ Indeed, as Bagehot himself observed, the U.K.'s Parliamentary system is characterized by "the close union, the nearly complete fusion of . . . executive and legislative powers."⁴⁰⁰ Together, these features serve to concentrate legislative and executive power in the office of the Prime Minister and his or her Cabinet.⁴⁰¹ Most importantly for the present purposes, this concentration of power makes it relatively easy for the government to take swift and decisive action in response to an unfolding crisis.

The distribution of power within the U.S. political system could hardly be more different. Heavily influenced by political philosophers from Polybius to John Locke and Baron de Montesquieu, the Founding Fathers famously designed a system of government based on a series of checks and balances.⁴⁰² These checks and balances included a

395. See Emergency Economic Stabilization Act (2008), Pub. L. 110-343, Stat. 3765.

396. During the crises of 1857 and 1866, meanwhile, the ruling Whigs enjoyed a sizeable majority in the House of Commons.

397. See ALBERT V. DICEY, INTRODUCTION TO THE STUDY OF THE LAW OF THE CONSTITUTION 3-4 (Liberty Fund ed. 1982) (1885) ("The principle of Parliamentary sovereignty means nothing more nor less than this, namely, that Parliament . . . has, under the English constitution, the right to make or unmake any law whatever; and, further, that no person or body is recognised by the law of England as having a right to override or set aside the legislation of Parliament."). For some of the more recent challenges to this principle, see COLIN TURPIN & ADAM TOMKINS, BRITISH GOVERNMENT AND THE CONSTITUTION 79-95 (7th ed. 2012) (describing the recent challenges to the principle of Parliamentary sovereignty posed by the United Kingdom's membership in the European Union, E.U. human rights law, and judicial activism).

398. For statutory restrictions, see the Parliament Act 1911, 1 & 2 Geo. 5 c. 13; see also the Parliament Act 1949, 12-14 Geo. 6 c. 103. For a more detailed description of the roles currently performed by the House of Lords, see TURPIN & TOMKINS, *supra* note 397, at 649-56.

399. TURPIN & TOMKINS, *supra* note 397, at 126-35.

400. BAGEHOT, *supra* note 391, at 9.

401. This concentration of power within the office of Prime Minister and Cabinet, along with how power is shared between these actors, is reflected in the 'core executive' hypothesis. See generally MARTIN SMITH, THE CORE EXECUTIVE IN BRITAIN (1999); see also PRIME MINISTER, CABINET & CORE EXECUTIVE (R. A. W. Rhodes & Patrick Dunleavy eds. 1995).

402. The thinking of the Founding Fathers in this regard is described in considerable detail by Hamilton, Madison, and Jay in The Federalist Papers. See generally THE FEDERALIST: A COLLECTION OF ESSAYS, WRITTEN

bicameral legislature, the strict separation of the legislative, executive, and judicial branches of the federal government, and a powerful Supreme Court endowed with the authority to strike down unconstitutional legislation.⁴⁰³ These checks and balances combine to make the process of introducing, enacting, amending, or suspending legislation far more difficult in the United States than in the United Kingdom.

One of the obvious risks with this system is that it might be used to obstruct the passage of new legislation—leading ultimately to political gridlock. In recent decades, this risk has been heightened by the increasing polarization of U.S. politics. Examining every congressional roll call vote between 1967 and 2017, political scientists have documented a growing ideological divergence between Democratic and Republican members of both the House of Representatives and Senate.⁴⁰⁴ This divergence was reflected in the voting pattern around the 2008 bailout package, where the first TARP bill was roundly rejected by House Republicans before a further deterioration in market conditions forced them to reconsider their position.⁴⁰⁵ If anything, this divergence has become even more stark over the course of the subsequent decade. Together with the checks and balances hardwired into the U.S. political system, this polarization poses the very real risk that Congress will be unable to pass emergency legislation to stabilize the financial system in the thick of any future crisis.

The trillion-dollar question thus becomes: how can the United States ensure that this political gridlock does not undercut its ability to avert financial catastrophe? Congress has two options. The first option is to radically reshape the structure of the U.S. financial system to reflect the monetarist framework. Amongst other drastic measures, this would involve strictly limiting money creation to conventional deposit-taking banks and breaking up any systemically important non-bank financial institutions. The second option is to shift some of the discretion for LOLR back to the Fed, but to combine it with more tailored mechanisms for ensuring sufficient accountability. In this respect, the United Kingdom offers a possible blueprint. The first step would be to return operational authority under Section 13(3) to the Federal Reserve: giving it the discretion to both identify the universe of eligible recipients of central bank liquidity support and set the terms upon which this support is provided.⁴⁰⁶ Taking a page from the SMF, the Fed's exercise of this discretion could be subject to a requirement that it seek the approval of the Treasury Secretary where this assistance posed a material risk to public funds. In theory, returning operational authority to the Fed would enable it to more credibly signal its commitment to providing liquidity support to firms outside the conventional banking system. As envisioned by the SMF, the Fed could then tailor its prudential regulation and supervision, along with mechanisms such as collateral prepositioning, to eliminate any resulting moral hazard

IN FAVOUR OF THE NEW CONSTITUTION, AS AGREED UPON BY THE FEDERAL CONVENTION, SEPTEMBER 17, 1787. IN TWO VOLUMES (1788).

403. See *id.* (discussing the role of checks and balances in the U.S. political system).

404. See *Congress at a Glance: Major Party Ideology*, VOTEVIEW.COM, <https://voteview.com/parties/all> [<https://perma.cc/RE6H-7EDD>] (last visited Jan. 27, 2020).

405. See Carl Hulse & David Herszenhorn, *Defiant House Rejects Huge Bailout; Next Step is Uncertain*, N.Y. TIMES (Sept. 29, 2008), <https://www.nytimes.com/2008/09/30/business/30cong.html> [<https://perma.cc/4Q7A-PE5S>] (Democrats approved the initial bill 140-95, while Republicans rejected it 133-65).

406. Of course, giving the Fed this discretion would not guarantee that it would always use it: ideological or other influences would continue to play a role in determining how the Fed approached decisions about the provision of emergency liquidity assistance.

problems. By the same token, where the Fed identified possible recipients outside its regulatory perimeter, these same moral hazard problems would provide a compelling rationale for subjecting these firms to Fed regulation and supervision.⁴⁰⁷

These relatively straightforward reforms would yield a number of potentially significant benefits. As a preliminary matter, giving the Fed greater discretion over the identity of eligible recipients and then subjecting them to Fed regulation and supervision would eliminate the antiquated distinction between banks and other financial institutions as potential sources of systemic risk. More importantly, giving the Fed greater ex ante flexibility would reduce the risk of political deadlock stemming from the need for ex post legislative intervention to relax the strict legal constraints under the current LOLR regime. Lastly, where a proposed rescue package posed a material risk to public funds, allocating decision-making authority to the Treasury Secretary would serve the dual purpose of avoiding the dysfunction and delay associated with the Congressional approval process whilst simultaneously ensuring a higher degree of individual political accountability for the most contentious bailout decisions.

Inevitably, some will argue that these reforms contemplate a significant shift in power from the legislative to the executive branch of the U.S. government. Others will argue that they undermine the checks and balances at the heart of the U.S. political system. Indeed, some might even argue that these checks and balances actually enhance the credibility of the government's commitment not to bail out troubled financial institutions. Ultimately, however, the harsh reality is that the rigid U.S. political system is poorly designed to deal with the unique and fluid challenges of financial crisis management. As a result, U.S. policymakers can either learn the lessons of history or find themselves doomed to repeat it.

VII. CONCLUSION

Playwright George Bernard Shaw once wrote that the United States and United Kingdom were divided by a common language.⁴⁰⁸ Perhaps nowhere does this observation resonate more strongly than in the context of the design of central bank LOLR regimes. For far too long, debates around the function and design of these regimes have revolved around an influential but illusionary technocratic consensus embodied by Walter Bagehot's famous rule. Yet as this Article has clearly demonstrated, there are in fact two competing schools of thought regarding the function and design of LOLR regimes. Equally important, the design of these regimes is inevitably shaped by ideological, political, and historical forces unique to each country.

However, the fact that we do not always speak the same language does not necessarily mean that we cannot learn from each other's experiences. In the United Kingdom, strict legal constraints on the Bank of England's LOLR regime during the 19th century were routinely suspended: their rigidity poorly suited to the fluid demands of financial crisis management. Over 150 years later, there is little reason to think that the new constraints on

407. Simultaneously, responsibility for making decisions about whether to provide emergency liquidity assistance to firms outside the Fed's regulatory perimeter could be given to the Treasury Secretary.

408. Bill Schulz, *Popular British Words and Sayings that Everyone in the World Should Know*, READER'S DIGEST, <https://www.rd.com/culture/popular-british-sayings/> [https://perma.cc/99LP-UK7M] (last visited Mar. 17, 2020).

the Federal Reserve's LOLR regime will be any more successful. Compounding matters, these constraints have been imposed during a period of increasing political deadlock, thereby undermining the chances that they will be relaxed amidst the chaos and uncertainty of the next crisis. Here once again the United Kingdom may hold out valuable insights about how to design a more credible and effective LOLR regime.