

ESSAY

THE FIRST YEAR: THE ROLE OF A MODERN LENDER OF LAST RESORT

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Insufficient liquidity can trigger fire sales and wreak havoc on a financial system. To address these challenges, the Federal Reserve (the Fed) and other central banks have long had the authority to provide financial institutions liquidity when market-based sources run dry. Yet, liquidity injections sometimes fail to quell market dysfunction. When liquidity shortages persist, they are often symptoms of deeper problems plaguing the financial system. This Essay shows that continually pumping new liquidity into a financial system in the midst of a persistent liquidity shortage may increase the fragility of the system and, on its own, is unlikely to resolve the deeper problems causing those liquidity shortages to persist.

This Essay suggests that when facing persistent liquidity shortages, the Fed should instead use the leverage it enjoys by virtue of controlling access to liquidity to improve its understanding of the ailments causing the market dysfunction to persist and to help address those underlying issues. When liquidity shortages persist, they will often indicate that market participants lack critical information about risk exposures or that they are concerned financial institutions or other entities lack sufficient capital in light of the risks to which they are exposed. Providing credible information and working with other policymakers to ensure the overall financial system is sufficiently capitalized are thus among the issues that the Fed should prioritize when facing persistent liquidity shortages. This Essay thus provides a new paradigm for how the Fed can utilize its lender-of-last-resort authority to prevent a nascent financial crisis from erupting into one that inflicts significant harm on the real economy.

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The heart of this Essay brings these dynamics to life through a close examination of the Fed's actions during the early stages of the 2007–2009 financial crisis (the Crisis). Using transcripts from Fed meetings and other primary materials, this Essay reconstructs the first thirteen months of the Crisis. The analysis reveals more than a year during which Fed officials could have taken an array of actions that may have reduced the size of the Great Recession and the amount of credit risk and moral hazard stemming from the government's subsequent interventions. The analysis also demonstrates specific ways that the Fed's lender-of-last-resort authority could serve as the type of responsive and dynamic regulatory tool that the Fed requires when seeking to restore stability during the early phases of a panic.

INTRODUCTION	845
I. LENDER OF LAST RESORT.....	850
A. The Crisis.....	855
II. LEVERAGE AS CREDITOR.....	858
A. The Claim.....	859
B. Identifying a Persistent Liquidity Shortage.....	864
C. The Aims: Focusing on Information.....	866
1. Extracting Information	868
2. Information Injections.....	872
3. Bank Health.....	873
III. THE CRISIS	873
A. August 2007: The Start.....	876
1. Extracting Information	878
2. Disseminating Information	879
3. Bank Health.....	881
B. January 2008: The First Intermeeting Rate Cut.....	881
1. Extracting Information	882
2. Disseminating Information	885
3. Bank Health.....	885
4. Tool Set.....	887
C. March 2008: New Liquidity Facilities and the Failure of Bear Stearns	888
1. Extracting Information	889
2. Disseminating Information	893
3. Bank Health.....	894
4. Fed Interventions and Market Expectations	894
D. Summer 2008	897
1. Lehman.....	898

2016]	<i>LENDER OF LAST RESORT</i>	845
	2. Increased but Still Limited Monitoring.....	898
	3. Understanding the Risks	901
	4. AIG	903
	E. Easing Away from the Full Backstop	907
IV.	IMPLICATIONS.....	911
	A. Better Outcomes Were Possible	913
	1. The Early Stages.....	914
	2. Lehman.....	915
	3. AIG	917
	B. Liquidity and Information.....	920
V.	CHALLENGES.....	921
	A. Friction	922
	B. Other Operational Challenges.....	923
	C. Bypass the Fed.....	924
	D. Information Does Not Ensure Action.....	924
	E. One Tool, Multiple Aims.....	925
	CONCLUSION.....	925

INTRODUCTION

Dynamism is a central challenge for regulation today.¹ Nowhere is this challenge more acute than in financial regulation, where the very act of regulating causes activity to move to less regulated spaces.² And at no time is the problem more pressing than in the midst of a financial crisis, which often emanates from fragilities in those less regulated domains.³ This Essay reveals that the Federal Reserve (the Fed) need not wait for Congress to expand its oversight authority to tackle these challenges right at their source. It can instead use the leverage it enjoys by virtue of controlling access to liquidity to obtain critical information about the challenges it is facing and to start addressing those challenges. This Essay thus sheds critical new light on how a central bank can best use its

1. See, e.g., Charles F. Sabel & William H. Simon, *Minimalism and Experimentalism in the Administrative State*, 100 *Geo. L.J.* 53, 78 (2011) (identifying “continuous change and variation . . . as the most pervasive challenge of current public problems”).

2. See, e.g., Paul Tucker, *The Lender of Last Resort and Modern Central Banking: Principles and Reconstruction*, in *Bank for Int’l Settlements, BIS Papers No. 79: Re-Thinking the Lender of Last Resort* 10, 17 (2014), <http://www.bis.org/publ/bppdf/bispap79.pdf> (on file with the *Columbia Law Review*) (explaining “regulatory arbitrage is endemic” to modern finance).

3. See, e.g., Robert F. Bruner & Sean D. Carr, *The Panic of 1907: Lessons Learned from the Market’s Perfect Storm* 65–70 (2007) (explaining financial crisis of 1907 emanated from trust companies engaged in activities similar to those of banks but subject to different public and private regulatory regimes); see also *infra* Part III (showing central role of shadow banking system in Crisis).

lender-of-last-resort (LOLR) authority to contain a growing financial crisis.

This Essay advances the LOLR literature by showing that the optimal role for a LOLR to play depends on the type of liquidity shortage it is facing. Some liquidity shortages are caused by an exogenous event, like the terrorist attacks of 9/11. The current LOLR literature accurately captures the ways that such shocks can trigger a dangerous cycle of liquidity shortages and fire sales that harm the financial system.⁴ Under these circumstances, the standard prescription that a LOLR should flood the market with liquidity, subject only to moral hazard and credit risk considerations, is apt.⁵ When the cause of the problem is exogenous to the system, liquidity alone will often suffice to restore market functioning and the shortages will be finite.

The 2007–2009 financial crisis (the Crisis), however, and other periods of financial distress have a very different arc. During these episodes, liquidity shortages persist despite countervailing efforts by a LOLR to address them. Persistent liquidity shortages pose a very different challenge and, in a modern financial system, convey distinct and important information. In today's more complete markets, which include a robust interbank lending market and a developed regime for sale and repurchase agreements (repos), a financial institution that is healthy or in possession of high-quality collateral should be able to access liquidity from market-based sources. Thus, when liquidity shortages persist in the face of aggressive efforts by a central bank to address them, those shortages are not just potential aggravators of systemic distress, they are also symptoms signaling the existence of deeper problems plaguing the financial system. Continuing to pump liquidity into the market during such periods functions as a palliative: It may temporarily reduce the pain, but it will not rectify the underlying problems—and it may even make things worse by allowing those problems to fester.

Fortunately, in conjunction with posing distinct challenges, persistent liquidity shortages also pose distinct opportunities. The untapped potential of the Fed's LOLR authority arises from the fact that during periods of systemic distress, liquidity will tend to be scarce and, hence, valuable. Controlling access to liquidity is thus a tool that becomes more potent in precisely the circumstances the Fed needs it most. Just as importantly, the liquidity shortages will often serve as a roadmap to the underlying challenges plaguing the financial system, as lack of liquidity in a domain where liquidity previously was plentiful is often an indication of

4. See *infra* Part I (explaining how current literature focuses on reasons for bank runs and ways in which LOLR can stem such runs).

5. See *infra* section I.A.

where the deeper problems lie.⁶ This Essay shows how the Fed can more effectively use its LOLR authority to promote systemic stability—the mandate that justified giving this authority to the Fed when it was founded in 1913 and that continues to justify the Fed’s role in today’s far more complex financial system. The focus is on information.

The claim is simple: The Fed should use its LOLR authority to obtain critical information about the underlying issues that are causing the market dysfunction to persist. When it appears that market participants are hesitant to work with one another because of a lack of information, the Fed should also play a role in helping to overcome the frictions impeding the creation and redistribution of critical information. And when it appears that market participants are pulling back because of legitimate concerns about the financial health of other financial institutions, the Fed should use its authority and work with other regulators and Congress, as needed, to help ensure that financial institutions are adequately capitalized in light of the risks to which they are exposed. In short, the Fed should more fully embrace the role it has often, albeit inconsistently, played as an “information-coordination agent” during periods of systemic financial distress.⁷

The revised paradigm proposed here, while consistent with aspects of how the Fed has often used its formal and informal authority in the past, marks an important shift in the theory of how a LOLR should respond to systemic distress. The current paradigm, invoked repeatedly by Fed Chairman Ben Bernanke in explaining how the Fed used its authority during the Crisis and by outside courts and commentators assessing the Fed’s actions, comes from a nineteenth-century British commentator.⁸ That paradigm is focused, almost exclusively, on addressing the ways that insufficient liquidity can aggravate systemic distress. This Essay, by contrast, builds on the insight that when liquidity remains in short supply despite aggressive efforts by the Fed to provide fresh liquidity to the financial

6. See *infra* Part IV (identifying specific ways in which events during early stages of Crisis alerted Fed officials to particular information gaps contributing to market dysfunction).

7. See *infra* notes 76–81 and accompanying text (examining Fed’s historical willingness to act as information-coordination agent).

8. See *infra* notes 19–26, 57 and accompanying text (describing Bagehot’s dictum and its use by Fed policymakers to explain Fed’s actions); see also Kathryn Judge, *A Different Take on the AIG Case: The Dangers of Invoking 19th Century Principles to Solve 21st Century Problems*, CLS Blue Sky Blog (June 23, 2015), <http://clsbluesky.law.columbia.edu/2015/06/23/another-take-on-aig-the-dangers-of-invoking-19th-century-principles-to-solve-21st-century-problems> [<http://perma.cc/B2ED-9BUD>] (“Ben Bernanke and other leading policymakers regularly invoked Bagehot’s dictum to defend their actions during the recent financial crisis, and outside experts similarly invoked Bagehot to assess the appropriateness of those actions.”).

system, deeper problems are causing those liquidity shortages to persist.⁹ Following the established paradigm without seeking to understand and address those underlying issues will only make the system more fragile and increase the ultimate size and scope of the crisis to come. When facing persistent systemic distress, the Fed should accordingly change course. Rather than just using its LOLR authority to help contain the distress that can arise from insufficient liquidity, the Fed should also use its LOLR authority to serve as an information-coordination agent—facilitating the collection and production of the information required to understand why liquidity shortages are persisting. Only by gathering such information and helping to disseminate critical information to market participants, other regulators, and Congress, can the Fed best fulfill its role of helping to contain a growing financial crisis.

Recognizing that these concepts are best demonstrated through example, the heart of this Essay is a detailed examination of the first year of the Crisis. This case study illuminates the central role that informational challenges played in inhibiting market functioning during the Crisis and the ways that informational challenges limited the capacity of Fed and other policymakers to understand the nature and scope of the problems plaguing the financial system. The examination also establishes that—contrary to a common assumption that the Crisis began in September 2008,¹⁰ when Lehman Brothers failed and the Crisis exploded—the Crisis actually began thirteen months earlier, in August 2007.¹¹

Although largely overlooked in the extensive literature on the Crisis, this interim period is the critical juncture when trying to assess whether the Fed and other policymakers could have done more to prevent the ultimate fallout that made the Crisis the Crisis. Before August 2007, markets appeared to be stable and well functioning, making it nearly impossible for policymakers to appreciate just how fragile the financial system had become.¹² By September 2008, the Fed and other policy-

9. See *infra* section II.C.2 (suggesting when market participants lack critical information on creditworthiness of counterparties and value of collateral, they will be hesitant to trade and liquidity shortages are likely to persist).

10. See *infra* notes 314–316 (interrogating assumption that, prior to September 2008, incipient Crisis was too amorphous and ill defined to motivate congressional action).

11. See *infra* note 137 (collecting sources pinpointing August 2007 as start of Crisis).

12. See, e.g., Gary B. Gorton, *Misunderstanding Financial Crises: Why We Don't See Them Coming* 4 (2012) (stating prior to Crisis, economists “had the view that a crisis could not occur in the United States, that the problem had been solved”); Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., Remarks at the Meeting of the Eastern Economic Association: The Great Moderation (Feb. 20, 2004), <http://www.federalreserve.gov/Boarddocs/Speeches/2004/20040220/> [<http://perma.cc/E443-5ZVH>] (noting “[o]ne of the most striking features of the economic landscape over the past twenty years or so has been a substantial decline in macroeconomic volatility” and describing various explanations for the “Great Moderation”).

makers had no attractive options.¹³ As reflected in the massive ripples emanating from Lehman's bankruptcy, allowing systemically significant institutions to fail crippled market functioning, leading to severe and adverse spillover effects on the real economy. Yet the only alternative available given the government's relative lack of information—bailing out institutions like AIG—gave rise to massive moral hazard and exposed the government to credit risk.¹⁴ As the only period during which policy-makers had been alerted to the systemic risk that had built up in the financial system and had time to take actions that could have altered the course ahead, the first year of the Crisis had the potential to be pivotal.

Working closely with primary materials, including meeting transcripts of the Federal Open Market Committee (FOMC), a core decision-making body of the Fed, this Essay reexamines the decisions that Fed policymakers made and could have made during this critical period. The analysis shows that the Fed is already putting itself at the forefront of crisis containment efforts and that using its LOLR authority in the way proposed is consistent, in spirit, with the Fed's established approach of taking the lead in doing whatever is necessary to help contain a looming financial crisis. At the same time, the analysis also reveals numerous junctures at which Fed policymakers might well have made different, and better, decisions had the Fed and other policymakers embraced the view that the Fed should use its LOLR authority in the ways here proposed.¹⁵ The purpose of this analysis is not to fault Fed policymakers, but to understand and alter the forces inhibiting their willingness to use the Fed's LOLR authority in the manner most likely to successfully contain a financial crisis once underway.

This Essay proceeds in five parts. Part I examines the rationales for having a LOLR and how the Fed used its LOLR authority during the Crisis. Part II presents the Essay's claim—that a central bank facing persistent liquidity shortages should use its LOLR authority to understand and help coordinate a response to the ailments giving rise to those

13. The Federal Reserve System consists of the seven-member Board of Governors (the Board), twelve regional banks that function as the operating arm of the system, and the Federal Open Market Committee (FOMC), which consists of all members of the Board and five regional bank presidents. See Richard S. Carnell, Jonathan R. Macey & Geoffrey R. Miller, *The Law of Financial Institutions* 61 (5th ed. 2013). This Essay specifies among these bodies when appropriate, but, given the high degree of overlap and common purpose, it often focuses on the Fed without specifying a particular body within it.

14. For further discussion of the costs of these two events, see *infra* section III.D. Typically, the parties that most benefit when an institution is bailed out are the institution's creditors. This leads to an array of market distortions. Perceptions that an institution is too big (or otherwise systemically significant or politically connected) to fail alter creditors' analyses, increasing their willingness to extend credit and causing them to do so on excessively favorable terms. This distorts competition, incents institutions to grow or otherwise alter their risk profiles in ways that increase expectations they will receive a bailout, and facilitates excessive risk taking.

15. See *infra* Part IV.

shortages. The focus is on information. Part III reconstructs the critical first year of the Crisis. Using transcripts of meetings of the FOMC, autobiographies of leading policymakers, a detailed report prepared in conjunction with the Lehman bankruptcy, and other sources, it shows what policymakers knew and believed throughout the relevant period. Part IV considers how the Crisis may have played out differently had the Fed used its LOLR authority in the manner here proposed. Part V examines drawbacks to the proposed approach. Lack of liquidity remains an aggravator of systemic distress and expanding the aims that liquidity facilities are designed to serve may increase concerns about stigma, create operational challenges, or otherwise reduce the provision of liquidity. The analysis nonetheless suggests that most of these issues could be managed, and it sheds light on how a central bank might operationalize the proposed approach.

I. LENDER OF LAST RESORT

In the United States and most other jurisdictions, the central bank functions as the LOLR. This means that the Fed has the authority to provide collateralized loans to banks¹⁶ and, in “unusual and exigent circumstances,” to nonbanks.¹⁷ The role of a LOLR is to provide the liquidity banks and other institutions need to avoid fire sales and satisfy short-term creditors when market-based sources of liquidity are scarce.¹⁸ Banks and other financial institutions secure these loans by posting less liquid assets as collateral. This Part examines the reasons for having a central bank that can serve as a LOLR during periods of systemic distress and how those rationales have evolved over time. It then provides a quick summary of the Fed’s LOLR activities during the Crisis and how the established-but-outdated paradigm of how a LOLR should respond to systemic distress appears to have shaped the Fed’s actions and third-party assessments of the same.

A. *Background: Evolving Rationales*

The notion that a central bank should function as the LOLR goes back at least to 1802 and the work of Henry Thornton.¹⁹ Yet today, the

16. See 12 U.S.C. § 347b(a) (2012) (“Any Federal Reserve bank . . . may make advances to any member bank . . .”).

17. *Id.* § 343(3)(A).

18. See, e.g., Thomas M. Humphrey, *The Classical Concept of the Lender of Last Resort*, Fed. Res. Bank of Richmond Econ. Rev., Jan.–Feb. 1975, at 7, https://www.richmondfed.org/~media/richmondfedorg/publications/research/economic_review/1975/pdf/er610101.pdf [http://perma.cc/AMB2-6K94] (“The objective of the central bank in time of panic is to satisfy the market’s demand for liquidity.”).

19. See, e.g., Thomas M. Humphrey, *Lender of Last Resort: The Concept in History*, Fed. Res. Bank of Richmond Econ. Rev., Mar.–Apr. 1989, at 8, 8–12 [hereinafter *Humphrey, Lender of Last Resort*], https://www.richmondfed.org/~media/richmondfedorg/publications/research/economic_review/1989/pdf/er75020

origins of the concept are typically associated with the 1873 publication of *Lombard Street*, a still-influential text in which Walter Bagehot argued that the Bank of England was right to extend loans to any party with appropriate collateral during times of systemic distress, subject to certain conditions designed to address the corresponding moral hazard.²⁰ As Bagehot explained, in the face of a crisis, injecting additional liquidity into the financial system in this fashion could not guarantee a good outcome, but failure to do so would guarantee a bad one.²¹ His prescription, embodied in a series of guidelines known today as Bagehot's dictum, was that a central bank should lend freely during a crisis, subject to constraints designed to reduce the inevitable moral hazard and credit risk.²²

At the time Thornton and Bagehot were writing, and even at the Fed's founding, LOLR activity was the primary mechanism through which a central bank could affect overall monetary supply.²³ A central rationale underlying their analyses thus related to the need to maintain the money stock.²⁴ Since the 1930s, however, LOLR operations have played only a modest role in this regard.²⁵ Open market operations (OMO), through which the Fed alters the level of reserves in the financial system by buying, selling, borrowing, and lending Treasury

2.pdf [http://perma.cc/9F2B-G5A7] (explaining Henry Thornton "identified the Bank of England's distinguishing characteristics as an L[O]LR," "specified the L[O]LR's primary function," and "distinguished between the micro and macroeconomic aspects of this function," among other contributions).

20. See Walter Bagehot, *Lombard Street: A Description of the Money Market* 196–99 (1873) (arguing "in time of panic [the central bank] must advance freely and vigorously" while keeping interest rates high as deterrent against idle borrowing); Peter Conti-Brown, *Misreading Walter Bagehot: What Lombard Street Really Means for Central Banking*, *The New Rambler* (Dec. 14, 2015) (reviewing Walter Bagehot, *Lombard Street: A Description of the Money Market* (1873)), <http://newramblerreview.com/book-reviews/economics/misreading-walter-bagehot-what-lombard-street-really-means-for-central-banking> [http://perma.cc/S54X-FP9Q] (identifying account that "Bagehot became the first to articulate what a central bank should do to prevent a panic from becoming a crisis" as "common trope").

21. See Bagehot, *supra* note 20, at 198–99. In this sense, he was more prescient than many economists writing in his wake.

22. See *id.* at 197–99 ("[A]dvances should be made on all good banking securities, and as largely as the public ask for them.").

23. See, e.g., George G. Kaufman, *Lender of Last Resort: A Contemporary Perspective*, in *Financial Crises, Contagion, and the Lender of Last Resort* 169, 182–83 (Charles Goodhart & Gerhard Illing eds., 2002) ("In the early days, . . . analysts gave heavy weight in justifying L[O]LR intervention to the protection of the money supply.").

24. See Humphrey, *Lender of Last Resort*, *supra* note 19, at 16 ("Thornton and Bagehot believed the L[O]LR had the duty . . . to protect the money stock . . .").

25. See Kaufman, *supra* note 23, at 180 ("As financial markets developed in breadth and resiliency, . . . market operations preempt[ed] the discount window as the major tool of monetary policy . . .").

securities, have largely superseded discounting as the primary mechanism through which the Fed implements monetary policy.²⁶

This has led to a second generation of scholarship that premised the need for a LOLR on the inherent instability of banks and the adverse consequences of fire sales.²⁷ Two defining characteristics of banks are their use of fractional reserves and their role in maturity transformation.²⁸ Much of a bank's funding takes the form of short-term liabilities, like demand deposits, while most of its assets are long term and relatively illiquid, like loans to businesses and individuals.²⁹ This works most of the time, as the bank retains sufficient liquid assets to meet typical depositor demands.³⁰ The system breaks down, however, when depositor demands become correlated, as they do during a bank run.³¹ Once a bank depletes its liquid reserves, it must sell illiquid assets to obtain the cash needed to pay off other depositors.³² The illiquid nature of the assets and the need to sell them in a very short timeframe leads to "fire sales," at prices well below the best value price of the assets sold,³³ a process that could cause

26. See, e.g., Xavier Freixas et al., *The Lender of Last Resort: A Twenty-First Century Approach*, 2 J. Eur. Econ. Ass'n 1085, 1086 (2004) (noting "Bagehot view of the LOLR is often seen as obsolete for any well-developed financial system"); see generally Perry Mehrling, *The New Lombard Street: How the Fed Became the Dealer of Last Resort* (2010) (providing thorough historical overview of this evolution).

27. See, e.g., Kaufman, *supra* note 23, at 182 (explaining how "[p]rotection of macro-liquidity has shifted from protection of the aggregate money supply to protection of equilibrium asset prices," and assuming, in both instances, the thing from which the system needs protection is a "*sudden adverse shock*[]" that cause[s] markets to *temporarily* overadjust" (emphasis added)); Tucker, *supra* note 2, at 15 (explaining by "providing liquidity" when banks face runs by short-term creditors, "the central bank reduces the need for a forced sale of assets that otherwise would depress values, causing avoidable insolvencies and knocking the economy as a whole onto an inferior equilibrium growth path").

28. Carnell, Macey & Miller, *supra* note 13, at 40, 45.

29. *Id.* at 45–49.

30. *Id.*

31. See Itay Goldstein & Ady Pauzner, *Demand-Deposit Contracts and the Probability of Bank Runs*, 60 J. Fin. 1293, 1293 (2005) (explaining "[t]he maturity mismatch between assets and liabilities makes banks inherently unstable by exposing them to the possibility of panic-based bank runs . . . when investors rush to withdraw their deposits" because they know every bank lacks sufficient short-term, liquid assets to pay off all depositors).

32. See *id.* at 1293–94 (observing that "[a]s a result [of a run], the bank is forced to liquidate its long-term investments at a loss" and may fail).

33. See, e.g., Andrei Shleifer & Robert Vishny, *Fire Sales in Finance and Macroeconomics*, 25 J. Econ. Persp. 29, 30 (2011) (defining fire sales as "forced in the sense that the seller cannot pay creditors without selling assets" and explaining "price is dislocated because the highest potential bidders are typically . . . themselves indebted and cannot borrow more to buy the asset" (citing Andrei Shleifer & Robert Vishny, *Liquidation Values and Debt Capacity: A Market Equilibrium Approach*, 47 J. Fin. 1343, 1346–47 (1992))).

even a healthy bank to wind up insolvent.³⁴ This can give rise to a range of ripple effects, in part because other banks holding similar assets may be forced to write them down, causing losses to spread and threatening the stability of other institutions.³⁵

The presence of a LOLR disrupts this vicious circle. Rather than selling illiquid assets, a bank facing a run can now use those assets as collateral for a loan from the central bank and thus obtain the liquidity needed to satisfy depositor demands.³⁶ Moreover, the mere presence of a LOLR can reduce the tendency of depositors to run, as they now have no reason to fear that an otherwise healthy bank might be rendered insolvent should other depositors demand their money back.³⁷

The dramatic changes in the financial markets over the past thirty years have complicated even this updated depiction of the LOLR's function. One reason is that market and regulatory innovations have cast doubt on whether the Fed should continue to provide LOLR support to individual institutions. There is now a robust interbank lending market and other financial innovations, like repos, which typically enable banks with appropriate collateral to quickly and cheaply obtain new funding.³⁸

34. See Douglas W. Diamond & Philip H. Dybvig, Bank Runs, Deposit Insurance, and Liquidity, 91 J. Pol. Econ. 401, 402 (1984) (demonstrating why “even ‘healthy’ banks can fail” when facing a run and why it can be rational for depositors to run on healthy banks).

35. See, e.g., Eduardo Dávila, Dissecting Fire Sales Externalities 10–12 (May 2014) (unpublished working paper) (on file with the *Columbia Law Review*) (explaining “collateral externality” created by fire sales “arises because experts do not internalize that selling an additional unit of capital depresses the equilibrium price and, consequently, reduces the borrowing capacity of other constrained experts”); Jeremy C. Stein, Governor, Bd. of Governors of the Fed. Reserve Sys., The Fire-Sales Problem and Securities Financing Transactions 3–4 (Oct. 4, 2013), <http://www.federalreserve.gov/newsevents/speech/stein20131004a.pdf> [<http://perma.cc/9HTS-JS6W>] (describing harm fire sales inflict upon third parties as decreases in collateral value of security exacerbate financing constraints); see also Markus K. Brunnermeier & Lasse Heje Pedersen, Market Liquidity and Funding Liquidity, 22 Rev. Fin. Stud. 2201, 2205 (2009) (showing how funding liquidity and market liquidity shortages can reinforce and aggravate one another).

36. See Tucker, *supra* note 2, at 15 (“[B]y providing liquidity the central bank reduces the need for a forced sale of assets that otherwise would depress values . . .”).

37. E.g., *id.* at 15 (“*Ex ante*, knowing that the LOLR is there, banks’ short-term creditors should be less inclined to run.”); see also Diamond & Dybvig, *supra* note 34, at 404, 416–18 (suggesting existence of deposit insurance prevents runs and further positing LOLR presence can serve similar role).

38. See, e.g., Gara Afonso et al., Stressed, Not Frozen: The Federal Funds Market in the Financial Crisis, 66 J. Fin. 1109, 1113 (2011) (“A repurchase agreement, or repo, is a financial contract that allows the use of a security as collateral for a cash loan, mostly on an overnight basis. . . . The repo market is a large and opaque over-the-counter market that exceeded \$10 trillion in the United States in 2008.”); Viktoria Baklanova, Adam Copeland & Rebecca McCaughrin, Reference Guide to U.S. Repo and Securities Lending Markets 4–21 (Fed. Reserve Bank of N.Y. Staff Report No. 740, Sept. 2015), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr740.pdf [<http://perma.cc/4RHV-SA99>] (explaining basic mechanics of repo contracts and measuring current market size of U.S. repo market); Dennis Kuo et al., Identifying Term Interbank Loans from Fedwire Payments Data 6–8 (Fed. Reserve Bank of N.Y. Staff Report No. 603, Mar. 2013),

In the presence of such market mechanisms, liquidity injected through OMO should be redistributed to the banks or other institutions most in need of it, assuming they are healthy or have appropriate collateral.³⁹ In light of these developments, some economists have argued that OMO should be the sole tool that the Fed uses to respond to liquidity shortages.⁴⁰

The second and related development has been the rise of the shadow banking system, a complex array of market-based mechanisms and nonbank institutions that serve many of the same economic functions traditionally played by banks.⁴¹ The Crisis revealed that the shadow banking system can be subject to runs just like banks and that runs on the shadow banking system can similarly have adverse spillover effects on the health of the real economy.⁴² The massive scale of this system and its vulnerabilities also demonstrate the inevitable mismatch

https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr603.pdf [<http://perma.cc/3WSS-HR7H>] (providing overview of function and importance of interbank lending market, which “consists of unsecured loans made from one bank to another, or more broadly, from one financial institution to another”).

39. See, e.g., Mehrling, *supra* note 26, at 27 (“The way it was supposed to work is that the Fed would lend freely to the [primary] dealers and arbitrage would do the rest.”). Deposit insurance similarly reduces the need for a LOLR, as depositors have little reason to flee if they know the government will make them whole. See, e.g., Jeremy C. Stein, *Monetary Policy as Financial Stability Regulation*, 127 *Q.J. Econ.* 57, 84 (2012) (“[T]he government [could] try to stem the amount of socially costly fire sales that occur for a given amount of short-term bank debt. This could be done with either deposit insurance or a lender-of-last-resort policy.” (emphasis omitted)).

40. See Xavier Freixas et al., *Lender of Last Resort: A Review of the Literature*, 7 *Fin. Stability Rev.* 151, 157 (1999) (providing overview of literature supporting this view); see generally Mark A. Carlson & David C. Wheelock, *The Lender of Last Resort: Lessons from the Fed’s First 100 Years* 36–38 (Fed. Reserve Bank of St. Louis, Working Paper No. 2012-065B, 2012) (describing “longstanding debate in academic and policy forums concern[ing] how a lender of last resort should provide liquidity, and in particular whether the lender of last resort should ever lend directly to individual financial institutions” and identifying major proponents on both sides).

41. See Erik F. Gerding, *Law, Bubbles, and Financial Regulation* 399–401 (2014) (“[T]he shadow banking system and its component financial instruments serve many of the functions of traditional depository banking, yet operate by connecting borrowers to investors in capital markets.”); Zoltan Pozsar et al., *Shadow Banking* 1–3 (Fed. Reserve Bank of N.Y. Staff Report No. 458, July 2010) [hereinafter Pozsar et al., *Shadow Banking*], http://www.newyorkfed.org/research/staff_reports/sr458.pdf [<http://perma.cc/6TJB-CBLH>] (“Shadow banks intermediate credit through a wide range of securitization and secured funding techniques . . . [and] over the past decade, the shadow banking system provided sources of funding for credit by converting opaque, risky, long-term assets into money-like, short-term liabilities.”); Kathryn Judge, *Information Gaps and Shadow Banking*, 103 *Va. L. Rev.* (forthcoming 2017) [hereinafter Judge, *Information Gaps*] (manuscript at 21–22) (on file with the Columbia Law Review) (observing in 1970s “an array of market-based mechanisms [emerged] that fulfill many of the economic functions long performed by banks” and these mechanisms are collectively known today as the shadow banking system).

42. See Gary Gorton & Andrew Metrick, *Securitized Banking and the Run on Repo*, 104 *J. Fin. Econ.* 425, 425–28 (2012) (describing Crisis as “system wide bank run” emanating from securitized, rather than traditional, banking system).

between the scope of the Fed's oversight authority and the domains in which systemic risk can build. While the Fed's oversight authority has been expanded post-Crisis, nothing in the Dodd-Frank Act alters the general tendency for financial activity to move to less regulated domains.⁴³

B. *The Crisis*

Despite the questions about the need for a LOLR willing to provide liquidity through mechanisms other than OMO in today's markets, the Fed quickly took up the role of providing more aggressive liquidity injections to individual financial institutions during the Crisis. When the Fed first recognized that a lack of liquidity seemed to be adversely affecting market functioning in August 2007, it responded by encouraging banks to make greater use of the discount window, the only standing LOLR facility.⁴⁴ When bank borrowing remained modest, the Fed created the Term Auction Facility (TAF).⁴⁵ The TAF was available only to banks otherwise eligible to borrow through the discount window and it required comparable collateral, but through its structure and lack of historical baggage, the TAF was designed to be free from the perceived stigma that many viewed as inhibiting utilization of the discount window.⁴⁶

When conditions in the financial markets got worse rather than better, the Fed expanded its use of new facilities. In March 2008, around the time of Bear Stearns' failure, the Fed implemented two new facilities.⁴⁷ These facilities were distinctive in that they provided liquidity support directly to primary dealers—that is, the securities dealers with whom the Fed engages in OMO, including all of the major investment

43. Judge, Information Gaps, *supra* note 41, at 52 (arguing “regulations implementing provisions of the Dodd-Frank Act targeting the shadow banking system seem likely to fall short” of legislator’s goals for reforming money market mutual funds).

44. The Discount Rate, Bd. of Governors of the Fed. Reserve Sys., <http://www.federalreserve.gov/monetarypolicy/discountrate.htm> [<http://perma.cc/R6EZ-Y6CN>] (last updated Oct. 13, 2015) (providing more detailed description of Fed’s standing facilities).

45. Press Release, Bd. of Governors of the Fed. Reserve Sys. (Dec. 12, 2007), <http://www.federalreserve.gov/newsevents/press/monetary/20071212a.htm> [<http://perma.cc/79QL-PKES>].

46. E.g., Olivier Armandier et al., Discount Window Stigma During the 2007–2008 Financial Crisis, 118 J. Fin. Econ. 317, 326 (2015) (empirically establishing banks were willing to pay more to borrow through TAF than to borrow from discount window and thus “provid[ing] strong evidence of the existence of DW stigma”); Gary B. Gorton & Andrew Metrick, The Federal Reserve and Financial Regulation: The First Hundred Years (Nat’l Bureau of Econ. Research, Working Paper No. 19292, 2013), <http://www.nber.org/papers/w19292.pdf> [<http://perma.cc/B63B-UHTP>] (providing historical overview of processes through which discount window became stigmatized and identifying stigma as one of the major challenges Fed faced in Crisis).

47. See *infra* note 194 and accompanying text.

banks—rather than regulated banks.⁴⁸ To do so, the Fed invoked its authority under section 13(3) of the Federal Reserve Act, which enables the Fed to provide liquidity to nonbanks under “unusual and exigent circumstances.”⁴⁹ Like the discount window, these facilities conferred benefits on the institutions eligible to borrow through them even when those institutions did not use the facility, as counterparties had less reason to be concerned about the capacity of an eligible institution to obtain liquidity if needed.⁵⁰

Following Lehman’s failure in September 2008, the Fed got even more aggressive, creating four additional facilities to provide support to segments of the market that in the Fed’s view were experiencing significant distress.⁵¹ For example, to help revive the securitization market, the Fed created a facility that allowed users to borrow funds on a non-recourse basis so long as they provided the requisite collateral, qualifying AAA-rated asset-backed securities (ABS).⁵² Similarly, to support the market for commercial paper—short-term debt used by a wide variety of firms for liquidity management and other purposes—the Fed created a facility that provided a liquidity backstop to U.S.-based issuers of commercial paper.⁵³ The diversity of facilities the Fed created illustrates the incredible flexibility of the Fed’s LOLR authority. The Dodd-Frank Act imposes some new constraints on the Fed’s authority, primarily limiting

48. Office of the Inspector Gen., Fed. Reserve, *The Federal Reserve’s Section 13(3) Lending Facilities to Support Overall Market Liquidity: Function, Status, and Risk Management* 21 (2010) [hereinafter *Office of the Inspector Gen., Lending Facilities*], https://oig.federalreserve.gov/reports/FRS_Lending_Facilities_Report_final11-23-10_web.pdf [<http://perma.cc/T3BA-PL9E>].

49. *Id.* at i. Some of the programs actually relied upon an amalgam of the Fed’s powers and hence had to be approved by both the FOMC and the Board. See, e.g. Minutes of the Fed. Open Mkt. Comm. Meeting on Mar. 18, 2008, at 8–9 [hereinafter *Minutes of the March 18, 2008 FOMC Meeting*], <http://www.federalreserve.gov/monetarypolicy/files/fomcminutes20080318.pdf> [<http://perma.cc/RJU2-2X8C>] (voting to authorize New York Fed to lend up to \$200 billion to primary dealers through Term Securities Lending Facility (TSLF)); Bd. of Governors of the Fed. Reserve Sys., *Term Securities Lending Facility (TSLF) and TSLF Options Program (TOP)*, http://www.federalreserve.gov/newsevents/reform_tslf.htm [<http://perma.cc/7FKW-XC4U>] (last updated Dec. 9, 2014) (noting TSLF was instituted under Section 13(3) and therefore required Board authorization).

50. Transcript of the Fed. Open Mkt. Comm. Meeting on June 24–25, 2008, at 166 (statement of William Dudley) [hereinafter *June 24–25, 2008 FOMC Meeting*], <http://www.federalreserve.gov/monetarypolicy/files/FOMC20080625meeting.pdf> [<http://perma.cc/T4NU-YC34>] (explaining Lehman’s access to Primary Dealer Credit Facility (PDCF) materially altered willingness of counterparties to continue to work with it).

51. See Office of the Inspector Gen., *Lending Facilities*, *supra* note 48, at 57, 69, 81, 93 (summarizing traits of additional facilities).

52. *Id.* at 105.

53. *Id.* at 69.

its ability to provide individualized support of the type used to bail out Bear Stearns and AIG, but the flexibility otherwise remains intact.⁵⁴

The key point to highlight, which comes out in richer detail in the Fed's deliberations, is that Fed policymakers were remarkably dynamic and creative along some dimensions, and yet simultaneously remarkably constrained in their creativity and responsiveness along other dimensions.⁵⁵ More concretely, the Fed was exceptionally innovative in devising new ways to facilitate the flow of liquidity to the shadow banking system and to protect the financial system as it existed. At the same time, Fed policymakers remained largely tethered to the assumption that the near-exclusive function of the Fed's LOLR authority was to prevent insufficient liquidity from harming the financial system despite signals that lack of information was a significant and potentially greater factor inhibiting market functioning.⁵⁶ Similarly, despite the dramatic changes in the rationales for LOLR support and the nature of the financial system since Bagehot's time, Fed policymakers regularly and explicitly invoked Bagehot's dictum to explain the Fed's actions.⁵⁷ And, despite finding creative ways to provide significant liquidity support to the shadow banking system,⁵⁸ Fed policymakers regularly took cover in the prevailing, and outdated, regulatory regime to deflect suggestions that they should bear any meaningful responsibility for the financial health of the institutions populating that system.⁵⁹

Given the structure of the Fed, it is not possible to draw any strong generalizations about why "the Fed" was so responsive and innovative in

54. Dodd-Frank Wall Street Reform and Consumer Protection Act, 12 U.S.C. § 343 (2012). The Dodd-Frank Act also left the Fed's authority to provide banks liquidity through the discount window and other facilities fully intact. *Id.*

55. See *infra* Part III (examining mixed responses of Fed policymakers to Crisis).

56. See, e.g., Ben S. Bernanke, *Origins and Mission of the Federal Reserve*, in *The Federal Reserve and the Financial Crisis* 1, 4 (2013) [hereinafter Bernanke, *Origins and Mission*] (stating "provision of liquidity" is "main tool of central banks in dealing with financial panics or financial crises" and asserting "providing short-term credit to financial institutions . . . can help calm the market, can help stabilize those institutions, and can help mitigate or end a financial crisis").

57. Kathryn Judge, *The Federal Reserve: A Study in Soft Constraints*, 78 *Law & Contemp. Probs.* no. 3, 2015, at 65, 79 [hereinafter Judge, *Soft Constraints*] ("During the recent Crisis, Bagehot's name and [a] simplified version of his dictum were invoked with great frequency by members of the Fed and outside commentators.").

58. See *infra* notes 128–131 (discussing means employed by regulators to increase liquidity in shadow banking system).

59. E.g., Morgan Ricks, *Shadow Banking and Financial Regulation* 4 (Columbia Law & Econ. Working Paper Grp., Paper No. 370, 2010) [hereinafter Ricks, *Shadow Banking*], http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1571290 [<http://perma.cc/2M9N-JTYC>] ("[A]t the height of the crisis, very nearly the *entire* emergency policy response was designed to prevent shadow bank defaults through a series of 'temporary' and 'extraordinary' interventions.").

some regards and so constrained in others.⁶⁰ A variety of factors likely contributed. Fed policymakers faced a genuine challenge. The LOLR literature provided minimal guidance with respect to how the evolution of modern financial systems may have changed the appropriate role of a LOLR, beyond the claims, quickly belied by reality, that such changes mooted the need for a LOLR to provide support through any mechanism beyond OMO.⁶¹ Fed policymakers may also have perceived that invoking Bagehot's dictum could provide both justification and a cover for the scope of the Fed's operations.⁶² Regardless of the rationales for the Fed's actions during the Crisis, the very process of identifying more effective ways for the Fed to deploy its control over liquidity to bring about the timely resolution of a financial crisis could transform the Fed's behavior in response to future crises. If Fed officials failed to appreciate how they could most effectively use their authority, then the insights gleaned from the analysis here could prompt officials to be more responsive in the future. If Fed officials were constrained by concerns about the perceived legitimacy of using their authority in the ways proposed, providing a new vision about how the Fed ought to use this authority could empower Fed officials to take the actions they recognize as needed to promote stability. And, if Fed officials failed to act in order to deflect responsibility for troubled institutions and markets, this Essay could spur Fed officials into action by making it more likely that Congress and others will hold them to account should they fail to act when the proposed paradigm suggests they could and should do so.

II. LEVERAGE AS CREDITOR

This Part introduces the claim that the Fed should use its LOLR authority to further its role as information-coordination agent during periods of persistent systemic distress. It then briefly shows how a central bank can determine that it is facing a persistent liquidity crisis and how a central bank should shift its approach to using its LOLR authority once it makes that determination. In order to allow the case study of the Crisis to animate the claim, the analysis here is kept brief.⁶³

60. See *infra* Part III (providing overview of key decisionmaking bodies that collectively constitute the Fed).

61. E.g., Tucker, *supra* note 2, at 10 (describing “relative neglect of LOLR in the core literature on central banking over the past twenty years” and attributing this “tragedy,” which “contributed to central banks losing their way” during Crisis, to fact that until Crisis, “LOLR was widely regarded as a relic of the past”).

62. See Judge, *Soft Constraints*, *supra* note 57, at 81 (“Bagehot’s dictum provides cover for one of the most controversial aspects of the Fed’s actions during the Crisis—its extensive lending to nonbank institutions—and was invoked by Fed policymakers to justify these actions.”).

63. See *infra* Part V (providing more thorough analysis of counterarguments).

A. The Claim

This Essay argues that the Fed's LOLR authority is a powerful tool and one that has often been ineffectively utilized as a result of the near-exclusive focus on liquidity shortages as an aggravator of systemic distress. Insufficient liquidity can have significant and adverse effects on market functioning, so providing liquidity will always be among the aims a LOLR should seek to achieve.⁶⁴ When a liquidity shortage is the byproduct of an exogenous shock, such as the 9/11 terrorist attacks or the dramatic one-day decline of the stock market known as Black Monday, the current paradigm suggesting that the LOLR should flood the market for liquidity, subject only to constraints relating to moral hazard and credit risk, likely remains optimal.⁶⁵ Under such conditions, liquidity alone should suffice to restore stability and the disruptions to market functioning should be inherently finite so long as a central bank provides the requisite support.⁶⁶ But not all liquidity shortages fit this mold.⁶⁷

During the Crisis and other periods of financial distress, liquidity shortages have persisted despite aggressive efforts by the Fed to inject new liquidity into the market.⁶⁸ When the ongoing provision of liquidity fails to quell a liquidity shortage, that persistence conveys information. It reveals that the shortage is also a signal that there are deeper ills plaguing the financial system. Under these circumstances, the provision of

64. See Donald L. Kohn, Vice Chairman, Bd. of Governors of the Fed. Reserve Sys., *The Federal Reserve's Policy Actions During the Financial Crisis and Lessons for the Future* 2–3 (May 13, 2010), <http://www.federalreserve.gov/newsevents/speech/kohn20100513a.pdf> [<http://perma.cc/R53D-WKP3>] (identifying “liquidity pressures” as central to Crisis and stressing Fed’s need to adapt to address these “strains”).

65. See, e.g., Frederic S. Mishkin, Governor, Bd. of Governors of the Fed. Reserve Sys., *Systemic Risk and the International Lender of Last Resort* (Sept. 28, 2007) [hereinafter *Mishkin, Remarks*], <http://www.federalreserve.gov/newsevents/speech/mishkin20070928a.htm> [<http://perma.cc/4HB6-VRWH>] (identifying these as two instances when Fed “acted successfully to prevent potentially devastating financial seizures”).

66. See Kaufman, *supra* note 23, at 174–78 (analyzing effectiveness of LOLR support when facing certain types of exogenous shocks).

67. While this paper is the first to argue that this distinction merits a prominent place in analyses of how LOLRs should respond when facing liquidity shortages, others have recognized that liquidity shortages can be grouped in this manner. Compare Transcript of the Fed. Open Mkt. Comm. Meeting on Sept. 18, 2007, at 89 (statement of Frederick Mishkin) [hereinafter *September 18, 2007 FOMC Meeting*], [\[http://www.federalreserve.gov/fomc/minutes/20070918.htm\]](http://www.federalreserve.gov/fomc/minutes/20070918.htm) [<https://www.perma.cc/6NNG-UPUE>] (making this distinction and identifying previous examples of each), with Frederic S. Mishkin, *Economics of Money, Banking, and Financial Markets* 437–38 (10th ed. 2013) (discussing LOLR function without making any reference to this distinction).

68. E.g., *infra* section II.B (showing Crisis followed this pattern); see also Transcript of the Fed. Open Mkt. Comm. Meeting on Aug. 5, 2008, at 90 (statement of Frederic Mishkin) [hereinafter *August 5, 2008 FOMC Meeting*], <http://www.federalreserve.gov/monetarypolicy/files/FOMC20080805meetings.pdf> [<http://perma.cc/P9SS-G9CF>] (“Just as a reminder, remember that in the Great Depression, when . . . something hit the fan, [laughter] it actually occurred close to a year after the initial negative shock . . . We are now a year into this.”).

liquidity alone will never suffice to restore market functioning and could make the situation worse.

The notion that liquidity alone will not suffice to restore stability once lost is not a new insight. For example, well over twenty years ago, Charles Calomiris and Gary Gorton showed that once a panic takes hold, the provision of liquidity alone will not suffice to end the panic.⁶⁹ Rather, in their analysis, once a panic takes hold, markets will resume healthy functioning only after a credible source, such as the government or a clearinghouse, provides market participants with the information about where the weaknesses lie.⁷⁰ While much has changed in the financial markets, this fundamental fact has not.⁷¹

The recent work of a number of leading economists has brought to life the further possibility that the provision of liquidity can be counter-productive during periods of prolonged market distress. Gary Gorton, Andrew Metrick, and Lei Xie, for example, have demonstrated that under such conditions, market participants tend to provide (and thus obtain) funding through mechanisms with increasingly short maturities, thereby increasing the fragility of the overall financial system and reducing its capacity to withstand further adverse developments.⁷² Concretely, this means that one reason the ripple effects of Lehman Brothers's failure in September 2008 were so crippling was that the overall financial system was significantly more fragile than it had been when the Crisis started in August 2007. Similarly, Viral Acharya and Bruce Tuckman have shown that traditional LOLR activities enable financial institutions to delever at a slower rate than the market would otherwise require.⁷³ This is good if the problems are exogenous and the

69. See Charles W. Calomiris & Gary Gorton, *The Origins of Banking Panics: Models, Facts, and Bank Regulation*, in *Financial Markets and Financial Crises* 109, 160–62 (R. Glenn Hubbard ed., 1991) (using asymmetric information theory to explain why provision of liquidity may be insufficient to resolve panics).

70. Cf. *id.* at 161 (arguing open market operations by themselves will not be effective in quelling panics because “[t]he problem is not that depositors want cash for its own sake . . . but [that they lack information and] are concerned that their bank will fail”).

71. See Ronald J. Gilson & Reinier Kraakman, *Market Efficiency After the Financial Crisis: It's Still a Matter of Information Costs*, 100 *Va. L. Rev.* 313, 351–52 (2014) (“Increased mandatory disclosure is the simplest response to market failure that turns on information costs. Disclosure was inadequate within and across all markets implicated in the Crisis . . .”); see also *infra* section II.C (arguing provision of information to market participants should be an important part of Fed policy response to crises).

72. Gary B. Gorton, Andrew Metrick & Lei Xie, *The Flight from Maturity 1* (Nat'l Bureau of Econ. Research, Working Paper No. 20027, 2014), <http://www.nber.org/papers/w20027.pdf> [<http://perma.cc/X368-5TDS>] (arguing “the financial system became increasingly fragile *during* the crisis, so that even a small shock would have led to a large response *at that point in the crisis*”).

73. E.g., Viral V. Acharya & Bruce Tuckman, *Unintended Consequences of LOLR Facilities: The Case of Illiquid Leverage* 3, 4 (Oct. 23, 2013), <http://www.imf.org/external/np/res/seminars/2013/arc/pdf/viral.pdf> [<http://perma.cc/AG7V-DL4M>] (showing access to LOLR “give[s] the bank leeway to reduce deleveraging sales of illiquid assets” and

deleveraging inefficient, but by rendering institutions more fragile in the face of subsequent adverse shocks, this effect is quite troubling in the context of a persistent liquidity shortage. There is thus a growing body of work that suggests that during periods of prolonged distress, market participants change their activities in ways that increase the fragility of the system. This alone provides a reason to rethink how a LOLR should respond when facing a persistent liquidity shortage.

The second reason to rethink how a LOLR should use that authority when facing a persistent liquidity shortage is that persistent liquidity shortages also give rise to new opportunities. When liquidity is in short supply, the value of liquidity goes up and so too does the leverage the Fed enjoys by virtue of controlling access to liquidity. The Fed's singular access to unlimited liquidity thus becomes a far more potent tool right when the Fed needs it most. Just as importantly, the site of liquidity shortages will often serve as a roadmap to the sectors of the financial system that are facing problems that need to be addressed before stability can return, the ultimate aim of the Fed's LOLR authority. Through properly designed facilities, the Fed can extract information and address problems right at their source, irrespective of the prevailing, and typically outdated, regulatory regime. By drawing attention to these opportunities and making an affirmative case for how the Fed can use its LOLR authority as part of its role as information-coordination agent during periods of systemic distress, this Essay complements the recent work on the reasons that flooding the market with liquidity may be problematic during such times.

The core claim is simple: The Fed ought to use the leverage that it enjoys by virtue of controlling access to liquidity to acquire the information it needs to understand the magnitude and contours of the underlying issues causing the market dysfunction to continue. It should also use that leverage, in conjunction with its other sources of authority, to facilitate the redistribution of information among market participants and other government actors in order to bring about a timely resolution to the underlying issues that it discovers.⁷⁴

Critically, the role of information-coordination agent is not an entirely new one for the Fed, nor is it one that would require any expansion of the Fed's already vast authority. The Fed has long been at the forefront of efforts to contain growing financial crises,⁷⁵ and collecting and coordinating the distribution of information have always been com-

explaining "facts of broker-dealer deleveraging . . . [demonstrate] that during a crisis, with security of LOLR facilities in place, broker-dealers delivered relatively slowly, and the weaker among them delivered the most slowly").

74. This is based on the notion that containing financial crises is a central role of central banks. See, e.g., Bernanke, *Origins and Mission*, *supra* note 56, at 3 (explaining one function of Fed is "to keep the financial system working normally and, in particular . . . to either prevent or . . . mitigate financial panics or financial crises").

75. *Id.*

ponents of those efforts. The Fed often played, albeit inconsistently, the role of collecting and coordinating the distribution of information in the recent Crisis,⁷⁶ and it is one that the Fed has played during other episodes that threatened systemic stability. For example, when the possible failure of the hedge fund Long-Term Capital Management (LTCM) posed a threat to the stability of the financial system in 1998, the New York Fed played a critical role in identifying and coordinating a response to that threat.⁷⁷ Consistent with the paradigm proposed here, the Fed operated in a way that was agile and responsive to the source of the threat, even though the Fed has no supervisory or other authority over hedge funds like LTCM.⁷⁸ It similarly lacked such authority over the many investment banks that played a critical role in funding the bailout and that would have been harmed had LTCM failed.⁷⁹ This ultimately enabled the Fed to coordinate an entirely private bailout of LTCM, eliminating the need for the government to make difficult decisions about whether to become further involved in the debacle.⁸⁰

While the Fed did not have to use any of its formal sources of authority in connection with that debacle, its decision to play the critical role that it did in facilitating a smooth resolution of LTCM illustrates the longstanding assumption by the Fed and others that the Fed should play a central role in crisis management. The situation also illustrates the ways the Fed has often and appropriately been quite creative in how it uses its formal and informal sources of authority in executing that role.⁸¹

Despite this related incident and the role the Fed played communicating and coordinating with Treasury and other officials during the Crisis, the Fed often failed to use its LOLR authority as a mechanism for gathering information that would have been valuable to the Fed,

76. See *infra* Part III (exploring contours of Fed's dual role as provider of both liquidity and information regarding financial risk).

77. See Hedge Funds: Hearing Before the H. Comm. on Banking & Fin. Servs., 105th Cong. (1998) (statement of Alan Greenspan, Chairman, Board of Governors, Federal Reserve System), <http://www.federalreserve.gov/boarddocs/testimony/1998/19981001.htm> [<http://perma.cc/XZA6-7B2B>] (reporting on New York Fed's role in "facilitating private sector refinancing of the large hedge fund, Long Term Capital Management").

78. See Roger Lowenstein, *When Genius Failed: The Rise and Fall of Long-Term Capital Management* 186 (2000) ("Long-Term was not a bank, and the Fed does not have authority over hedge funds.").

79. See *id.* at 214–18 (recounting LTCM rescue, which included investment banks such as Goldman Sachs and Merrill Lynch); Michael P. Malloy, 3 *Banking Law and Regulation* § 14.04[C] (2d. ed Supp. 2016) (noting Morgan Stanley and Goldman Sachs only became subject to Fed supervision in 2008 when they converted to Bank Holding Companies); Edward V. Murphy, Cong. Research Serv., R43087, *Who Regulates Whom and How? An Overview of U.S. Financial Regulatory Policy for Banking and Security Markets* 25–26 (2015) (explaining Fed had "no regulatory jurisdiction" over investment banks pre-2008).

80. See generally Lowenstein, *supra* note 78 (providing detailed account of episode).

81. See *infra* section V.A (discussing Fed's historical flexibility in adapting its instruments to achieve evolving aims).

other policymakers, and market participants. Again, this may well reflect a lack of theoretical support for such an approach, a legitimate desire by Fed officials not to overstep the implicit limits on how they ought to use their vast authority, or a less legitimate desire to avoid accountability by hewing to an outdated regulatory regime. The case study here reveals moments that support all three conjectures. Regardless of the rationale or justification for such behavior in the past, this Essay⁸² provides much needed guidance for how the Fed might more effectively use this authority when facing the next financial crisis.

An important benefit of altering the Fed's LOLR activities in the manner proposed is that in addition to enhancing the Fed's ability to contain a growing financial crisis, it also helps mitigate the accountability issues that arise when the Fed uses this authority. Banks and other financial institutions generally borrow from the Fed only in circumstances where the Fed is providing more favorable terms (or more liquidity) than the institution can otherwise obtain.⁸³ Additionally, mere access to Fed support can benefit eligible institutions even in the absence of actual borrowing.⁸⁴ Accurately perceiving that the financial institutions who receive such support disproportionately benefit from it has animated much of the post-Crisis backlash against the Fed and has led many to call for its overall authority to be curtailed significantly.⁸⁵ Some Fed policymakers had similar concerns about the fairness of the Fed's actions and seemed to want to be able to impose more of a quid pro quo on the Fed's LOLR operations.⁸⁶ Yet, there are good reasons for the Fed not to demand

82. Guidance is also provided by other post-Crisis research focusing on the ramifications of the Fed continuing to abide by outdated guidance in how it ought to deploy its LOLR authority during periods of persistent systemic distress.

83. Olivier Armantier et al., *Discount Window Stigma During the 2007–2008 Financial Crisis* 18–21 (Fed. Reserve Bank of N.Y. Staff Report No. 483, Jan. 2011), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr483.pdf [<http://perma.cc/H5K9-SS3R>] (showing financial institutions avoided borrowing from Fed's discount window during 2008 crisis and were willing to pay premium to borrow from alternative sources).

84. See, e.g., *infra* section III.C.4.

85. E.g., Tucker, *supra* note 2, at 10 (observing “especially in the United States the atmosphere [surrounding discussions regarding the appropriate role for a LOLR] is . . . toxic, poisoning debates about central banking more generally”); Jeffrey M. Lacker, President, Fed. Reserve Bank of Richmond, *The Fed as Lender of Last Resort: Comments on “Rules for a Lender of Last Resort”* by Michael Bordo 1 (May 30, 2014), http://www.richmondfed.org/press_room/speeches/president_jeff_lacker/2014/pdf/lacker_speech_20140530.pdf [<http://perma.cc/9HVW-EQWS>] (explaining “[c]redit extension,” as LOLR, “arguably has been the most problematic and contentious aspect of central banking, and it seems likely to remain so for the foreseeable future”).

86. E.g., Transcript of the Fed. Open Mkt. Comm. Conference Call on March 10, 2008, at 11 (statement of Richard Fisher) [hereinafter March 10, 2008 FOMC Conference Call], <http://www.federalreserve.gov/monetarypolicy/files/FOMC20080310confcall.pdf> [<http://perma.cc/TEJ4-DK74>] (“I can understand the carrot side of this thing, and we are doing it for the reasons that you stated, and I am very sympathetic to the argument. The question is, [w]hat do we get in return . . . ?”).

economic recompense commensurate with the value of the liquidity support it provides through LOLR facilities. Stigma often already discourages borrowing and the Fed usually provides such support only when the overall financial system would benefit from an institution's willingness to take it.⁸⁷ The proposed approach is a way to balance these competing interests. By making informational and other noneconomic demands in connection with the largesse of cheap liquidity, the Fed may be able to mitigate concerns about legitimacy and fairness while enhancing (rather than undermining) the Fed's efforts to restore market functioning.⁸⁸

B. Identifying a Persistent Liquidity Shortage

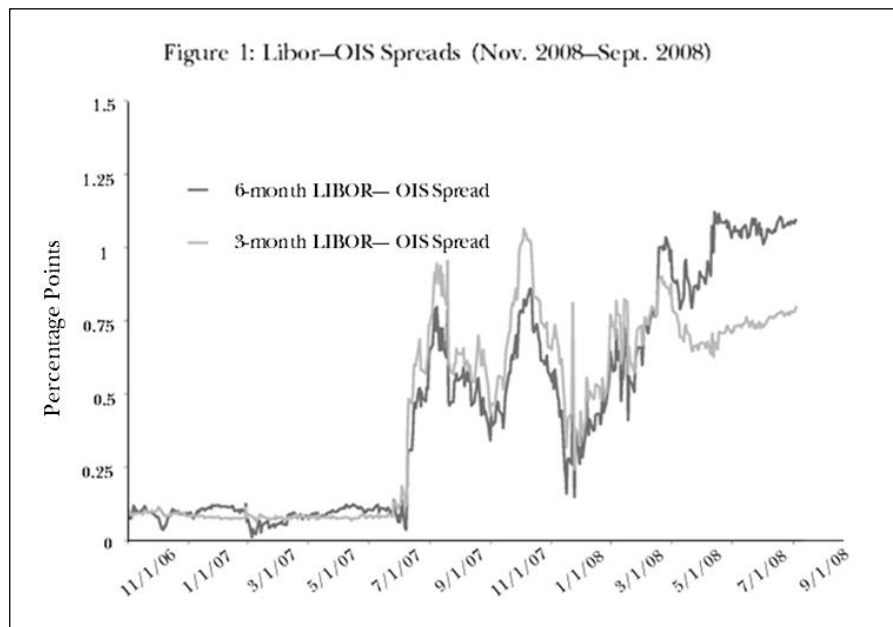
A threshold challenge to the claim that a LOLR should revise how it uses that authority when facing a persistent liquidity shortage is whether it is realistic to expect that central banks will be able to recognize a shortage as persistent in real time. In practice, this potential challenge is not all that challenging, as reflected in the evolution of the Crisis.

Despite the Fed's myriad efforts to inject additional liquidity into the market starting in August 2007, conditions remained strained throughout the period that followed. This was evident from a number of indicia available in real time. For example, one important indicator of liquidity conditions and bank health is the Libor-OIS spread, which is the difference between the London Interbank Offered Rate (Libor) and the overnight indexed swap (OIS) rate, a rate that reflects market expectations of overnight rates over the term of the contract. Figure 1 shows the three-month Libor-OIS spread and the six-month Libor-OIS spread for the period from January 2006 through September 2008.⁸⁹

87. E.g., Milton Friedman & Anna Jacobson Schwartz, *A Monetary History of the United States, 1867–1960*, at 268–69 (1963) (arguing Fed should use “penalty rate” during normal times but not during times of crisis); Armentier et al., *supra* note 83, at 32–34 (finding “strong evidence . . . of [discount window] stigma”).

88. See *infra* section IV.A (addressing concern that even proposed conditions might depress usage in problematic ways).

89. Notably, all of these measures likely understate the liquidity and credit challenges as a result of Libor manipulation by reporting banks, and members of the FOMC were aware that this was likely. See, e.g., Transcript of the Fed. Open Mkt. Comm. Meeting on April 29–30, 2008, at 5 (statement of William Dudley) [hereinafter April 29–30, 2008 FOMC Meeting], <http://www.federalreserve.gov/monetarypolicy/files/FOMC20080430meeting.pdf> [http://perma.cc/PT6T-54Z3] (“There is considerable evidence that the official LIBOR fixing understates the rates paid by many banks for funding.”).



Throughout this period, Fed policymakers regularly monitored these indicators and understood that they showed that financial markets remained distressed.⁹⁰ Fed policymakers also regularly stated that the country was in the midst of a financial crisis that had started in August 2007.⁹¹ And as will be described in detail in Part III, they were aware that the Fed’s myriad efforts to inject liquidity into the system had not had the desired aim of quelling the ongoing market dysfunction.⁹² The trajectory of the Crisis thus illustrates how persistent liquidity crises will reveal themselves and can be identified even without the benefit of hindsight, enabling Fed policymakers to alter their response in the ways proposed.

90. See, e.g., Rajdeep Sengupta & Yu Man Tam, *The LIBOR-OIS Spread as a Summary Indicator*, Econ. Synopses, No. 25 (2008), <https://research.stlouisfed.org/publications/es/08/ES0825.pdf> [<http://perma.cc/VFS3-GK79>] (“The LIBOR-OIS spread has been a closely watched barometer of distress in money markets for more than a year.”).

91. See, e.g., *infra* notes 162–166 and accompanying text (noting Fed policymakers during this period recognized state of economy resembled that of other major financial crises and were concerned conditions might get worse).

92. See, e.g., *infra* notes 181–186, 217–221 and accompanying text (providing evidence of Fed’s awareness facilities they were using to inject liquidity had failed to fully quell market dysfunction). Just as importantly, this type of temporal delay is not unique to the Crisis. E.g., Aug. 5, 2008 FOMC Meeting, *supra* note 68, at 90 (statement of Frederic Mishkin) (“Just as a reminder, remember that in the Great Depression, when . . . something hit the fan, [laughter] it actually occurred close to a year after the initial negative shock We are now a year into this.”).

C. *The Aims: Focusing on Information*

Underlying this Essay's claim that we should rethink how a central bank can best use its LOLR authority when facing a persistent liquidity shortage is the recognition that today's financial markets look quite different than the markets of Bagehot's day. In addition to being far more complete than markets of yesteryear, today's markets and institutions are also more complex and dynamic. While the additional mechanisms for redistributing liquidity transform the informational content of persistent liquidity shortfalls, the complexity and dynamism increase the need for the information such signals now convey. These changes also transform the role of the Fed and other regulators, as the dynamism of the system and the massive information gaps that arise from the current regime increase the need for financial regulators to be agile and responsive when facing indications that panic may be taking hold.⁹³ Precisely because this Essay is calling on the Fed to be agile and responsive in light of what it learns in the moment, it is impossible to fashion a detailed roadmap in advance. Nonetheless, financial crises follow patterns. Two key ingredients for a financial system to recover from a state of prolonged distress are (1) regulators and market participants must have credible information about the risks to which banks and other financial institutions are exposed⁹⁴ and (2) those institutions must have sufficient capital in light of those risks.⁹⁵

That financial stability depends on banks and other financial institutions having sufficient capital in light of the risks to which they are exposed is reflected in the fact that capital regulation was the cornerstone of early efforts to harmonize the regulation of banks in advanced economies.⁹⁶

93. See Judge, *Information Gaps*, supra note 41, at 26–40 (describing information gaps and their impact on systemic stability).

94. See, e.g., Calomiris & Gorton, supra note 69, at 124–27 (explaining when “depositors are unable to distinguish individual bank risks, they may withdraw a large volume of deposits from all banks” during a panic).

95. See, e.g., Allen N. Berger et al., *The Role of Capital in Financial Institutions*, 19 J. Banking & Fin. 393, 424–25 (1995) (highlighting importance of capital requirements in protecting government—the largest unsecured creditor of most U.S. banks—and in guarding economy against negative externalities caused by bank failures); Daniel K. Tarullo, *Capital Regulation Across Financial Intermediaries* (Sept. 28, 2015), <http://www.federalreserve.gov/newsevents/speech/tarullo20150928a.htm> [<http://perma.cc/4K2L-N72S>] (“In the wake of the crisis, Basel III strengthened capital quality and levels across the board. In addition, capital surcharges were imposed on about thirty banks of global systemic importance”); Daniel K. Tarullo, Governor, Bd. of Governors of the Fed. Reserve Sys., *Regulatory Reform Since the Financial Crisis* (May 2, 2012), <http://www.federalreserve.gov/newsevents/speech/tarullo20120502a.htm> [<http://perma.cc/R942-LMP7>] (discussing role of capital requirements in post-Crisis regulatory reform and noting “they are central to good financial regulation, precisely because they are available to absorb all kinds of potential losses, unanticipated as well as anticipated”).

96. Carnell, Macey & Miller, supra note 13, at 29, 219–21 (“[During the 1980s,] U.S. regulators worked with their foreign counterparts to develop risk-based capital standards

The importance of high-quality information has just as long of a history, though it has not received quite as much attention. Looking back, the inability of depositors to readily distinguish healthy banks from weak ones has long been a factor contributing to the spread of panics and bank runs.⁹⁷ The growth of the shadow banking system, an intermediation regime that is larger than the U.S. banking system and replicates the basic economic functions of banks, alters the information dynamics that contribute to fragility, but by no means reduces the importance of information.⁹⁸ In other work, I show theoretically why information gaps are likely to be large in the shadow banking system and how those information gaps inhibit market functioning in certain states of the world.⁹⁹ Given that the value of information is often state-contingent and that information is costly to produce, ramping up information production in certain states of the world will often be an optimal regulatory strategy.¹⁰⁰ Just as importantly, it will often be necessary regardless of whether optimal or not because market participants lack the incentives and regulators lack the authority and resources to generate all of the information that might be pertinent in all of the states of the world that could come to be.¹⁰¹

[through the Basel Committee on Banking Supervision] The Basel I Risk-Based Capital Guidelines, promulgated in 1988, set forth requirements for minimum capital relative to a risk-adjusted measure of assets.”).

97. See, e.g., *id.* at 216–18 (“Well-capitalized banks are less likely to falter or fail than poorly capitalized banks. Thus capital requirements help protect depositors, other creditors, the FDIC, and the financial system.”).

98. See Judge, *Information Gaps*, *supra* note 41, at 30–33 (describing different ways information can facilitate and impede market functioning and how those dynamics can be state contingent); see also Gilson & Kraakman, *supra* note 71, at 331–50 (exploring role information costs played as type of “market friction” in the Crisis); Gary Gorton & Andrew Winton, *1.A Financial Intermediation*, in *Handbook of the Economics of Finance* 431, 505 (George M. Constantinides et al. eds., 2003) (providing information-based theory of panics).

99. See Kathryn Judge, *Fragmentation Nodes: A Study in Financial Innovation, Complexity, and Systemic Risk*, 64 *Stan. L. Rev.* 657, 690–97 (2012) [hereinafter Judge, *Fragmentation Nodes*] (arguing information gaps in securitization process may alter behavior of market participants in ways that exacerbate systemic risk); Judge, *Information Gaps*, *supra* note 41, at 24–25, 33–41 (explaining means by which information gaps expand in shadow banking system); see also Gary B. Gorton, *The Subprime Panic*, 15 *Eur. Fin. Mgmt.* 1, 11 (2009) (noting shadow banking claims are not traded in markets resembling those economists tend to focus on).

100. Judge, *Information Gaps*, *supra* note 41, at 49, 54–56 (pointing to “important role that more robust disclosure policies could play in limiting information gaps and the fragility that results”).

101. See *id.* at 8–19 (contrasting information-related incentives of money claimants with those of equity claimants); see also Gilson & Kraakman, *supra* note 71, at 331–50 (arguing costs of obtaining information on timing of housing bubble burst and consequences of housing price decline kept information from reaching market and contributed to crisis).

As the remainder of this section conveys in greater detail and Part III brings to life, information production and redistribution are critical to the success of any effort aimed at crisis containment. Extracting information and producing information, providing market participants with the credible information they require to resume working directly with one another, and identifying capital shortfalls in a timely fashion are thus the three aims that are the focus here and are among the core aims that the Fed will want to pursue when using the leverage it enjoys as the LOLR in the face of persistent liquidity shortages.

1. *Extracting Information.* — When liquidity problems persist, the first priority for any central bank should be to understand why those problems are persisting. The importance of the Fed having timely access to information about the health of financial institutions and markets and the distribution of risks is well recognized and is a primary justification for the Fed's significant oversight authority.¹⁰² Nonetheless, the Fed's supervisory authority will almost inevitably be insufficient to enable the Fed to gather the information that it needs. This is in part because when the Fed is acting as a supervisor, its primary function historically has been microprudential—i.e., focused on the financial health and risk exposures of individual institutions with the aim of reducing the likelihood that any single firm will fail.¹⁰³ During a period of systemic distress, however, the information that will be most valuable to the Fed often will be macroprudential in nature—i.e., focused on matters that affect the stability of the overall financial system, such as how exposures to a particular risk are distributed across market participants, or the nature and size of interconnections among different institutions and markets.

Another limitation is that the supervisory scheme is highly fragmented and will inevitably be incomplete and backward looking. Even with the post-Crisis reforms, the regulatory regime in the United States remains highly fragmented. There are three separate bank regulators and a wide array of important financial firms and markets that are overseen by nonbank regulators, like the Securities and Exchange Commission (SEC).¹⁰⁴ Insurance regulation, meanwhile, remains largely state-based.¹⁰⁵

102. See, e.g., Heidi Mandanis Schooner, *The Role of Central Banks in Bank Supervision in the United States and the United Kingdom*, 28 *Brook. J. Int'l L.* 411, 432 (2003) ("Close relationships with banks will assist the central bank in anticipating the direction of the economy and in addressing financial crises.").

103. Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., Remarks at the 47th Annual Conference on Bank Structure and Competition: Implementing a Macroprudential Approach to Supervision and Regulation (May 5, 2011) [hereinafter Bernanke, *Macroprudential Approach*], <http://www.federalreserve.gov/newsevents/speech/bernanke20110505a.htm> [<http://perma.cc/2SK2-ZJR8>] ("[T]he traditional, or 'microprudential,' approach to regulation and supervision . . . is concerned primarily with the safety and soundness of individual institutions, markets, or infrastructures.").

104. See Carnell, Macey & Miller, *supra* note 13, at 60–65 (enumerating bank and nonbank regulators).

105. *Id.* at 570.

The Dodd-Frank Act makes important progress on reducing the communication and coordination problems that arise from this dispersion of authority through the creation of the Financial Stability Oversight Council (FSOC).¹⁰⁶ Under the leadership of the Treasury Secretary, the FSOC's membership includes all of the leading federal financial regulators and representatives from state regulators,¹⁰⁷ and the Dodd-Frank Act allows the FSOC to designate nonbanks as systemically significant and thereby subject those firms to Fed oversight.¹⁰⁸ The Dodd-Frank Act also created the Office of Financial Research (OFR) to supplement the FSOC's operations with broad information-gathering authority.¹⁰⁹ These changes mitigate some of the specific information problems that arose during the Crisis.¹¹⁰ When facing the next financial crisis, the OFR should be an important ally for the Fed in its efforts to gather pertinent information. And the FSOC should serve as an important body through which the Fed can more effectively disseminate relevant insights to other financial regulators and work with those regulators to address deficiencies outside the Fed's domain. Nonetheless, these changes by no means alleviate the core information and coordination issues that arise from the dispersion of authority among so many different regulators, and hence the importance of having one powerful and agile body play a lead role identifying such threats.

Just as relevant as the failure of the Dodd-Frank Act to fundamentally reform the fragmented regulatory regime is the inability—and hence failure—of the Act to alter the historical pattern that the very process of implementing financial regulations causes activity to move to less regulated domains.¹¹¹ A leading example, and one that poses fundamental and still unaddressed informational challenges, is the rise of the shadow banking system. The shadow banking system is a capital-markets-based intermediation regime that serves many of the functions traditionally filled only by banks. This system was central to the Crisis and a

106. See Dodd-Frank Wall Street Reform and Consumer Protection Act, 12 U.S.C. § 5321 (2012) (establishing FSOC).

107. *Id.* § 5321(b) (identifying FSOC members).

108. *Id.* § 5323(a)(1) (“The Council . . . may determine that a U.S. nonbank financial company shall be supervised by the Board of Governors and shall be subject to prudential standards . . . if the Council determines that material financial distress at the U.S. nonbank financial company . . . could pose a threat to . . . financial stability . . .”).

109. See *id.* §§ 5342–5343 (establishing OFR and authorizing it to “sponsor and conduct research projects” and “share data and information . . . with the [FSOC]”).

110. See Bernanke, *Macroprudential Approach*, *supra* note 103 (“[The OFR’s] collection and analysis of financial-sector data should allow regulators to see more of the financial landscape and better equip them to identify systemic risks and other emerging threats.”).

111. See generally Victor Fleischer, *Regulatory Arbitrage*, 89 *Tex. L. Rev.* 227, 243–44 (2010) (defining conditions creating opportunities for regulatory arbitrage).

primary beneficiary of the Fed's LOLR operations.¹¹² Moreover, while this system shrank immediately following the Crisis, it regained its status as equal in size to the U.S. banking system and it is poised for yet further growth.¹¹³

Information, or rather lack of it, is central to the systemic risk that arises from shadow banking. A core regulatory challenge posed by shadow banking is the rise of information gaps—that is, pockets of pertinent and theoretically knowable information not known to any market participant or regulator.¹¹⁴ Information gaps are endemic to shadow banking because a significant portion of the capital flowing into the shadow banking system comes from the issuance of money-like claims that are designed to obviate the need for the holder to do any meaningful due diligence about the value of the underlying assets or the associated risks.¹¹⁵ At the same time, because this regime operates in the capital markets and thus outside the direct purview of the Fed and other prudential regulators, regulators often know even less than market participants about matters like the quality of the underlying assets and how the institutional arrangements that constitute the system redistribute risks and create new interconnections. The close examination of the first year of the Crisis provides additional evidence of these dynamics and the ways that information gaps can inhibit both the market and regulatory responses required to help restore stability once panic takes hold.¹¹⁶ It also highlights why the Fed and other regulators will always have an incomplete understanding of how risks are allocated and the transmission mechanisms through which problems can spread, as the very process of regulating incentivizes

112. See, e.g., Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., *Some Reflections on the Crisis and the Policy Response* (Apr. 13, 2012), <http://www.federalreserve.gov/newsevents/speech/bernanke20120413a.htm> [<http://perma.cc/7AKH-GPX>] (stating “a number of the vulnerabilities” at heart of the Crisis “were associated with the increased importance of the so-called shadow banking system”); see also *supra* section I.B (discussing Fed’s provision of liquidity to nonbanks during Crisis).

113. See, e.g., Steven L. Schwarcz, *Regulating Shadow Banking: Inaugural Address for the Inaugural Symposium of the Review of Banking & Financial Law*, 31 *Rev. Banking & Fin. L.* 619, 620 (2012) (noting “shadow banking has . . . grown rapidly” between 2008 and 2011); Fin. Stability Bd., *Global Shadow Banking Monitoring Report 2014*, at 8–9 (2014), http://www.fsb.org/wp-content/uploads/r_141030.pdf [<http://perma.cc/6QBR-E7A6>] (reporting shadow banking assets as share of GDP rose by “6 percentage points to 120% of GDP in 2013, approaching the peak of 124% of GDP in 2007”).

114. See Judge, *Information Gaps*, *supra* note 41, at 5–6 (describing why information gaps are endemic to shadow banking as currently constituted).

115. *Id.*

116. See *infra* Part III (providing numerous examples of how lack of information inhibited market functioning and capacity of regulators to respond in timely and appropriate way as events unfolded).

market participants to find new ways to undertake economically equivalent activity in less regulated domains.¹¹⁷

In short, in both the United States and abroad, central banks have always played a lead role in crisis management. Even post-Crisis, the Fed retains complete control over monetary policy, which is often the most powerful tool available to combat a growing financial crisis.¹¹⁸ The Fed alone also retains control over the provision of liquidity, the other primary tool traditionally used to prevent and contain financial crises.¹¹⁹ And other elements of the Dodd-Frank Act, like Congress's decision to have the Fed oversee nonbank systemically important institutions, affirm the expectation that the Fed will continue to play a lead role in addressing systemic threats.¹²⁰ The creation of the FSOC and the OFR alter the overall landscape in material ways, and Fed policymakers will need to work closely with both organizations in the course of their efforts to contain future financial crises. Nonetheless, the Fed remains at the forefront of crisis management, and crisis management requires high-quality information that the Fed will often lack when a crisis first strikes. Updating the paradigm for how the Fed can best use its LOLR authority and expecting the Fed to serve as an information-coordination agent during periods of systemic distress will enable the Fed to execute its established roles more effectively than it currently does and enhance the capacity of the overall financial regulatory regime to contain nascent financial crises.

The final point to highlight is that in arguing that the Fed should at times extract information from banks and other financial institutions in exchange for the largesse of timely access to cheap liquidity, this Essay embraces a very thick notion of information generation. This can go beyond demanding data, to asking market participants to produce information they might not otherwise possess and potentially even seconding personnel to the Fed to enhance the Fed's ability to analyze the information it has received. Given that part of the challenge will be that relevant information is dispersed across market participants and regulators in ways that inhibit anyone from having the comprehensive view necessary to make informed decisions, the claim here is that the Fed should prioritize both information extraction and production as among the aims it can legitimately seek to achieve using its LOLR authority.

117. See Tucker, *supra* note 2, at 10, 17 (noting "regulatory arbitrage is endemic" to modern societies).

118. E.g., Douglas W. Diamond and Raghuram G. Rajan, *Illiquid Banks, Financial Stability, and Interest Rate Policy*, 120 J. Pol. Econ. 552, 583 (2012) (showing "why the structure of banks may necessitate ex post interest rate intervention").

119. See *supra* notes 16–18 and accompanying text.

120. See generally Ben S. Bernanke, *The Federal Reserve and the Financial Crisis* 3 (2013) (stating key function of Fed is "to keep the financial system working normally and, in particular[] . . . to either prevent or mitigate financial panics or financial crises").

2. *Information Injections.* — Information is just as important to market participants as it is to regulators. Market participants rationally hesitate to enter into a transaction when they lack information about the creditworthiness of counterparties, the value of collateral, or other considerations relevant to the amount and nature of the risk that the transaction poses, and the terms of the transaction do not compensate them accordingly. These dynamics play a significant role in contributing to systemic risk. Bad news signaling that missing information may be important is often the immediate trigger of a financial crisis.¹²¹ This is just as true in the shadow banking system as it is in the banking system.¹²² While market participants generally, and money claimants in particular, may be quite comfortable relying on imperfect but probative indicia of asset quality and related matters during periods of widespread confidence, that inclination can change quickly in the face of any indication that the proxies market participants had relied on are less reliable than previously believed.¹²³

Put differently, a lack of liquidity will often serve as a flag that market participants are unwilling to trade because they lack the information they need to understand and price the risks to which they will be exposed. Depending on their incentives and how costly it is for them to privately produce that information, ignorance on the part of market participants can serve as a major impediment to the restoration of healthy market functioning once confidence wanes.¹²⁴ Additionally, injecting information or otherwise helping to coordinate the production and redistribution of information to address such challenges may entail significantly less credit risk and moral hazard than other government inter-

121. See, e.g., Gary B. Gorton, *Stress for Success: A Review of Timothy Geithner's Financial Crisis Memoir*, 53 J. Econ. Literature 975, 981 (2015) [hereinafter Gorton, *Stress for Success*] (contending we can understand financial crises as situations “where conditional on a public shock . . . debt [which had been information insensitive] becomes information-sensitive,” giving rise to “adverse selection or the fear of adverse selection”); see also Mishkin, *Remarks*, *supra* note 65 (defining systemic risk as “risk of a sudden, usually unexpected, disruption of information flows in financial markets that prevents them from channeling funds to those who have the most productive profit opportunities”).

122. See e.g., Judge, *Information Gaps*, *supra* note 41, at 41–45 and sources cited therein (discussing evidence of mass exits by money claimants in shadow banking system during Crisis, which occurred when “bad news was coupled with new information suggesting that the proxies money claimants had relied on were less accurate than previously believed”).

123. See Judge, *Fragmentation Nodes*, *supra* note 99, at 697 (“When a signal conveys new information suggesting that an investor has dramatically underappreciated the nature or magnitude of a risk to which he is exposed . . . the investor is likely to exercise significantly greater caution in assessing and taking actions in response to other possible risks as well.”).

124. See Judge, *Information Gaps*, *supra* note 41, at 33–36 (“[I]t is costly to produce information and, when those costs are high because gaps are large, this can result in significant frictions limiting the capacity of market participants and regulators to respond in a timely and proportionate fashion to certain types of new information.”).

ventions to help restore stability, while still helping to promote that aim. Helping market participants to produce pertinent information and overcome frictions is thus one way that the Fed can fulfill its role as information-coordination agent and help restore stability during periods of systemic distress.

3. *Bank Health.* — Another common reason for persistent liquidity problems is that banks or other financial institutions lack sufficient capital in light of the risks to which they are exposed. Liquidity shortages only arise when market participants are hesitant to work with one another or hesitant to accept collateral on terms equivalent to those they had previously been willing to offer. Information-related frictions can aggravate and give rise to such problems. But when market participants remain hesitant, it will often indicate that they have legitimate concerns about the health of other financial institutions or the value of the collateral they can post. Given the inherent staleness of the measures regulators typically use to monitor bank health, these indications are ones that the Fed and other regulators should take seriously. And because the Fed's role as the LOLR means it will likely end up exposed to precisely those financial institutions and collateral that the market is questioning, regardless of whether the Fed otherwise oversees those institutions, the Fed ought to be at the forefront of efforts to identify capital shortfalls and other financial weaknesses.

History has shown that bank regulators and other government actors often delay acknowledging and addressing weaknesses in the health of financial institutions, and that such delays typically cause the situation to deteriorate further and often increase the cost of the ultimate cleanup.¹²⁵ The Fed's LOLR authority is not the optimal tool for addressing capital weaknesses. Once the Fed identifies areas of concern, it will often need to work with the FSOC, other regulators, or Congress to gather further information and address any identified capital deficiencies. Failures to correct shortfalls thus cannot and should not be laid entirely at the Fed's door. Nonetheless, identifying capital shortfalls and working with other policymakers as needed to address those shortfalls in a timely fashion is entirely consistent with roles that the Fed has long played and remains uniquely well suited to play.

III. THE CRISIS

For the sake of analysis, the Crisis can be divided into four chapters: (1) the buildup, (2) the slow decline, (3) life support, and (4) recovery. During the buildup, the period leading up to August 2007, the groundwork for the Crisis was laid: housing prices soared; subprime loans proliferated; securitization vehicles, backed by subprime loans and other

¹²⁵ The savings and loan debacle is the most famous example of these phenomena, but the analysis here reveals that similar dynamics were at play during the Crisis.

assets, flourished; other elements of the shadow banking system similarly grew; and financial institutions became increasingly leveraged and increasingly reliant on wholesale financing. There was increasing evidence of problems in the housing market and declining demand for mortgage-backed securities (MBS) starting in 2006. Nonetheless, it was not until August 2007,¹²⁶ when BNP Paribas announced that it was halting redemptions in three funds because a lack of liquidity prevented it from being able to accurately price certain MBS in those funds,¹²⁷ that systematic ramifications of these developments were on full display. The period from August 2007 through September 2008 marked the slow decline. Immediately following the failure of Lehman Brothers, starting with the government's provision of \$85 billion for insurance giant AIG, was the period of life support. In the months that followed, the government effectively backstopped every critical element of the banking and shadow banking system.¹²⁸ To do this, regulators became increasingly creative in how they used the powers available to them,¹²⁹ sought additional authority from Congress,¹³⁰ and then became even more creative and aggressive in how they used their expanded authority.¹³¹ This stabilized markets, but it did so primarily by allowing market participants to rely on the creditworthiness of the government in lieu of frank assessments of counterparty risk and asset values. This period gradually transitioned into the final chapter, a period of recovery during which market participants became increasingly willing to work with one another

126. See The Role of Credit Rating Agencies in the Structured Finance Market: Hearing Before the Subcomm. on Capital Mkts., Ins. & Gov't Sponsored Enters. of the H. Comm. on Fin. Servs., 110th Cong. 148 (2007) (statement of Vickie A. Tillman, Executive Vice President, Standard & Poor's Credit Market Services) (testifying as to role of S&P Ratings services following "unprecedented conditions in the subprime mortgage market and the credit crunch and pressure on the economy that have followed").

127. See *infra* note 137 and accompanying text.

128. See Pozsar et al., *Shadow Banking*, *supra* note 41, at 2 (noting emergency liquidity facilities "amounted to functional backstops of... the [entire] credit intermediation process that runs through the shadow banking system... [w]hile today's traditional banking system was made safe and stable through the deposit insurance and liquidity provision provided by the public sector").

129. See *infra* section III.D.2 (discussing Fed tactics in handling AIG crisis).

130. Housing and Economic Recovery Act of 2008, Pub. L. No. 110-289, § 1145, 122 Stat. 2654, 2734 (2008) (codified at 12 U.S.C. § 4617 (2012)) (providing Treasury Secretary with power to place Government-Sponsored Enterprises (GSEs) into receivership or conservatorship); Emergency Economic Stabilization Act, Pub. L. No. 110-343, § 115, 122 Stat. 3765, 3780 (2008) (codified at 12 U.S.C. § 5225 (2012)) (providing Treasury Secretary with authority to acquire up to \$700 billion of distressed assets).

131. For example, preferred shares in relatively healthy banks and unhealthy automakers were deemed to be "troubled assets," and thus could be acquired using funds that Congress had made available based on the expectation they would be used to buy MBS and other "toxic" assets. See, e.g., Neil King Jr. & John D. Stoll, U.S. Offers \$5 Billion to Car Suppliers, *Wall St. J.* (Mar. 20, 2009, 12:01 AM), <http://online.wsj.com/news/articles/SB123747406976485103> (on file with the *Columbia Law Review*) (noting automaker bailout was funded through Troubled Asset Relief Program (TARP)).

directly and the financial system regained its capacity to function without widespread government support.

Each period of the Crisis, from the buildup to the recovery, is potentially relevant to this project. The types of life support required, for example, reveal systemic fragilities that potentially could have been identified and treated earlier. Similarly, the conditions that enabled life support to be withdrawn shed light on the types of government interventions that proved most enduring. Yet accounts of the Crisis are frequently hundreds of pages long, and even then are truncated versions of all that occurred.¹³² A comprehensive analysis is thus beyond the scope of this Essay.

This Part addresses the space constraints in a few ways. First, the analysis proceeds chronologically, but its focus is on the slow decline, that is, after the crisis was underway but before the disastrous events of September 2008. Second, the analysis focuses on episodes that are particularly important or illustrative with respect to the dynamics here at issue. Within these episodes, the analysis is structured in accordance with the aims of information gathering, information dissemination, and assessing bank health. The goal is to consider whether, in light of what Fed officials knew at various junctures, they might have made different decisions had their actions been guided by the proposed paradigm for how a LOLR should respond during periods of prolonged market dysfunction.

The third way the scope is rendered manageable is by focusing primarily on the lead up to two of the most important developments in the Crisis: the failure of Lehman Brothers and the Fed's rescue of AIG. Lehman's bankruptcy filing had massive ripple effects, triggering adverse developments throughout the financial system, and has been identified by many as the most significant regulatory failure of the Crisis.¹³³ It thus played a critical role, accentuating the magnitude of the Crisis and the Great Recession that followed. AIG's near failure was critical. As one commentator noted at the time, the initial \$85 billion facility the Fed instituted to save AIG was "the most radical intervention in private busi-

132. E.g., Fin. Crisis Inquiry Comm'n, *The Financial Crisis Inquiry Report* (2011) (spanning 633 pages); Timothy F. Geithner, *Stress Test: Reflections on Financial Crises* (2014) (spanning 580 pages); Henry M. Paulson, Jr., *On the Brink: Inside the Race to Stop the Collapse of the Global Financial System* (2011) (spanning 512 pages); Andrew Ross Sorkin, *Too Big to Fail: The Inside Story of How Wall Street and Washington Fought to Save the Financial System—and Themselves* (2009) (spanning 600 pages).

133. See, e.g., Richard A. Posner, *A Failure of Capitalism* 274 (2009) [hereinafter Posner, *Failure of Capitalism*] ("decid[ing] to allow Lehman to slip into bankruptcy . . . looms as the single biggest blunder" during the Crisis); Gorton, *Stress for Success*, *supra* note 121, at 2 ("Clearly, the results of the Lehman bankruptcy were devastating."). But see David Skeel, *The New Financial Deal: Understanding the Dodd-Frank Act and Its (Unintended) Consequences* 23–31 (2010) (suggesting Lehman's failure was not as pivotal as some suggest).

ness in the central bank's history."¹³⁴ The implicit policy of too-big-to-fail reified by this action gave rise to significant moral hazard and associated market distortions—shielding systemically important firms from market discipline, enabling them to access funding on excessively favorable terms, and incenting financial institutions to alter their profiles in ways that increase the likelihood that they too will be perceived as too systemically significant to fail. It also led to a range of costly reforms designed to counter this moral hazard.¹³⁵ And it exposed the Fed to significant credit risk, as Fed policymakers had limited information about AIG's financial health when they extended this support.¹³⁶ Hence, if the Fed, on its own or with the aid of other actors, could have done more to avert or minimize the ramifications of either of these developments, the course of the Crisis, the legislative response to it, and the amount of credit risk and moral hazard arising from the government's interventions might have been very different.

A final background note: Because the aim of this Part is to consider what was known or realistically knowable by policymakers, it relies heavily on primary materials to reconstruct these dynamics in real time. One limitation inherent in this approach is that the most comprehensive contemporaneous materials consist of transcripts of FOMC meetings. Composed of all members of the Board of Governors of the Federal Reserve (the Board) and five presidents of regional reserve banks, the FOMC is primarily responsible for setting monetary policy and overseeing OMOs whereas the Board and regional banks play a greater role in establishing and implementing LOLR operations. Nonetheless, the transcripts remain highly relevant, as financial stability is critical to the FOMC's capacity to fulfill its mandate and the transcripts provide valuable insights into the understandings and perceptions of FOMC members, which also informed the actions they took as members of the Board and presidents.

A. *August 2007: The Start*

The event that precipitated the start of the Crisis was the announcement by BNP Paribas that it was suspending redemptions in

134. Edmund L. Andrews, Michael J. de la Merced & Mary Williams Walsh, Fed's \$85 Billion Loan Rescues Insurer, N.Y. Times (Sept. 16, 2008), <http://www.nytimes.com/2008/09/17/business/17insure.html> (on file with the *Columbia Law Review*).

135. See, e.g., U.S. Gov't Accountability Off., GAO-14-809T, Testimony Before the Subcomm. on Fin. Insts. & Consumer Prot. of the S. Comm. on Banking, Hous. & Urban Affairs, Large Bank Holding Companies: Expectations of Government Support 2 (statement of Lawrence L. Evans, Jr., Director, Financial Markets and Community Investment, U.S. Gov't Accountability Off.) (2014) (stating empirical analysis and interviews suggest "recent regulatory reforms have reduced but not eliminated the likelihood the federal government would prevent the failure of one of the largest bank holding companies").

136. See *infra* notes 275–277 and accompanying text (noting policymakers' contemporaneous acknowledgement that Fed lacked critical information when rescuing AIG).

three of its funds because the lack of liquidity in the market for subprime MBS prevented it from being able to value the assets the funds held.¹³⁷ The market contraction that followed was sufficiently severe that the European Central Bank (ECB) immediately injected an additional 95

137. See Alan S. Blinder, *After the Music Stopped: The Financial Crisis, the Response, and the Work Ahead* 90 (2013) (“The system began to crack in July 2007” but “[t]he real wake-up call didn’t come until August 9, 2007 . . .”); Paulson, *supra* note 132, at 61 (“The crisis in the financial markets I had anticipated hit with force on August 9, 2007.”); Viral V. Acharya & Matthew P. Richardson, *Causes of the Financial Crisis*, 21 *Critical Rev.* 195, 208 (2009) (describing BNP Paribas announcement on August 9, 2007 as “next wave of the crisis”); Gara Afonso, Anna Kovner & Antoinette Schoar, *Stressed, Not Frozen: The Federal Funds Market in the Financial Crisis* 2–3, 9 (Fed. Reserve Bank of N.Y., Staff Rep. No. 437, May 2011) (finding liquidity hoarding beginning after August 2007 and referring to “2007–2008 Crisis”); Markus K. Brunnermeier, *Deciphering the Liquidity and Credit Crunch 2007–2008*, 23 *J. Econ. Pers.* 77, 82–86 (2009) (describing troubling indicators throughout summer of 2007 and shift that followed BNP’s announcement); Michael J. Fleming, *Federal Reserve Liquidity Provision During the Financial Crisis of 2007–2009*, at 1 (Fed. Reserve Bank of N.Y., Staff Rep. No. 563, 2012) (“The Federal Reserve . . . undertook numerous measures to mitigate the effects of the financial crisis that started in August 2007.”); Gary Gorton & Andrew Metrick, *Securitized Banking and the Run on Repo*, 104 *J. Fin. Econ.* 425, 426 (2012) (referring to “financial crisis that began in August 2007”); Mark Jickling, Cong. Research Serv., R40173, *Causes of the Financial Crisis* (2010) (“The current financial crisis began in August 2007 . . .”); Alberto Manconi, Massimo Massa & Ayako Yasuda, *The Role of Institutional Investors in Propagating the Crisis of 2007–2008*, 104 *J. Fin. Econ.* 491, 491 (2012) (“By August 2007, what had begun as some bad news about the souring of the subprime mortgage market had spread into a full-fledged financial crisis encompassing wide-ranging and seemingly unrelated markets.”); Pozsar et al., *Shadow Banking*, *supra* note 41, at 59 (noting “liquidity crisis began in August 2007”); Alexander Chudik & Marcel Fratzscher, *Liquidity, Risk and Global Transmission of the 2007–08 Financial Crisis and the 2010–11 Sovereign Debt Crisis* 2 (Fed. Reserve Bank of Dall., Working Paper No. 107, 2012), <http://www.dallasfed.org/assets/documents/institute/wpapers/2012/0107.pdf> [<http://perma.cc/J7BA-9PK5>] (describing August 2007 as “onset of the global financial crisis”); Frederic S. Mishkin, *Over the Cliff: From the Subprime to the Global Financial Crisis* 5 (Nat’l Bureau of Econ. Research, Working Paper No. 16609, 2010), <https://www0.gsb.columbia.edu/faculty/fmishkin/papers/nberwp.w16609.pdf> [<http://perma.cc/NNV2-967Z>] (“Lehman was going to extraordinary efforts . . . to hide its leverage, even after the financial crisis started in August 2007.”); Jill Treanor, *Credit Crunch Pinpointed to 9 August 2007—The Day the World Changed*, *Guardian* (Dec. 1, 2011, 3:49 PM), <http://www.theguardian.com/business/2011/dec/01/credit-crunch-pinpointed-august-2007> [<http://perma.cc/CG4L-2DG7>] (pinpointing “start of the first credit crunch as 9 August 2007”); *Unhappy Birthday, Economist: Schumpeter* (Aug. 9, 2012, 1:40 PM), <http://www.economist.com/blogs/schumpeter/2012/08/financial-crisis> [<http://perma.cc/P638-B7X2>] (“There is a debate to be had over when precisely the financial crisis began. But five years ago today, on August 9th 2007, is the strongest candidate.”). The transcripts from the FOMC meeting on August 7, 2007, reveal that Fed policymakers were attuned to liquidity shortages in these markets and the potential for those shortages to disrupt the functioning of key markets. Transcript of the Fed. Open Mkt. Comm. Meeting on August 7, 2007, at 16–17 (statement of William Dudley) [hereinafter August 7, 2007 FOMC Meeting], <http://www.federalreserve.gov/monetarypolicy/files/FOMC20070807meeting.pdf> [<http://perma.cc/5GST-3JBU>]. Nonetheless, the BNP Paribas announcement and the market disruptions that followed provided regulators and market participants significant new information about the magnitude of the disruptions that could result.

billion Euro into the financial system. Soon thereafter, the ECB made additional liquidity injections and other central banks, including the Fed, intervened to support market functioning.¹³⁸ The August and September meetings of the FOMC address these developments and what Fed policy-makers learned from them.

1. *Extracting Information.* — Within a week of the BNP Paribas announcement, Fed Chairman Ben Bernanke recognized that the dysfunction observable in the markets could trigger a “downward spiral . . . that could threaten or harm the economy” and that the Fed should respond accordingly.¹³⁹ As Bernanke noted, the possible responses consisted of “something in monetary policy, something in our lender-of-last-resort function, or some combination.”¹⁴⁰ After debating the options, the FOMC decided to bolster its LOLR operations by making loans extended through the discount window more attractive to banks.¹⁴¹ The Committee favored such an approach because lowering the fed funds rate—the primary tool for monetary policy—was viewed as a “blunter instrument.”¹⁴²

By September, most Fed policymakers recognized that the previous month had revealed significant weaknesses in the financial markets, and many also believed that the possibility of an extremely bad outcome had increased.¹⁴³ According to Governor Frederic Mishkin, “[T]he downside risk is actually very, very substantial. Though we may not be allowed to

138. See, e.g., Mauro F. Guillen, Lauder Inst., Wharton Sch., Univ. of Pa., *The Global Economic & Financial Crisis: A Timeline 1*, http://lauder.wharton.upenn.edu/wp-content/uploads/2015/06/Chronology_Economic_Financial_Crisis.pdf [<http://perma.cc/5ZG8-WHVT>] (last visited Oct. 22, 2015) (“Thursday, August 9, 2007: . . . The European Central Bank pumps €95bn (£63bn) into the banking market to try to improve liquidity. It adds a further €108.7bn over the next few days. The US Federal Reserve, the Bank of Canada and the Bank of Japan also begin to intervene.”).

139. Transcript of the Fed. Open Mkt. Comm. Conference Call on Aug. 16, 2007, at 3 (statement of Ben Bernanke), <http://www.federalreserve.gov/monetarypolicy/files/FOMC20070816confcall.pdf> [<http://perma.cc/3MH5-MPRH>] [hereinafter August 16, 2007 FOMC Conference Call].

140. *Id.* at 7 (statement of Ben Bernanke).

141. Officially this decision was implemented by the Board of Governors of the Federal Reserve, which comprises a subset of the FOMC. See Bd. of Governors of the Fed. Reserve Sys., Minutes of the Federal Open Market Committee on September 18, 2007, <http://www.federalreserve.gov/fomc/minutes/20070918.htm> [<http://perma.cc/8CEP-MBNP>] (“Simultaneously [with the FOMC decision], the Federal Reserve Board announced that, to promote the restoration of orderly conditions in financial markets, it had approved a 50 basis point reduction in the primary credit rate . . .”).

142. See August 16, 2007 FOMC Conference Call, *supra* note 139, at 28 (statement of Richard Fisher); see also *id.* at 6 (statement of Ben Bernanke) (noting “rate cut is not completely off the table, but my own feeling is that we should try to resist a rate cut until it is really very clear from economic data and other information that it is needed”).

143. See, e.g., September 18, 2007 FOMC Meeting, *supra* note 67, at 83 (statement of Randall Kroszner) (“I agree with virtually everyone around the table that some of the downside risks have increased, and it’s important to think about them in terms not just of the overall average but of tail risks.”).

mention it in public, we have to mention the ‘R’ word because there is now a significant probability of recession.”¹⁴⁴ Fed President Janet Yellen similarly expressed “concern[] about the asymmetric nature of the risks that we face and the possibility of . . . nonlinear, negative dynamics.”¹⁴⁵

Fed policymakers had also become attuned to the possibility that seemingly minor developments could have significant and surprising effects. As Governor Kroszner noted: “We saw that what really initiated things . . . was BNP Paribas’s announcement [I]t would have been hard to know that it would have the kind of effect that it seemed to have of leading to a revaluation of risks not just in the subprime sector but much more broadly.”¹⁴⁶ He also specifically recognized that because of changes in the financial markets, the Fed lacked critical information:

In the old days, we used to know where the risks were; unfortunately, we knew that they were all on the bank balance sheets. With the originate-to-distribute model and securitizations, we have been able to move to a different model in which the risks are much more dispersed [S]ome of them are certainly going to be coming onto the bank balance sheets, so the banks never fully get out of this. But it leads to potential pockets of uncertainty, and that is exactly what has come up.¹⁴⁷

Yet, Fed policymakers seemed reluctant to use the Fed’s LOLR authority to inquire into the actual health of financial institutions. For example, in explaining why he favored a more modest reduction in the interest rate for discount window loans, Governor Donald Kohn explained that such an approach would “help[] [the Fed] maintain” the status of the discount window as a “no questions asked” facility, that is, as a facility that qualifying banks could access without having their financial health scrutinized.¹⁴⁸ And, in his view, it was “really important to maintain” that policy.¹⁴⁹

2. *Disseminating Information.* — Even prior to the BNP announcement, Fed policymakers were aware that the markets for subprime mortgages and securities backed by them were “significantly impaired.”¹⁵⁰ Fed policymakers were also aware that the problems in the subprime market were adversely affecting corporate debt markets despite

144. Id. at 90 (statement of Frederic Mishkin). All titles refer to the position held at the time the words were spoken. Governors are members of the Board; presidents are the heads of the regional Reserve Banks.

145. Id. at 112 (statement of Janet Yellen).

146. Id. at 83–84 (statement of Randall Kroszner).

147. Id. at 86 (statement of Randall Kroszner).

148. August 16, 2007 FOMC Conference Call, *supra* note 139, at 12 (statement of Donald Kohn).

149. Id. at 26 (statement of Donald Kohn).

150. August 7, 2007 FOMC Meeting, *supra* note 137, at 6 (statement of William Dudley).

“the disparity in fundamentals between these two sectors.”¹⁵¹ As William Dudley, who oversaw the Fed’s OMO, explained to the Committee, the primary factor that seemed to be driving this unexpected contagion was that “[t]here has been a loss of confidence among investors in their ability to assess the value of and risks associated with structured products, which has led to a sharp drop in demand for such products.”¹⁵²

By September, the market appeared to be in the grips of a process of trying to re-evaluate the risks associated with a wide variety of structured assets and the exposures of financial institutions to those assets. As Timothy Geithner, President of the New York Fed and Vice President of the Committee, explained: “The process of differentiation among strong and weak institutions, conduits, financing vehicles, et cetera has to continue. But as many of you said, this process could take quite some time, and it will leave us with the risk of a fair amount of fragility in markets in the interim.”¹⁵³ Kohn echoed these sentiments, noting that “[a] critical channel of contagion that came into play in the intermeeting period was the involvement of the banks as providers of credit and liquidity backstops in the [asset-backed commercial paper (ABCP)] market” which caused “uncertainties about real estate markets, the performance of nonprime mortgages, and structured-credit products [to come] to rest as greater uncertainty about bank exposures.”¹⁵⁴ It thus appeared to Fed policymakers that a lack of credible information about the value of structured products and financial institutions’ exposures to those products were significant factors inhibiting market functioning.

Moreover, Fed policymakers recognized even at this stage that for markets to recover, market participants required information. As Kroszner explained:

People don’t have as much information as they thought they had. They were relying on traditional rating agencies and on other sources that were perfectly fine for traditional credits but more of a challenge for the newer credits [like structured financial products] They are now going to have to invest much more in getting that information.¹⁵⁵

Mishkin similarly observed: “Of course, the big problem is really the issue of information revelation and price discovery.”¹⁵⁶ Interestingly, there was even some acknowledgment that it may be appropriate for the Fed to play a role in this process. President Jeffrey Lacker, for example, suggested that, “if we really think information constraints are at the heart

151. *Id.* at 8 (statement of William Dudley).

152. *Id.* (statement of William Dudley).

153. September 18, 2007 FOMC Meeting, *supra* note 67, at 74 (statement of Timothy Geithner).

154. *Id.* at 74–75 (statement of Donald Kohn).

155. *Id.* at 86–87 (statement of Randall Kroszner).

156. *Id.* at 103 (statement of Frederic Mishkin).

of the problem, it might be better to address this problem by addressing those constraints directly.”¹⁵⁷ He specifically proposed having the Fed “us[e] [its] supervisory authority to encourage and facilitate greater transparency.”¹⁵⁸ It was not an option the Fed pursued at the time.

3. *Bank Health.* — At this stage, there appear to have been relatively few concerns about the financial health of banks in general, primarily because most financial institutions appeared to have strong capital ratios, but there were some exceptions. Governor Kevin Warsh, for example, noted that “when we look at these financial institutions, we are probably more prudent to judge them by their actions rather than what these capital ratios would suggest. Their actions are still not ebullient. Their actions are still not overly opportunistic.”¹⁵⁹ Others expressed similar sentiments, suggesting that while banks appeared very well capitalized and capable of withstanding the adverse developments, there were reasons for concern.¹⁶⁰

It was also clear that many large financial institutions were facing a number of challenges that could adversely affect their financial health. Market conditions prevented banks from being able to retain securitized loans they had originated with that intent and limited their capacity to replace short-term “bridge” loans with longer-term syndicated loans. Both of these developments and the increasing utilization of outstanding credit lines had the effect of tying up more capital than banks had anticipated.¹⁶¹ The most significant and troubling development with respect to bank health, however, was the discovery that many banks had very significant contingent, and sometimes implicit, liabilities that had not been reflected on their balance sheets, raising questions about the accuracy and completeness of those balance sheets.

B. *January 2008: The First Intermeeting Rate Cut*

By January, it had become clear that the challenging market conditions were likely to persist for some time and conditions could get substantially worse. As Bernanke explained: “The thrust that I got [from conversations with bankers] was that things are going to be pretty

157. Id. at 145 (statement of Jeffrey Lacker).

158. Id. (statement of Jeffrey Lacker).

159. Id. at 79 (statement of Kevin Warsh).

160. For example, at the September 18 meeting William Dudley assessed that:

The general sense is that U.S. banks are very healthy and . . . well capitalized. However, . . . [t]he problem they have right now is that they can’t really size with any accuracy how much will be coming onto their balance sheets over the next few months through asset-backed commercial paper, through bank conduits, and through other things for which they may be on the hook that they didn’t expect to be on the hook for.

Id. at 11.

161. Id. at 4 (statement of William Dudley).

tight As one banker put it in our meeting, ‘There is no Plan B.’”¹⁶² In other words, the possibility acknowledged in August of a further downward spiral in the financial markets, with significant and deleterious effects on the real economy, appeared even more likely in January. Reflecting the magnitude of concern about this risk, the FOMC lowered the fed funds rate by 75 basis points to 3.5% on January 22, in a rare intermeeting action; and it lowered the rate an additional 50 basis points, to 3%, at its regularly scheduled meeting on January 30. This section considers the rationales underlying those cuts and the implications for this Essay’s claims. The section closes by exploring the challenges of using monetary policy to respond to adverse developments in the financial markets and why it may be valuable for the Fed to have more fine-tuned instruments to address such developments.

1. *Extracting Information.* — In proposing the initial rate cut, Bernanke explained that he was troubled by the conditions of the financial markets. As he noted, Carmen Reinhart and Kenneth Rogoff had recently circulated a paper “which compares some indicators of our economy with other major financial crises and finds that we rank *at the moment* among the five largest financial crises in any industrial country since World War II.”¹⁶³ In addition to recognizing that the country already appeared to be in the midst of a significant financial crisis, many Fed policymakers remained concerned that conditions could get substantially worse. Mishkin, for example, emphasized that:

[T]here really is potential for a negative feedback loop that has not yet set in. The financial disruption that we’re seeing right now could then mean a more substantial worsening of the aggregate economy, and that could make the financial markets have even more strain So I really worry about the downside risks and think that they are very substantial¹⁶⁴

Others expressed related concerns about the course the Crisis was taking.¹⁶⁵ Fed policymakers were thus confronting the challenge of how

162. Transcript of the Fed. Open Mkt. Comm. Conference Call on Jan. 9, 2008, at 17 (statement of Ben Bernanke), <http://www.federalreserve.gov/monetarypolicy/files/FOMC20080109confcall.pdf> [<http://perma.cc/2R2D-NDME>].

163. Transcript of the Fed. Open Mkt. Comm. Conference Call on Jan. 21, 2008, at 8 (statement of Ben Bernanke) (emphasis added) [hereinafter January 21, 2008 FOMC Conference Call], <http://www.federalreserve.gov/monetarypolicy/files/FOMC20080121confcall.pdf> [<http://perma.cc/N897-5CNV>].

164. Transcript of the Fed. Open Mkt. Comm. Meeting on Jan. 29–30, 2008, at 94 (statement of Frederic Mishkin) [hereinafter January 29–30, 2008 FOMC Meeting], <http://www.federalreserve.gov/monetarypolicy/files/FOMC20080130meeting.pdf> [<http://perma.cc/F3A7-PKT9>]; see also *id.* at 81 (statement of Timothy Geithner) (explaining how adverse feedback loop could develop).

165. See, e.g., *id.* at 83 (statement of Donald Kohn) (“To me one of the defining characteristics of the period since, say, mid-November is the spreading out from the housing sector of lending caution to other sectors in the economy.”).

best to contain what appeared to be a significant and growing financial crisis.

The magnitude of the perceived threat is reflected both in the Committee's willingness to approve a rare and controversial intermeeting rate cut and in the aggregate size of the two cuts authorized. President Thomas Hoenig, for example, repeatedly noted that he was "troubled" by the cut, but willing to support it because "[i]t is a very daunting thought to think about a crisis that you might have avoided had you just taken certain actions."¹⁶⁶

There was also increasing appreciation that the Fed lacked the information and understanding it needed to face the challenges ahead. As Kroszner observed, "it is hard for me to really understand exactly what drove the . . . deterioration" at the end of 2007.¹⁶⁷ In his view, until the Fed understood the reasons why conditions were continuing to deteriorate, it had little hope of successfully combatting those dynamics.¹⁶⁸

The specific challenges plaguing the financial markets in January also shed light on some of the factors contributing to the system's fragility, factors which the Fed should potentially have known more about than it did.¹⁶⁹ One of the most pressing challenges was the deteriorating financial health of the monoline insurers—insurance companies that traditionally specialized in insuring municipal bonds but also had insured many AAA-rated MBS and other ABS. As Dudley explained, the leading monoline insurers had recently had their credit ratings downgraded and further downgrades were expected.¹⁷⁰ This posed a number of challenges, primarily because many of the MBS, other ABS, and related assets held by banks were insured, and when the companies providing that insurance were downgraded, the banks had to mark down the value of those assets accordingly.¹⁷¹

These developments thus brought to the fore many of the dynamics that contributed to AIG's near failure. It alerted the Fed to the magnitude of the interconnections between banks and insurance companies

166. January 21, 2008 FOMC Conference Call, *supra* note 163, at 14–15 (statement of Thomas Hoenig).

167. January 29–30, 2008 FOMC Meeting, *supra* note 164, at 90 (statement of Randall Kroszner).

168. See *id.* (statement of Randall Kroszner) ("I'm concerned that, since I don't really understand what happened there, I don't want to take too much comfort from what has happened so far.").

169. See *infra* section III.B.2 (assessing Fed's awareness of systemic weaknesses and informational uncertainty).

170. January 21, 2008 FOMC Conference Call, *supra* note 163, at 4 (statement of William Dudley).

171. *Id.* at 5 (statement of William Dudley). Insurance companies typically recognize losses on insurance policies only as they are incurred, so the net effect is to accelerate recognition of these losses.

and to the role of insurance policies (and economically similar arrangements) covering MBS and related products in creating those exposures. It also highlighted the potential for a rating downgrade of an insurance company to wreak havoc on banks for reasons apart from the actual financial health of the insurance company. Perhaps most importantly, these developments alerted the Fed to how little monitoring there often was of the risk exposures of insurance companies generally. As Geithner explained: “We have had extensive conversations with the New York State Insurance Commissioner, who is the lead supervisor of many of them” and “[i]t turns out that office . . . has very little information, particularly on the stuff that is on the leading edge of concern, which is to whom they sold credit protection and on what.”¹⁷² Dudley also noted that “there’s quite a bit of cloudiness about what their true condition is.”¹⁷³

The Fed also had a much more robust picture of what went wrong in August 2007. The FOMC’s regularly scheduled January meeting included a “special presentation on policy issues raised by [the] financial crisis,”¹⁷⁴ including a “diagnosis” which suggested that the two most important contributing factors were: “(1) a loss of investor confidence in the ratings of structured-finance products and [ABCP], which caused structured-credit markets to seize up and ABCP markets to contract, and (2) the resulting losses and balance sheet pressures on financial intermediaries, especially many of the largest global financial services organizations.”¹⁷⁵ Other evidence suggested these challenges persisted and were continuing to contribute to the ongoing market dysfunction.

The staff presentation on the Crisis also provided information from a study conducted in conjunction with the Office of the Comptroller of the Currency (OCC), the primary supervisor of all national banks, and the SEC, which ran the Consolidated Supervised Entity (CSE) Program, through which it had supervisory authority over the five leading investment banks. The study examined the quality of risk management at large financial institutions, and it revealed a very mixed bag. Some firms appeared to have robust and effective risk-management systems; others did not. The study found that the “less effective” firms “operated with more limited liquidity and capital buffers”; “did not have limit structures that were consistently or effectively enforced”; “did not properly aggregate or monitor off-balance sheet exposures across the organization”; “were siloed . . . and were comparatively slower in taking actions to mitigate exposures”; had thought less “about the interplay of their risk measures”; had less “timely and scalable management information systems”; were less “disciplined in how they valued the holdings of

172. January 29–30 FOMC Meeting, *supra* note 164, at 17 (statement of Timothy Geithner).

173. *Id.* at 18 (statement of William Dudley).

174. *Id.* at 158 (statement of Ben Bernanke).

175. *Id.* at 159 (statement of Patrick Parkinson).

complex or potentially illiquid securities”; “relied heavily on third-party views of risk”; and “tended to have a narrower view of the risks associated with their CDO business.”¹⁷⁶

In other words, there were massive deficiencies in the risk-management systems of some major financial institutions, limiting their capacity to understand, much less manage, their risk exposures.

2. *Disseminating Information.* — In addition to recognizing that conditions seemed to be getting worse rather than better, Fed policymakers recognized that informational dynamics continued to be a significant factor contributing to that decline. As Geithner noted: “There [remains] a huge amount of uncertainty about the size and the location of remaining credit losses across the system.”¹⁷⁷ Kohn similarly observed: “The extraordinary volatility in markets is, I think, indicative of underlying uncertainty, and that underlying uncertainty itself will discourage risk-taking.”¹⁷⁸ He further highlighted that “[t]he monoline issue raises questions about who will bear the losses [stemming from the declining housing prices] and provides another channel for problems spreading through the credit markets.”¹⁷⁹ And, as just discussed, the Fed staff also presented new analyses regarding the dynamics that had contributed to the liquidity crunch that occurred in August, which emphasized the role that uncertainty played in contributing to it. By January 2008, it was thus plain that a lack of information persisted, with respect to both the value of MBS and other securitized assets and the impact of potential losses on those assets upon the health of major financial institutions. It was also clear that this dynamic was contributing to, and could significantly aggravate, market dysfunction.

3. *Bank Health.* — By January, some Fed policymakers had become quite concerned about the financial health of banks generally. A presentation by Fed staff showed that the largest banks remained “well-capitalized,” as that term was defined under the then-prevailing statutory scheme, but there had “been significant erosion of their capital ratios over the past two quarters.”¹⁸⁰ It was thus evident that the developments in the financial markets and the declining value of certain assets were having significant and adverse effects on bank balance sheets.

Continuing a theme from August, some questioned how much comfort regulators should take from banks’ supposedly adequate capitalization ratios. Warsh, for example, believed that “financial institutions as a group are . . . undercapitalized, even with the recent capital infusions.”¹⁸¹ He further observed: “Income statement shortfalls due to falling profits,

176. Id. at 184–86 (statement of Jon Greelee).

177. Id. at 81 (statement of Timothy Geithner).

178. Id. at 84 (statement of Donald Kohn).

179. Id. (statement of Donald Kohn).

180. Id. at 8 (statement of William Dudley).

181. Id. at 86 (statement of Kevin Warsh).

poor visibility, weaker pipelines, and the need to reduce headcounts very meaningfully strike me in some ways as a more urgent and troublesome issue for large financial institutions than their balance sheet weaknesses” and while “the window for foreign investment is open now, I wouldn’t expect that window to stay open throughout 2008.”¹⁸² Warsh was thus questioning not only bank health but also the adequacy of the information the Fed possessed and relied on to assess bank health, suggesting instead that a more forward-looking approach might be more informative.

Warsh also identified one of the core challenges underlying the problems that had already surfaced and that would give rise to those that lay ahead. As he explained, large financial “institutions have been built, or should I say rebuilt, over the past six years to prepare themselves for a low volatility, high liquidity world, and what they found is the exact opposite.”¹⁸³ He thus recognized that both their balance sheets and business models were designed to maximize profits in a world that no longer existed and would not return. Moreover, “[t]hey are at different levels of understanding the new world”—some get it, some do not—“and it will take . . . time to rebuild their businesses to be profitable in it.”¹⁸⁴ In short, at least some policymakers believed that financial institutions were in real trouble and that those troubles were likely to get worse before they got better. They also recognized that some institutions were in denial regarding the challenges they faced, and that while institutions could raise the new capital they would need to survive the transition in the current environment, they likely needed to do so quickly.

Others raised similar concerns and made other suggestions regarding the type of information that the Fed might want from banks. President Eric Rosengren, for example, raised concerns about the adequacy of banks’ risk-management systems. He observed:

[A] horizontal stress review was done about a year ago When they did that stress testing, what was striking was that there were four institutions—I think it was Citigroup, JPMorgan Chase, Wachovia, and Bank of America . . . and all four concluded that a housing-price reduction of between 10 percent and 20 percent would affect earnings but wouldn’t affect capital. Obviously, in retrospect that doesn’t seem to have been a good forecast.¹⁸⁵

He also recommended going back and repeating the exercise, both because it would be helpful for the institutions and because “[federal

182. *Id.* at 87 (statement of Kevin Warsh). This approach to assessing the health of large financial institutions was central to the stress tests, which proved critical in helping to restore market functioning. See *infra* notes 303–312 (exploring purposes and effects of Fed’s stress-testing regime).

183. January 29–30, 2008 FOMC Meeting, *supra* note 164, at 87 (statement of Kevin Warsh).

184. *Id.* (statement of Kevin Warsh).

185. *Id.* at 189 (statement of Eric Rosengren).

policymakers would] learn something about how they're thinking about housing prices and the indirect effects that might occur because one of our concerns . . . is that there may be unintended consequences if housing prices drop more than they have historically."¹⁸⁶ This not only functions as a reminder that horizontal stress tests were a tool that the Fed and other bank supervisors had been using for some time, but it also reveals that as early as January 2008, there was support for using horizontal stress tests to provide higher quality information to both the Fed and banks about the risks to which banks were exposed and to test banks' capacity to accurately assess how they would fare in the face of further adverse developments.

4. *Tool Set.* — The January meetings also highlight the challenge of using monetary policy to combat the perceived threats to the financial system. The core challenge, as articulated by staff economist Brian Madigan, is that while “aggressive policy easing would help mitigate economic weakness, it would also raise the risk that policy could add unduly to inflation pressures should recessionary weakness not develop.”¹⁸⁷ Put differently, by positively affecting asset prices, economic growth, and other factors that affect the health of financial institutions and the stability of the financial system, monetary policy can play an important role in reducing or mitigating a nascent financial crisis. But it is a coarse and sometimes excessively high-powered tool and there are always risks associated with its use. Moreover, the primary risk associated with easy money policies, inflation, was one that the FOMC felt it could not ignore. In January, following a trend that would continue, Madigan noted that “the inflation picture seems to have deteriorated somewhat,” i.e., there was reason for concern.¹⁸⁸ Many Committee members were also concerned that lowering the fed funds rate between scheduled meetings could damage the Fed's credibility, create expectations of further rate cuts, and send a signal that the Fed was panicking.

Some members also questioned whether rate cuts would actually reduce the risks that the Fed was seeking to contain. As Lacker noted: “I can appreciate the possibility of financial market fragility, but I don't see the level of the funds rate as real closely tied to conditions of fragility.”¹⁸⁹ He explained: “I don't think a funds rate change is going to save the monolines. I don't think it is going to save financial institutions from the monolines.”¹⁹⁰ And, in his view, those were the core challenges. The drawbacks with using monetary policy to address the challenges the Fed

186. Id. (statement of Eric Rosengren).

187. Id. at 103 (statement of Brian Madigan).

188. Id. at 104 (statement of Brian Madigan).

189. January 21, 2008 FOMC Conference Call, *supra* note 163, at 16 (statement of Jeffrey Lacker).

190. Id. (statement of Jeffrey Lacker).

was facing help demonstrate the value to the Fed of having more refined tools for addressing a growing financial crisis.

C. *March 2008: New Liquidity Facilities and the Failure of Bear Stearns*

A critical turning point in the Crisis was the failure of Bear Stearns in March 2008. With the help of a \$29 billion backstop from the New York Federal Reserve,¹⁹¹ Bear was acquired by J.P. Morgan rather than filing for bankruptcy. The purchase price made all creditors whole and ultimately provided equity holders \$10 per share.¹⁹² To ensure that the Fed would not lose money on the backstop, and solidifying the close working relationship between the Fed and Treasury in response to the Crisis, the Treasury committed to making the New York Fed whole if the collateral Bear posted proved insufficient to cover the amount owed.¹⁹³ This event was important because of the information that Bear's failure conveyed to policymakers and market participants and, separately, because the Fed's decision to help Bear avoid filing for bankruptcy implicitly affirmed too-big-to-fail (or, more accurately, too interconnected to fail) as a government policy. The increased expectation of government intervention altered market activity and, presumably, should have made it clear to Fed and other policymakers that the Fed may well provide support to a financial institution—even one that it does not supervise and about which it thus might have little information—if the welfare ramifications of allowing it to fail seem sufficiently great.

It was also in March that the Fed introduced the Term Securities Lending Facility (TSLF) and the Primary Dealer Credit Facility (PDCF), liquidity facilities available to the primary dealers rather than banks.¹⁹⁴ In connection with these facilities, the Fed ultimately put small teams on-

191. The liquidity facility was adopted pursuant to section 13(3) and thus required the approval of the Board of Governors, but not the FOMC. For more about this facility, see Press Release, Bd. of Governors of the Fed. Reserve Sys. (Mar. 16, 2008) [hereinafter March 16, 2008 Press Release], <http://www.federalreserve.gov/newsevents/press/monetary/20080316a.htm> [<http://perma.cc/8PRJ-GYKN>].

192. Landon Thomas Jr. & Eric Dash, Seeking Fast Deal, JPMorgan Quintuples Bear Stearns Bid, N.Y. Times (Mar. 25, 2008), <http://www.nytimes.com/2008/03/25/business/25bear.html> (on file with the *Columbia Law Review*) (“[The chief executive of J.P. Morgan] agreed to pay \$10 a share in stock and to purchase 95 million new shares of Bear Stearns . . .”).

193. Bd. of Governors of the Fed. Reserve Sys., Bear Stearns, JPMorgan Chase, and Maiden Lane LLC, Regulatory Reform, http://www.federalreserve.gov/newsevents/reform_bearstearns.htm [<http://perma.cc/TVT6-KH5U>] (last updated Dec. 9, 2014).

194. See Press Release, Bd. of Governors of the Fed. Reserve Sys., Federal Reserve and Other Central Banks Announce Specific Measures Designed to Address Liquidity Pressures in Funding Markets (Mar. 11, 2008), <http://www.federalreserve.gov/newsevents/press/monetary/20080311a.htm> [<http://perma.cc/KK5S-E9XR>] (introducing TSLF); March 16, 2008 Press Release, *supra* note 191 (announcing PDCF).

site at Lehman and the other investment banks¹⁹⁵ and eventually entered into an information-sharing arrangement with their primary regulator, the SEC.¹⁹⁶ This section explores the implication of these developments, concluding with a closer look at how the support provided by the NY Fed altered dynamics in ways relevant to this Essay's claims.

1. *Extracting Information.* — The near-failure of Bear revealed that the Fed lacked access to timely information about the health of at least some systemically important financial institutions. It further revealed massive deficiencies in the oversight regime then in place and cast doubt on the SEC's capacity to understand and respond to risk-taking at the major investment banks. At a meeting just prior to Bear's failure, the Fed approved the TSLF, a facility that would provide loans to primary dealers, including Bear Stearns. Nonetheless, there was but one reference to Bear Stearns at the meeting and no discussion of its financial health. A subsequent congressional hearing revealed that no federal regulator appreciated the firm's "precarious health," and they learned of its intent to file for bankruptcy only the day before the firm expected to file.¹⁹⁷ The event thus revealed massive gaps in the capacity of the regime then in place to provide financial policymakers timely and accurate information about the financial health of the major investment banks.

Also notable, as explained by SEC Chairman Christopher Cox shortly after Bear's failure, was that the "experience demonstrated . . . that the prevailing measurements of capital and liquidity that were then being used by the SEC and by every bank regulator . . . were inadequate to prevent the 'run on the bank' that Bear endured. In just two days . . . , Bear's liquidity pool fell by over 83%," and "[s]hort-term secured financing was unavailable even when Bear offered high-quality collateral."¹⁹⁸ This was a development that no "regulatory approach" or "existing regulatory model had taken into account."¹⁹⁹ It was thus clear that the information that the Fed and others were relying on as prognosticators of financial institution health failed to accurately portend probable demise.

195. Report of Anton R. Valukas at 1495, *In re Lehman Bros. Holdings, Inc.*, 469 B.R. 415 (Bankr. S.D.N.Y. 2010) (No. 08-13555) [hereinafter Report of Anton R. Valukas].

196. Press Release, Bd. of Governors of the Fed. Reserve Sys. (July 7, 2008), <http://www.federalreserve.gov/newsevents/press/bcreg/20080707a.htm> [<http://perma.cc/LYX9-43G9>] (announcing memorandum of understanding between SEC and Fed).

197. Stephen Labaton, *Testimony Offers Details of Bear Stearns Deal*, N.Y. Times (Apr. 4, 2008), <http://www.nytimes.com/2008/04/04/business/04fed.html> (on file with the *Columbia Law Review*).

198. Christopher Cox, Chairman, SEC, *Address to the Security Traders 12th Annual Washington Conference* (May 7, 2008), <http://www.sec.gov/news/speech/2008/spch050708cc.htm> [<http://perma.cc/FS7N-FASE>].

199. *Id.*

The decision to save Bear also revealed specific information gaps and other limitations inherent in the then-existing regulatory regime. For example, in assessing the ramifications of allowing Bear to fail and choosing to intervene to prevent that outcome, Fed officials were again alerted to the critical role of interconnections among firms as a mechanism through which the system could be threatened. According to the minutes of the Board meeting approving the loan, the Board reasoned “that, given the fragile condition of the financial markets at the time, the prominent position of Bear Stearns in those markets, and the expected contagion that would result from the immediate failure of Bear Stearns, the best alternative available was to provide temporary emergency financing.”²⁰⁰ Bernanke similarly emphasized, when defending the action before Congress a few weeks later, that the Fed was concerned that Bear’s “failure could . . . have cast doubt on the financial positions of some of Bear Stearns’ thousands of counterparties.”²⁰¹ This suggests that the Fed was worried about the actual losses that Bear’s failure would impose on other financial institutions and it was concerned that even if Bear’s counterparties could handle the resulting losses, the counterparties of Bear’s counterparties may not know that, and this latter dynamic could itself impede market functioning.²⁰²

The second rationale that Bernanke emphasized in defending the Fed’s action was that “Bear Stearns participated extensively in a range of critical markets” and the Fed was concerned that “the sudden failure of Bear Stearns likely would have led to a chaotic unwinding of positions in those markets and could have severely shaken confidence.”²⁰³ In contemplating the effects of allowing Bear to file for bankruptcy, the Fed thus had become attuned to the limited capacity of the resolution regimes then in place to facilitate an orderly liquidation of such a firm and the potential for such a process to trigger profound and adverse ripple effects throughout the financial system.

In addition to revealing weaknesses, the procedures the Fed undertook in deciding to provide support to Bear also reveal significant

200. *McKinley v. Bd. of Governors of the Fed. Reserve Sys.*, 647 F.3d 331, 334 (D.C. Cir. 2011) (quoting Thro Declaration Exhibit A (minutes of March 14, 2008 board meeting)).

201. Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., *The Economic Outlook: Testimony Before the Joint Economic Committee, U.S. Congress* (Apr. 2, 2008) [hereinafter *Bernanke, Economic Outlook Testimony*], <http://www.federalreserve.gov/newsevents/testimony/bernanke20080402a.htm> [http://perma.cc/JL64-QVUW].

202. The potential for these dynamics to lead to market freezes has since been formalized. See Ricardo J. Caballero & Alp Simsek, *Fire Sales in a Model of Complexity 1–4* (Nat’l Bureau of Econ. Research, Working Paper No. 15479, 2009), <http://www.nber.org/papers/w15479.pdf> [http://perma.cc/99L3-DT86] (highlighting ways in which fire sales may impede market functioning by increasing uncertainty faced by participants in complex financial markets).

203. See Bernanke, *Economic Outlook Testimony*, *supra* note 201.

strengths in terms of the Fed's capacity to respond creatively and aggressively when it chooses to do so. The information-gathering activities the Fed engaged in illustrate this dynamic. For example, to assess the ramifications of Bear's failure, the Fed "surveyed those institutions subject to the Board's regulation to assess their exposure to Bear Stearns," with particular attention to "the exposure of large complex banking organizations."²⁰⁴ Thus it used the supervisory relationships to gather information that was not directly relevant to the supervision, but which allowed it to make a more informed decision with respect to another issue the Fed was facing. This act also highlights that even financial institutions that the Fed oversaw directly—including many banks that were using TAF as an important source of liquidity—had information that the Fed did not otherwise regularly seek in connection with its supervisory activities and which could have been incredibly useful to the Fed in its efforts to manage the evolving financial crisis.

To assess and manage the credit risk inherent in providing the back-stop supporting the acquisition, the Fed recognized that it also needed information about the quality of the assets that Bear wanted to post as collateral. In order to obtain this information in the limited time available, Geithner "called Larry Fink, the CEO of the investment firm BlackRock," to evaluate the assets.²⁰⁵ The episode thus also demonstrates that the Fed can, and during the Crisis regularly did, use outside consultants when it needs expertise or simply greater manpower than it can muster internally. This enables the Fed to expand its information-gathering and analyzing capacities quite quickly when it chooses to.²⁰⁶

Other issues discussed during the March FOMC meetings further support the notion that policymakers who subscribed to the proposed paradigm for how a LOLR can best use that authority might have recognized the importance of prioritizing information gathering and analysis. Even prior to Bear's failure, Kroszner, for example, worried that the TSLF "may be just another step along a path that we haven't really

204. McKinley, 647 F.3d at 334 (citing Declaration of Coryann Stefansson, Associate Director of Board's Division of Banking Supervision and Regulation ¶¶ 7–8).

205. Geithner, *supra* note 132, at 155.

206. The Fed used outside consultants in a number of ways in connection with its exceptional liquidity facilities. See, e.g., Office of the Inspector Gen., Lending Facilities, *supra* note 48, at 24–26 (listing consulting service vendors used by Fed). More generally, while the Fed's status as a leading bank regulator means that it will have a workforce capable of assessing a bank's health and risk exposures, such personnel will likely be exceptionally busy already during periods of widespread systemic distress. Relying on outside consultants or personnel seconded from the financial institutions receiving liquidity support from the Fed could allow the Fed to expand its effective workforce quickly and might also engender greater diversity in the perspectives brought to the table, further enhancing the Fed's capacity to identify and assess issues in a timely manner. Cf. *infra* sections V.B, V.D (describing how logistical constraints and biases might limit Fed's efficacy as information-coordination agent).

defined well.”²⁰⁷ This concern entailed a number of distinct issues, including concerns about a slippery slope and exit strategy, but Kroszner was particularly concerned that the program may not be enough and may not address the heart of the challenge. As he explained:

I don't really understand *why* some of the risk spreads have blown out again in the last week or two. That doesn't mean that we need to study it to death But I think we need to have a bigger-picture view to see what is going to go next and how to respond going forward to people who say, “Well, you've tried five different little things, and none has really worked, or they work as temporary palliatives.” So I think we really need to understand the origins of this better to better understand how we can respond.²⁰⁸

This statement reflects an awareness of the Fed's limited understanding of the challenges it was facing and a recognition that without such an understanding, it was far less likely that the Fed would be able to meaningfully address those challenges. Nonetheless, when the Fed met later that month—after Bear had failed and the Fed had stepped in to rescue it—there was little indication that the Fed was particularly concerned with becoming better informed about the reasons for the ongoing problems in the financial markets and how they could best respond.

The overall tone and focus of the March meetings also suggest that better information may have altered the Fed's focus, discussions, and actions in productive ways. Throughout March, the appropriate fed funds rate remained the primary topic of the discussions. While this focus, in itself, may be explained by virtue of the FOMC's function, the tenor of those discussions cannot be so easily dismissed. Two FOMC members, for example, voted against the rate cut effectuated at the March meeting.²⁰⁹ One of the dissenters noted he had some concerns about growth, but he felt that the situation was notably less dire than some others perceived it to be.²¹⁰ At the same time, he was very concerned about inflation, and he believed that cutting rates further would prioritize growth over price stability, setting the stage for future inflation.²¹¹ Even Committee members who approved the cut spent significant time addressing the inflationary risks, a focus that necessarily

207. March 10, 2008 FOMC Conference Call, *supra* note 86, at 31 (statement of Randall Kroszner).

208. *Id.* (emphasis added).

209. Minutes of the March 18, 2008 FOMC Meeting, *supra* note 49, at 7–8.

210. Transcript of the Fed. Open Mkt. Comm. Meeting on Mar. 18, 2008, at 48–49 (statement of Charles Plosser) [March 18, 2008 FOMC Meeting Minutes], <http://www.federalreserve.gov/monetarypolicy/files/FOMC20080318meeting.pdf> [<http://perma.cc/LXG7-PD9P>] (emphasizing disparity between Fed forecasts and those of private sector).

211. *Id.* at 49–51 (statement of Charles Plosser).

diverted attention from the pending crisis and the many issues raised by Bear's failure and salvation.²¹²

2. *Disseminating Information.* — Bear's near failure also held lessons regarding market participants' lack of credible information about the health of other financial institutions and how that lack of information could adversely affect market functioning. As an initial matter, Bear's demise cast doubt on the reliability of the type of information market participants typically utilized to assess the health of a financial institution. As Dudley explained, "[t]he disparity between [Bear's] book value [which had been \$84 per share at the end of the last fiscal year] and the purchase price caused investors to question the accuracy of investment banks' financial statements more generally."²¹³ A related challenge was that Bear's demise appeared to be the product of a "run," as investors and counterparties lost confidence in the firm and sought to protect their individual interests despite the costs it might impose on the collective.²¹⁴ The event thus revealed that even a bank that did not rely on depositors could fail quickly and appearing to be well capitalized did not ensure a firm would survive.²¹⁵ Additionally, as just described, the Fed's decision to support Bear was justified in part by concerns that uncertainty among financial counterparties about the effect that Bear's failure would have on each other could have crippled market functioning.²¹⁶

The discussion at the FOMC meeting following Bear's failure suggests that Committee members recognized that insufficient information was contributing to systemic fragility. Charles Evans, president of the Federal Reserve Bank of Chicago, explained, "I believe our innovative policies are helpful for facilitating market functioning, but they don't address the root problem. Markets want a firmer sense of where prices for stressed assets will bottom out and of the magnitude of the portfolio losses that will be taken by major financial players."²¹⁷ Charles Plosser, president of the Federal Reserve Bank of Philadelphia,

212. See, e.g., *id.* at 27 (statement of Thomas Hoenig) (voting in favor of cut but expressing concern regarding "upside risk to inflation"); *id.* at 31–33 (statement of Janet Yellen) (voting in favor of cut, but concluding statement with remarks on inflation).

213. *Id.* at 4 (statement of William Dudley).

214. See *id.* at 3 (statement of William Dudley) ("In my view, an old-fashioned bank run is what really led to Bear Stearns's demise.").

215. See, e.g., Letter from Christopher Cox, Chairman, SEC, to Nout Wellink, Chairman, Basel Comm. on Banking Supervision 3 (Mar. 20, 2008), http://www.sec.gov/news/press/2008/200848_letter.pdf [<http://perma.cc/9CM6-C9DS>] (showing "until the closing of the JP Morgan Chase transaction on Sunday March 16, Bear Stearns had a capital ratio of well in excess of the 10% level used by the Federal Reserve Board in its 'well-capitalized' standard"). Cox also suggested that the firm failed, in part, because counterparties refused to work with it "[n]otwithstanding that Bear Stearns continued to have high quality collateral to provide as security for borrowings." *Id.*

216. See March 18, 2008 FOMC Meeting, *supra* note 210, at 61 (statement of Kevin Warsh) (noting "counterparty risk has become the dominant concern in markets").

217. *Id.* at 40 (statement of Charles Evans).

similarly noted that “[u]ncertainty about valuations seems to be the root cause of liquidity problems.”²¹⁸ Members of the FOMC thus recognized that liquidity was a symptom, not just a cause, of the ongoing market dysfunction and that lack of information was a significant factor contributing to the ongoing challenges.

3. *Bank Health.* — The FOMC transcripts also reveal that Fed policymakers were increasingly concerned about the health of large financial institutions. Governor Kohn, for example, explained: “I agree with the others who say that [our innovations, while helpful] don’t directly deal with the underlying macro risk, which is really a story about capital, solvency, wealth, and prices.”²¹⁹ Governor Warsh reiterated this concern, “highlight[ing] . . . the need, across all these institutions, to raise significant capital for safety and soundness purposes and, in addition, for credit availability purposes” as “this broad class is systematically undercapitalized.”²²⁰ Warsh also went further, suggesting that in light of his assessment of the industry, he believed that the Fed should “use all our tools to persuade them that it is in their interest and in the interest of the broad economy for them to raise capital.”²²¹

To be sure, others, including Geithner, disagreed with the assessment that the financial system as a whole was undercapitalized.²²² That there were such mixed views on such a fundamental issue, however, largely affirms why this may have been an important issue for the Fed to investigate further.

4. *Fed Interventions and Market Expectations.* — The events of March 2008 also highlight the way that regulatory responses to a persistent liquidity crisis affect the capacity of the system to withstand further adverse developments. That government policies and actions change market expectations is well recognized, and there is a growing appreciation of the ways that steps the government takes seeking to mitigate a crisis can have the counterproductive effect of making the system more fragile and the ultimate fallout even more damaging.²²³ A few dynamics merit particular attention.

First, in choosing to save Bear, the Fed sent a strong signal that it would not allow a firm to fail when its failure might have adverse systemic repercussions and connections with other financial firms or a

218. *Id.* at 52 (statement of Charles Plosser); see also *id.* at 61 (statement of Kevin Warsh) (“Over the past couple of weeks, not just in the episode with Bear Stearns, counterparty risk has become the dominant concern in markets.”).

219. *Id.* at 58 (statement of Donald Kohn).

220. *Id.* at 62 (statement of Kevin Warsh).

221. *Id.* (statement of Kevin Warsh).

222. *Cf. id.* at 74–75 (statement of Timothy Geithner) (arguing against ability to make accurate judgment as to undercapitalization).

223. See, e.g., Acharya & Tuckman, *supra* note 73, at 2 (arguing LOLR facilities, if poorly designed, may actually risk “reducing the extent to which financial firms delever” and exacerbating risk of default).

presence in critical markets might suffice as a basis for intervention. The market responded accordingly.²²⁴ This was foreseeable and specifically acknowledged by Fed policymakers. As Lacker noted in May, one drawback of having the Fed seek greater supervisory authority over investment banks and other primary dealers is:

[It] is just going to sustain the expectations that have arisen since Bear—which have been described and referenced a couple of times and which you see in the fall in CDS spreads for those institutions—and it is just really hard to see how to put that genie back in the bottle and limit the extent to which we’re viewed as backstopping them.²²⁵

More generally, as Bernanke observed at the FOMC’s June meeting in response to apparent improvements in some indicators of systemic distress, “I do not agree that systemic risk has gone away. I think it is in abeyance. There is perhaps, if anything, excessive confidence in the ability of the Fed to prevent a crisis situation from metastasizing.”²²⁶ By increasing participants’ estimations that the Fed would prevent a major financial institution from failing, the action weakened market discipline and increased the likelihood that market participants would be ill-prepared should a systemically significant firm actually file for bankruptcy.²²⁷

A related challenge is that the signal was sent not only to counterparties of major financial institutions, but also to the executives making decisions on behalf of those institutions. Richard Fuld, Lehman’s CEO, has said that he never thought that the government would allow Lehman to fail.²²⁸ Similarly, SEC Chairman Cox has suggested that “people would have behaved differently if they were not expecting the government to do something,” and their capacity to do so would have been aided significantly if that “message could have been provided . . .

224. See James R. Barth et al., *The Rise and Fall of the U.S. Mortgage and Credit Markets* 119 fig.4.13 (2009) (showing CDS spreads for financial firms fell significantly when Fed intervened to support Bear Stearns).

225. June 24–25, 2008 FOMC Meeting, *supra* note 50, at 166 (statement of Jeffrey Lacker).

226. *Id.* at 133 (statement of Ben Bernanke).

227. Cf. Skeel, *supra* note 133, at 31–33 (“The prospect of bankruptcy at the end of the line would discourage excessive risk taking in the first instance, encourage creditors to monitor, and if dark clouds did develop, spur managers to make plans for an orderly bankruptcy.”). This phenomenon has arisen in an array of contexts and is a well-recognized cost of bailouts. See, e.g., Giovanni Dell’Ariccia, Isabel Schnabel & Jeromin Zettelmeyer, *Moral Hazard and International Crisis Lending: A Test 5* (Int’l Monetary Fund, Working Paper No. 02/181, 2002) (examining Russian crisis and determining expectation of IMF bailout created moral hazard problem).

228. Report of Anton R. Valukas, *supra* note 195, at 1506.

more than a week before” Lehman’s demise.²²⁹ It thus appears that the Fed’s rescue of Bear not only sent a signal to the market that it would likely find a way to prevent Lehman from failing, it also altered the way that executives at Lehman assessed their options and reduced their sense of urgency.²³⁰

Through the two liquidity facilities for primary dealers, the Fed further contributed to Lehman’s fragility and its capacity to delay making difficult decisions. As Geithner acknowledged in June, “[O]ur facilities by design should allow them [the investment banks] to run with a mix of leverage and liquidity risk that is above what the market probably now would permit. In the absence of our facilities, leverage and liquidity risk . . . would have to be lower”²³¹ This flexibility was particularly important to Lehman’s ongoing survival during this period. As Dudley explained, also in June:

There were a number of people to whom we talked who said that *the reason* they stayed with Lehman during this period of stress was that they knew that the Primary Dealer Credit Facility was there as a backstop. So I have a high degree of confidence that Lehman would have been in great difficulty without it.²³²

These developments were not viewed, at the time, as solely problematic. Allowing financial institutions to delever more slowly than they otherwise would was one aim of the temporary facilities and may have been helpful in averting fire sales. Nonetheless, it is clear that Fed officials knew that their programs enabled Lehman to remain more highly levered and less liquid than the market would otherwise allow, rendering Lehman more vulnerable to adverse shocks.²³³ These indirect means of support are critical, as Lehman may have had better options if the market had forced it to make difficult decisions earlier than September.²³⁴ Even according to Lehman’s own overly rosy assessments, the firm lost nearly \$7 billion in just the second and third quarters of 2008, far more than it raised during the period.²³⁵

229. Abigail Field, *Lehman Report: Why the U.S. Balked at Bailing Out Lehman*, DailyFinance (Mar. 15, 2010 8:47 PM), <http://www.dailyfinance.com/2010/03/15/why-the-u-s-balked-at-bailout-out-lehman/> [<http://perma.cc/QUH4-S452>].

230. See *infra* section IV.B (addressing whether Fed could have credibly conveyed such a message and types of actions Lehman could have taken if it had been convinced).

231. June 24–25, 2008 FOMC Meeting, *supra* note 50, at 153–54 (statement of Timothy Geithner).

232. *Id.* at 155–56 (statement of William Dudley) (emphasis added).

233. See Acharya & Tuckman, *supra* note 73, at 22, 26–29 (analyzing Lehman’s illiquid leverage throughout 2007 and 2008).

234. See, e.g., Geithner, *supra* note 132, at 207 (explaining Lehman “had chased the boom far too long” and citing as example that “as late as May 2007,” when PDCF was in place, Lehman “led financing for a wildly overpriced \$22 billion acquisition”).

235. See Lehman Bros. Holdings Inc., *Quarterly Report (Form 10-Q)* 4 (July 10, 2008), https://www.sec.gov/Archives/edgar/data/806085/000110465908045115/a0818147_110q.htm [<http://perma.cc/3Q9K-U9CJ>] (showing loss of \$2.873 billion in

A final issue is that Bear's failure could have triggered legal reforms, which would have significantly affected subsequent developments. Shortly after Bear's failure, the Chairman of the SEC, the one agency with oversight responsibility for the investment banks, recognized the insufficiency of the current regime and the need for greater regulation.²³⁶ Some in Congress seemed to agree and also appeared open to suggestions for how the regulatory structure should be changed to address gaps revealed by Bear's near failure.²³⁷ Nonetheless, no Fed or Treasury officials pushed for immediate reform, and no changes were enacted along these lines.

D. *Summer 2008*

Nearly six months passed between March 2008, when the Fed bailed out Bear Stearns and adopted facilities available to primary dealers, and the developments of September 2008, which triggered the nadir of the Crisis and expanded the scope of the government safety net through the extension of its implicit too-big-to-fail policy.²³⁸ There are numerous signs suggesting that during this period, financial policymakers were exceptionally concerned about the health of the financial system and the potential for the situation to deteriorate further. As Geithner describes in his autobiography: "I felt like I was watching a disaster unfold in slow motion, with no ability to prevent it and weak tools to limit the damage."²³⁹ Some regulators also started to engage in contingency planning should

second quarter of 2008); Riley McDermid & Steve Gelsi, *Lehman to Post \$2.8 billion Quarterly Loss*, MarketWatch (June 9, 2008, 4:38 PM), <http://www.marketwatch.com/story/lehman-brothers-to-raise-6-billion-in-capital-shares-plunge> [<http://perma.cc/7TDV-XS5N>] (reporting Lehman's plan to raise \$6 billion in capital to offset loss and continuing damage inflicted by credit crunch). To understand the critical role the Fed played in allowing this to happen, see *infra* Part III.D.1.

236. Cox, *supra* note 198 ("[T]he framework of federal financial services regulation . . . is dangerously behind the times.").

237. See, e.g., *Turmoil in U.S. Credit Markets: Examining the Recent Actions of Federal Financial Regulators*: Hearing Before the S. Comm. on Banking, Hous. & Urban Affairs, 110th Cong. 94 (2008) (prepared statement of Sen. Tim Johnson) ("I look forward to the regulators and other panelists suggestions on what Congress can and should do . . ."); *id.* at 3 (statement of Sen. Richard C. Shelby) ("[I]t would be unwise if we did not take this opportunity . . . to thoroughly examine what transpired, including how Bear Stearns was regulated, what caused its collapse, whether any other institutions face similar risk, and if there are any shortcomings in our regulatory structure."); see also Jed Graham, *Paulson Urges Broad Rethinking of Rules as Investment Banks Tap Discount Funds*, *Investor's Bus. Daily*, 2008 WLNR 5774642 (Mar. 27, 2008) (quoting House Financial Services Committee Chairman Barney Frank as saying "investment banks should be subject 'to the same type of prudential supervision that now applies only to banks'").

238. The most significant regulatory development during this period was the adoption of the Housing and Economic Recovery Act of 2008, which, among other things, provided the Treasury the authority that it eventually used to place Fannie Mae and Freddie Mac into receivership. Housing and Economic Recovery Act of 2008, Pub. L. No. 110-289, § 1145, 122 Stat. 2654, 2734 (2008) (codified at 12 U.S.C. § 4617 (2012)).

239. Geithner, *supra* note 132, at 173.

conditions deteriorate further. It was during this period, for example, that Secretary of the Treasury Henry Paulson and his staff devised the blueprint for the subsequently adopted Troubled Asset Relief Program (TARP), which initially entailed a proposal for the government to spend up to \$500 billion to acquire MBS and other illiquid assets.²⁴⁰

In many ways, what is most notable about this period, however, is not what happened but what did not, particularly considering the lessons reflected in and arising from the near failure of Bear. Rather than canvassing all that happened and could have happened over the course of these six months or engaging in a detailed analysis of FOMC meeting transcripts, which reflect many of the same concerns identified during the first seven months of the Crisis, this section focuses on issues that proved particularly pivotal—the financial health of Lehman and AIG and the systemic ramifications of allowing either to fail.

1. *Lehman*. — According to Geithner, one of the most pressing challenges facing the Fed during this period was that the Fed “had only limited tools to defend against a run on firms outside the commercial banking system, at a time when running seemed increasingly rational.”²⁴¹ The failure of Bear Stearns had vividly demonstrated just how quickly an investment bank, even one that was seemingly well capitalized, could fail if counterparties refused to work with it, and it illustrated that counterparties might run more quickly than previously appreciated. Both regulators and market participants viewed Lehman as the next most vulnerable of the investment banks.²⁴² This section considers, in turn, the Fed’s monitoring of Lehman and the planning it undertook in anticipation of its possible failure.

2. *Increased but Still Limited Monitoring*. — Starting in March 2008, the Fed invoked a right to know more about the financial health of the investment banks and other primary dealers as a condition for standing ready to lend. Notably, while some Fed policymakers questioned whether the Fed should demand information from investment banks in connection with the adoption of the TSLF, the first facility to provide credit to primary dealers, Geithner downplayed the Fed’s capacity to use its status as creditor to demand information or impose other conditions on

240. Sorkin, *supra* note 132, at 83–93.

241. Geithner, *supra* note 132, at 173.

242. See, e.g., Report of Anton R. Valukas, *supra* note 195, at 1491 (“At the time of Bear Stearns’ near collapse . . . [it was] thought at the highest levels of every relevant Government agency that Lehman could be the next investment bank to fail.”); Landon Thomas Jr., *Aftershocks of a Collapse, With a Bank at the Epicenter*, N.Y. Times (Mar. 18, 2008), <http://www.nytimes.com/2008/03/18/business/18bear.html> (on file with the *Columbia Law Review*) (“And then we’re hoping that Lehman won’t go under because then there will be way too many bankers looking for jobs.” (quoting anonymous investment banker)).

eligible institutions.²⁴³ Nonetheless, by the time he wrote his autobiography, he recalled that starting in March, he took the position that, “[i]f [the investment banks] were going to enjoy access to Fed liquidity, we needed to understand and limit the risks they were taking” which meant “climb[ing] inside the investment banks” and not “rely[ing] on the SEC anymore.”²⁴⁴ And the Fed did demand greater information in connection with its adoption of its second facility for primary dealers, the PDCF.

For the next six months, the Fed engaged in a monitoring program that focused “primarily, but not exclusively, on [the] four [largest] investment banks.”²⁴⁵ As explained by the Fed staff in a June presentation to the FOMC: “Our effort does not stem from our general supervisory examination authority.”²⁴⁶ Rather, they sought “to exercise informed judgment about the capital and liquidity positions of the primary dealers that have access to the PDCF” and “to, in shorthand, mitigate the moral hazard that accompanies the creation of the PDCF in particular.”²⁴⁷ There is no indication that any of the primary dealers, including the investment banks, in any way challenged or protested the authority of the Fed to engage in additional monitoring; nor is there any sign that any stigma resulted from the heightened scrutiny.

The scope of these operations was “fairly narrow,”²⁴⁸ focusing almost exclusively on capital and liquidity. The staffing seems to have been correspondingly modest, with “several”²⁴⁹ New York Fed staff on-site at Lehman and with the overall operations supported by only a “small off-site staff.”²⁵⁰ The limited scope of the Fed’s investigatory efforts is reflected in the amount of information the Fed did not possess about Lehman until after its bankruptcy. Perhaps the most famous of Lehman’s efforts to disguise its actual financial health was its Repo 105 program, which enabled the firm to appear less leveraged than it actually was in its public financial statements.²⁵¹ Because the transactions were specifically taken with the aim of distorting the accuracy of the company’s public filings and misleading counterparties and investors who relied on those

243. See March 10, 2008 FOMC Conference Call, *supra* note 86, at 17 (statement of Timothy Geithner) (“We do not have the capacity... to redesign the regulatory framework to give us, as a condition of access to something that we are doing for market functioning, the ability to affect and constrain the risktaking behavior of those institutions.”).

244. Geithner, *supra* note 132, at 162.

245. June 24–25, 2008 FOMC Meeting, *supra* note 50, at 138 (statement of Art Angulo).

246. *Id.* at 139 (statement of Art Angulo).

247. *Id.* (statement of Art Angulo).

248. *Id.* (statement of Art Angulo).

249. Report of Anton R. Valukas, *supra* note 195 at 1469.

250. June 24–25, 2008 FOMC Meeting, *supra* note 50, at 139 (statement of Art Angulo).

251. Report of Anton R. Valukas, *supra* note 195, at 6.

filings, they are precisely the type of transactions that it is most important for regulators with inside access to detect.²⁵² Yet the Fed's monitoring was sufficiently limited that it had no knowledge of these transactions until much later.²⁵³

The FOMC discussed the limited scope of the Fed's monitoring activities at its June 2008 meeting. Art Angulo, who led the presentation, explained that the New York Fed was monitoring investment banks' capital, but "we know from examining banks that a capital number that's reported to you depends on how you're carrying your assets" and, "we're basically taking the inputs . . . at face value and not doing our own work to try to validate those."²⁵⁴ This was true even though there had been numerous questions raised about the values Lehman was placing on its assets and despite the lessons learned (and capabilities demonstrated) in connection with the Bear episode.²⁵⁵ Angulo further acknowledged, "[W]e have not really looked to a consolidated assessment of risk management at these firms, something we do in the bank supervision process."²⁵⁶

Significantly, Angulo suggested that the Fed should consider more rigorous oversight. As he explained to the Committee, "[S]ix months or a year from now, I think it's going to be very difficult to say that we're just doing this liquidity and capital thing. People are going to want to know a little more about our judgments and how we made those judgments"²⁵⁷ and "there's some risk to making those judgments without having a little more information. So I think . . . if we have our traditional bank supervision model on the left and what we're doing right now on the right, we

252. David A. Skeel, Jr. & Thomas H. Jackson, Transaction Consistency and the New Finance in Bankruptcy, 112 Colum. L. Rev. 152, 164 (2012) (describing "now-infamous Repo 105 transactions that Lehman employed at the end of each quarter to disguise the amount of its leverage").

253. Ben Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., Lessons from the Failure of Lehman Brothers: Testimony Before the H. Comm. on Fin. Servs. (2011) [hereinafter Bernanke, Lessons], <http://www.federalreserve.gov/newsevents/testimony/bernanke20100420a.htm> [<http://perma.cc/9LUS-WSA6>] ("The Federal Reserve was not aware that Lehman was using so-called Repo 105 transactions to manage its balance sheet.").

254. June 24–25, 2008 FOMC Meeting, *supra* note 50, at 148 (statement of Art Angulo).

255. See Geithner, *supra* note 132, at 165 ("The markets could see that Lehman was carrying assets at 80 or 90 cents on the dollar that other firms had written way down."); Louise Story, Lehman Battles an Insurgent Investor, N.Y. Times (June 4, 2008), <http://www.nytimes.com/2008/06/04/business/04lehman.html> (on file with the *Columbia Law Review*) (explaining hedge fund manager David Einhorn was betting against Lehman and had raised questions regarding "how the company valued the assets on its books, and whether it was disclosing all the risks it faces").

256. June 24–25, 2008 FOMC Meeting, *supra* note 50, at 148 (statement of Art Angulo).

257. *Id.* at 143 (statement of Art Angulo).

have to move this way, more to the left.”²⁵⁸ There is no indication that such a move was subsequently undertaken.

This failure is all the more surprising in light of what the Fed did learn about Lehman from its limited information-gathering activities.²⁵⁹ Exercising its authority as a potential creditor, the Fed forced Lehman and the other investment banks to assess how they would perform if subject to a run comparable to that Bear Stearns had faced. Those assessments, conducted in May 2008, revealed that none of the investment banks would survive such a run.²⁶⁰ In the face of those findings, the Fed does not appear to have taken any steps, either directly or in conjunction with the SEC, to ensure the firms increased their liquidity provisions or otherwise enhanced their resilience. Instead, the Fed weakened the test.²⁶¹ Even this “Bear-lite” scenario did not look good for Lehman. The NY Fed found that “Lehman would need \$84 billion in additional liquidity to survive a severe run,” akin to that faced by Bear, and would require “\$15 billion to survive a somewhat less severe run.”²⁶² In short, absent significant government support, it was clear that Lehman would fail in the face of a run. More generally, as Bernanke testified, “[T]he information [the Fed] obtained suggested that the capital and liquidity of the firm were seriously deficient.”²⁶³

There were also numerous indications that Lehman failed to comprehend the nature and magnitude of the challenges it was facing and was excessively hesitant to raise new capital.²⁶⁴ For example, when Lehman ran its own test to assess how the firm would fare under the Bear-line scenario, “Lehman’s risk managers . . . concluded they would weather the storm with \$13 billion in cash to spare.”²⁶⁵

3. *Understanding the Risks.* — The other issue critical to the analysis here is whether Fed policymakers had the information necessary to assess the ramifications of a Lehman bankruptcy. Here, the transcripts of a conference call among members of the FOMC on September 16, 2008, the day after Lehman failed, are telling. By the time of the call, numerous indicators—including the stock market, interbank lending rates, and

258. Id. (statement of Art Angulo).

259. Report of Anton R. Valukas, *supra* note 195, at 1495–96 (explaining on-site team “received real-time data on Lehman’s liquidity and capital position[s] through formal and informal channels at the firm, and synthesized this data in comprehensive daily reports distributed throughout the [New York Fed]”).

260. June 24–25, 2008 FOMC Meeting, *supra* note 50, at 141 (statement of Art Angulo).

261. Id. (statement of Art Angulo).

262. Geithner, *supra* note 132, at 165.

263. Bernanke, *Lessons*, *supra* note 253.

264. In his autobiography, Paulson describes his efforts to encourage Richard Fuld, Lehman’s CEO, to seek additional funding and Fuld’s hesitance to do so. Paulson, *supra* note 132, at 124, 137.

265. Geithner, *supra* note 132, at 165.

Treasury yields—indicated significant market strain, so one would expect that even Committee members who underestimated the negative ramifications of Lehman’s failure would have already revised their expectations downward.²⁶⁶ Nonetheless, many remained relatively undisturbed by the bankruptcy.

The views of James Bullard, president of the Federal Reserve Bank of St. Louis, while rosier than some, were not atypical. In arguing against the need to cut the fed funds rate, he acknowledged that “[f]inancial market turmoil is certainly a key concern,” but he then emphasized that “the U.S. economy still outperformed expectations in the first half of 2008, despite the demise of Bear Stearns—an event” that, in his view, was “not too different in some respects from the current episode.”²⁶⁷ He proceeded to note: “My sense is that three large uncertainties looming over the economy have now been resolved—the GSEs and the fates of Lehman and Merrill Lynch Normally, the elimination of key uncertainties is a plus for the economy.”²⁶⁸ And he said that a “positive” dimension to denying funding support to Lehman or potential acquirers was that “the Fed has begun to reestablish the idea that markets should not expect help at each difficult juncture.”²⁶⁹ Based on this analysis, he was of the view that the Fed should “wait for some time to assess the impact of the Lehman bankruptcy filing, *if any*, on the national economy” rather than “react[ing] too hastily to a fluid situation.”²⁷⁰ With the benefit of hindsight, Bernanke has acknowledged that Fed policy-makers had a “range of views” about the likely impact of Lehman’s failure, and yet the actual ramifications were “worse than almost anybody expected.”²⁷¹ Both the variations in their assessments and the magnitude of the disparity between any of those assessments and what came to pass suggest the Fed policymakers lacked the information they needed to make the best decisions under the circumstances.

266. For a summary of the adverse developments already observable and clearly presented to members of the FOMC, see Transcript of the Fed. Open Mkt. Comm. Meeting on Sept. 16, 2008, at 4 (statement of William Dudley) [hereinafter September 16, 2008 FOMC Meeting], <http://www.federalreserve.gov/monetarypolicy/files/FOMC20080916meeting.pdf> [http://perma.cc/2U6C-K8QR].

267. *Id.* at 35 (statement of James Bullard).

268. *Id.* (statement of James Bullard). The GSEs had been placed into a government conservatorship and Bank of America had agreed to acquire Merrill Lynch. Fed. Hous. and Fin. Auth., FHFA as Conservator of Fannie Mae and Freddie Mac, <http://www.fhfa.gov/Conservatorship/pages/history-of-fannie-mae-freddie-conservatorships.aspx> [http://perma.cc/88P8-GYBE] (last visited Feb. 8, 2016); Andrew Ross Sorkin, *Lehman Files for Bankruptcy; Merrill Is Sold* (Sept. 14, 2008), <http://www.nytimes.com/2008/09/15/business/15lehman.html> (on file with the *Columbia Law Review*).

269. September 16, 2008 FOMC Meeting, *supra* note 266, at 36 (statement of James Bullard).

270. *Id.* (statement of James Bullard) (emphasis added).

271. Report of Anton R. Valukas, *supra* note 195228, at 1505 (quoting Bernanke).

It is also possible to identify specific deficiencies in the information matrix available to Fed officials in deciding to allow Lehman to fail. For example, interconnections among different markets and market actors played a critical role in contributing to market dysfunction throughout the Crisis, and in saving Bear, the Fed seemed concerned about these dynamics.²⁷² Having recognized the importance of interconnections to assessing the systemic ramifications of allowing an institution to fail, the Fed could have sought information about other financial institutions' exposures to Lehman. Similarly, having recognized that an institution's presence in particular markets could also be a mechanism of systemically troubling contagion, the Fed could have sought to identify critical markets which may be adversely affected should Lehman fail. Yet, based upon the information reviewed, there is little indication the Fed made any effort to gather such information. There are also signs that even after Lehman's failure, the Fed dramatically underestimated the nature and size of credit exposures among financial institutions.²⁷³ It thus appears that additional information about Lehman's exposures, how financial institutions might respond to its failure, and the ramifications of its failures on particular markets may have altered Fed policymakers' assessments of the ramifications of allowing Lehman to fail.

4. *AIG*. — The day after Lehman filed for bankruptcy, the Fed, with support from Treasury, committed to providing AIG \$85 billion in liquidity support, without which it too would have filed for bankruptcy.²⁷⁴ At the time the liquidity facility was created, Fed policymakers knew little about AIG. Geithner, for example, has said that up until the weekend before the Fed made that commitment, he had “very little knowledge about the company” and he had more interactions with AIG than any other leading Fed policymaker.²⁷⁵ Because of this limited knowledge, he

272. See *supra* section III.C.

273. For example, in 2012, the Fed proposed a rule that would limit interbank credit exposures among the largest financial institutions to 10% of an institution's regulatory capital. Enhanced Prudential Standards and Early Remediation Requirements for Covered Companies, 77 Fed. Reg. 594, 600 (proposed Jan. 5, 2012). In response, the industry presented evidence that typical interbank exposures were often far in excess of the proposed rule, and the Fed's subsequent failure to finalize the rule suggests it failed to understand this when it made the proposal. The Clearing House, Single Counterparty Credit Limits: The Clearing House Industry Study (July 2012), <https://www.theclearinghouse.org/~media/Files/Association%20Documents/20120719.pdf> [<http://perma.cc/98RP-SMA3>].

274. Press Release, Bd. of Governors of the Fed. Reserve Sys. (Sept. 16, 2008), <http://www.federalreserve.gov/newsevents/press/other/20080916a.htm> [<http://perma.cc/T2PW-MB8J>]. For a thorough summary of the government's evolving support for AIG, see Regulatory Reform: American International Group (AIG), Maiden Lane II and III, http://www.federalreserve.gov/newsevents/reform_aig.htm [<http://perma.cc/2FRG-KMRZ>] (last updated Dec. 9, 2014).

275. Geithner, *supra* note 132, at 184. There is evidence suggesting that some New York Fed employees had been making some efforts to monitor AIG's health and had even sought information from potential counterparties about their exposures to the subsidiary that sank AIG, AIGFP, starting in August 2008. See Plaintiffs' Proposed Findings of Facts at

“thought we were taking enormous, unprecedented risks and that there was substantial risk that we would lose billions of dollars, if not tens of billions of dollars.”²⁷⁶ As with Lehman, Geithner (and others) have explained their ignorance on the basis that “the Fed had no authority or responsibility to supervise insurance companies.”²⁷⁷ This section considers whether there was information available to the Fed suggesting that it should have sought to learn more about AIG earlier than it did and some of the ramifications of its failure to do so.

AIG’s liquidity crisis was triggered by collateral calls from financial institutions that were counterparties to credit-default swaps (CDS) pursuant to which an AIG subsidiary had effectively insured the performance of MBS and similar instruments and exposures.²⁷⁸ AIG’s senior management was aware that the company might face crippling liquidity demands and that the firm had alerted the New York Fed to this possibility months before these events came to pass. As Geithner recounts, “In July, [AIG CEO] Bob Willumstad had visited the Fed and danced around the issue of whether we might be able to help if AIG’s liquidity ever dried up.”²⁷⁹ After one of these meetings, some members of the New York Fed staff had met with the Office of Thrift Supervision (OTS)—AIG’s primary bank regulator—“to discuss AIG,” and, in Geithner’s own telling, the staff at the meeting “had come away alarmed.”²⁸⁰ Fed policymakers also knew from other recent experiences that the OTS had regularly failed to detect problems and control risk taking at banks it oversaw and that the OTS had failed to communicate new and relevant

46–49, *Starr Int’l Co. v. United States*, 121 Fed. Cl. 428 (Feb. 19, 2015) (No. 11-00779C). Yet, the evidence also reveals that neither Geithner nor other senior Fed officials were aware of these developments. *Id.* at 48.

276. James B. Stewart, *Solvency, Lost in the Fog at the Fed*, N.Y. Times (Nov. 7, 2014), <http://www.nytimes.com/2014/11/08/business/the-feds-ambiguous-definition-of-solvency.html> (on file with the *Columbia Law Review*).

277. Geithner, *supra* note 132, at 184.

278. Matthew Karnitschnig et al., *U.S. to Take Over AIG in \$85 Billion Bailout; Central Banks Inject Cash as Credit Dries Up*, Wall St. J., <http://online.wsj.com/articles/SB122156561931242905> (on file with the *Columbia Law Review*) (last updated Sept. 16, 2008, 11:59 PM); Robert O’Harrow, Jr. & Brady Dennis, *Downgrades and Downfall*, Wash. Post (Dec. 31, 2008), <http://www.washingtonpost.com/wp-dyn/content/article/2008/12/30/AR2008123003431.html> [<http://perma.cc/CK97-VKPD>].

279. Geithner, *supra* note 132, at 176; see also Defendant’s Statement of Contested Facts at 12, *Starr Int’l Co.*, 121 Fed. Cl. 428 (No. 11-00779C) (recognizing “Geithner . . . met with . . . AIG’s CEO[] twice in July 2008”).

According to Willumstad, he told [Geithner] I had been doing some planning and doing some stress testing of AIG’s portfolios, and one of the conclusions I came to is if there were a liquidity crisis, particularly in the securities lending program, that that would require a lot of liquidity in a short period of time, potentially, and I thought that the New York Fed would be able to provide some support in that area.

Plaintiffs’ Proposed Findings of Facts at 54, *Starr Int’l Co.*, 121 Fed. Cl. 428 (No. 11-00889C).

280. Geithner, *supra* note 132, at 184.

information to the Fed in a timely manner.²⁸¹ The Fed thus had been alerted to the possibility that AIG might face a situation where it would not have the liquidity it needed to continue operations without government support, and it had little reason to have faith that the insurance or bank regulators with primary responsibility for AIG understood the risks to which the firm was exposed.

The Fed was also on notice that if AIG ran out of liquidity, the systemic ramifications might be sufficiently severe that the Fed would feel obliged to intervene to avert such an outcome. As reflected in the concerns about the monoline insurers, Fed officials had been alerted to the high degree of connectedness between insurance companies and other financial institutions and that insurance policies and credit default swaps (that operated like insurance) were an important mechanism of interconnection. Moreover, in connection with alerting the Fed to its liquidity risk, AIG had also attempted to communicate to the Fed just how interconnected it was. In July, Willumstad presented Geithner with information about AIG's sizeable connections with Wall Street firms.²⁸² Additionally, Fed officials continued to recognize that interconnections could be a basis for intervention. As Lacker noted at the FOMC's June meeting in discussing the support the Fed has provided to Bear: "I think it's likely that any other institution that presents the same threat of a disorderly resolution is going to be perceived as benefiting from our implicit lending support, whether or not they're a primary dealer, unless we say something otherwise, unless we draw a boundary, and unless we make that credible."²⁸³ Lacker even identified "insurance companies" as among the types of firms that "could easily fail in a disruptive way."²⁸⁴

The Fed did not have oversight authority over AIG, but there were a number of mechanisms through which the Fed could have learned more about the situations that might cause the firm to face a liquidity crunch and the ramifications if it did. Given that the CEO had come to the Fed on multiple occasions exploring the idea of government support, it is possible that AIG might have provided such information had it been asked.²⁸⁵ Separately, the Fed could have used its LOLR authority to gather significant additional information about AIG's exposures. AIG's key

281. Transcript of the Fed. Open Mkt. Comm. Conference Call on July 24, 2008, at 23–26 (statement of Janet Yellen), <http://www.federalreserve.gov/monetarypolicy/files/FOMC20080724confcall.pdf> [<https://www.perma.cc/8T9R-ALLW>] (describing OTS shortcomings revealed in connection with failure of IndyMac).

282. Sorkin, *supra* note 132, at 210–11.

283. June 24–25, 2008 FOMC Meeting, *supra* note 50, at 165 (statement of Jeffrey Lacker).

284. *Id.* (statement of Jeffrey Lacker).

285. This is not unprecedented. Hedge fund Long-Term Capital Management (LTCM), for example, willingly opened its books to Fed officials even though the Fed had no oversight over LTCM and, contrary to AIG, LTCM had not sought support directly from the Fed. See, e.g., Lowenstein, *supra* note 78, at 183, 186.

counterparties were virtually all banks or other financial institutions with access to the Fed's liquidity facilities. Goldman Sachs, for example, was one of AIG's most significant counterparties, and it was collateral calls by Goldman that played a critical role in draining AIG of the liquidity it needed to operate without government support.²⁸⁶ The Fed had an on-site team at Goldman and was already demanding that Goldman provide its nonpublic information in connection with its eligibility to use the PDCF and TSLE. Foreign banks, many of whom were the leading users of the TAF, also had significant counterparty exposures to AIG.²⁸⁷ Thus, had the Fed chosen to use its LOLR authority to generate information, it likely could have collected a significant body of information about AIG's exposures, the liquidity demands it could face, and other matters pertinent to AIG's financial health and the ramifications of allowing it to fail.

The incredibly limited information the Fed had about AIG is critical to understanding the nature and magnitude of the risks the Fed assumed when it committed to bail out AIG. With the benefit of hindsight, we know that AIG was facing a liquidity crisis and was otherwise a solvent institution. This has significantly enhanced the government's capacity to extricate itself from AIG and to make (rather than lose) money on its investment.²⁸⁸ But in assessing that decision, it is important to recognize that this was far from clear at the time the New York Fed committed to providing the liquidity required to save AIG. As Dudley acknowledged at an FOMC meeting on September 16, the day that the Fed made that commitment, "a lot of times when people look closer at the books they find out that the liquidity crisis may also be a solvency issue" and "it is still a little unclear whether AIG's problems are confined just to liquidity. It also may be an issue of how much this company is really worth."²⁸⁹ Geithner similarly has acknowledged that "[i]f AIG had been forced to mark all its assets to their depressed market prices during a selling frenzy, then sure, it would've been insolvent."²⁹⁰ He has further explained, "we

286. Serena Ng & Carrick Mollenkamp, *Goldman Fueled AIG Gambles*, Wall St. J., <http://online.wsj.com/news/articles/SB10001424052748704201404574590453176996032> (on file with the *Columbia Law Review*) (last updated Dec. 12, 2009, 12:01 AM).

287. Sorkin, *supra* note 132, at 162.

288. For a summary of the specific investments the government made to support AIG and the financial returns on those investments, see U.S. Dep't of the Treasury, *Investment in AIG*, <http://www.treasury.gov/initiatives/financial-stability/TARP-Programs/aig/Pages/status.aspx> [<http://perma.cc/4DX2-AC78>] (last updated Dec. 11, 2013, 5:09 PM).

289. September 16, 2008 FOMC Meeting, *supra* note 266, at 5 (statement of William Dudley). The government has actually highlighted the Fed's ignorance regarding AIG in defending the terms of the loan it ultimately provided. See, e.g., Defendant's Statement of Contested Facts at 20, *Starr Int'l Co. v. United States*, 121 Fed. Cl. 428 (Aug. 18, 2014) (No. 11-00779C) (recognizing "[the New York Fed], and therefore ultimately taxpayers, took on significant credit risk given the size of the loan, the Federal Reserve's prior unfamiliarity with AIG, and the uncertainty of the Federal Reserve's information about AIG's solvency, financial condition, and funding needs").

290. Geithner, *supra* note 132, at 206.

thought that once the crisis passed . . . there was a *reasonable chance* AIG's assets would be worth more than its liabilities."²⁹¹

Also noteworthy is that without the adverse effects rippling from Lehman's failure, it cannot be assumed that the Fed and other policy-makers would have coalesced around the idea that AIG should receive government support. Even without Lehman's failure, AIG's exposures might well have put it in a position where, absent government support, it could not have avoided filing for bankruptcy. In that event, the Fed would have to choose between the moral hazard and other risks inherent in providing support and the adverse systemic ramifications of allowing AIG to fail. The quality of the decision Fed policymakers could make, and the magnitude of the risks of intervening, depended in significant part on the Fed's capacity to estimate the costs of allowing AIG to fail. Information available to the Fed's policymakers reveals that the Fed's lack of knowledge about AIG's interconnections, activities, and solvency may have resulted in the Fed erring in its assessment of the ramifications and perhaps taking a different course than it did. It is thus entirely possible that under slightly different circumstances, AIG would have been forced to file for bankruptcy, giving rise to adverse systemic repercussions that may well have surpassed those triggered by Lehman's failure.

E. *Easing Away from the Full Backstop*

The role of the government only increased following the initial liquidity injection into AIG. With the adoption of the Emergency Economic Stabilization Act of 2008 (EESA) on October 3, 2008, Congress provided financial regulators with significant additional tools and resources to support the financial system, while also seeking to hold regulators accountable for their actions.²⁹² The centerpiece of EESA, TARP, authorized the Treasury Secretary to spend up to \$700 billion to purchase distressed assets, largely based on the plan conceived over the summer by Paulson's aides. In light of operational challenges, a desire to move more quickly than that plan could be implemented, and other factors, the Treasury redirected those funds, using them instead to inject capital directly into banks and certain other firms.²⁹³ That policymakers

291. *Id.* (emphasis added).

292. Emergency Economic Stabilization Act, Pub. L. No. 110-343, 122 Stat. 3765 (2008) (codified at 12 U.S.C. §§ 5201–5202, 5211–5241 (2012)).

293. See U.S. Dep't of the Treasury, Bank Investment Programs, <http://www.treasury.gov/initiatives/financial-stability/TARP-Programs/bank-investment-programs/Pages/default.aspx> [<http://perma.cc/QP6Z-W6HB>] (last updated Jan. 13, 2016 12:17 PM) (describing TARP program). While structurally this program was quite different than the plan to buy troubled assets, it served similar aims. First, it improved the financial viability of banks receiving the funds by ensuring that they had the capital necessary to endure additional losses. Second, it sent a clear signal to the market that the government would stand behind the banks receiving the funds.

failed to realize prior to the passage of EESA that buying distressed assets was not the best response, combined with other dimensions of how policymakers handled that process—like the “infamous three-page” version of the original TARP proposal, which in addition to being incredibly bare bones also sought to shield the program from any meaningful oversight—raised questions about whether leading policymakers were prepared for and able to handle the challenges they were facing.²⁹⁴

Other programs further expanded the scope of government support. The Treasury guaranteed all money market mutual funds.²⁹⁵ The Fed created a number of additional liquidity facilities²⁹⁶ and, throughout this period and for years to follow, adopted an exceptionally accommodative and increasingly creative approach to monetary policy.²⁹⁷ The Federal Deposit Insurance Commission (FDIC) increased its level of coverage from \$100,000 to \$250,000 per eligible account type,²⁹⁸ insured deposits in excess of \$250,000 if held in noninterest-bearing transaction accounts, and guaranteed banks’ issuance of certain long-term debt.²⁹⁹ By using government backstops to reduce effective uncertainty and the ramifications of information gaps, these programs had a significant and beneficial effect on financial activity.

294. Frederic S. Mishkin, *Over the Cliff: From the Subprime to the Global Financial Crisis*, 25 *J. Econ. Pers.* 49, 54 (2011) [hereinafter *Mishkin, Over the Cliff*]; see also *id.* at 55 (noting “although markets had been watching government agencies scramble to deal with the financial crisis since late 2007, the events of September 2008 raised serious doubts that the U.S. government had the capability to manage the crisis”).

295. See Press Release, U.S. Dep’t of the Treasury, *Treasury Announces Temporary Guarantee Program for Money Market Funds* (Sept. 29, 2008), <http://www.treasury.gov/press-center/press-releases/Pages/hp1161.aspx> [http://perma.cc/3PC2-KLAW] (“The U.S. Treasury will guarantee the share price of any publicly offered eligible money market mutual fund—both retail and institutional—that applies for and pays a fee to participate in the program.”).

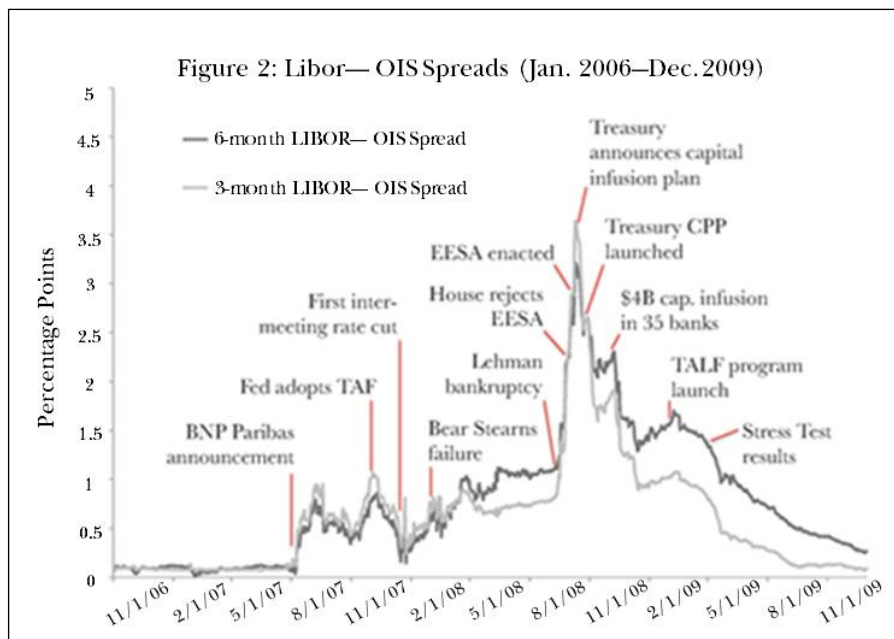
296. See *supra* text accompanying notes 46–53 (discussing new liquidity facilities created).

297. See generally Marc Labonte, Cong. Research Serv., RL30354, *Monetary Policy and the Federal Reserve: Current Policy and Issues for Congress* (2015) (providing detailed overview of Fed’s monetary policy before and after Crisis).

298. The Emergency Economic Stabilization Act of 2008 temporarily increased the insured deposit level to \$250,000, the Helping Families Save Their Homes Act of 2009 extended the temporary increase, and the Dodd-Frank Wall Street Reform and Consumer Protection Act permanently raised the cap to \$250,000. See Emergency Economic Stabilization Act of 2008 § 136(a)(1), 12 U.S.C. § 5241(a)(1) (2012); Helping Families Save Their Homes Act of 2009, Pub. L. No. 111-22, § 204, 123 Stat. 1632, 1648–51 (amending 12 U.S.C. § 5241); Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 335, 124 Stat. 1376, 1540 (2010) (amending 12 U.S.C. §§ 1821(a)(1)(E), 1787(k)(5)); see also Press Release, Fed. Deposit Ins. Corp., *Basic FDIC Insurance Coverage Permanently Increased to \$250,000 per Depositor* (July 21, 2010), <http://www.fdic.gov/news/news/press/2010/pr10161.html> [http://perma.cc/ZE8S-UK8W] (noting increase in deposit insurance coverage limits).

299. FDIC Temporary Liquidity Guarantee Program, Debt Guarantee Program and Transaction Account Guarantee Program, 12 C.F.R. § 370.3–370.4 (2014).

The important role of these and other government interventions in restoring market functioning and subsequently enabling the markets to function without such massive government support is reflected in the Libor–OIS spread, the same measure used throughout the first year of the Crisis to demonstrate that markets were in a state of significant and ongoing dysfunction.³⁰⁰ Figure 2 extends the period covered past the first year to the full arch of the Crisis, with notations for developments that appear to have had a particularly sizeable impact on the spread. This expanded view supports the notion that the fumbling of early efforts to get EESA adopted and to implement TARP adversely affected market functioning, but it also sheds light on the government interventions that were particularly important in restoring market functioning.



Among the government initiatives aimed at restoring market functioning, the Treasury's programs to recapitalize the largest financial institutions proved particularly critical.³⁰¹ Pursuant to its Capital Purchase Program (CPP), the Treasury Department invested more than \$200 billion of the TARP funds in over 700 different financial institutions.³⁰² While the Libor–OIS spread is probably disproportionately affected by

300. See *infra* Figure 1.

301. See U.S. Dep't of the Treasury, Capital Purchase Program, <http://www.treasury.gov/initiatives/financial-stability/TARP-Programs/bank-investment-programs/cap/Pages/overview.aspx> [<http://perma.cc/52GZ-6CEP>] (last updated Oct. 16, 2015 12:02 PM) (describing Treasury's Capital Purchase Program).

302. *Id.*

these programs, as banks were the direct beneficiaries, the magnitude of the effect and the scope of the programs make it clear that one of the reasons that liquidity support alone had failed to quell the market dysfunction is that financial institutions were too thinly capitalized relative to the risks to which they were exposed.

Another important development facilitating the ability of the markets to function without widespread government backstops was the public disclosure of regulators' assessments of the capacity of the largest banks to withstand further adverse developments. Through the Supervisory Capital Assessment Program (SCAP), 150 examiners and analysts from the Fed, the OCC, and the FDIC evaluated how the nineteen largest banking organizations would fare under specified adverse conditions.³⁰³ After asking banks to "estimate . . . losses and earnings . . . under two alternative" scenarios, regulators "identif[ied] methodological weaknesses, missing information, over-optimistic assumptions, and other problems"; "made judgmental adjustments to the firms' loss and revenue estimates"; and undertook other steps aimed "to achieve methodological consistency" and improve accuracy.³⁰⁴

As Bernanke explained when the results were released, the "examinations were not tests of solvency," which had long been monitored and regulated.³⁰⁵ "Rather, the assessment program was a forward-looking, 'what-if' exercise intended to . . . gauge the extent of the additional capital buffer necessary to keep these institutions strongly capitalized and lending, even if the economy performs worse than expected between now and the end of next year."³⁰⁶ A primary aim was to disseminate useful and credible information about bank health. As Bernanke later explained, the Fed recognized that "[t]he loss of confidence we have seen in some banking institutions has arisen not only because market participants expect the future loss rates on many banking assets to be high, but because they also perceive the range of uncertainty surrounding estimated loss rates as being unusually wide" and the SCAP "was designed to reduce this uncertainty."³⁰⁷

303. See Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., *The Supervisory Capital Assessment Program* (May 11, 2009) [hereinafter Bernanke, May 11, 2009 Speech], <http://federalreserve.gov/newsevents/speech/bernanke20090511a.htm> [<http://perma.cc/RUE7-85X7>] (introducing SCAP).

304. *Id.*

305. Press Release, Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., *Statement Regarding the Supervisory Capital Assessment Program* (May 7, 2009), <http://www.federalreserve.gov/newsevents/press/bcreg/bernakescap20090507.htm> [<http://perma.cc/6MLG-HZBY>].

306. *Id.* For more information about the methodology, see generally Bd. of Governors of the Fed. Reserve Sys., *The Supervisory Capital Assessment Program: Design and Implementation* (Apr. 24, 2009), <http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20090424a1.pdf> [<http://perma.cc/Q26L-BGL7>].

307. Bernanke, May 11, 2009 Speech, *supra* note 303.

The decision to disclose the results was controversial, as it runs against the strong tendency of bank regulators to favor confidentiality and was questioned by numerous outside commenters.³⁰⁸ It was made easier by the fact that the government could commit to providing banks the capital they needed to address identified shortcomings.³⁰⁹ On net, Fed policymakers seem to have decided that in light of the uncertainty that remained pervasive in 2009, “[e]ven a mixed bag of information about the actual condition of banks was better than knowing nothing and fearing a worst-case scenario.”³¹⁰ The SCAP seemingly succeeded in reducing uncertainty and promoting market activity.³¹¹ Bernanke opined later: “[T]he SCAP stands out for me as one of the critical turning points in the financial crisis. It provided anxious investors with something they craved: credible information about prospective losses at banks.”³¹²

IV. IMPLICATIONS

This Essay’s recounting of the first year of the Crisis, while necessarily heavily edited relative to the volumes of primary materials from which the account is derived, remains closely tethered to those materials. This Essay’s normative claim creates the framework for the examination, but policymakers’ voices are retained throughout. This is important in part because the account has implications beyond this Essay’s claims regarding how the Fed can best use its LOLR authority.

308. See, e.g., Stavros Peristiani, Donald P. Morgan & Vanessa Savino, The Information Value of the Stress Test and Bank Opacity 1 (Fed. Reserve Bank of N.Y. Staff Report No. 460 (July 2010), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr460.pdf [<http://perma.cc/CW5G-J5Z9>] (“The introduction of the stress test was greeted with a mixture of trepidation and skepticism by financial analysts, with some worrying that undercapitalized banks would be closed or nationalized based on the test results, and others expecting a ‘white-wash’ . . .”); see also Donna Borak, The Increasing Leverage of Daniel Tarullo, *Am. Banker* (July 28, 2013), http://www.americanbanker.com/magazine/123_8/the-increasing-leverage-of-daniel-tarullo-1060538-1.html [<http://perma.cc/2HK6-TU5G>] (“Some on the board feared that the market would lose confidence in the banks if the results [of the stress test] were negative.”).

309. See Press Release, Timothy F. Geithner, Sec’y of the Treasury, Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., Sheila Blair, Chairman, Fed. Deposit Ins. Corp. & John C. Dugan, Comptroller of the Currency, The Treasury Capital Assistance Program and the Supervisory Capital Assessment Program (May 6, 2009), <http://www.federalreserve.gov/newsevents/press/bcreg/20090506a.htm> [<http://perma.cc/JS4Q-WZXG>] (noting SCAP complemented Treasury’s Capital Assistance Program (CAP), “which makes capital available to financial institutions as a bridge to private capital in the future”).

310. Borak, *supra* note 308 (describing Tarullo’s rationale for pushing for disclosure).

311. E.g., Peristiani, Morgan & Savino, *supra* note 308, at 4–11.

312. Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., Stress Testing Banks: What Have We Learned? (Apr. 8, 2013), <http://federalreserve.gov/newsevents/speech/bernanke20130408a.htm#f2> [<http://perma.cc/TR7G-SKC3>].

One valuable lesson from this analysis, for example, is that the Crisis was in fact underway for more than a year by the time Lehman Brothers failed.³¹³ While this has been acknowledged by many, it remains poorly understood by the public and even by some otherwise quite informed academics and commentators. Eric Posner and Adrian Vermeule, for example, authored an influential law review article and subsequent book in which they argue that during crises “rational legislators and judges [have] no real choice but to hand the reins to the executive and hope for the best.”³¹⁴ To support this claim, they give two examples—Congress’s decision to authorize the use of force shortly after the terrorist attacks of 9/11 and Congress’s decision to authorize the Treasury to buy troubled assets shortly after Lehman failed and AIG was bailed out in September 2008.³¹⁵ While acknowledging differences between the events, their analysis equates the failure of Lehman in September 2008 with the terrorist attacks that occurred on September 2001 and suggests that while in each case, there may have been earlier signs of trouble, the problems were too amorphous prior to that time for regulators to have been able to prod Congress into action.³¹⁶ The examination here of the thirteen months leading up to September 2008 tells a very different story, one with important implications for the balance of power among the government actors involved.

If September 2008 had come out of the blue, then, consistent with Vermeule and Posner’s account, effective crisis governance may well have required that the executive branch take the lead and obtain exceptionally broad discretion from Congress about how best to proceed. Recognizing that the Crisis had been going on for more than a year prior to the disastrous events of September 2008 raises questions about whether the Fed and other financial regulators should have sought greater authority from Congress earlier and if expectations that they would be granted more authority with fewer strings attached might have been among their reasons for not doing so. There are also questions about what Fed and other policymakers communicated to members of Congress about their intentions when they sought approval for EESA. For example, Bernanke’s recently released autobiography reveals that he believed that injecting capital into banks was likely to be more effective than Paulson’s plan to try to buy troubled assets from banks and that Paulson had “assured [Bernanke] that the authority to purchase assets would be written broadly enough to allow the government to purchase

313. See, e.g., *supra* section III.D.1 (describing events precipitating failure of Lehman Brothers).

314. Eric A. Posner & Adrian Vermeule, *Crisis Governance in the Administrative State: 9/11 and the Financial Meltdown of 2008*, 76 U. Chi. L. Rev. 1613, 1614 (2009) [hereinafter, Posner & Vermeule, *Crisis Governance*]; see also Eric A. Posner & Adrian Vermeule, *The Executive Unbound: After the Madisonian Republic* (2011).

315. Posner & Vermeule, *Crisis Governance*, *supra* note 314, at 1613–14.

316. *Id.* at 1638–39.

equity shares in banks—that is, to inject government capital, [Bernanke’s] preferred approach—if that turned out to be best.”³¹⁷ Only by closely examining the full year leading up to the passage of EESA and what policymakers knew during this period can we develop a more robust understanding of the degree to which the Fed and other regulators shared critical information with Congress, whether they may have withheld information, and the implications of those decisions.

More generally, the widespread tendency to talk about the “2008 financial crisis” elides a critical period in that crisis, one that merits far greater attention than it has received in the ongoing efforts to learn all of the lessons the Crisis has to teach. In providing a detailed account of what Fed policymakers knew and believed at key junctures in this period, this Essay lays the groundwork for these efforts to continue in a more informed and thus productive way. The remainder of this Essay leaves further examination to future work and focuses instead on the implications of this account for this Essay’s normative claims.

A. *Better Outcomes Were Possible*

If the scale of the Crisis was fixed as of its start in August 2007, then the claim here is moot. By contrast, if the alternative decisions that the Fed might have made following the proposed approach would have altered the course of the Crisis, this would provide strong support for this Essay’s claims. Unfortunately, we will never know with certainty either way. It is impossible to press rewind and see what would have happened under various alternative scenarios, and trying to assess what might have been is an inherently speculative undertaking and one inevitably biased by hindsight. Nonetheless, this is the type of enterprise that has been employed repeatedly and productively in the wake of financial crises throughout history and is how we learn from them.

This Part grapples with these challenges by focusing on the core issue of how a central bank that recognized the difference between finite and persistent liquidity crises—and the unique challenges and opportunities posed by the latter—may have responded differently given what Fed officials knew and believed at the relevant junctures. It further assumes that altering the paradigm for how a LOLR ought to respond during periods of prolonged distress will alter the types of questions Congress, academics, and others will pose to Fed officials when seeking to hold them accountable for their actions. This latter layer is key, as it is the mechanism for both addressing concerns about legitimacy and reducing the capacity for Fed officials to dodge responsibility when they were in a position to take productive actions by utilizing their powers in the ways proposed. Again, the analysis is necessarily truncated in light of

317. Ben S. Bernanke, *The Courage to Act: A Memoir of a Crisis and Its Aftermath* 304 (2015).

space constraints, addressing only a few of the virtually endless alternative scenarios.

1. *The Early Stages.* — There are a number of ways that the Fed may have more effectively used its LOLR and other sources of authority during the first seven months of the Crisis had it viewed itself as having the right and obligation to function as an information-coordination agent once it was clear the financial system was facing a persistent liquidity shortage. For example, Fed officials were aware that a significant factor contributing to the hesitance of financial institutions to work with one another was a lack of information about the distribution of subprime exposures.³¹⁸ Fed officials were also aware that they lacked a complete understanding of these dynamics.³¹⁹ Given the Fed's willingness to cut the Fed funds rate twice in January 2008 and the fact the Fed had already put the TAF in place, a Fed attuned to the importance of information gaps might have also opted around that time to create a liquidity facility designed to provide financial institutions access to relatively cheap liquidity in exchange for (1) information about that institution's direct and indirect exposures to subprime assets, (2) the tools the institution was using to assess the value and risks of the assets, and (3) any efforts it had taken to mitigate these exposures. Such intervention would have had a far smaller downside risk than the rate cuts and might have yielded an array of benefits, including providing both the institutions and the Fed much needed information about the nature and dispersion of risk exposures and variations in the tools being used to assess their value. It also may well have alerted the Fed to important connections among institutions, and properly executed, it may well have revealed the extensive one-way risk AIG had assumed as a result of insuring such exposures.

Another move that the Fed might have taken around January would have been to focus on the financial health of banks and other financial institutions. In addition to the other important developments in January, this was the month that specific findings were presented to the FOMC regarding the inadequacies in many banks' risk-management systems.³²⁰ Even at that time, it was well known that capital is a backward-looking measure and that whether a bank is adequately capitalized depends not only on the actual downside risks to which a bank is exposed but also the bank's capacity to identify and measure its risk exposures.³²¹ Even under the approaches to bank oversight then in place, the Fed and other prudential regulators could have used deficient risk-management systems

318. See *supra* sections III.A–III.B.

319. See *supra* sections III.A–III.B.

320. See *supra* text accompanying notes 174–176.

321. See, e.g., Richard S. Carnell, *A Partial Antidote to Perverse Incentives: The FDIC Improvement Act of 1991*, 12 *Ann. Rev. Banking L.* 317, 350 (1993) (observing “[c]apital is, intrinsically, a lagging indicator of problems”).

as a basis for demanding that banks raise fresh capital.³²² Given that the large banks and investment banks may well have still been able to raise capital in the market at that stage and that thicker capital cushions at the largest and least well-managed institutions might have substantially improved the capacity of the financial system, such a move might have significantly altered the course of the crisis. In short, even in light of what Fed officials knew at the time, such a move had far greater upside than downside risks. While this type of move is contrary to bank regulators' traditional predilection toward delay, it is precisely because that predilection is so well established and so problematic that the Fed should be expected to take the lead in identifying and prompting a timely response when the market is signaling that there are reasons for concern.

Although there are numerous other productive actions a Fed focused on functioning as an information-coordination agent might well have taken during these very early stages, it is the six months following the failure of Bear Stearns that is most ripe with missed opportunities. After seven months of strained liquidity conditions, it was clear that the markets were experiencing persistent liquidity shortages, and thus a change in approach would be appropriate under the paradigm proposed here. Bear's near-failure and the Fed's responses to it altered the course in ways that are central to the issue of how a LOLR can most effectively use that authority.

2. *Lehman*. — Of the countless ways the situation with Lehman may have played out differently, the analysis here will focus on just three, overlapping alternatives: (1) forcing Lehman to make difficult decisions earlier than it did; (2) resolving the Lehman situation without having Lehman file for bankruptcy; and (3) disseminating credible information about counterparty exposures and otherwise better handling the resolution to mitigate the market dysfunction caused by Lehman's bankruptcy.³²³

One of the principal benefits of having the Fed use its authority to gather additional information is that it may well have figured out well before September 2008 that Lehman's assets were worth less than they purported them to be, that Lehman was disseminating deceptive information about its liquidity reserves, and that Lehman would likely not survive as a stand-alone firm, at least not without a significant capital infusion. Lehman was losing money, and assuming fresh risks, during much of the period in question. Other banks similarly faced deteriorating health and increasing reliance on ever shorter-term sources of financing during this period, increasing the fragility of the overall system.³²⁴ Pushing up resolution of Lehman's situation may well have

322. See e.g., *id.* at 354–59 (exploring Fed's risk-based prerogatives in encouraging firms to raise capital).

323. Further courses of actions that could have affected both Lehman and AIG are discussed further below. See *infra* section IV.A.1.b.

324. E.g., Gorton, Metrick & Xie, *supra* note 72, at 1.

resulted in Lehman being acquired by Barclays or another financial firm,³²⁵ and would likely have increased the resiliency of the rest of the financial system, reducing the ripple effects, if Lehman was nonetheless forced to file for bankruptcy.

Apart from the timing of the resolution, a better informed Fed may well have been able to do more to avert the difficult decision of whether to bail out Lehman altogether. For example, even with the regulatory regime then in place, the Fed could have used insights it gained regarding Lehman's precarious financial health to explain to the SEC why it should use its supervisory authority to encourage Lehman to raise capital and otherwise improve its financial health. The Fed also could have signaled to Lehman that ongoing access to the Fed's two credit facilities, which appear to have played a critical role in the willingness of Lehman's counterparties to continue working with the firm, would be conditioned on the firm selling some of its illiquid assets and raising fresh capital. In light of the evidence that Lehman's CEO, Richard Fuld, failed to pursue other options in part because of expectations that government support would be available if needed, signals to the contrary may have altered his assessment of a range of options, increasing his willingness to raise capital on terms he may not have found otherwise desirable or to initiate discussions of a possible merger.

A distinct way the Lehman situation would likely have played out quite differently had the Fed been playing the role of information-coordination agent is that, even holding all else constant, the Fed might have been able to mitigate the ripple effects emanating from Lehman's failure. A study by the FDIC suggests that had Lehman's resolution been conducted under the FDIC's control rather than through bankruptcy, the value destroyed would have been a small fraction of the overall value destroyed by its bankruptcy.³²⁶ Even without the changes wrought by the Dodd-Frank Act, the report explains a number of ways that, had the overall process been handled in a more coordinated fashion, much of the value destruction could have been avoided.³²⁷ A more informed Fed might also have been able to reduce the ramifications of Lehman's failure by reducing the effective uncertainty that it triggered. Throughout the Crisis, interconnections among financial institutions played a key role in magnifying

325. See Anne Craig et al., *The Weekend that Wall Street Died*, *Wall St. J.* (Dec. 29, 2008), <http://www.wsj.com/articles/SB123051066413538349> (on file with the *Columbia Law Review*) (describing Barclay's interest in Lehman and how Fed's failure to communicate with UK counterparts in timely fashion foreclosed that option).

326. See Fed. Deposit Ins. Corp., *The Orderly Liquidation of Lehman Brothers Holdings Inc. Under the Dodd-Frank Act*, 5 FDIC Q. 1, 18 (2011), http://www.fdic.gov/bank/analytical/quarterly/2011_vol5_2/lehman.pdf [<http://perma.cc/G7UX-9K3S>] ("FDIC could have used its power as receiver and the ability to facilitate a sale . . . to preserve the institution's franchise value . . .").

327. *Id.* at 11–18 (discussing methods FDIC could have used to gain information necessary for effective resolution without signaling to markets that Lehman's failure was imminent).

distress, and the Fed explicitly recognized the importance of such interconnections in explaining the assistance it provided to Bear Stearns. Had the Fed gathered reliable information about other banks' exposures to Lehman and the protection they had in place, the Fed could have publicized this information when Lehman ultimately failed. Given the prominent role that lack of information about other banks' exposures to Lehman played in helping to explain the magnitude of the fallout, this type of information may have meaningfully reduced the market dysfunction that followed.³²⁸ In sum, there is a reasonable basis for thinking that the Lehman failure may have been averted or its effects reduced substantially had the Fed been using its LOLR authority in the manner here proposed.³²⁹

3. *AIG*. — In order to understand how the proposed approach would have increased the probability of a favorable outcome with respect to AIG, it is critical to evaluate what happened and what could have happened in probabilistic terms. With the benefit of hindsight, it is clear that, contingent upon there being no other changes in the period leading up to September 16, 2008, providing AIG the liquidity it needed to continue operations was likely the correct action for the Fed to take. That said, the correctness of that decision was in no small part a matter of luck.

As an initial matter, AIG was facing potential downgrades in its credit rating for reasons quite apart from Lehman's bankruptcy.³³⁰ It is entirely possible that AIG would have faced those downgrades, and the accompanying demands for collateral from counterparties that ultimately crippled and nearly destroyed the firm, before Lehman's demise. And, it is far from clear that had AIG run out of liquidity first, policymakers would have been willing to provide it the requested aid. At least part of the reason that Fed and other policymakers allowed Lehman to fail was that they were concerned about moral hazard and they underestimated the ramifications of allowing it to fail.³³¹ In light of how little they knew,

328. Cf. Caballero & Simsek, *supra* note 202, at 4 (suggesting market participants lacking information about complexity of interconnections between counterparties are likely to engage in liquidity hoarding to offset uncertainty regarding their exposure to surprise liquidity shocks).

329. Perhaps the most obvious way that a more informed Fed might have acted differently would have been to choose to save Lehman. While the leading financial regulators have all adhered to the position that they had no choice but to allow Lehman to fail, this claim remains highly contested and even they do not deny they could have helped Lehman had the firm been solvent, as it may well have been earlier in the summer.

330. Defendants' Proposed Findings of Facts at 2–3, *Starr Int'l Co. v. United States*, 121 Fed. Cl. 428 (Feb. 9, 2015) (No. 11-00779C).

331. See, e.g., See, e.g., Posner, *Failure of Capitalism*, *supra* note 133, at 133, 274–75 (suggesting Bernanke and Paulson “let” Lehman fail because of failure to appreciate consequences and that they could have chosen otherwise); The Price of Failure, *Economist* (Oct. 4, 2008), <http://www.economist.com/node/12342689> [<http://perma.cc/SQL9-V7VW>] (“Had officials foreseen this debacle, Lehman would surely have been propped

they could easily have made similar miscalculations with respect to AIG if they did not have the additional and game-changing data point of the market's reaction to Lehman's bankruptcy. Moreover, while with the benefit of hindsight, we know that AIG was highly interconnected with other financial institutions and nonfinancial firms and the uncertainty and other ripple effects of allowing it to fail may well have dwarfed the effects of Lehman's bankruptcy. Nonetheless, at the time, policymakers knew little about AIG and its interconnections and these other considerations, significantly hampering their capacity to make informed judgments about the ramifications of alternative courses of actions they may well have pursued.

Another critical consideration when assessing the bailout of AIG in probabilistic terms is solvency. At the time the Fed initially made available to AIG an \$85 billion credit facility, Fed officials had quite limited information about the firm's financial health and did not actually know whether it was solvent.³³² The government itself has highlighted its "prior unfamiliarity with AIG," in a lawsuit challenging the terms of the bailout.³³³ While the government got lucky, that fact doesn't change that the minimal information the government possessed increased the credit and other risks the government assumed when it authorized the initial facility to support AIG.

It is also possible that had the Fed gathered more information about AIG's one-way bet on subprime and other MBS, it could have worked with AIG and its regulators to do more to address its liquidity management and capitalization prior to September 2008. AIG's financial health suggests it may have been able to raise new capital had it been compelled, or even strongly encouraged, to do so earlier.³³⁴ Such actions may have averted the need for it to seek support from the Fed and, even if the Fed still got involved, these actions would have reduced the credit risk and moral hazard arising from the intervention.

A significant shortcoming of the government's handling of these matters, relevant to both Lehman and AIG, is preparedness, or lack

up."); Deborah Solomon et al., *Ultimatum by Paulson Sparked Frantic End*, *Wall St. J.* (Sept. 15, 2008), <http://www.wsj.com/articles/SB122143670579134187> (on file with the *Columbia Law Review*) (noting "by taking the rescue option off the table," federal government "re-established 'moral hazard'"); see also Simon Johnson & James Kwak, *Lehman Brothers and the Persistence of Moral Hazard*, *Wash. Post* (Sept. 15, 2009, 8:33 AM), <http://www.washingtonpost.com/wp-dyn/content/article/2009/09/15/AR2009091500943.html> [<http://perma.cc/9SXA-UC76>] (suggesting Paulson, Bernanke, and Geithner let Lehman fail "to send a message," but "plan backfired completely").

332. See *supra* section III.D.2.

333. Defendant's Statement of Contested Facts at 20, *Starr Int'l Co.*, 121 Fed. Cl. 428 (No. 11-00889C).

334. Cf. Plaintiffs' Corrected Proposed Findings of Fact at 16–17, *Starr Int'l Co. v. United States*, 121 Fed. Cl. 428 (Aug. 22, 2014) (No. 11-00779C) (identifying potential investors and providing other evidence to support possibility of market-based alternatives as late as September 2008).

thereof. The events of September 2008 reveal all too clearly that the Fed and other leading financial policymakers did not have a clear plan of action for how they would respond in the face of a possible failure of Lehman or AIG. Fed policymakers knew far less than they could have about the health of either firm, the value of the assets each held, and the nature of their connections to other financial institutions. There also seems to have been remarkably little communication among key policymakers about how they would respond to such an eventuality.³³⁵ While nothing can be assured, if the Fed had a better understanding of the probability that either firm would require liquidity support and the chain reactions that might occur if they were allowed to fail, or if Fed officials expected to be held accountable under the paradigm proposed here, Fed policymakers may well have done more to prepare. In addition to being helpful for the reasons given, this might have enabled policymakers to appear more informed when seeking greater authority from Congress after Lehman failed, which may have independently reduced the magnitude of the fallout.³³⁶

The final point to highlight is that a more informed Fed could have sought greater authority to address the challenges it was facing or worked more closely with regulators who had the powers that the Fed lacked. The scope of the Fed's authority is not fixed; it can always be expanded or contracted by Congress.³³⁷ In the wake of Bear's failure, some members of Congress seemed open to expanding the Fed's oversight to reach the investment banks and potentially other systemically important institutions. Had the Fed used its LOLR authority to learn more about the interconnections among Lehman and other banks, the amount of one-way risk AIG had assumed, or other sources of fragility, the Fed may have sought—and gotten—Congress to act far sooner than it did. This seems particularly likely given that the competence of the OTS, the SEC, and state insurance regulators—at least with respect to their oversight of systemically important financial institutions and their capacity to understand and address the systemic ramifications of problems at those institutions—had been revealed to be clearly wanting. The inherent elasticity of the regulatory authority and the capacity of expert regulators to play a meaningful role helping Congress to understand the nature of

335. For example, in his autobiography, Geithner notes that on the Thursday night prior to the failure of Lehman, “[W]hen Hank [Paulson] forcefully repeated his no-public-money stand during a conference call with Ben [Bernanke] and SEC Chairman Chris Cox, I began to worry that he actually meant it.” Geithner, *supra* note 132, at 179.

336. E.g., Mishkin, *Over the Cliff*, *supra* note 294, at 52–55 (describing process and identifying it as one of four key developments “that morphed the subprime crisis into a virulent global financial crisis”).

337. See Posner & Vermeule, *Crisis Governance*, *supra* note 314, 1646–60 (discussing how Congress regularly expands authority during periods of financial crisis); see also Alexander Mehra, *Legal Authority in Unusual and Exigent Circumstances: The Federal Reserve and the Financial Crisis*, 13 U. Pa. J. Bus. L. 221, 264–66 (2010) (discussing narrowing of Fed's lending authority after Crisis).

the challenges that they are facing and the tools needed to address them are thus highly relevant in assessing how the thirteen months here at issue may have been better utilized.

B. *Liquidity and Information*

Financial crises are not all-or-nothing events. Size matters. Throughout the period here at issue, the country was in the midst of a financial crisis that it was too late to avert. Nonetheless, the costs that the Crisis would inflict on the real economy were not a foregone conclusion. Nor was the amount of moral hazard from expanding the government safety net and the corresponding need for a large-scale regulatory overhaul to address it. The analysis here suggests that had the Fed accepted that it could and should use its LOLR authority in the ways proposed, the depths that followed might not have been so deep.

More generally, the unfolding of the Crisis detailed here is consistent with this Essay's claims that persistent liquidity shortages merit distinct treatment and that information plays a critical role in efforts to address persistent liquidity shortages. Through actions like changes in the term of its discount window operations, adoption of the TAF, the institution of two credit facilities to support primary dealers in March 2008, and the backstop enabling JP Morgan's acquisition of Bear Stearns, the Fed was actively seeking to pump fresh liquidity into the system throughout the period here at issue. Those efforts resulted in modest but incomplete improvements in market functioning. With the benefit of hindsight, it is clear that those efforts failed to bring about a more lasting restoration of market functioning because they were symptoms of deeper ills plaguing the financial system that liquidity alone could not resolve. As reflected in the market's response to the CPP and Treasury's related programs, one of the core challenges was that market participants accurately perceived that many banks and other financial institutions held insufficient capital in light of the risks to which they were exposed. The market's response to the stress tests, meanwhile, suggests the way that market participants' lack of information also contributed to that dysfunction. Looking further back, the discussions among Fed policymakers throughout the first year show that both of these were issues to which they were attuned, even if they failed to fully investigate or address them, well before September 2008.

Further affirming the importance of rethinking how the Fed can best use its LOLR authority, the case study illustrates the downsides of the Fed's willingness to provide liquidity during periods of prolonged market dysfunction. Without the Fed's LOLR interventions, market participants would very likely have had to make difficult decisions earlier than they did. Had regulators used the intervening period to develop a more comprehensive game plan for addressing foreseeable contingencies, or otherwise used the intervening time to bring about changes

that would enhance the capacity of the financial system to withstand further adverse developments, this delay might have proved quite useful. As it was, the intervening period was one during which the overall system became increasingly fragile and regulators became only minimally more prepared, suggesting that the short-term benefits derived from the Fed's LOLR interventions ultimately may have done as much harm as good.

The Fed's LOLR authority is a tool; it is not a panacea. The preceding analysis reveals a number of issues that could not or should not have been addressed by the Fed using the leverage it enjoys by virtue of controlling access to liquidity. Nonetheless, it does show how a more robust use of this tool can function as a critical first step in devising a more comprehensive response in the face of a budding financial crisis. It identifies a number of ways that the Fed plausibly could have used its LOLR authority to become better informed and how Fed policymakers may have made different—and better—choices, had they done so. It further suggests some ways that the Fed could have used its LOLR authority to strategically facilitate the dissemination of information in ways that may have reduced effective uncertainty and promoted market functioning. The Fed alone cannot bring an end to all financial crises, but by serving as an information-coordination agent, it can more effectively fulfill its longstanding role at the forefront of efforts to contain a growing financial crisis.

V. CHALLENGES

This Part assesses some challenges and drawbacks of having the Fed use its LOLR authority to pursue aims beyond directly counteracting liquidity shortages. The potential concerns are myriad, and often different in kind. As reflected in the ongoing debates about whether the Fed should enjoy more or less authority to lend to nonbank financial institutions and even to banks,³³⁸ there are a wide range of perspectives on these matters.

338. See Federal Reserve Reform Act of 2015, H.R. 3189, 114th Cong. § 11 (proposing restrictions on Fed's special lending powers that would narrow circumstances under which Fed could lend to nonbank financial firms); Centennial Monetary Commission Act of 2015, H.R. 2912, 114th Cong. § 4 (calling for establishment of new commission to "evaluate various operational regimes under which the . . . [Fed] may conduct monetary policy"); Examining Federal Reform Proposals: Testimony Before the Monetary Policy & Trade Subcomm. of the H. Comm. on Fin. Servs., 114th Cong. 3–4 (2015) (statement of Donald Kohn, Senior Fellow, Economic Studies Program, Brookings Institution) (emphasizing importance of Fed's emergency lending powers for nonbanks); *id.* (statement of Paul H. Kupiec, Resident Scholar, American Enterprise Institute) (claiming proposed restrictions on Fed's emergency lending powers for nonbanks help remove concerns that Fed "could once again legally lend to stop . . . [a] financial firm from failing"); see also Requirements for the Fed to Describe Its Strategy: Testimony Before the S. Comm. on Banking, Hous. & Urban Affairs, 114th Cong. 1 (2015) (statement of John B. Taylor, Stanford University and the Hoover Institution) (advocating for legislation requiring Fed to provide Congress with clear rule describing its monetary policy); Federal Reserve Accountability and Reform, Testimony Before the S. Comm. on Banking, Hous. &

The concerns include both issues of accountability—e.g., are there sufficient mechanisms in place to ensure the Fed uses the significant discretion it enjoys to further congressionally endorsed and popularly acceptable aims and will the proposed paradigm shift enhance or detract from efforts to promote accountability—and efficacy—e.g., are the theorized gains from the proposed paradigm shift ones that can actually be realized in practice. Rather than trying to categorize or create a hierarchy among these competing voices, this Essay seeks simply to identify the most pressing concerns that might argue against the proposed course. In analyzing these issues and suggesting most can be addressed if the paradigm shift is appropriately implemented, this Part also provides guidance regarding how the ideas proposed here could be translated into workable policies.

A. *Friction*

Perhaps the biggest risk associated with imposing additional conditions on a bank's ability to access liquidity from the Fed is that doing so would deter borrowing. This could be problematic because liquidity shortfalls remain an aggravator of systemic distress and concerns about stigma can depress usage in dramatic and nonlinear ways.

As a preliminary matter, if conditions are imposed in connection with access rather than usage and firms have little or no discretion about being in the eligible pool, then the conditions should not affect usage. This is precisely the approach the Fed used when it put its on-site teams at the investment banks in connection with the PDCF, proving its viability. Moreover, even when imposed in connection with use of a Fed facility, certain conditions may actually encourage use. Imposing a meaningful solvency requirement, which the Fed could verify only by accessing additional information about an institution's health and risk exposure, might encourage solvent banks to borrow as a way of signaling the Fed's faith in their financial health.³³⁹ Similarly, the very framing of the LOLR activity advocated here is quite different than the type of borrowing that has traditionally given rise to stigma. There is no reason that use of a facility designed with the express aim of providing exceptionally cheap liquidity to financial institutions in exchange for the institution providing information and otherwise helping the Fed to maintain the stability of the overall system should create any stigma. If anything, like a meaningful solvency condition, the willingness to be open and work with the Fed may send positive signals to the market.

Urban Affairs, 114th Cong. 8–10 (2015) (statement of Peter Conti-Brown, Academic Fellow, Stanford Law School) (attacking bill supported by Taylor).

339. See Tucker, *supra* note 2, at 20–21 (“Rather than use of the discount window being tantamount to being given the ‘Black Spot’, it could instead be a signal that the central bank was confident that the firm was fundamentally sound.”).

Even if some conditions would be costly to comply with, because of stigma concerns or otherwise, these frictions should be sufficiently modest, particularly when focusing on aims like information generation.³⁴⁰ In light of the Fed's capacity to simultaneously employ multiple facilities and other mechanisms to inject additional liquidity into the market, the potential frictions that might result from imposing additional conditions are more likely to be factors influencing when and how the Fed pursues additional goals, not whether it should.

B. *Other Operational Challenges*

Another challenge is that the proposed aims are not self-executing. Many require expertise, in addition to leverage, to implement effectively and some may face additional procedural challenges.³⁴¹ These too are genuine challenges, but also ones that the Fed should have the capacity to address. With respect to gathering information, for example, the Fed could begin by reassigning some of the bank examiners it already employs to the new institutions or markets. The Fed could also hire new staff, use outside advisers, or ask eligible banks to second employees with the appropriate skills to the Fed as a condition of eligibility. All of these alternatives entail challenges, but the very existence of so many alternatives suggests these are challenges that could be overcome. A similar array of imperfect but viable options likely exists with respect to the other operational challenges that would inevitably arise in the process of implementing these proposals.

Related to the general operational challenges is the issue of cost. Seeking to achieve many of the priorities identified here would entail expenditures. Depending on the scale of the program and the use of outside advisers, these costs could seem significant. Yet, focusing on costs is more likely to support than undermine this Essay's claim. Most of the costs that the Fed would incur implementing the proposed approach are knowable and limited. Hence, even if the Fed errs by gathering information that ultimately is not that useful or the situation improves without further government intervention, the downside is likely to be modest. This stands in stark contrast to the downside risk associated with other interventions that the Fed may use. If the Fed is too quick to lower the fed funds rate, for example, or keeps it too low for too long, possible effects include inflation and creating conditions that are conducive to asset bubbles, increasing the likelihood of a future crisis.³⁴² It is precisely

340. Cf. *id.* (emphasizing frictions created by stigma concerns when central banks lend for purposes of solvency support rather than information gathering).

341. See, e.g., Paperwork Reduction Act of 1980, Pub. L. No. 96-511, § 3504, 94 Stat. 2812, 2815 (codified as amended at 44 U.S.C. §§ 3501–3521 (2012)) (requiring agencies to obtain approval from Office of Management and Budget for any “information collection request”).

342. Richard A. Posner, Afterword to What Caused the Financial Crisis 279, 279–80 (Jeffrey Friedman ed., 2011).

because there are such significant drawbacks to using the tools otherwise available to the Fed to combat a potential crisis that the more moderate costs and other drawbacks of the proposed approach weigh so heavily in favor of its utilization.

C. *Bypass the Fed*

A related challenge is that banks may respond by seeking government-backed liquidity from sources other than the Fed. During the early stages of the Crisis, for example, banks substantially increased their reliance on loans from the Federal Home Loan Banks as a source of funding and liquidity.³⁴³ Some banks also used the lure of excessively high rates of interest to retain and attract insured deposits.³⁴⁴ Rather than suggesting that the Fed should avoid using the types of conditions contemplated here, however, these dynamics affirm the importance of policy changes to reduce banks' capacity to use these alternative programs to access government-backed liquidity.³⁴⁵ Moreover, there are limitations on the extent to which banks can rely on each of these alternative discount windows, and neither can be used by nonbank financial institutions, so the Fed retains significant leverage even if they persist.³⁴⁶

D. *Information Does Not Ensure Action*

A distinct challenge is that much of the analysis here presumes that better information would lead to better action. While generally true, information does not always lead to understanding, and understanding does not ensure wise action. A report, prepared at the behest of the New York Fed, suggests that at least with respect to the Fed's supervisory division, there may be reasons for concern.³⁴⁷ This is a serious issue and, like the last one, should be addressed for reasons apart from the issues raised here. At the same time, the analysis in Part III reveals many Fed policymakers recognized the limits of their knowledge, wanted to better under-

343. Viral V. Acharya et al., *How Do Global Banks Scramble for Liquidity? Evidence from the Asset-Backed Commercial Paper Freeze of 2007*, at 2 (Fed. Reserve Bank of N.Y., Staff Rep. No. 623, Dec. 2013), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr623.pdf [<http://perma.cc/T65X-BJWA>].

344. See *id.* at 6 n.8, 16–18 (finding banks attempted to increase short-term liquidity at end of 2007 by growing time deposits).

345. For a fuller critique of the institutional competencies of these liquidity providers and other reasons such alternative programs should be revised, see Kathryn Judge, *Three Discount Windows*, 99 *Cornell L. Rev.* 795, 837–55 (2014).

346. *Id.* at 837, 840 (suggesting alternative discount windows are subject to external constraints which may make them less useful to banks as liquidity shortages persist).

347. Fed. Reserve Bank of N.Y., *Report on Systemic Risk and Bank Supervision 2* (Aug. 18, 2009) (unpublished manuscript), <http://s3.documentcloud.org/documents/1303305/2009-08-18-frbny-report-on-systemic-risk-and.pdf> (on file with the *Columbia Law Review*) (suggesting NY Fed has “a culture that is too risk-averse to respond quickly and flexibly to new challenges”).

stand what was actually going on, and seemed ready to modify their response accordingly. Additionally, the aim of calling for a change in paradigm regarding how the Fed should use its LOLR authority is to also transform the standard against which the Fed's actions will be measured. Policymakers who anticipate being held accountable if they fail to use their authority to gather pertinent and available information and to timely identify threats may well become more diligent in those efforts, even if they might not otherwise be so disposed.

E. *One Tool, Multiple Aims*

A final challenge is that the proposal muddies the waters surrounding the Fed's various instruments and aims. According to the "Tinbergen principle," policymakers should have at least one independent policy instrument for each policy objective, and such an approach has real virtues.³⁴⁸ Nonetheless, there has never been such purity in the Fed's operations.³⁴⁹ The Fed has long been tasked with achieving a number of overlapping policy aims, and it has been given a range of tools to help it further those aims. In practice, the relationship between those tools and the policy aims it seeks to achieve has never been cleanly delineated, and there may be benefits to a little fuzziness in this regard.³⁵⁰ Thus, while the proposal here may muddy the water, it does so in an environment where the water is already quite muddy and where that may be optimal.

CONCLUSION

Financial crises are inevitable. The amount of damage a crisis inflicts on the economy, however, can vary dramatically. So, too, can the amount of moral hazard created by the government's response. This is not a new insight. A primary reason central banks are empowered to provide liquidity is the recognition that insufficient liquidity can cause a modest crisis to explode into something much more serious. Nonetheless, insufficient liquidity is not the only factor that can aggravate systemic distress, and the provision of government liquidity uncoupled from an effort to redress the underlying problems causing liquidity shortages to persist can increase the fragility of the overall system. Thus, once a financial crisis takes hold, a central bank should couple efforts to provide liquidity with efforts to address the underlying problems causing those liquidity shortages to persist. This means that the central bank should use its authority to understand how risks are allocated across the financial sys-

348. Jan Tinbergen, *On the Theory of Economic Policy* 37–42 (1952).

349. See *supra* Part I (noting conflict and overlap among Fed's objectives and mandates).

350. See, e.g., Gabriele Galati & Richhild Moessner, *Macroprudential Policy—a Literature Review*, 27 *J. Econ. Surv.* 846, 864 (2013) (recognizing "in practice, the different policy tools and objectives of monetary, macroprudential and microprudential policy are interrelated").

tem, the nature of interconnections within that system, and other sources of fragility. The central bank should then use these insights to help the market resume functioning without the aid of the central bank. This is not a project for the central bank alone. When market dysfunction persists, it is usually a sign that market participants lack critical information and that the information they have suggests there is too little loss-bearing capital in relation to how risks are distributed. By using its LOLR authority, in conjunction with its other sources of authority, to serve as an information-coordination agent, a central bank can help spearhead the efforts required to address these deficiencies. In drawing attention to limitations in current conceptions of the appropriate role of a LOLR and offering a new paradigm, this Essay contributes to the ongoing efforts to learn from the Crisis and to enable the Fed and other central banks to more effectively contain the next financial crisis.