From the "Lender of Last Resort" to "Too Big to Fail" to "Financial System Savior": Federal Reserve Credit Policy and the Shadow Open Market Committee

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Jeffrey M. Lacker[1]
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While the Shadow Open Market Committee may be best known for its 50-year record of prescient critiques of the FOMC's conduct of monetary policy, it has also devoted significant attention over the years to the Federal Reserve's credit policy. In fact, the lifespan of the Shadow coincides with a significant growth of the scale and scope of Fed interventions in credit markets. That overlap was not a coincidence—the rising financial instability that provoked Fed participation in rescuing failing banks beginning in the early 1970s is attributable in part to the late 1960s rise of inflation that inspired the birth of the SOMC. The Shadow's critiques of those rescues have been based on a historically-grounded understanding of the role of lender of last resort as a critical element of sound monetary policy, concern about the incentive effects of lending precedents, and the principle that financial institution rescues are tangential to the Fed's monetary policy responsibilities and constitute fiscal actions more appropriately assigned elsewhere. Those principles remain all the more relevant in the twenty-first century as Federal Reserve continues to expand the scope of its credit market interventions.

Both the theory and practice of Federal Reserve lending have changed dramatically over time. At its founding, Fed lending was viewed as the operational mechanism for maintaining monetary stability. The failure to do so in the Great Contraction of 1930-33 is attributable to the flawed Real Bills Doctrine then prevalent within the System. Open market purchases and sales of U.S. Treasury securities took over as the primary monetary policy instrument after the 1951 Treasury-Fed Accord and lending was relegated to the role of providing occasional accommodation for banks experiencing sudden unanticipated reserve drain late in the day. Discount window lending was routinely sterilized and thus divorced from monetary policy. Beginning in the mid-1960s, the discount window was used to help the FDIC delay the closure of failing banks by providing funds to allow uninsured creditors to exit. The repeated practice of protecting creditors gave rise to expectations that a portion of the financial system was "too big to fail." The scale and scope of the Federal Reserve's credit extension increased dramatically in the 21st century. Fed lending peaked at over $400 billion during the Great Financial Crisis and extended well beyond the banking sector.[2] The Fed rolled out even broader credit market

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[1] Jeffrey Lacker is a member of the Shadow Open Market Committee, a Senior Affiliated Scholar at the Mercatus Center at George Mason University and the former President and CEO of the Federal Reserve Bank of Richmond. Email: *jmlacker27@gmail.com*. The author is grateful to Huberto Ennis, Ed Nelson and John Weinberg for helpful discussions.

[2] Source: Board of Governors of the Federal Reserve System (US), Assets: Liquidity and Credit Facilities: Loans: Primary Credit: Week Average, retrieved from FRED, Federal Reserve Bank of St. Louis;

programs during the pandemic of 2020 and helped rescue uninsured creditors of failing regional banks in 2023.

This paper weaves together two narratives. One is the evolution of ideas about how and why the Federal Reserve Banks should play a role in credit markets. Several relatively distinct lending *doctrines*, for want of a better word, can be identified that have shaped and rationalized the Fed's credit market activities. These doctrines vary in the extent to which they are grounded in economic models; some are, some are only loosely, and some have turned out to be wholly fallacious. Most are normative, while some can be interpreted as positive models in a public choice vein.

Federal Reserve lending is at times intertwined with monetary policy, but is fundamentally quite distinct, so clarity about the dividing line between monetary and credit policy is important. I will adopt Goodfriend and King's (1988) crisp distinction. Monetary policy refers to changes in the stock of high-powered money—that is, currency plus bank reserves, the Federal Reserve's monetary liabilities—accomplished by buying or selling Treasury securities in the open market. Credit policy shifts the composition of the Fed's assets by acquiring private obligations, while holding the stock of high-powered money fixed. For example, Fed loans to private institutions or purchases of private securities financed by the sale of Treasury securities ("sterilized") would be pure credit policy. "Credit policy involves the fiscal allocation of public funds in a way that monetary policy does not." (Goodfriend 2011a, 2) Fed lending that is financed by reserve creation ("unsterilized") is a combination of monetary and credit policy.[3] Under the monetary policy operating regime in place prior to 2008 (that is, with no interest on reserves), interest rate targeting required that any reserves added via lending be automatically drained via offsetting open market operations. Note that this definition of monetary policy is narrower than the Fed's definition, which appears to be "any transaction the Fed undertakes to try to influence economic conditions."

Four distinct lending doctrines are discernable in twentieth century practice and thought. The Fed was founded to provide *Monetary Stability* by expanding the supply of bank reserves and paper currency, via Fed unsterilized lending, in response to shifts in demand, as occurred during banking panics and autumn crop movements in the late nineteenth century. The *Real Bills Doctrine* went further and asserted that credit booms and busts could be prevented if Federal Reserve Banks lent freely but only against short-term, self-liquidating commercial bills arising from real transactions in goods and services. A separate motivation for the founders was *Warburg's Mercantilism*, the desire articulated by the financier Paul Warburg to relocate the financing of U.S. foreign trade—carried out via bankers' acceptances—from Europe to New York; central bank lending support was viewed as offsetting foreign central banks' backstop support for their own bills markets. In the mid-1960s a practice emerged of acting as a *Reluctant*

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https://fred.stlouisfed.org/series/WPC, February 24, 2023, and author's calculations. The peak was reached in October 2008.

[3] A stricter definition would classify anything beyond holding short-term Treasury securities (T-bills) as credit policy. SOMC members have noted the fiscal/distributional consequences of the Fed's operations in longer-dated Treasury securities, and some have advocated a "bills only" monetary policy. (Lacker 2022)

Samaritan in one-off cases of financial distress by lending to failing banks, allowing the FDIC to delay closure and let uninsured creditors escape losses. The widening domain of intervention precedents has enlarged the financial safety net over time.

While some continuity with twentieth century doctrine is evident in the dramatic expansion of Fed credit market interventions in the twenty-first century, a case can be made that the expansive new approach to financial stability that emerged in 2007 represented a fundamental doctrinal discontinuity, best thought of as a distinct new lending doctrine. It seems firmly predicated on the idea that laissez faire banking and financial markets are inherently fragile. As put into practice, however, the doctrine makes virtually no contact with the vast literature on the microfoundations of banking and financial markets in the presence of informational or other frictions. While loosely inspired by a selective reading of that late-twentieth century literature, and by gauzy appeals to Walter Bagehot, the organizing principle underlying current credit doctrine appears to be for the Fed to act as *Sell-Side Savior*, supporting in crises those trying to sell financial instruments, subordinating the interests of market participants with less sanguine expectations about the underlying cash flows, holding funds on the sidelines in anticipation of buying opportunities.

The second narrative thread is the commentary of the Shadow Open Market Committee on Fed credit policy. Consistent with the principles of sound central banking and healthy markets, the SOMC naturally has had much to say. At the Committee's third meeting co-founder Allan Meltzer responded to the bailout earlier that year of Franklin National Bank by calling on the Fed to issue a clear statement of "lender of last resort" policy, which he interpreted narrowly as unsterilized monetary operations because the "unique ability of a lender-of-last-resort is the ability to produce base money on demand." (Meltzer 1974, 36) Anna Schwartz in the 1980s distinguished between "real" and "pseudo" financial crises, the former involving monetary stability and the latter not warranting Fed intervention. She was critical of what she called "misuse" of the discount window to aid failing banks and argued that "the Federal Reserve does not need the discount window to serve as a lender of last resort." (Schwartz 1992, 67) The Committee was certainly on record warning about the growth of financial fragility prior to the GFC; SOMC statements cited the moral hazard consequences of the Continental Illinois intervention in 1984, and in the early 2000s called out risks emanating from Fannie Mae and Freddie Mac.

Following the GFC, SOMC members expressed concern about threats to the Fed's independence, critiqued regulatory reform proposals and provided insightful analysis of the emerging central bank financial stability and macro-prudential programs. Three current and future SOMC members were calling for a Treasury-Fed "Credit Accord" at that time, and a joint statement resembling their proposed accord was actually issued by the Treasury and the Fed in March 2009. Although the Fed has not articulated its current credit policy, per se, from the description of its financial stability mandate one can infer a twenty-first century Fed lending doctrine that sees the Fed as intervening, at its discretion, to remedy financial "distress," "dislocation" and "dysfunction" wherever they might arise. While seemingly inspired by the literature on the microfoundations of banking and financial arrangements, including theories of

runs and financial contracting frictions, actual Fed lending practice has made virtually no contact with that literature. No staff analysis compared the possibility propositions detailing the circumstances under which government intervention is warranted in a given theoretical environment with actually observed real world economic environments. Transcripts and memoirs reveal little or no policymaker interest in the welfare economics of credit market interventions. Indeed, it is not obvious that the Fed's interventions are warranted on economic grounds and most seem largely distributional. Moreover, in many cases it would be hard to distinguish empirically between market failure possibility propositions and the fragility induced by decades of Fed interventions. The SOMC's credit policy perspectives may not have left as visible an imprint as on the monetary policy side, but Fed lending is a heavily contested policy terrain where vested financial interests have more direct distributional stakes.

The paper begins with three lending doctrines that were influential at the founding of the Fed and a brief overview of the evolution of Fed lending practice over the twentieth century, including the rise of "too big to fail." The SOMC's pre-GFC contributions on Fed credit policy are then reviewed. Understanding of the Fed's TBTF lending leads to the fourth doctrine, the Reluctant Samaritan. The associated accumulation of precedents set the stage for the GFC. The influence of the four twentieth-century lending doctrines on the events of the GFC is discussed next, followed by review of the SOMC's commentary during and after the GFC. After a brief discussion of the Fed's pandemic credit market interventions and the ensuing regional bank failures, the new Fed lending doctrine is explained and discussed.

The Federal Reserve Was Founded to Solve a Monetary Problem

When the Federal Reserve System was founded in 1913, Reserve Bank lending authority was central to an institutional design that was motivated by the shortcomings of existing monetary arrangements. (Wicker 2015) Under the National Bank Acts that had structured the U.S. monetary system since 1863, federally chartered banks were entitled to issue their own currency, subject to the requirement that note issues were collateralized by holdings of specified U.S. Treasury bonds. The money stock in use by the public consisted of coins, currency and deposits at banks. Banks held reserves in the form of coin and currency and deposits at other banks. The public shifted out of deposits and into notes when moving crops to market during harvest season, and when suspicion fell on weak local banks. Because the process of expanding collateralized note issue was costly and time-consuming, currency at times became relatively scarce and hard to obtain. Without a sufficient expansion in note issue, the overall money stock declined.[4]

Tight restrictions on bank branching made for a fragmented banking system—there were over 27,000 banks in the U.S. in 1913. (U.S. Bureau of the Census 1975, Part 2, 1019) Clearing and

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[4] If M is the total stock of money in the hands of the public, consisting of coins, notes and deposits; H is high-powered money (coin and bank notes); r is the ratio of bank reserves to deposits; and d is the deposit-currency ratio; then $M = H(1+d)/(1+rd)$. A shift from deposits to currency (a decline in d) requires an offsetting increase in H to avoid a contraction in the money stock. (Friedman and Schwartz 1963, 790–92)

settlement of notes and checks relied heavily on clearinghouses in major cities and the vast web of interbank deposits extending out to small rural banks. When currency was scarce, clearinghouse banks suspended depositor withdrawals (except to deposit at other clearinghouse banks) and sometimes refused country banks' requests to withdraw cash. Clearinghouses would at times issue their own currency substitutes in the form of "clearinghouse certificates," although their legality was in question. (Timberlake 1978; Calomiris and Haber 2015)

The design of the Federal Reserve System was influenced by British experience. The Bank of England had an effective monopoly on circulating bank notes and faced a similar fractional reserve problem in crises. The Bank's monetary liabilities—its note issue—was managed through its lending policy and not by purchases of government debt. Bank advances to the government were politically sensitive, given Britain's (1688) constitutional constraints on public finance, and required parliamentary approval. In the U.S., government bond backing of money had been discredited by the National Bank system and was viewed as inherently inflationary besides. The founders therefore had the Fed's monetary issue backed by loans on or discounts of short-term paper, modelled after the Bank of England. (Lacker forthcoming)

Henry Thornton (1802) and Walter Bagehot (1873) described the crises faced by the early Bank of England as monetary problems, not credit market problems. (Lacker forthcoming) Taking the constraints on Bank financing of the government as given, they recommended that the Bank expand its lending when faced with an internal drain. They are very clear that it was expansion of note issue that was the proper objective of the Bank in a crisis. Both Thornton and Bagehot were agnostic about assets acquired to achieve that objective—any asset will do, as long as its safe. In fact, both noted that expanding note issue by acquiring government securities would also be suitable. And both said specifically that the Bank should not lend to failing or distressed entities and that it would be inappropriate for the Bank to attempt to address problems associated with individual institutions in stress or particular segments of the credit market.

Bagehot's strident exhortations were aimed at overcoming the Bank's hesitance about lending into deteriorating credit conditions owing to their for-profit incentive. The Bank's directors were reluctant to concede that they had a public responsibility for monetary stability. Bagehot's cause was as much about governance as it was about policy. In contrast, because the Federal Reserve's profits and losses are ultimately passed through to the U.S. Treasury, the problem with Federal Reserve credit policy today is the opposite—"to limit the Fed's lending reach." (Goodfriend 2012, 48)

A Brief Digression on the Phrase "Lender of Last Resort" [5]

Twenty-first century central bankers frequently claim that their credit market interventions are in line with a "classic central bank role as lender of last resort," often accompanied by a citation to Bagehot's *Lombard Street*. (1873) For example, in his memoirs, former Fed chair Ben

[5] This passage closely follows Lacker (forthcoming).

Bernanke recalled that "we saw our responses to the panic as fulfilling the classic central banking role of lender of last resort." (Bernanke 2015, 243) Bagehot never actually used the phrase and neither did Thornton. It seems to have been first used in English by R. G. Hawtrey ([1932] 1970) in the 1930s.[6] The idea Hawtrey references is the one articulated by Bagehot and more thoroughly by Thornton; when confronted with a banking panic, a central bank should expand, via lending, the supply of the high-powered money (its note issue) over which it has an effective monopoly. Central bank lending in such circumstances must be *unsterilized*, a qualification that was taken as given by Bagehot but is not typically included in elaborations of his recommendations. Sterilized lending would not have addressed the problems posed by eighteenth or nineteenth century panics.

Modern usage of the phrase "lender of last resort" departs from the classical ideas of Thornton and Bagehot in two ways. First, many economists identify the lender of last resort role as supplying additional base money in response to increased demand in a panic, including through open market operations, consistent with Thornton and Bagehot. (Humphrey 1975; 1989; Schwartz 1986; Goodfriend and King 1988; Bordo 1990; 2014b) Second, in the opposite direction, the phrase is often used to refer simply to any central bank emergency lending, whether sterilized or not. For example, by the 1970s, Federal Reserve staff had begun using the phrase "lender of last resort" to refer to emergency lending to "troubled" banks, even in settings in which monetary policy procedures in place resulted in sterilization of discount window advances in order to insulate broader monetary conditions. (Board of Governors of the Federal Reserve System 1971, 19) Unfortunately, the broader popular usage cloaks central bank credit policy, misleadingly, in the mantle of the time-honored monetary policy prescriptions of Thornton and Bagehot. (Lacker forthcoming, 38) The historically more accurate phrase "monopoly monetary liability supplier of last resort" would be more faithful to Thornton and Bagehot.

The primary purpose for which the Federal Reserve was founded, therefore, was to act as a "classical lender of last resort" in the historically faithful sense of that phrase. Because of the confusing modern usage, however, I will refer to this as "monetary stability":

> **Lending Doctrine 1: Monetary Stability** (Classical Lender of Last Resort) When a public shift from bank deposits to notes threatens to reduce the overall money stock and there is some impediment to acquiring government securities via open market operations, the Federal Reserve, as the monopoly issuer of high-powered money in the form of notes and reserve account balances, should lend in order to expand the supply of high-powered money.

The Real Bills Doctrine Led the Fed Astray

[6] Haubrich (2013). Sir Francis Baring published a pamphlet in 1793 using the French phrase "*dernier resort*" to describe the Bank of England's position in the crises of 1793 and 1797. See Lacker (forthcoming, 5)

The Federal Reserve Act was designed "to furnish an elastic currency" by overcoming the constraints that made it hard to expand the note supply when needed. Beyond that, some of the founders of the Fed had in mind a specific theory of the proper quantitative determination of the volume of Fed lending and note supply. The theory was that note issue "can never be excessive or deficient when issued in the form of loans against short-term, self-liquidating commercial bills arising from real transactions in goods and services.[7] (Humphrey and Timberlake 2019, 1) The aim was to steer bank credit expansion away from "speculative purposes" toward "productive" uses. If money expansion was linked in that way to real activity, the money supply would not exceed demand and would not be inflationary. Banking system credit creation was viewed as tied to money creation, and thus following the doctrine would avoid credit-driven booms and busts. This "Real Bills Doctrine," as Lloyd Mints (1945) was later to call it, motivated a set of restrictions in the Federal Reserve Act limiting the types of commercial paper the Reserve Banks could discount from member banks. (Hackley 1973)

> **Lending Doctrine 2: Real Bills** Federal Reserve Banks should lend freely to member banks against short-term, self-liquidating commercial bills arising from real transactions in goods and services.

The fallaciousness of the Real Bills Doctrine was well understood by some early Fed leaders, such as Benjamin Strong, Governor of the Federal Reserve Bank of New York from 1914 to 1928. A single "real" transaction could give rise to multiple "real bills" as the merchandise made its way through various intermediaries, each issuing its own paper, on its way to the ultimate purchaser. Moreover, the fungibility of funds meant that collateral requirements might not have any effect on the nature of lending undertaken by the borrowing bank. (Chandler 1958, 197–98) Besides, hitching the quantity of a nominal monetary instrument to the nominal quantity of commercial paper offered as collateral had the potential to induce inflationary or deflationary spirals.[8] (Humphrey and Timberlake 2019, 9–26; Humphrey 1982; Sargent and Wallace 1975; Hetzel 2022, 35–38) The flaws in the Real Bills Doctrine were also well understood by early British monetary writers, such as Henry Thornton ([1802] 1939, 86, 253–54), who was a member of the 1810 Bullion Committee of the British Parliament which explained the fallacy.

The fallacy of the Real Bills Doctrine nonetheless continued to influence Federal Reserve actions in subsequent decades, particularly during the disaster of the Great Contraction. The Doctrine led the Fed leadership astray, causing them to misread signals and think that monetary policy was easy when it was actually quite restrictive. (Humphrey and Timberlake 2019, 79–85; Friedman and Schwartz 1963, 299–419) In a 1963 letter to Congress, the Board of Governors of

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[7] The definitive accounts of the Real Bills Doctrine are Mints (1945) and Humphrey and Timberlake (2019). See also Humphrey (1982), Hetzel (2014) and Lacker (2019).

[8] Sargent and Wallace (1982) interpret the Real Bills Doctrine as central bank lending policy (or open market operations) that accommodates fluctuations in the demand for credit and present a model in which that policy dominates a "quantity theory" policy that keeps stabilizes the central bank money supply. There is no distinction in their model between different private credit instruments, however, and thus there are no bills that are not "real." Moreover, credit markets and the process of production and distribution are not rich enough to assess Strong's critique.

the Federal Reserve System finally abandoned the theory and proposed (unsuccessfully) removing the restrictions inspired by the Real Bills Doctrine from the Federal Reserve Act. (Hackley 1973, 191–92)

Some Founders Also Wanted the Fed to Backstop the Banker's Acceptance Market

At the time the Fed was founded, international trade by U.S. firms was financed in European financial centers. Short-term obligations would be endorsed by a bank to become "two-name paper," or bills of exchange, which were traded ("discounted") on active markets. In the U.S., banks extended credit on promissory notes which were generally not marketable.

Paul Warburg, a financier from a distinguished German banking family who had moved to New York to join Kuhn, Loeb and Co., one of the largest New York investment banks, was one of the driving forces in banking reform prior to the establishment of the Federal Reserve. (Broz 1997, 142; Board of Governors of the Federal Reserve System, n.d.-b) His working knowledge of European banking systems made him particularly valuable, including at Senator Aldrich's famous Jekyll Island gathering that led to the first draft of what became the Federal Reserve Act. Warburg believed it was essential to create a liquid market in bank acceptances—bills issued by firms and endorsed by a bank along the lines of European practice. (Broz 1997, 142–59) His case for a broad and liquid market for discounted bills was couched in public interest terms. He argued that an active discount market would provide banks with a means of adjusting their reserve position by selling or buying bills; promissory notes, in contrast, were unmarketable because of the uncertain creditworthiness of the borrowing firm. An active discount market, Warburg claimed, would also divert reserves invested in stock exchange call loans and thus reduce the extent to which money market stringency would lead to stock market sell-offs. And it would attract foreign bank investments and tie the dollar more closely to the international financial system, part of a broad Atlanticist agenda to expand America's international diplomatic and economic role. (Roberts 2000)

While Warburg couched his argument in terms of the broad public interest, he was very clear that it would have private benefits to the U.S. financial sector as well. After an extensive explanation of the workings of U.S. international trade finance, he decried, in familiar terms, the payments made to European banks:

> It is impossible to estimate how large a sum America pays every year to Europe by way of commissions for accepting such documentary bills, and the other bills with which we shall now deal, but the figures run into many millions. This annual tribute to Europe resulting from our primitive financial system is not merely waste of money, but reflects upon the dignity of a nation of the political and economic importance of the United States. (Warburg 1910, 9)

The pecuniary gains for New York banks were another benefit of bringing trade finance to American shores. A central bank would have a critical role to play in establishing a market for acceptances, according to Warburg. "The central-bank system and the discount system can not

be separated;" he wrote, "they are absolutely interdependent." (Warburg 1910, 31) A ready market for American paper, requires that it can be rediscounted at any moment. "This is insured in nearly every country of the world claiming a modern financial organization by the existence of some kind of a central bank, ready at all times to rediscount the legitimate paper of the general banks. Not only England, France and Germany have adopted such a system, but all the minor European States as well—and even reactionary Russia—have gradually accepted it." (Warburg 1907, 14)

Discount lending by the new Federal Reserve to support the commercial paper market would therefore serve a valuable mercantilist purpose. By subsidizing a New York bills market, the Fed could counter the support provided by European central banks for their bills markets and help bring valuable financial transactions to American shores.[9]

> **Lending Doctrine 3: Warburg's Mercantilism** The Federal Reserve should provide backstop price support to the market for banker's acceptances and similar bills of exchange in order to attract and retain the intermediation of short-term financing in the United States.

The founders failed in their quest to create a broad national acceptance market or reduce reliance on stock market loans. (Meltzer 2003, 76, 736) The Fed often operated in the bankers' acceptance market in the early years, but that faded in importance after the 1951 Treasury-Fed Accord. By the 1950s, the government securities market, where the Fed was operating quite actively, along with the interbank market for reserve account balances, provided an alternative to stock market call loans for banks to use to adjust their reserve positions. That said, the Fed has been attentive to money market conditions throughout its history. During the Penn Central crisis in 1970, for example, even though the Fed didn't intervene directly in the commercial paper market, it did explicitly open the discount window to banks while urging them to provide support to their commercial-paper-issuing borrowers that were affected by the market turmoil. (Calomiris 1994) And while bankers' acceptances and trade finance more broadly did not appear to be instigators in the GFC or the fallout from the pandemic, and were not the targets of direct Fed intervention, the broader commercial paper market was the beneficiary of targeted support from a number of programs implemented in 2008 and 2020.[10]

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[9] Warburg's views were shared by other New York financiers such as Frank Vanderlip, president of National City, the largest bank in New York; and Benjamin Strong, president of Bankers Trust and later the first Governor of the Federal Bank of New York; along with allies such as Senator Aldrich. (Broz 1997, 148, 151; Meltzer 2003, 76)

[10] Trade finance became a delicate political issue with the outbreak of World War I. Warburg, then a member of the Federal Reserve Board, clashed with Strong, Governor of the Federal Reserve Bank of New York, over the interpretation of Federal Reserve Act provisions regarding acceptances. "Until late 1916 each professed disinterest in the probable effect of particular policies on the Allies, maintaining that the only relevant concern was how best to promote American economic interests. Predictably, though, Strong's suggestions were likely to assist, and Warburg's to impede, the Allied war effort." (Roberts 1998, 594) Federal Reserve credit policy became entangled in politics at the very beginning.

Fed Lending Practice Evolves over the Twentieth Century

At the founding of the Federal Reserve, discount window lending was envisioned as the primary method of conducting monetary policy, consistent with the Monetary Stability and Real Bills Lending Doctrines. That changed over the course of the 20th century. After the 1951 Treasury-Fed Accord gave the Fed greater freedom to operate in the government securities market, open market operations became the main tool of monetary policy. Untethered from monetary policy, Fed lending was free to be deployed for other, nonmonetary purposes.

America's entry into World War I in 1917 drew the Fed in to a supporting role coordinating and managing sales of the Liberty Bonds issued by the Treasury. (Meltzer 2003, 85–86) The Governors (as they were then called) of the Federal Reserve Banks chaired committees organized in each district to promote sales to the general public. In addition, they offered banks short-term loans at preferential discount rates, which enabled member banks to buy short-term Treasury certificates during the periods between bond drives. Discount rates were set below the rates earned on the Treasury certificates, making borrowing immediately profitable. A second type of loan allowed banks to stretch out public payments for bonds. Lending on the security of government bonds was a departure from the Real Bills Doctrine, but Secretary of the Treasury William McAdoo was also chairman of the Federal Reserve Board and the Fed had little choice but to pitch in on a patriotic endeavor.

Following the recession of 1920-21, the Fed began making more use of open market operations, in part in order to acquire earning assets to cover Reserve Bank operating costs and in part to move away from passive reliance on the demand for discount window borrowing. (Meltzer 2003, 143–44) An awareness emerged, though imperfect, of the relationship between open market operations in bills or government securities and the demand for bank borrowing at the window; sales tended to drive banks to the window to replace lost reserves, purchases tended to induce repayments. System policy discouraged borrowing except "for the purpose of meeting temporary and seasonal needs". (Friedman and Schwartz 1963, 268–69) Open market operations shared center stage in the conduct of monetary policy. At the same time, Reserve Banks began allowing banks to borrow at the window for extended periods, delaying closures that would otherwise have been initiated by owners facing double liability. (White 2013)

Real bills thinking was still prevalent, particularly at the Board, at the outset of the Great Contraction of 1930-33.[11] The sustained shift out of deposits into currency drove the money multiplier down. The Fed failed to offset the decline by boosting high-powered money, resulting in a disastrous 35.7 percent decline in the money stock from April 1929 to April 1933.[12] Fed leaders misread indicators and viewed their monetary policy stance as sufficiently

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[11] For accounts of Fed policy in the Great Contraction see Friedman and Schwartz (1963, 299–419); Hetzel (2022, 142–92); Humphrey and Timberlake (2019, 79–100); and Bordo, Choudhri and Schwartz (1995; 2002);

[12] Friedman and Schartz (1963, 333). They calculate that the change in the deposit-currency ratio alone would have produced a decline in the money stock of 37 percent, the change in the deposit-reserve ratio would have produced a decline of 20 percent, and the interaction of the two would have produced a rise of 10 percent. The stock of high-powered money did increase, but only enough to produce a rise of 17 ½ percent in the stock of money.

accommodative, despite rapid deflation and elevated inflation-adjusted interest rates. (Humphrey and Timberlake 2019)

A debate continues about the waves of bank failures in the Great Contraction. Much of the debate concerns "whether the banking panics were really panics in the sense of illiquidity shocks or whether they reflected endogenous insolvency responses to a recession caused by other forces, such as a collapse of autonomous expenditures or productivity shock." (Bordo and Landon-Lane 2010, 487; see also Calomiris and Mason 2003; Nelson 2020, 2:38–39) A separate set of issues concern the relative roles of the money stock collapse and the waves of banking failures. Milton Friedman and Anna Schwartz, in *A Monetary History of the United States* (1963), ascribe a crucial role to the collapse in the money stock and note the contribution of the waves of bank failures to that collapse. Ben Bernanke, in a widely-cited 1983 paper, also attributed the Great Contraction to the money stock collapse, but found evidence of an additional "credit channel" depressing economic activity, through which bank failures disrupted the information-intensive intermediation process and reduced the economic effectiveness of the banking sector. (Bernanke 1983, 257) Friedman and Schwartz disagree.

> If the bank failures deserve special attention, it is clearly because they were the mechanism through which the drastic decline in the stock of money was produced, and because the stock of money plays an important role in economic development. The bank failures were important not primarily in their own right, but because of their indirect effect. If they had occurred to precisely the same extent without producing a drastic decline in the stock of money, they would have been notable but not crucial. If they had not occurred, but a correspondingly sharp decline had been produced in the stock of money by some other means, the contraction would have been at least equally severe and probably even more so. (Friedman and Schwartz 1963, 352)

One common misconception about the Great Contraction is that the Fed erred by not lending more freely to banks seeking credit at the discount window. Friedman and Schwartz make clear, however, that the Fed could have conducted open market purchases of Treasury securities, as they did for a time in mid-1932 with salutary effect, or lent to banks by discounting Treasury securities. (1963, 391–99) While acknowledging the disastrous consequences of bank failures, the Great Contraction was a failure of Fed monetary policy, not credit policy.

The Rise of Too Big to Fail

In the 1960s the Fed began making use of the discount window to help the Federal Deposit Insurance Corporation delay the closure of failing banks. The practice continued, involving larger and larger institutions and ultimately giving rise to the widespread understanding that some banking organizations were "too big to fail." Numerous accounts describe the process. (See Stern and Feldman 2004; Nurisso and Prescott 2020) Key features of these interventions are discussed below. The central lesson is that by the time the 20st century came to a close, there were pervasive expectations that Federal Reserve lending or intervention was likely to insulate short-term creditors from the effects of sizable failing or distressed financial institutions.

Federal Reserve lending to failing banks was often coordinated with or at the request of the FDIC in order to buy more time to arrange for a merger partner, or to delay or avoid the expense to the Deposit Insurance Fund of an outright closure. FDIC and Fed practice when the merger or closure ultimate took place was for the FDIC to repay the Fed loan at par and take back the collateral. As a result, the Fed loan provided the funds for uninsured short-term creditors to exit and avoid losses. If uninsured creditors remain exposed to the bank when it is closed, they enter into a resolution process alongside the FDIC to recover on the bank's remaining assets. The Fed's loan thus facilitated shifting losses from uninsured creditors to longer-term creditors and/or the FDIC.

Flights from deposits to currency were generally absent in these episodes. Depositors would sometimes flee the failing bank, often serving as the spark for the crisis, but generally to other banks, not to currency. These episodes did not involve declines in the money multiplier or threats to the money stock, and thus were not at all crises in the sense envisioned by Henry Thornton or Walter Bagehot. Anna J. Schwartz (1986) refers to these as "pseudo-financial crises", to distinguish them from true monetary stability crises.

These crisis loans were routinely sterilized—that is, they were financed by the sale of U.S. Treasury securities, not by the creation of high-powered money. If they had not been sterilized, the additional bank reserves would have flowed into the interbank lending market and depressed interbank lending rates, easing monetary policy. The FOMC sometimes did cut interest rates in conjunction with financial crises, but those were deliberate monetary policy actions motivated by fears of a broader deterioration in economic conditions rather than classical monetary distress.

The phrase "lender of last resort" began to be used in conjunction with these one-off crisis loans in the mid-1960s. The Federal Reserve in its 1968 *Reappraisal of the Federal Reserve Discount Mechanism,* used the phrase to describe Fed intervention in individual institution failures. The passage is worth quoting in full:

> Under present conditions, sophisticated open market operations enable the System to head off general liquidity crises, but such operations are less appropriate when the System is confronted with serious financial strains among individual firms or specialized groups of institutions. At times such pressures may be inherent in the nature of monetary restraint, in the sense that monetary policy actions, no matter how impersonally applied, often have, in fact, excessively harsh impacts on particular sectors of the economy. At other times underlying economic conditions may change in unforeseen ways, to the detriment of a particular financial substructure. And, of course, the possibility of local calamities or management failure affecting individual institutions or small groups of institutions is ever-present. It is in connection with these limited crises that the discount window can play an effective role as "lender of last resort." (Board of Governors of the Federal Reserve System 1968, 17)

Note the acknowledgement that open market operations can head off "general liquidity crises"—that is, monetary stability problems of Thornton-Bagehot variety, necessitating an accommodating expansion in high-powered money. The phrase "lender of last resort" is used instead for Fed credit extension in connection with one-off institutional bailouts—"limited crises"—a usage at variance with the classic lender of last resort idea. Note also the attention to the differential sectoral effects of monetary restraint. The *Reappraisal* was issued just after the famous "Credit Crunch" of 1966 in which Fed tightening to attempt to rein in inflation raised interest rates above Regulation Q ceilings and led to sudden financial flows out of banks and into nonbank financial intermediaries. Political criticism of the Fed was sharp, particularly from the housing industry. (Haltom and Sharp 2014, 1–2)

The lender of last resort phrase was used in the same sense of rescuing individual firms in the communiqué issued by the Bank for International Settlements on September 10, 1974. (Bank for International Settlements 1974; *Euromoney* 1974) That tumultuous and pivotal year saw the failure of Franklin National Bank,[13] whose London subsidiary was an active borrower in the Eurodollar market, and of Herstatt Bank, a German bank whose closure in the middle of the trading day left the unsettled legs of foreign exchange trades in limbo. At meetings in Basel of representatives of the G-10 central banks, plus Switzerland, questions were raised about which central bank would have the responsibility to be the "lender of last resort" for a bank with cross-border operations. (Wallich 1974b; 1974a) The Bank of England wanted clarity that they would not be responsible for supporting Franklin National's London subsidiary and insisted that the central bank of the country of domicile of the parent organization was to be the responsible one. The group reportedly agreed at the July meeting on several points, according to a trade publication report:

> (1) Banks that get into liquidity difficulties within national boundaries will be supported by the central bank concerned.
> (2) Banks that get into difficulties through fraud will not necessarily be bailed out but all deposits will be protected.
> (3) Where the difficulty is at a foreign branch of the bank, the parent bank will be bullied into making good any losses (and if necessary supported by the central bank concerned under 1 or 2 above).
> (4) Where the loss is sustained by an overseas subsidiary, the parent will again be responsible and supported by the central bank if necessary.
> (5) Consortium banks will be supported on a *pro rata* basis by their parents (again with central bank support if necessary). (*Euromoney* 1974)

In September, the same group released a statement saying they agreed to "intensify the exchange of information between central banks" and that they "had an exchange of views on the problem of lender of last resort in Euromarkets. They recognized that it would not be practical to lay down in advance detailed rules and procedures for the provision of temporary liquidity. But they were satisfied that means are available for that purpose and will be used if

[13] See note 14.

and when necessary." (Bank for International Settlements 1974; Farnsworth 1974) The statement conveyed a strong backstop commitment but retained maximal discretion.

Principles (1)-(3) are in line with Warburg's notion of major country central banks each providing backstop support for their financial institutions. While Warburg's focus was on support for a market in trade bills and bankers' acceptances to match and offset foreign central bank support for their bill markets, the same principle can be seen extended more broadly in 1974. Too big to fail for cross-border financial institutions required agreement among central banks on the division of responsibilities.

While Fed credit policy most commonly took the form of direct lending to afflicted institutions, there were times at which the Fed stood back but "encouraged" large member banks to support an ailing market or firm. When the railroad Penn Central defaulted on their commercial paper in 1970, the Fed relaxed long-standing administrative constraints at the discount window to allow banks to borrow to lend to their commercial-paper-issuing customers that were not able to roll their paper on previous terms. (Calomiris 1994) Similarly, during the stock market contraction of 1987, the Fed "encouraged" banks to lend to equity market dealers facing funding issues. (Berhardt and Eckblad 2013) In 1998, the Federal Reserve Bank of New York organized a private sector consortium rescue of the hedge fund LTCM. (Lowenstein 2011) While these interventions did not involve direct Fed lending to failed institutions, they did utilize the considerable persuasive leverage available to the Fed to protect at least some investors from losses they might otherwise have incurred.

Congressional testimony was an inevitable consequence of the larger and more visible interventions, but the Fed avoided spelling out intended boundaries around possible future interventions. Prior to the early 1980s, member banks had privileged access to the discount window, but the Fed had Depression-era authority to lend outside their ranks and in any event could always lend using a member bank as a conduit. There were no apparent legal bounds on its lending and the Fed would not specify criteria, beyond the vague idea of "distress." (See commentary by Charles Calomiris at the April 2012 SOMC meeting, (Calomiris 2012), and (Calomiris and Meltzer 2016)) Their communication strategy, which came to be known as "constructive ambiguity," conveyed that financial firms should not count on Fed lending support, but the Fed preserved the latitude to intervene at its discretion. (Corrigan 1990; Giannini 1999)

The accumulation of cases of Fed-FDIC intervention to insulate various uninsured creditors from losses in failing financial institutions has not gone unnoticed. A voluminous literature notes the obvious moral hazard effects, which include lower funding costs, excessive size, excessive borrowing, particularly short-term wholesale funding, excessive risk taking in general, and a competitive advantage for the customers of large financial institutions. For an overview of the literature see Stern and Feldman (2004), Benston (1995) and Kaufman (1990; 2014). For a recent review of the voluminous empirical literature see Strahan (2013).

The Shadow Open Market Committee on Twentieth-Century Fed Credit Policy

The high and variable inflation of the late 1960s and early 1970s provided the impetus for the founding of the SOMC. Not coincidentally, however, this corresponded with a rise in volatility in banking and financial markets. Limited deregulation was beginning to increase the scope for competition among banks, and improvements in technology allowed for financial innovation to skirt some regulations. (Horvitz 1975) Banks found ways to take on more risk, and the incidence of failures rose. The SOMC, consistent with the principles of sound central banking and healthy markets, naturally had something to say. At the third meeting of the SOMC—held on September 6, 1974, just three days prior to the G-10 gathering that released the statement described above—Allan Meltzer urged the Fed to issue a clear statement of lender of last resort policy. (Meltzer 1974) He used that phrase in the classical monetary sense rather than the sense of institutional rescues and called out the risk of flight from deposits to currency: "The money stock shrinks and interest rates rise. Banks…sell assets... Bank failures rise, as in the early thirties." Citing Bagehot and the policies of the Bank of England, he cautioned that "prevention of financial panics did not mean then – and does not mean now – that a bank or a large bank should not be permitted to fail. The failure must not spread to solvent, liquid banks or institutions." Meltzer compared the Fed's handling of Franklin National[14] unfavorably to its handling of the Penn Central crisis in 1970: "In 1970, the Fed did not try to prevent failure; it prevented the failure from spreading through the financial markets. The Fed acted as if it recognized that the lender of last resort has a responsibility to the market and the institutions in the market and not to the particular issuer of securities." Meltzer argued against preventing financial firm failures:

> The appropriate response in the case of temporary illiquidity is for the illiquid bank to borrow in the market…. The Federal Reserve has no responsibility to prevent the failure. It should publicly accept responsibility for preventing the panic from spreading through the market. The Federal Reserve should issue a policy statement accepting responsibility as lender of last resort to the financial system and denying responsibility to protect any private financial institutions from the consequences of errors and misjudgments. Such a statement should make clear that the policy will not prevent every failure but will seek to prevent a financial panic. (Meltzer 1974, 1–2)

A half year later, at the next SOMC meeting, Thomas Mayer, then at the University of California, Davis, presented "The Case Against Credit Allocation," a response to several bills before Congress that sought to channel credit away from "inflationary" uses. "It would be foolish," Mayer argued, "to claim that the decisions of the private market are always optimal. But recognition of the weaknesses of market allocations does not suffice to make the case for replacing the free market with government controls." The idea that laissez-faire credit markets

[14] For accounts of the Franklin National failure see Spero (1980) and Sinkey (1977). "In many ways Franklin was a turning point, indicating a new way for how banks would be resolved and the lengths to which banking agencies would go in avoiding the least hint of financial instability, with minimal evidence presented of actual disruptions that would occur absent a bailout." (McKinley 2011, 68)

are afflicted by imperfections but difficult for government intervention to improve upon would return in the twenty-first century debates about the "credit channel." If Meltzer and Mayer's guidance had been followed, banking and financial markets might have evolved very different over the next half century.

In May 1984, Continental Illinois nearly failed before being rescued by regulators. ("Continental Illinois: A Bank That Was Too Big to Fail," n.d.) A large-scale run by uninsured depositors and other uninsured creditors, "amid rumors that the bank was in danger of failing," led the bank to seek a discount window loan from the Federal Reserve Bank of Chicago. It also received support from a consortium of sixteen large banks, but that was not enough. Two days later the FDIC, the Office of the Comptroller of the Currency and the Fed announced a temporary assistance program under which the FDIC guaranteed all depositors and general creditors of the bank and, together with a group of private banks, provided $8 billion in capital. The announcement also stated that ''as part of the overall program, and in accordance with customary arrangements, the Federal Reserve is prepared to meet any extraordinary liquidity requirements of the Continental Illinois Bank during this period." (Kilborn 1984) Continental ultimately merged with Bank of America.

At its next meeting after the Continental Illinois failure, the SOMC policy statement included a section on banking policy in which they decried the rescue and the subsequent statement by the Comptroller that the eleven largest banks were deemed "too big to fail," the first official acknowledgement of such. The Committee statement cited the encouragement to banks to take excessive risks, including international loans, and noted that market discipline would be eroded. "The proper response to Continental's problem was to allow Continental to fail while preventing the effects of the failure from spreading to other banks." That prescription echoes Meltzer's recommendation following Franklin's failure and aligns with the thesis that expanding high-powered money so that the banking system has adequate reserves is the way to diffuse panics while preserving sound incentives. The statement went on the say that "banking history gives many examples to show that large failures do not bring on a financial panic if the authorities lend to the market to prevent a wave of failures. The most recent example in the U.S. followed the failure of Penn Central in the early 1970s." (Shadow Open Market Committee 1984, 3)

In the 1980s the SOMC credit policy thread was taken up by Anna J. Schwartz, SOMC member from the founding. In a contribution to the March 17, 1986 SOMC meeting, Schwartz commented on the unfolding LDC debt crisis, saying that "resort to the short-term palliatives that have been relied on to solve the Mexican difficulties do not address the fundamental roadblocks to debt repayment" and that the external debts of Latin American countries "will not be repaid at face value." She urged building up loss reserves, writing down loans to market values and reforming of deposit insurance systems.

In a paper delivered to a Federal Reserve Bank of St. Louis conference, titled "Real and Pseudo-Financial Crises," Schwartz (1986) brought to bear the understanding gleaned from her lifetime of studying monetary history. "Real" financial crises were "fueled by fears that means of payment will be unobtainable at any price and, in a fractional-reserve banking system, leads to a

scramble for high-powered money. It is precipitated by actions of the public that suddenly squeeze the reserves of the banking system. In a futile attempt to restore reserves, the banks may call loans, refuse to roll over existing loans, or resort to selling assets." (11-12) In other words, a real financial crisis is the result of monetary instability of the type described by Thornton and Bagehot. The U.S. experience from 1930 through 1933 *was* a real financial crisis, she noted: "A multiple contraction of deposits was enforced by the inability of the banks to acquire adequate amounts of high-powered money." (21) The Fed failed to supply currency or reserves to meet the increased demand, a response which could have been accomplished, as she and Friedman noted in *A Monetary History*, by either lending or open market operations.

Schwartz reviewed historical financial crises in the United States and the United Kingdom and saw no real financial crises in the U.S. since 1933, and none in the U.K. since 1866. (12) Her review of episodes since the mid-1960s labelled "financial crises" led her to conclude that they are not monetary stability problems—she calls them "pseudo-financial crises." (25)

> Loss of wealth is not synonymous with a financial crisis…. Real financial crises need not occur because there is a well-understood solution to the problem: assure that deposits can be converted at will into currency whatever the difficulties banks encounter. The solution does not preclude failure of mismanaged banks. Recent discussion of moral hazard in relation to real financial crises would be more apt in relation to pseudo-financial crises. They provide the rationale for bail-outs and shoring up inefficiency. Pseudo-financial crises in recent years have generated expectations 'that no monetary authority will allow any key financial actor to fail' (Wojnilower, 1980, p. 299). (Schwartz 1986, 23, 28)

Schwartz was skeptical about official crisis accounts. "The bugaboo of financial crisis has been created to divert attention from true remedies that the present financial situation demand…. It is not financial distress that triggers a crisis. The failure of authorities or institutions to respond in a predictable way to ward off a crisis and the private sector's uncertainty about the response are the triggers of a real financial crisis." (11-12) Allan Meltzer, her discussant at that conference, also emphasized uncertainty about the lender-of-last-resort function and the importance of precommitment. (Meltzer 1986) He also emphasized the monetary nature of lender-of-last-resort intervention: "The unique ability of a lender-of-last-resort is the ability to produce base money on demand." (36)

Schwartz was invited to give the 1992 Homer Jones Memorial Lecture at the Federal Reserve Bank of St. Louis and she took the opportunity to discuss "The Misuse of the Fed's Discount Window." (Schwartz 1992) (A brief synopsis was presented at the September 1991, SOMC meeting.) Drawing on discount window data obtained by the House Banking Committee, she noted that a very large fraction of discount window borrowers that failed had the lowest possible supervisory rating and that a large number of borrowers had discount window loans outstanding when they failed. (59) Recent practice, she noted, delays closure of failed institutions, increasing losses to the FDIC and ultimately taxpayers. "The time has come," she concludes, "for a truly basic change: eliminate the discount window and restrict the Fed to open

market operations." (59) "The Federal Reserve does not need the window to serve as a lender of last resort."[15] (67)

In the 1990s Schwartz went on to critique foreign exchange market intervention, the Bretton Woods 50th anniversary commission, the Mexican rescue plan of 1995, and IMF lending practices more broadly. Allan Meltzer was also an outspoken critic of the IMF (and the World Bank as well), testifying before Congress on the topic and chairing the International Financial Institutions Advisory Commission in 1998, which issued a report recommending reforms of the IMF and the World Bank. The incentive effects of the IMF's evolving mission were prominent in his critique:

> Since 1971, the IMF has been looking for new things to do. It has now solved its problem by creating moral hazard, allowing international banks to avoid the risks they undertake by imprudent lending. The IMF encourages the behavior that creates the problems. (Meltzer 1998)

Schwartz was similarly critical in a September 1998, SOMC contribution titled "What Future for the IMF." She also noted the IMF's desire for a "bigger part on the world stage," and cited its role, together with the U.S. Treasury, in fostering a "culture of loans to troubled low-income countries." (Schwartz 1998) Troubled countries can turn to deep international capital markets and borrow at rates reflecting their true credit risk. IMF rescues, she argued, do not deal with true reform problems. At the March 1999, SOMC meeting, Schwartz (1999) delivered a scathing critique of Stanley Fischer's (1999) address to the American Economic Association advocating for an international lender of last resort, noting that such an entity would be redundant given that national central banks control the creation of high-powered money. Two years later, Schwartz (2001) commented that "three emerging market countries have been in the IMF infirmary: Argentina, Brazil, and Turkey. Despite the critical reviews to which the IMF was subjected in 2000, not much has changed in its response to the pleas for assistance by troubled countries." (1) At the spring meeting the following year, the news release noted that Argentina had failed to address its structural and fiscal problems and urged the IMF to "hold off making further loans until Argentina's internal problems are addressed." (Shadow Open Market Committee 2002a)

The policy statement at the Spring 2002 meeting also called out the Fed's warehousing arrangement by which it held foreign currency on behalf of the Treasury when the Exchange Stabilization Fund is exhausted. The arrangement should be terminated, it said, "because it circumvents the intent of Congress with respect to the Exchange Stabilization Fund." (Shadow Open Market Committee 2002b) The failure of Enron the previous December and the resulting focus on corporate governance and transparency motivated the recommendation, but it also dovetailed with other longstanding critics of the Fed's role in foreign exchange operations, including future SOMC member Marvin Goodfriend. (Broaddus and Goodfriend 1996) That

[15] Her co-author Milton Friedman took the same position his 1960 book, *A Program for Monetary Stability*. (1960, 30–35)

context also prompted a memorandum from Lee Hoskins, former president of the Federal Reserve Bank of Cleveland, suggesting a number of other improvements to Fed governance, including decentralizing discount window operations to end micro-management by the Board of Governors.

In the early 2000s, the SOMC began focusing on the risks emanating from the government-sponsored enterprises, Fannie Mae and Freddie Mac. At the fall 2002 SOMC meeting, the Committee's official statement noted the regulatory advantages and implicit guarantees enjoyed by these GSEs, which encourage excessive risk taking and distort resource allocation, and recommended privatization. At that meeting Gregory Hess (2002) warned about GSE risk-taking incentives and argued for full privatization and explicit removal of the implicit guarantee. He returned to the subject to argue more forcefully for privatization at the fall 2003 meeting. (Hess 2003) At the May 2004 meeting, he took notice of a December 2003 working paper by Board of Governors economist Wayne Passmore estimating that the housing GSEs receive a 40 basis points cost of funds benefit from the implicit government guarantee and various other privileges relative to their competitors, and yet pass on only 7 basis points in the form of lower mortgage rates. (Hess 2004) Hess titled his presentation "Can We Avert the Next Financial Crisis?", a prescient question in 2004. The policy statement at that meeting, supported by another Hess memo, recommended "to move the supervision and regulation of these GSE's to the Treasury, to explicitly remove the implicit and explicit benefits that they receive and to significantly raise their capital requirements," but ultimately to privatize them. (Shadow Open Market Committee 2004) In the fall, Hoskins revisited the IMF and World Bank and urged privatization, again arguing that only national central banks have the capacity to address crises.

Shadow Open Market Committee analysis of issues related to Federal Reserve credit policy generally delivered a sharply critical view of the TBTF rescue lending that began to emerge and grow when the group was founded in 1973, so much so that one member advocated abolishing the Fed's lending authority. The critical perspective was grounded in the historical understanding that a central bank, as the monopoly supplier of high-powered money, had a responsibility to deliver monetary stability. That responsibility was originally known as lender of last resort, but central banks had hijacked the phrase and applied it to sterilized lending that was unrelated to monetary stability. Lending in TBTF cases thus falls outside of the Monetary Stability Doctrine. Such lending is also inconsistent with the Real Bills Doctrine, whose proponents opposed deposit insurance and Fed lending to failing banks. And it does not fit in with the commercial paper market focus of Warburg's Mercantilism. What sort of implicit doctrine does TBTF lending represent?

Limited Commitment and Fed Lending

As many have observed, in large financial institution failures the Fed faces a time consistency problem. (Stern and Feldman 2004, 19–20; Chari and Kehoe 2016) If they choose a course of action in advance, providing good incentives suggests committing not to rescue the creditors of insolvent institutions. If they cannot commit and can only choose actions ex post, after an institution has gotten into trouble, they may feel compelled to alleviate distress and come to the

rescue of uninsured creditors, even in the case of insolvent institutions. James Buchanan (1975) called this situation "The Samaritan's Dilemma."

In a 1999 paper, Marvin Goodfriend and I took a deeper look at the time consistency problem associated with central bank lending, drawing on insights from the financial contracting literature. (Goodfriend and Lacker 1999) Our supposition was that central bank lending is analogous to private line of credit lending, where the presumption would be that contractual arrangements are structured so as to manage the commitment problem efficiently from an ex ante standpoint. In contrast, a central bank faces distinctly different incentives and might not be expected to make lending and closure decisions that have the same ex ante efficiency properties. A central bank is a public institution, with profits and losses flowing back to the government, so profit maximization might not be the primary objective. A central bank faces the prospect of being blamed for any financial consequences of failing to lend and will always have difficulty proving the counterfactual that letting a distressed bank fail would not seriously harm markets. The failing institution and its allies—particularly similarly situated firms—may be able to bring pressure on the Fed as well. In addition, delaying or avoiding closure of a financial institution can help deflect attention from supervisory missteps leading up to the problem. The FDIC may be unwilling or unable to accept the upfront cost to the Deposit Insurance Fund from closing a failing bank. Because near-term political fallout and ex post resolution costs are tangible and borrower behavior is sunk, the Fed cooperates in forestalling prominent financial institution closure, even in cases where closure arguably would have been part of an ex ante optimal arrangement.

The limited commitment perspective provides a framework for understanding the rise of TBTF over time. An instance of financial distress leads the Fed and the FDIC to intervene in a way that forestalls financial market turbulence and political costs by allowing uninsured investors to avoid losses. Regulations are tightened to attempt to prevent the occurrence of the risks that were the proximal cause of the crisis. But the newly established precedent increases the probability that market participants perceive of future intervention in similar circumstances. Moreover, the regulatory crackdown encourages financial innovations that by-pass the tighter constraints and create potentially fragile financial arrangements on the edge of the domain where future official support might be forthcoming—"shadow banking." The inherent limitations on the effectiveness of risk-containment mean that fragility builds up and future crises and intervention become more likely. A self-reinforcing cycle of rescue, regulation, by-pass and crisis leads to an ever-expanding financial safety net. (Lacker 2011; 2012b)

Central bankers are not unaware of the moral hazard effects of the precedents their interventions set and they have a motive to avoid political criticism for bailing out large financial institutions. Their interest in limiting those effects undoubtedly serves to inhibit interventions in some circumstances. Several large nonbank financial institutions have failed without intervention: Drysdale Securities (1982) and Drexel Burnham Lambert (1990) are noteworthy examples. When a large entity is failing, it is almost routine to approach to the Fed for support, as happened when Penn Central failed in 1970 (Brimmer 1989, 5) and in the case of Drexel

(Fromson 1990). Stern and Feldman (2004, 80–85) devote a chapter to such cases, arguing that they help illuminate interventions as well.[16]

The Fed's "constructive ambiguity" communication strategy follows naturally from this framework, but it exacerbates problematic incentives. The Fed avoids committing to future interventions in order to discourage the risk taking that might contribute to future crises. But officials avoid promising *not* to intervene, in order to preserve the flexibility to respond to future crises in a manner that best suits their interests at that time. (Corrigan 1990) Board Governor Henry Wallich spelled out the Fed's communication policy in a response to 1974 Senate questions about the provision of emergency assistance:

> There are dangers in trying to define and publicize specific rules for emergency assistance to troubled banks, notably the possibility of causing undue reliance on such facilities and possible relaxation of needed caution on the part of all market participants. Therefore, the Federal Reserve has always avoided comprehensive statements of conditions for its assistance to member banks. Emergency assistance is inherently a process of negotiation and judgment, with a range of possible actions varying with circumstances and need. Therefore, a predetermined set of conditions for emergency lending would be inappropriate. (Wallich 1974c, 762)

Preserving optionality leads creditors to attach non-zero probability to being rescued. So when a financial firm faces distress, the Fed's intervention decision shifts the perceived probability of intervening for other similar institutions—upward if they decide to intervene, downward if they do not. Rescues prevent "contagion" by preventing perceived intervention probabilities from falling. (Cochrane and Seru 2024, 187)

Limited commitment, then, in the context of late twentieth century U.S. central banking, yields a distinct lending doctrine:

> **Lending Doctrine 4: Reluctant Samaritan** Federal Reserve lending decisions are made case-by-case, at its discretion, in order to: mitigate the ex post costs of resolving failing financial firms, especially banks; help the FDIC delay resolution of failing banks; avoid the political fallout of financial market turmoil that might arise if lending is withheld; and minimize the perceived departure from past precedent. Communication strives to minimize expectations of future intervention but preserve maximum discretion.

Marvin Goodfriend and I were struck by the contrast between TBTF lending and the U.S. monetary policy, where the Fed faces the same time consistency problem. Discretionary monetary policy setting without commitment is well known to be suboptimal, but the Volcker Fed was willing to incur short-term costs in order to establish a reputation for fighting inflation.

[16] In November 2008, LandAmerica, a mortgage title insurance company based in Richmond Virginia, approached the Federal Reserve Bank of Richmond about lending assistance. The request was denied and they filed for bankruptcy on November 26.

(Goodfriend 1997; Goodfriend and King 2005) Goodfriend and I wondered, on the doorstep of the twenty-first century, whether the Fed could pursue a similar strategy by building a reputation for lending restraint. (Goodfriend and Lacker 1999, 23–24) I was hopeful, based on Fed leaders' statements that seemed to discourage expectations of future rescues. Federal Reserve Chair Alan Greenspan, in a lengthy speech on "The Financial Safety Net" at the 2001 Federal Reserve Bank of Chicago Conference on Bank Structure, expressed the view that "as a society we ought to explore what we can do at the margin to retain the economic benefits and lower the economic costs of the safety net." (Greenspan 2001) He spent some time on practical steps to do so, including disclosures to facilitate greater market discipline, but noted that "the additional information will be irrelevant unless counterparties believe that they are, in fact, at risk….The potential for greater market discipline at large institutions is substantial." It seemed to me that reining in the financial safety net might be possible. Goodfriend, on the other hand, was less hopeful. He turned out to be right.

A less hopeful perspective on the possibility of a reputational strategy for limiting lending has led some to look to more formal constraints on Fed credit market intervention. The Federal Deposit Insurance Corporation Improvement Act of 1991 sought to constrain and dis-incent bank bailouts by requiring certain regulator actions—"prompt corrective action"—for undercapitalized banks, limiting the FDIC to "least-cost" resolution methods for failed banks and limiting Federal Reserve Bank lending to undercapitalized banks. (United States. Congress. 1991, §142) Stern and Feldman (2004) argue that the Act did nothing to fundamentally change regulators' decision making.

The fundamental problem is a consequence of the Federal Reserve Banks' balance sheets. The Fed's ability to manage their liabilities independently is essential to the framework established by the Treasury-Fed Accord for the independent conduct of monetary policy. Yet that independence leaves the Fed's assets under its discretionary control as well. Since lending, once sterilized, does not interfere with monetary policy, the Fed is left exposed to pressure to use the balance sheet for politically favored purposes.

This suggests a broader perspective on the Fed's commitment problem. Compared to the first three Lending Doctrines, the Reluctant Samaritan is more of a positive theory in the realm of public choice, specifying how an institution like the Federal Reserve will behave given the political environment it faces. It fits naturally into the framework described by Charles Calomiris and Stephen Haber in their book, *Fragile by Design*. (2015) They situate central banking within the broader context of the relationship between the state and the banking and financial system, where the central bank is an intermediary, helping the private sector finance the state and channeling fiscal resources to the private sector in the form of regulatory privileges and various subsidies. Crisis lending on favorable terms to rescue investors in large financial institutions can be seen as an off-budget, rarely visible subsidy that becomes more valuable as the economic environment becomes riskier, as it began to in the 1960s. It also enhances the returns to scale, leading to larger banks, greater implicit subsidies and broader distortions. From this perspective, the limited nature of central bank lending commitment might be viewed as an endogenous component of the grand political banking bargain Calomiris and Haber describe.

In any event, the expansion of the federal financial safety net in the last third of the twentieth century laid the groundwork for the behavior of financial markets in the twenty-first. Expanding precedents enhanced expectations of lending support and arguably induced greater financial fragility, particularly reliance on short-term wholesale funding, a lending mechanism more likely to elicit rescues. At the end of the century, Richmond Fed economists estimated that a total of 44.8 percent of financial sector liabilities were estimated to be explicitly or implicitly government guaranteed, based conservatively on previous government actions or policy statements; see Table 1. (Walter and Weinberg 2001) The potential scale of government intervention was evident, though perhaps not widely appreciated.

Table 1. Estimated Federal Financial Safety Net, 1999
Billions of dollars

	Explicitly Guaranteed	Implicitly Guaranteed	Total Guaranteed	Total Liabilities
Commercial Banks	2,203	773	2,976	4,850
Savings Institutions	637	47	684	1,113
Credit Unions	336		336	375
Government Sponsored Enterprises		2,620	2,620	1,199
Private Employer Pensions	1,805		1,805	2,090
Other financial firms				7,723
Total financial firms	4,981	3,440	8,241	18,771
Percent of total liabilities	26.5%	18.3%	44.8%	100.0%

Source: Walter, John R., and John A. Weinberg. "How Large Is the Federal Financial Safety Net." *Cato J.* 21 (Winter 2001): 369.

The Great Financial Crisis

A decade and a half after the fact, the dramatic financial and banking events of 2007 to 2009 and the Federal Reserve's responses should be quite familiar. Still, it is worth revisiting selected elements of the narrative from the perspective of the lending doctrines identified above and the analysis provided both before and after the crisis by the SOMC.

The Monetary Stability Doctrine and the Great Financial Crisis

The growing recognition of the scale of subprime losses started generating financial market turbulence in early August 2007. It has become commonplace since the GFC to portray the Federal Reserve's responses as "fulfilling the classic central banking role of lender of last resort." (Bernanke 2015, 243) This was certainly an apt characterization in early August 2007, when growing expected losses on subprime mortgages raised counterparty risk in interbank funding markets. Banks' desired holdings of reserve account deposits rose significantly and became more volatile, leading the New York Fed to intervene more frequently during the trading day

and in larger amounts. On August 9, an additional $24 billion in reserves were supplied via repo operations—that is, the New York Fed buying Treasury securities with reserves and selling them back the next day. Accommodating fluctuations in reserve demand was standard procedure for implementing the FOMC's interest rate target; the difference was the magnitude and volatility of the demand shift that day.[17] These were temporary open market purchases of government securities and would be defined as monetary policy, not credit policy, by Goodfriend and King (1988).[18] There was no evidence of a public shift out of deposits into currency, so this did not appear to be a broader monetary stability problem.

Later that month, on the evening of August 16, 2007, the Fed lowered the interest rate on discount window loans to 50 basis points above the federal funds rate target from 100 basis points, which had been the norm since the discount window reforms of 2002. The objective was to encourage bank borrowing at the discount window. William Dudley, then Manager of the System Open Market Account, confirmed that any increase in discount window lending that resulted would be sterilized, consistent with the standard interest rate targeting operating regime. (FOMC Transcript, August 16, 2007, 4) Michael Bordo called attention to the sterilization at the April 2009, SOMC meeting. (Bordo 2009) Thus, increased discount window lending would be completely unrelated to the monetary stability doctrine or any "classic" notion of lender of last resort. All subsequent lending up until October 2008, was sterilized—the Term Auction Facility announced in December 2007, the Primary Dealer Credit Facility announced in March 2008, and the loan to aid the acquisition of Bear Stearns by JPMC in March 2008. There were some weaker banks that experienced deposit drains in late 2007 and early 2008, but these just resulted in funds moving from one bank to another and thus would not threaten the money multiplier or the overall money supply. The ratio of deposits to currency was stable and throughout the crisis there was no evidence of the type of fractional-reserve instability cited by Thornton and Bagehot. (Lacker forthcoming) Thus Schwartz (1986) would classify this episode a "pseudo-crisis"—that is, not a monetary stability crisis to which the central bank is obliged to respond. (The Great Psuedo-Crisis?)

Some accounts of the GFC describe events in the markets for repos and off-balance-sheet asset-backed commercial paper as "runs" and "panics." (Gorton 2008; 2010) Investors pulled away from those markets or demanded shorter tenors and tighter terms. There will be more to say about repo and ABCP runs later on, but here let us address the question of whether the money-like properties of the repo market indicated the need for special central bank response on classic lender of last resort grounds. The answer is clearly "no." Repo market borrowers and ABCP issuers may hold Federal Reserve Bank reserve accounts, either directly or indirectly. And repo market lenders and ABCP holders may have shifted into holding assets backed less partially by Fed monetary liabilities, inducing a movement in a repo version of the money multiplier. But

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[17] Excess reserves jumped from an average of $1.7 billion from December 12, 2002, to August 1, 2007, to an average of $9.2 billion over the two-week period ending August 15, 2007. Federal Reserve Bank of St. Louis, Excess Reserves of Depository Institutions, retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/EXCSRESNW, February 24, 2023 and author's calculations.
[18] Bernanke later described the New York Fed's intervention on August 9, 2007, as consistent with the "lender-of-last-resort concept." (Bernanke 2015, 144)

that increase in the demand for Fed liabilities would manifest itself as an increase in the demand for reserve balances. Indeed, the surge in excess reserve holdings in early August 2007, may have represented such a shift. But again, the New York Fed's standard operating procedure accommodated that demand automatically via open market purchases of Treasury securities, without the need for credit extension to the private sector. This was perfectly consistent with the propositions of Thornton and Bagehot, since both cited operations in government securities as effective means of implementing their recommendations. The Fed was doing all it needed to do, as monopoly supplier of reserve account balances, to respond to any sort of run on repos.

In October 2008, Federal Reserve Banks began paying interest on reserves under authority provided by the Emergency Economic Stabilization Act of 2008. At around the same time, the New York Fed exhausted its ability to sterilize the reserve balances being added by the large and growing credit programs. The Fed's balance sheet and the banking system's reserve balances ballooned, driving the federal funds rate down below the FOMC's target. At the December 2008, meeting, the Committee dropped the target to a range from zero to 0.25 percent. While credit extensions were unsterilized after the fall of 2008, as Thornton and Bagehot recommended, they had no direct effect on the quantity of money in the hands of the public. With the banking system's demand for reserve balances satiated, the Fed's balance sheet had become uncoupled from the problematic fractional reserve monetary dynamics that were central to the last resort lending urged by Thornton and Bagehot.[19] The high-powered money the Fed controlled was no longer scarce.

The Real Bills Doctrine and the Great Financial Crisis

The Fed made no effort during the GFC or the pandemic to limit credit extension to commercial paper arising out of "real" transactions, as the Real Bills Doctrine would require. All of the Fed's special lending programs circumvented the constraints in the Federal Reserve Act motivated by the Real Bills Doctrine. Some programs made use of the authority to make advances to banks (as opposed to discounting paper from banks), while others made use of the authority to make loans to nonbank entities under section 13(3). But the constraints of the Real Bills Doctrine were ignored, consistent with the Fed's formal disavowal of the doctrine in the 1960s. (Hackley 1973, 191–92)

While real bills prescriptions no longer limit Fed lending, traces of real bills thinking are evident in the Fed's approach to financial stability monitoring. That work is focused on "assessing vulnerabilities," including "valuation pressures [that] arise when asset prices are high relative to economic fundamentals or historical norms," "excessive borrowing by businesses and households," and "excessive leverage within the financial sector." (Board of Governors of the Federal Reserve System 2024, v–vi) The idea that asset prices can at times rise above "economic fundamentals," perhaps driven by "excessive" borrowing or leverage, echoes the idea that departure from real bills principles can lead to "speculative excess" the inevitable

[19] Lacker (2024) See Ennis (2018) for a model in which monetary conditions are unchanged over a broad range of reserves supply in the presence of interest on reserves. See also Ennis and Sablik (2019).

collapse of which depressed economic activity. (Mints 1945, 207) Michael Bordo at the September 2017, SOMC meeting noted the striking similarity between the real bills conception of inflation as driven by asset booms that the central bank should head off and the recent conception of central banks' financial stability responsibilities. (Bordo 2017)

More broadly, the essence of real bills thinking is that some types of credit are healthier for the economy than others, and banking practice and central bank policies should encourage the productive uses of credit. The Fed's twenty-first century credit market interventions involved acquiring some sectors' debt obligations instead of holding an equivalent amount of Treasuries. To the extent that such use of the Fed's balance sheet is effective at lowering some sectors' borrowing costs, it is likely to raise borrowing costs in other sectors. Even though the precepts of the real bills doctrine were disavowed by the Fed in the 1960s, the underlying conception of credit markets lives on.

Warburg's Mercantilism and the Great Financial Crisis

The trade bills and bankers' acceptances that were the focus of Warburg's mercantilist agenda were not a specific target of the Fed's credit market interventions in the GFC.[20] Some of the Fed's GFC credit market interventions can be seen as at least partially motivated by a desire to preserve and enhance the competitive position of U.S. dollar markets in the global banking and finance. Other major countries had long been providing support for their large financial institutions—so-called "national champions." As noted earlier, in 1974, around the time of the birth of Too Big To Fail, the G-10 central banks agreed on a demarcation of responsibilities for lending to the overseas affiliates of their major banks. The Fed's provision of dollar funding on favorable terms to foreign banks during the GFC through facilities like the TAF, which was dominated at the outset by branches and offices of foreign banks, appears to be a departure from the 1974 agreement, which held that the home country parent bank and the home country central bank would be responsible for the provision of liquidity support of a foreign branch in the U.S.

The swap lines the Fed established with foreign central banks also played a role in funding foreign banks U.S. operations. Under a swap line, the Fed exchange currencies with a foreign central bank, the purpose being "to enhance the provision of U.S. dollar liquidity."[21] Foreign central banks held large dollar reserves on their own, however, and conceivably could have lent those on favorable terms to their banks. The swap lines instead funneled Fed credit to foreign banks using foreign central banks as conduits, sparing the latter the inconvenience of using their own dollar reserves. Again, this departed from the 1974 agreement and expanded Fed lending across the reciprocal boundaries agreed in 1974, in alignment with Warburg's broader

[20] The Fed did roll out programs to bolster the broader commercial paper market.
[21] For example, the Federal Reserve Bank of New York credits the Bank of England with a dollar account balance, while the Bank of England simultaneously credits FRB New York with an equal value sterling account balance.

Atlanticist vision of a supporting a robust global role for dollar financial markets.[22] Indeed, one could view the Fed's eagerness to accommodate foreign bank dollar borrowing demand as aimed in part at preserving the dollar's role as a reserve currency.

The Reluctant Samaritan in the Great Financial Crisis

Key elements of the limited commitment perspective are evident in how the GFC played out. Federal Reserve decisions were clearly driven by a desire to avoid, ex post, private sector costs and political fallout, rather than by conformance to a response function policymakers wanted market participants to understand. The moral hazard implications of interventions were acknowledged but put off to be dealt with down the road, although those implications did not wait until the next business cycle to emerge and affect unfolding events. At several junctures, the Fed sought to calm markets and "restore confidence," but did so simply by resolving intervention uncertainty in the direction of making future rescues seem more likely. And political considerations, rather than narrow economic analysis, appeared to drive key lending decisions. The narrative centers shifting private estimates of the probability of future interventions, and the Fed's attempt to manage them.

The initial, August 2007, Federal Reserve response to financial market turmoil was *designed* to change expectations about the Fed's stance toward credit markets; it was designed to *increase* the perceived probability of lending, not reduce it as Greenspan had suggested in 2001. The 50 basis point reduction in the discount rate was intended to reduce the penalty for using the discount window and increase usage. After it was announced the morning of August 17, Vice Chairman Don Kohn and New York Fed president Tim Geithner were on a conference call of the Clearing House Association, an organization of the largest banks in the country (formerly known as the New York Clearinghouse), to explain the move and try to persuade banks that they should not feel stigmatized going to the window. On the contrary, they argued, it should be viewed as a "show of strength." Only one large bank took up the suggestion over the weekend, but when word of their borrowing leaked out their stock price fell sharply. The next week, the four largest U.S. banks (Citi, JPMorgan Chase, Bank of America and Wachovia), in a coordinated action, announced simultaneously that they had each borrowed $500 million from the Fed. The Board of Governors also sent letters to three of them granting temporary exemption from section 23A of the Federal Reserve Act which otherwise would have prevented them from sharing the discount window borrowing of their bank subsidiaries with other subsidiaries, such as their broker-dealers.

The Fed's promotional efforts failed to increase discount window lending appreciably. Total borrowing rose from $264 million on August 15 to $2.6 billion the next Wednesday, fell back a

[22] The support provided to AIG beginning on September 16, 2008, may have been influenced by international considerations, as well, along the lines of the 1974 agreement in Basel; some foreign banking organizations had substantial exposures to AIG just before they failed. (McDonald and Paulson 2015)

bit for two weeks, then spiked at $7.4 billion on September 12.[23] Borrowing remained under one billion dollars from late September until mid-December. As noted above, banks were borrowing large amounts from the Federal Home Loan Banks instead. Borrowing at the FHLBs rose by $237 billion in the second half of 2007, a 36.7 percent increase, with $150 billion of that increase accounted for by the top ten member institutions. (Ashcraft, Bech, and Frame 2010, 553) The Federal Reserve's attempt at intermediation at first could not compete against other government-sponsored enterprises. The Fed had more success with the introduction of the Term-Auction Facility, which was open to foreign banks, who were ineligible for FHLB membership.

The Fed's highly visible efforts in 2007 may have failed to appreciably increase discount window borrowing, but they surely tilted private sector incentives away from taking preventative measures that might have reduced their vulnerability to problems down the road. Capital markets were open for large banks for the next 12 months, and many raised new equity to replace capital written off in recent quarters. (Cohan 2009, 398) For example, Lehman Brothers issued $4.0 billion in convertible preferred stock in April 2008, and then in June it raised $6.0 billion in preferred and common stock. (Federal Deposit Insurance Corporation 2011, 31–32) The convertible preferred stock was more than three times oversubscribed, so they could have raised significantly more capital than they did, but they chose not to. (Lehman Brothers 2008) The prior month's assistance to the Bear-JPMC merger also would have tilted the willingness of a firm in Lehman Brothers' situation to incur material costs to reduce vulnerabilities. And liquidity management decisions were bound to be affected as well. Large banks using the overnight repo market to fund illiquid assets could have termed out their borrowings or issued additional equity and cut dividends to fund those assets. That might have been costly, but for a solvent firm it should not have been impossible. Convincing market participants that the Fed was more inclined to lend than they might have otherwise thought was bound to have moral hazard consequences at some point. Policymakers may not have appreciated how soon those consequences would arrive.

Fears of repercussions in the repo market motivated the Fed's decision to lend to Bear Stearns on Friday morning, March 14, 2008, and then on Sunday agree to assist Bears' merger with JP Morgan. Bear had continued to fund illiquid, mortgage-related securities in the overnight repo market, but repo investors began to flee Bear in significant numbers earlier that week. Unwinding the back leg of their overnight repos was up to Bear's clearing bank, JP Morgan; their decision Thursday night to not unwind the next morning forced the Fed to decide whether to lend or not.[24] Following that decision, policymakers feared that if Bear's repos failed to unwind,

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[23] Board of Governors of the Federal Reserve System (US), Assets: Liquidity and Credit Facilities: Loans: Wednesday Level [WLCFLL], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/WLCFLL, September 5, 2024.

[24] Tri-party repo clearing banks (JPMorgan Chase and Bank of New York) extend intraday credit to dealers; so if a dealer is not expected to fully fund their overnight position at the end of the day, the clearing bank has an incentive to refuse to unwind in the morning. See Ennis (2011) for a model of strategic interaction between a tri-party repo clearing bank and a central bank over a failing dealer, the importance of the clearing bank's provision in intraday credit, and the related issue of the Fed's provision of intraday credit to the clearing banks.

investors would pull away from other overnight repo borrowers, such as Lehman or Merrill, the two next largest investment banks. The Fed's intervention succeeded at calming markets by boosting the perceived probability that the Fed would protect repo investors in other investment banks. The intervention itself revealed nothing about the quality of Bear's assets that was not already apparent from the signals given off by Bear's loss of market funding that week. Instead, the intervention simply provided information about the preferences of policymakers. The contagion that policymakers wanted to prevent was the spread of reduced assessments of how likely policymakers were likely to intervene again. The financial safety net now included the top five investment banks.

The moral hazard implications of the Fed's assistance was noted prominently in a rare public rebuke by former Fed Chair Paul Volcker, who said that the Fed's actions "will surely be interpreted as an implied promise of similar action in times of future turmoil." (Volcker 2008, 2) Coming from a former central banker of Volcker's unmatched stature, this was a bracing assessment. And the fact that it highlighted the moral hazard implications was prescient.[25]

Federal Reserve officials offered virtually no guidance about what to expect in similar future circumstances, consistent with the Reluctant Samaritan's constructive ambiguity communication strategy. Senior executives at Lehman Brothers were said to have been surprised at not receiving the same merger assistance that Bear received. After Lehman was forced, by the government, to file for bankruptcy on September 15, the large assistance package for AIG two days later was another huge, and confusing, surprise. At that point, the need for a clear, publicly announced plan from the Treasury and the Fed for handling subsequent failures was achingly apparent. Up to that point, between Bear, IndyMac, Fannie and Freddie (both taken into conservatorship earlier in September), Lehman and AIG, six different failures had been handled five different ways. It would have been hard for market participants to predict, based on past actions, how the next financial firm failure would be handled, particularly where in the capital structure the cut would be made between those rescued and the rest. An announced plan for handling future financial problems would be useful, but it needed to be credible—perceived intervention probabilities were too uncertain. Paulson and Bernanke dusted off a plan staff had drafted that summer and went to Congress seeking appropriations for $700 billion. John Taylor (2009) argues persuasively, based on the timing of movements in credit spreads, that the frightening rhetoric used by Paulson and Bernanke to make their case to Congress and the public resulted in a significant deterioration in business and consumer confidence.

While Bernanke and Paulson were appealing to Congress, the decision was made to support all of the debt of Wachovia, including obligations of the holding company and other affiliates, setting a new safety net precedent. The bank subsidiary of Washington Mutual had been taken over by the FDIC and sold on Thursday night, September 25. Holders of the holding company

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[25] I gave a speech in London in early June 2008, questioning whether financial fragility was inherent or induced by the moral hazard effects of central bank intervention, which was taken by the financial press as a critique of the Bear Stearns assistance. (Lacker 2008)

debt would have to seek repayment as part of the holding company's bankruptcy proceedings, along with the FDIC seeking recovery of the costs they incurred inducing a buyer to take over the bank. The following day bondholders began calling Wachovia asking whether the bank would buy back their debt. Such accommodations were often made in normal times in order to maintain investor goodwill, even in cases in which there was no contractual obligation to repurchase the debt. Wachovia's condition had been suspect, due to mounting losses stemming from their acquisition of the California savings bank Golden West, pioneer of the "Pick-A-Pay" mortgage that allowed borrowers the option to skip payments. Wachovia had been slowly bleeding deposits over the summer and the inquiries that Friday posed a dilemma: cash reserves were dwindling but refusing a customary accommodation would send an adverse signal that could jeopardize future liquidity. Management turned to the Federal Reserve and Treasury to say that they didn't think they could make it through to the following weekend and thus would have to "be resolved" that weekend. Over the weekend, strategy was discussed by the regulators involved—the Office of Comptroller of the Currency, the FDIC, and the Fed, including staff from the Board of Governors, and the Federal Reserve Banks of Richmond, New York and San Francisco (the last two because the prospective bidders were Citigroup and Wells Fargo).[26] Citigroup, it was learned, would be proposing an assisted purchase of the holding company, so a critical policy question on Saturday was whether Wachovia's holding company debt would get government support, unlike WAMU's. The argument New York advanced for doing so was that without such support "no other large bank would be able to issue debt on Monday morning." That carried the day. Again, intervention steadied markets by raising the perceived probability of future intervention.[27] The financial safety net now included large bank holding companies.

In both the Bear Stearns and Wachovia rescues, policymakers' focus on immediate ("exigent") rather than ex ante considerations was evident. The moral hazard implications were universally acknowledged, but crisis conditions were viewed as too grim, so dealing with moral hazard effects was generally left for another day; future legislation or regulatory reforms could prevent the relevant institutions from taking the risks that had afflicted the ones just rescued. Deliberations were never framed in terms of repeated interactions. One did not hear the question posed: "What would we want market participants to believe we would do in similar future circumstances?" An example of this ex post mindset was Chairman Bernanke's comment at very the end of the December 2008, meeting; when asked, following a discussion of the TALF

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[26] See Bair (2012, 95–105) for an account of regulatory agency discussions that weekend.

[27] Citigroup's bid for Wachovia proposed federal support in the form of a "ring fence" in which a designated set of assets would be guaranteed by the FDIC, the Treasury and the Fed. Specifically, losses on the designated asset pool beyond a minimum threshold would be divided between the FDIC and the Treasury up to a second threshold, beyond which they would be born by the Federal Reserve Bank of New York. Prior to consummating the acquisition by Citi, Wells Fargo submitted a revised bid that required no government support, which the FDIC accepted Thursday night, October 2nd. The same ring fence arrangement was used to assist Citigroup itself later that fall, and was proposed for Bank of America in January 2009. The latter was not consummated after the May release of the results of the Supplementary Capital Assessment Program dramatically improved market conditions for the large banks. In both ring-fence agreements, if losses were large enough to require the Federal Reserve to absorb some, the mechanism for doing so was to be a non-recourse section 13(13) loan from the Reserve Bank in an amount that exceeded the posted Treasury securities collateral by the amount of the loss to be absorbed.

program, whether he was "concerned about setting up expectations for the next recession," said "Certainly I'm concerned. I'm very concerned. But I'm also concerned about getting through this recession." (FOMC Transcript, December 15-16, 2008, 237) At the following month's meeting, he spoke in the same vein: "But we are in a situation at this point where past is past and what is sunk is sunk. We have to deal with the situation. And it is very, very important for us to go forward to try to change the legal structure, the regulatory structure, and even Federal Reserve operating procedures in ways that will encourage more-stable systems in the future. But at the moment, the fire is burning, and we have to think about that." (FOMC Transcript, January 27-28, 2009, 81-82)

The combustion analogy is a perennial motif, with the Fed likened to the firefighter and the homeowners' negligence likened to the sunk effects of past moral hazard. (Cochrane and Seru 2024, 171, 186, 190) In fact, *Firefighting* went on to become the title of key decision makers' joint account of *The Financial Crisis and Its Lessons*. (Bernanke, Geithner, and Paulson 2019) The weakness in the analogy is the premise that the short-term costs of withholding intervention would be unbearably high—higher than the value of taking the opportunity to start building a reputation for lending restraint. By January 2009, financial markets had seen a year and a half rescue initiatives, encouraging banks and dealers to make use of the Fed's credit and thus discouraging self help. At that point, the pessimistic premise might have been pretty reasonable. The question with more lasting significance is whether it was wise for the Fed to push Fed lending so aggressively beginning in August 2007, or whether Greenspan's strategy (2001) of holding the line on the financial safety net would have ben a better course. After all, if Volcker had adopted the firefighter analogy, double-digit inflation might have lasted for quite a while.

The consequential role of shifting intervention expectations was evident in the implementation of the Capital Purchase Program under the Troubled Asset Relief Program. Announcement of the initial capital purchases at the largest banks in early October meant that private investors contemplating investment in a large bank had to assess the risk of further dilutive purchases by the Treasury. Capital market access was diminished but returned immediately after the release of the Supervisory Capital Assessment Program results on May 7, 2009. The innovative program required the largest banks to submit two-year-ahead projections for their capital positions under baseline and adverse macroeconomic scenarios.[28] For banks projecting a deficiency, further capital had to be raised to close the gap. Treasury pledged to provide the additional capital if needed, but, perhaps more importantly, pledged *not* to purchase more capital in a bank if they could raise the required amount privately. While the "clean bill of health" given by the supervisor-certified loss projections bolstered outlook, the Treasury foreswearing further dilution had to have been quite important as well.

The SCAP set an important precedent, in that the included institutions—the nineteen largest banking organizations in the U.S.—were implicitly deemed too big to fail. Notably, the list

[28] Since loan loss provisions looked ahead 12 months, this meant three-year-ahead projections were effectively required.

included some large regional banks. The smallest traditional bank was Regions at $142 billion at year-end 2009.[29] Viewing that as a candidate TBTF threshold and adjusting for the nearly 40 percent inflation between 2009 and the first quarter of 2023, yields a value of $198 billion. In other words, based on 2009 precedents, one could presume that a bank with $198 billion assets in early 2023 is likely to be viewed as too big to fail. Silicon Valley Bank had approximately $212 billion in assets when it failed in March 2023. (Board of Governors of the Federal Reserve System 2023, 2)

Table 2. Estimated Federal Financial Safety Net, 2009
Billions of dollars

	Explicitly Guaranteed	Implicitly Guaranteed	Total Guaranteed	Total Liabilities
Banking and Savings Firms	6,536	7,276	13,812	16,249
Credit Unions	725		725	817
Government Sponsored Enterprises		6,839	6,839	6,839
Private Employer Pensions	2,799		2,799	3,273
Money Market Mutual Funds		3,316	3,316	3,316
Other financial firms		748	748	12,741
Total financial firms	10,060	18,179	28,239	43,235
Percent of total liabilities	23.3%	42.0%	65.3%	100.0%

Source: Marshall, Liz, Sabrina Pellerin, and John Walter. "Bailout Barometer: How Large is the Financial Safety Net." Federal Reserve Bank of Richmond, last updated August 2017, https://www.richmondfed.org/publications/research/special_reports/safety_net/.

The federal financial safety net expanded along a number of dimensions in the GFC. Prior to the GFC, Fed and FDIC rescues had been limited to chartered banks and thrift institutions. As noted above, GFC interventions established the precedent of backstopping debt at all levels of a bank holding company, not just the bank. In addition, the SCAP implied that safety net support went farther down the size distribution of large banks than previous precedents indicated. And the Treasury and Fed's support for money market mutual funds and the top investment banks now qualified them for inclusion. As a result of these new precedents, when the Richmond Fed went back after the crisis to estimate the size of the financial safety net, the size had increased to 65.3 percent of financial firms' liabilities; see Table 2.

The Dodd-Frank Act (2010) did little to clarify the scope of the federal financial safety net—the outer boundaries remain ambiguous. The FDIC was given the authority to set up a new mechanism for handling large failing financial institutions, the "Orderly Liquidation Authority," but the FDIC's implementation has preserved the discretion to designate qualifying candidate institutions on the fly—that is, in a crisis. Oddly, OLA was not invoked for any of the bank failures of 2023. The newly established Financial System Oversight Committee was given authority to designate a nonbank entity as a "Systemically Important Financial Institution" and subject them to tighter oversight. That designation carries with it the presumption that they are

[29] State Street was smaller but the outsized role it plays in clearing and settlement drove its TBTF status.

also too systemically important for the government to let them fail without intervening to protect creditors. The FSOC's relatively discretionary implementation of that authority, together with related litigation, seem to preserve substantial uncertainty about the boundaries of the federal financial safety net, although perceived support probabilities might be quite high for a broad swath the financial system, given recent rescues. Recent bank failures under the new framework suggest that the Reluctant Samaritan dynamics will continue, and the financial safety net will continue to grow.

Section 165(d) of the Act mandated that large banking organizations submit plans ("living wills") for the "rapid and orderly resolution in the event of material financial distress or failure."[30] Failure to submit a plan deemed "credible" by the Fed and the FDIC (jointly) can result in the imposition of "more stringent capital, leverage, or liquidity requirements, or restrictions on the growth, activities, or operations of the company, or any subsidiary thereof." An industry has sprung up employing an army of lawyers and analysts to help large banks prepare their submissions, which involve lengthy documentation of organizational structure, interaffiliate agreements and detailed wind-down plans. One could of the living will requirements is as pre-packaged bankruptcies that can be crafted to avoid relying on governmental resources. (Lacker 2012a; 2013) The existence of such plans, approved ahead of time, could conceivably make it easier for regulators to credibly commit to not rescuing investors, thus containing the moral hazard effect the Fed's time consistency problem. Instead, implementation of the resolution planning program seems more like pre-planning to make FDIC rescues under the OLA as smooth as possible. Industry pressure appears to have led the Fed to allow banks to count discount window access in their resolution plans and their internal liquidity stress tests, which is counterintuitive—regulation is supposed to reduce the moral hazard fostered by reliance on the window, not imbed it.

The Shadow Open Market Committee on Fed Credit Policy and the Great Financial Crisis

The events of 2007-09 elicited a flurry of SOMC commentary, with the April 2009, meeting dominated by issues related to the Fed's controversial credit market actions. Michael Bordo compared the GFC to historical financial crises (an object of lifelong research), particularly the Great Contraction of 1929-1933. (Bordo 2009) While similar elements are evident—insolvencies and restricted lending, for example—the GFC is not a classic banking panic, Bordo argued, an assessment consistent with Anna Schwartz's (1986) diagnosis of "pseudo-financial crises." Nonetheless, the Fed greatly expanded the supply of high-powered money, Bordo noted, in accord with Bernanke's interpretation of the Great Contraction. Numerous special credit facilities channeled Federal Reserve credit to particular sectors. "Thus," Bordo argued, "the Fed changed its tactics away from providing general liquidity via open market operations and allowing the market to distribute liquidity to individual firms," shifting policy toward credit allocation in a manner similar to Hoover's Reconstruction Finance Corporation. (3) Bordo argued that what was needed was a "bold, decisive and quick resolution of the bank insolvency

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[30] The requirement applies to bank holding companies larger than $50 billion in assets, as well as certain nonbank financial companies.

issue parallel to FDR's banking holiday," (5) something that the capital stress tests then underway offered the prospect of accomplishing.

Also at the April 2009, SOMC meeting, new member Marvin Goodfriend (2009) reprised his 1994 argument for an "Accord" for Federal Reserve credit policy. (Goodfriend 1994) Such an agreement would be modeled after the 1951 Treasury-Fed Accord that enabled the Fed to conduct an independent monetary policy. "As a long run matter," Goodfriend argued, "a significant, sustained expansion of the Fed credit policy beyond ordinary, temporary last resort lending to banks is incompatible with sustained Fed independence." The Fed should therefore stick to a "Treasuries only" policy, he argued, except for limited discount window lending to banks. The Treasury and the Fed should agree on a low long-run inflation objective and should co-operate to shrink the Fed's balance sheet once the crisis was over. The idea of a credit accord had been widely discussed following Goodfriend's original 1994 proposal, but the GFC brought the discussion to the front burner. Within the Fed there was frequent questioning of the proper division of responsibility between the Fed and Treasury.[31] In early 2009, Charles Plosser was advocating for a credit accord inside the Fed, and both of us were doing so outside the Fed. (Plosser 2009; Lacker 2009)

On March 23, 2009, the Treasury and the Federal Reserve issued a joint statement (Board of Governors of the Federal Reserve System and United States Department of Treasury 2009) on "The Role of the Federal Reserve in Preserving Financial and Monetary Stability Joint Statement by the Department of the Treasury and the Federal Reserve." It looked like the credit accord that Goodfriend, Plosser and Lacker had been advocating, in that it called for Treasury-Fed cooperation to foster financial stability, and for the Federal Reserve "not to allocate credit to narrowly-defined sectors or classes of borrowers." The joint statement also affirmed the need to preserve monetary stability and the need for a comprehensive resolution regime for "systemically critical financial institutions." No mention was made of transferring Fed credit programs to the Treasury, but it included a pledge to jointly seek "legislative action to provide additional tools the Federal Reserve can use to sterilize the effects of its lending or securities purchases on the supply of bank reserves." This refers to authorization for the Fed to issue its own debt, an idea that subsequently fizzled out. I have no direct evidence on whether Goodfriend's proposal or Plosser and my efforts had any effect—I could not find a mention of the joint statement in either Bernanke or Geithner's memoirs—but I believe both of them were aware of the credit accord proposal and had contacts with Goodfriend in that time frame. Moreover, I believe that they both sincerely shared Goodfriend's concern about threats to the Fed's independence. So my sense is that advocacy by SOMC members before and during the GFC had a strong influence on the Treasury-Fed joint statement. In the end, however, it was not clear how much effect the joint statement had on the actual decisions at the Treasury and the Fed, since the Fed's large-scale acquisition of agency MBS was deemed to be consistent with it. Apparently, home mortgage borrowers were not a "narrowly-defined sector or class of borrowers."

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[31] Lawrence Ball provides an account of decision making regarding Lehman Brothers that raises pointed questions about the relationship between the Fed and the Treasury. (Ball 2018)

At the April 2009, SOMC meeting, Anna Schwartz specifically discussed the March 23, 2009, Joint Treasury-Fed statement and applauded its sensitivity to Federal Reserve monetary policy independence. Schwartz went on to discuss Milton Friedman's view that the Fed should be lodged more firmly within the U.S Treasury so that the two parties cannot blame each other for failure to achieve macroeconomic objectives. (Schwartz 2009) Friedman argued, she said, that "in a democracy it would be wrong to place such concentrated power as the Fed enjoys in a group free from any kind of political control." She disagreed with her late colleague, however, saying that he conceded too much power to the Treasury: "Political control in the hands of uninformed legislators is hardly the summum bonum[32] of a monetary system that provides financial stability and public trust of financial activity."

Regulation and supervision were in the spotlight following the GFC, and the expectation was that Congress, as they had following past crises, would pass remedial legislation. Charles Calomiris, also added to the SOMC roster in 2009, commented on proposals to reallocate regulatory authority among the Federal banking agencies. (Calomiris 2009c) He supported requiring the Fed to give up its role as microeconomic banking regulator, noting that the U.S. was alone among developed nations in assigning that role to the central bank. In a second paper for the meeting, Calomiris reviewed the origins of the crisis, citing ex ante underestimation of subprime default risk, lax monetary policy and risk-promoting housing policies during the lead up to 2007. (Calomiris 2009a) He urged regulatory changes to discourage too-big-to-fail protection of large, complex banks; provide macroprudential regulatory authority; eliminate subsidies for leveraged housing finance; reform OTC clearing and disclosure; improve risk measurement practices; reform use of rating agency opinions; and eliminate regulatory limits on concentration in bank ownership. His prognosis for reform in the coming legislative deliberations was mixed—some items on the agenda seem likely to be implemented, while in other areas there is little hope and "great potential for mischief."

By the time of the fall SOMC 2009 meeting, with the U.S. economy appearing to have bottomed out, the focus turned to how the Fed was going to exit from the extraordinary positions it had amassed via credit programs and asset acquisition. Guest speaker Don Kohn, then Vice Chairman of the Federal Reserve, gave remarks on "Central Bank Exit Strategies," providing assurance that the Fed has "the framework to exit" from the unusual policies when it needed to do so. (Kohn 2009) Importantly, he argued, the ability to pay interest on reserves would enable the Fed to raise short term interest rates even if the Fed's asset holdings were quite high. Lending programs "were designed to wind themselves down as market conditions improve, and are doing so." He also stated that "the Administration has agreed to seek to remove the so-called Maiden Lane facilities from the Federal Reserve's balance sheet," something that did not end up taking place. Athanasios Orphanides, then Governor of the Central Bank of Cyprus and later a member of the SOMC, offered a European perspective on the process of a central bank exiting from a large balance sheet expansion. (Orphanides 2009)

[32] Latin for "the highest good."

Marvin Goodfriend and Bennett McCallum argued for "Exiting Credit Policy to Preserve Sound Monetary Policy," in the words of their paper's title. (Goodfriend and McCallum 2009) They commended Chairman Bernanke for publicly discussing the Fed's exit strategy, and they urged the Fed to go further and declare the intention to return to a "Treasuries only" policy, "with only occasional 'last resort' lending to solvent depository institutions." Moreover, "the Fed should ask the Treasury and the Congress to take the problematic credit assets off its balance sheet in exchange for Treasuries, so that the credit assets can be managed elsewhere in the government, perhaps in a special entity created for that purpose." They also urged modifying regulations to remove the GSEs from the federal funds market or allow GSEs to earn interest on reserve balances—either would eliminate the confusing persistence of fed funds trades below the IOR. Peter Ireland, another twenty-first-century addition to the SOMC, later examined whether the Fed's exit from its extraordinary policy measures was "on track." (Ireland 2013) While noting that "the enormous expansion the bank reserves since 2008 had, for the most part, not translated into rapid growth in the broader monetary aggregates," Ireland urged Federal Reserve officials, and Fed watchers, to pay closer attention to measures of the money supply.

William Poole, then Senior Fellow at the Cato Institute and formerly president of the Federal Reserve Bank of St. Louis, highlighted that moral hazard was a much more serious problem following the Fed's interventions. (Poole 2009) While large financial institutions were cautious for the time being, and the Fed and the Treasury seem to be aware of the problems they have created, "their proposed policies are grossly inadequate to deal with it." In particular, relying on the "bravery of a Treasury secretary or Fed chairman" inevitably means that "any large bank that gets into trouble will be bailed out," echoing the limited commitment perspective on lending doctrine.

The housing finance giants, Fannie Mae and Freddie Mac, having played a consequential role in the crisis, naturally drew Shadow members' attention. At the September 2009 meeting, Gregory Hess argued for greater transparency about all aspects of the housing GSEs, and for acknowledgement that "Fannie Mae and Freddie Mac are now part of U.S. Government activities, warts and all." (Hess 2009) Calomiris, in 2010, described a three-part program for housing finance reform: (1) Replace leverage subsidies with means-tested down-payment assistance alongside reduced loan-to-value ratios (and phasing out Fannie Mae, Freddie Mac, and FHA mortgage guarantee programs); (2) offering means-tested interest rate risk assistance; and (3) finally allowing means-tested, tax-favored savings accounts for would-be homeowners. (Calomiris 2010a) The combination would tilt our mechanism for subsidizing home ownership away from subsidizing leveraged home ownership and in the process make for a safer and less fragile system. Means testing would better target subsidies. Hess would return to the topic at the October 2018 SOMC meeting, explained the flaws in the conservatorship arrangement, and commented favorably on legislative proposals then circulating to resolve the situation. (Hess 2018)

The circulation of numerous legislative proposals by the fall of 2009 was putting a spotlight on the possibility of changing roles for the Fed. Calomiris pointed out that "the expansive role of

the Fed as a financial regulator is out of step with the global trend to separate monetary policy from regulatory policy. Virtually all developed economies have separated their monetary authority from their financial regulatory authority. Such a separation is desirable, as it limits the politicization of monetary and regulatory policy; pressures from special interests in the regulatory arena have led to poor regulatory decision making by the Fed (which fears repercussions from Congress) and those pressures similarly have jeopardized the Fed's independence in managing monetary policy." (Calomiris 2009b, 3) Reforming the resolution of large financial institutions, he argued, should take the form of curing technical problems with the bankruptcy code that discourage its use with financial institutions, and a requirement that shareholders in a failed institution face a complete loss.

Legislative deliberations were well under way in Washington when the SOMC next met in March 2010, and a plethora of proposals were floating around that could affect the regulatory powers and authorities of the Fed. The implications for the Fed's monetary policy independence were a major focus. Marvin Goodfriend observed that "the Fed's expansive initiatives put the central bank in a cross-fire and created a pressing need to clarify its independent responsibilities." (Goodfriend 2010) The Fed, he again argued, should return to a "Treasuries only" portfolio. Credit policy, he noted, "exposes the central bank, and ultimately taxpayers, to potentially costly and controversial disputes regarding credit allocation," and "even the acquisition of government agency securities has allocative effects because it steers credit in a particular direction and confers a preferential status enhancing that agency's creditworthiness…. Expansive credit initiatives infringe significantly on the fiscal policy prerogatives of the Treasury and Congress and properly draw the scrutiny of the fiscal authorities. Hence, expansive credit initiatives jeopardize central bank independence." In light of proposals for a "pinnacle authority" for financial stability oversight and systemic risk regulation, Goodfriend argued that it should not be the Fed. The decisions such an authority would be called upon to make in times of financial turmoil would be "inevitably political, highly charged, and among the most contentious fiscal policy choices imaginable." Giving such choices to the Fed would put its independence at jeopardy.

At the same SOMC meeting, Bennett McCallum also spoke on the importance of monetary policy independence and how that relates to the U.S. Constitution. (McCallum 2010) Michael Bordo argued as well for the importance of monetary policy independence, tracing the history of Fed independence since its founding. (Bordo 2010) Having seen the close cooperation between the Chairman of the Fed and the Secretary of the Treasury in the fall of 2008, his conclusion was that the independence of the Fed had been compromised. To regain its independence, the Fed should wind down its credit facilities, end purchases of mortgage-backed securities and long-term Treasuries, and pursue a successful exit strategy.

Calomiris reviewed the history of the Bank of England and the First and Second Banks of the United States, based on his research with Stephen Haber (Calomiris and Haber 2015) on historical and cross-country banking experiences, noting that the Bank of England was an example of a successful co-evolution of a central bank and its government, while the First and Second Banks never managed to satisfy the political constraints necessary to form a stable

consensus about their role and structure. (Calomiris 2010c) The Federal Reserve, in contrast, did form a stable bargain that lasted from its founding until it was restructured in the mid-1930s. The lesson he took away, echoing his theme at the previous meeting, was that combining regulatory and monetary policy responsibilities in a single institution poses risks to the Fed's monetary policy independence. He therefore argued against giving too much regulatory authority to the Fed in the wake of the GFC, particularly resolution authority.

When the SOMC met next, in October 2010, the Dodd-Frank Act had been enacted and the Basel Committee had issued its revised capital standards, so it was time to look ahead. Naturally, the path toward implementing regulatory reform drew significant attention. Calomiris, surveying the field, ventured that "bureaucrats in the future will likely do what they have done in the past: follow the myopic political path of least resistance during a crisis and bail out everything in sight. Knowing that, financial institutions will not take appropriate precautions." (Calomiris 2010b) The details of the new resolution authority—the FDIC's OLA—would be key. After noting critical failings and omissions in the new regime, particularly any attempt to affix the government subsidization of mortgage risk-taking, Calomiris notes some promising areas for reform: use interest rates to measure loan default risk; reform of the SEC's credit rating agency regime; require large banks to issue "contingent capital certificates," a type of subordinated debt; and limit the extent of discretionary bailouts of creditors.

At the March 2011 SOMC meeting, Calomiris again drew from history; this time from the historical behavior of banks in the 1930s. (Calomiris 2011b) Declines in loan supply did have significant local effects, but deposit withdrawal appeared to reflect a largely rational and predictable process of deposit market response to deteriorating bank conditions rather than panic, per se. Comparing the "run" on asset-backed commercial paper in the summer of 2007, Calomiris noted research by Board staff economists Covitz, Liang and Suarez (2013) showing "only about 40% of ABCP issues experienced a run in 2007, implying substantial cross-sectional variation in the perceived risks of different ABCP issuers during the crisis. The same ABCP issuer characteristics predicted variation in the probability of a run on a particular ABCP issue, variation in the widening of the interest spread, and differences in the shrinkage of ABCP maturities." (Calomiris 2011b) The evidence clearly implied that the extent to which an ABCP issuer faced a run or unwillingness of counterparties to roll over positions was related to their risk profile, consistent with the pattern of depositor withdrawals in the 1930s.

At the October 2011 meeting, reviewing desirable size and structure, transitional dynamics, and "macro-prudential" implications of capital requirements, Calomiris concluded that "Capital requirements should rise for U.S. and European banks." (Calomiris 2011a) At the same meeting, amid concerns about a disappointing pace of recovery, Marvin Goodfriend (2011b) warned that "A more intensive use of credit policy by the central bank to stimulate economic activity at present would be politically divisive, potentially costly, and at best subsidize particular sectors at the expense of others without necessarily stimulating aggregate output as a whole."

Regulatory issues continued to garner attention in the years to come. At the September 2013 SOMC meeting, Charles Calomiris commented on the emerging movement to adopt a "macro-

prudential" policy regime in which regulatory and supervisory tools are used on a cyclical basis to "cool down or heat up the financial system as needed" to try to combat the financial boom-bust cycles that have become commonplace in recent decades. (Calomiris 2013) While sympathetic to the relevance of aspects of financial contracting that can magnify boom-bust cycles, he aligned with those skeptical of the "macro-pru" program, arguing that the financial system is not inherently fragile and that policymakers should continue to rely on traditional monetary policy tools to stabilize macroeconomic outcomes. In October 2016, presciently in view of the repo market turmoil of September 2019, Calomiris pointed out the perils surrounding the supplemental leverage ratio. (Calomiris 2016)

The delicate political independence of the Federal Reserve, and its relationship to various credit policy and regulatory developments, continued to be a focus of SOMC attention, even after the 2010 passage of the Dodd-Frank Act. In September 2013, as the world was contemplating the prosect of a new Federal Reserve chair, Marvin Goodfriend provided some advice for the Senators that would be conducting confirmation hearings. (Goodfriend 2013) In light of the dramatic interventions of the GFC, Goodfriend argued that "the Senate confirmation hearings should ascertain the nominated Fed Chair's inclination toward broad or narrow use of the Fed's operational independence…. Failing to constrain the Fed's independent last resort lending reach, in particular, has been and remains counterproductive for financial stability." He even wrote some questions for Senators to ask the new nominee related to Fed independence, including: "Do you think the Fed should return to the "Treasuries only" asset acquisition policy it followed prior to the 2007-8 credit turmoil? Explain." (6)

At the following meeting in April 2014, against the backdrop of the Fed's aggressive balance sheet expansion and extension of the maturity of its portfolio, Goodfriend highlighted the historical role of the Fed's surplus account as an earnings buffer and noted that "the Fed has long had discretion over its surplus capital and the amounts it transferred to the Treasury." (Goodfriend 2014b) He argued that "the Fed should use that discretion today to suspend transfers and build up surplus capital against the unprecedented interest rate risk on its balance sheet. If the federal debt ceiling were modified to exclude Treasury securities held by the Fed until the Fed can normalize its balance sheet, the accumulation of surplus capital would be costless for taxpayers and the Treasury. However, the build-up of surplus capital against interest rate risk on the Fed balance sheet would better position the Fed to sustain its 2% inflation objective." Attacking the same subject from another angle, Goodfriend at the November 2014 SOMC meeting characterized the Fed's quantitative easing program with interest rates at the zero lower bound as a "bond market carry trade." (Goodfriend 2014a) The arithmetic of such trades suggests that the Fed take a forward-looking stance: "Net interest earnings on the front end of the monetary carry trade should be retained—to guard against the central bank having to create reserves (or borrow) to pay interest on reserves or managed liabilities on the back end, and to show that interest expenses are paid for in large part by earnings from the front end." The risks Goodfriend foresaw came to pass in 2022-23, when raising the federal funds rate sharply to combat inflation resulted in negative Fed earnings and large portfolio losses, as documented in detail by SOMC member Andy Levin and co-authors at the April 2022 SOMC meeting. (Levin, Lu, and Nelson 2022)

Independence remained a lively subject in May 2017, when Charles Calomiris reprised for the SOMC his testimony the previous month to the Subcommittee on Monetary Policy and Trade of the House Committee on Financial Services.[33] (Calomiris 2017) In it he advocated a raft of governance changes to improve decision making and reduce politicization, including: having at least two Governors with significant financial market experience, requiring two staff members be assigned to each Governor, having all Federal Reserve Bank presidents vote at every FOMC meeting (rather than just five, per current law), devolving budget authority down to the Reserve Banks, giving the Fed a single mandate for price stability and mandating a systematic approach to monetary policy. He would also "prohibit the Fed from holding securities other than U.S. Treasury securities in its portfolio (except during emergencies, in the context of assistance approved under its emergency lending powers)," and "remove the Fed from writing and enforcing regulations," although "the Fed would still participate in examinations and have full access to all information necessary to fulfill its role as a lender of last resort."

Calomiris returned to the subject of Fed independence September 2019, SOMC meeting, where he presented a paper later published in the *Journal of Applied Corporate Finance*. Following the vein mined in his book with Stephen Haber (2015), his focus was the interplay between monetary and regulatory policy as seen through the lens of the grand political bargain around banking and the state. His analysis led him to the view that "to promote independence along both dimensions of economic policy, regulatory as well as monetary, two sorts of policy reforms would be helpful: (1) separation of authority over the two areas into two distinct agencies (to avoid trade-offs that reduce the independence of regulatory policy); and (2) the establishment of clear mandates and accountability procedures for each category of policy. In particular, with respect to monetary policy, the Fed should be required to articulate a systematic framework—such as a Taylor Rule—that it would adhere to, and which would be subject to (the Fed's own) revision over time." (Calomiris 2019, 6)

A concern about the Fed's monetary policy independence also was a theme of the address by Charles Plosser at the March 2019 SOMC meeting.[34] (Plosser 2019) His focus was the Federal Reserve's balance sheet and his aim was to respond to those saying that because the Fed could pay interest on reserves, a large balance sheet was relatively costless. Plosser's concern was that a large balance sheet makes an inviting target for political actors that want the Fed to use it to circumvent constitutional appropriations mechanisms for redistributional aims. The resulting political entanglements and controversy would risk damaging the Fed's ability to undertake policy actions that are worthy but in the short term costly. Plosser argued for a balance sheet no larger than necessary to manage a "corridor" operating regime, similar to the pre-GFC arrangements.

[33] His testimony drew upon "prior work, including a coauthored 2015 Shadow Open Market Committee (SOMC) presentation to Congressional staff written by Charles Calomiris, Greg Hess, and Athanasios Orphanides."
[34] See also Plosser (2017).

The September 2019 meeting also heard some “heretical thoughts” on independence from Deborah Lucas, who joined the SOMC in 2017, in part a response to the book *Unelected Power* by Paul Tucker. Her message, which actually does not seem so heretical, was that “if transparency by independent central banks is a prerequisite for legitimacy in a democratic society, and if central bankers seek to maintain independence, then they should proactively address the fiscal and distributional consequences of their actions to a much greater extent than they do currently. That includes developing standards for measuring and communicating those consequences to the public.” (Lucas 2019) With great autonomy comes great responsibility. Lucas knew a thing or two about measuring consequences, having spent time at the Congressional Budget Office estimating the fiscal effects of credit programs.

Lucas contributed two presentations of rigorous estimates of the costs of the extraordinary policy interventions of the GFC. Doing so carefully is important because widely reported budget numbers can be misleading. For example, the Fed’s remittances to the Treasury surged in the 2010s as their balance sheet ballooned, but that “obscures the financial status of the government by effectively treating as free money the market premiums earned on the Federal Reserve’s portfolio that are compensation for the costs of interest rate, prepayment, and liquidity risk that ultimately fall on taxpayers.” (Lucas 2017, 1) Drawing on a 2010 study by the CBO,[35] the net present value cost at inception was estimated to be $21 billion. Although that might seem like a relatively modest sum, perhaps surprisingly so, there are a few methodological points to bear in mind. The estimate was on an ex ante fair value basis. “During that period there was often a considerable difference between market prices and inferred fair value. Had the calculations been done at market prices the reported fiscal costs would have been considerably higher, but still modest relative to the amount of credit extended by the Federal Reserve under the facilities.” (8) In addition, by assumption, pecuniary effects—that is, changes in prices or interest rate spreads—were set aside in the construction of that benchmark estimate.

Lucas reported on a more comprehensive approach at the October 2018, SOMC meeting that delivers a more sizable sum: “Drawing selectively on existing cost estimates, and augmenting those with additional calculations,” she concluded that “the total direct cost on a fair value basis of crisis-related bailouts in the U.S. was about $498 billion.” (Lucas [2018] 2019, 3) Her work cast light on the distributional effects as well, confirming the insights of the limited commitment perspective: “As for the incidence of benefits, at the time the bailouts occurred, the largest direct beneficiaries were the unsecured creditors of large financial institutions, most significantly, of Fannie Mae and Freddie Mac. Shareholders benefited less than the popular perception, as most were wiped out.” (4) The GFC market interventions were quite large.

Dovetailing with the present paper’s focus, at the April 2014, SOMC meeting Michael Bordo (2014a) looked back at 100 years of the Federal Reserve as a lender of last resort, drawing on his contribution to the Federal Reserve centenary research conference held in November 2010, on Jekyll Island, Georgia, marking the famous 1910 meeting there of leading financiers and

[35] She was a co-author of the study while working at the CBO.

officials that led to the Federal Reserve Act.[36] Bordo argues that the Fed's effectiveness has evolved significantly, particularly in response to major financial crises, and he highlights the Fed's initial struggles during the Great Depression, where its actions were often too little and too late. Posing the question of whether the Fed's GFC lending facilities "worked," he says they did in the sense that the crisis was ultimately allayed, but they "have created problems for the future." The rescues of insolvent financial institutions deemed TBTF "have moved it far away from Bagehot's strictures and opened up a Pandora's box of perils." Among them, he notes, "the Fed's credit policy—a form of fiscal policy—has impinged upon the Fed's independence and weakened credibility." (11) Bordo, in tune with other members of the SOMC since the GFC, emphasizes the importance of clear communication and pre-established frameworks for LOLR operations.

Also germane to the present paper, in September 2017, Bordo took the opportunity of the tenth anniversary of the onset of the GFC to evaluate the aftermath from an historical perspective. (Bordo 2017) The striking development, he notes, is that "many have argued that the financial stability mandate should be elevated to the same level of importance as price stability and stability of the real macro economy. The definition of financial stability has also changed from the traditional role of the central bank as lender of last resort accompanied by supervision and regulation of the banking system (now referred to as micro prudential policy) to a new role to head off systemic risk to the entire financial system including nonbank financial intermediaries and financial markets." (1) Looking back over the past two centuries, "only two episodes stand out as serious financial crisis related recessions accompanied by credit driven asset price booms: the perfect storms of the Great Contraction 1929-33 and the GFC 2007-2008." (2) His reading of the record suggests to him that financial crises have had many causes, and "central banks should be cautious in a) elevating the financial stability mandate to the same level as price stability and macro stability; b) following [lean against the wind] policies; c) taking on macro prudential responsibilities." (2) "The Financial Stability mandate," he concludes, "could be done by another agency outside the central bank or possibly be a totally separate facility within the central bank as is the case with the Bank of England. This would prevent central banks from engaging in credit policy, maintain their independence from the fiscal authorities and allow them to preserve their main goals which are to provide credibility for low inflation and macro stability." (13)

Looking back, the decade following the GFC saw Shadow members speak out insightfully about the key issues surrounding related to Fed lending. The vast increase in credit market interventions raised serious concerns about the Fed's independence and ability to withstand political cross currents. The incentive effects of the precedents set during the GFC were highlighted often as well. One SOMC member championed the accurate measurement of the economic magnitude of those interventions. SOMC members also called out the problematic unresolved status of the housing finance GSEs, still in conservatorship a decade after their

[36] Bordo, along with William Roberds, co-organized the conference and co-edited the conference volume: (Bordo and Roberds 2013). In that volume see especially Bordo and Wheelock (2011). On lender of last resort, see also Bordo (2014b).

failure. Members highlighted deep concerns about possible reassignment of regulatory and supervisory responsibilities, although Dodd-Frank ended up reassigning less than it could have. The central bank movement to take on a "financial stability" mandate was flagged as a clear risk, again citing problematic political exposures that would accompany such a move. Many SOMC members were concerned that the widening of Fed credit market intervention in the GFC along with new financial stability responsibilities would impinge on the Fed's independent conduct of monetary policy in the years ahead. Also noted was the risk to the Fed's future income and net worth from the carry trade built in to its large-scale balance sheet. Many of these risks came to pass during the fallout from the next economic shock.

Federal Reserve Credit Policy in the Pandemic

When the magnitude and rapidity of the likely economic dislocations brought by the COVID-19 pandemic became widely apparent in mid-March 2020, the financial market reactions were equally large and rapid. In an extraordinarily uncertain environment, investors sold a wide variety of securities, including Treasury securities, and moved into cash. The FOMC made a pair of emergency rate cuts, bringing the target range for the federal funds rate down to effectively zero on March 15. The discount rate was reduced to 0.25 percent, narrowing the spread between it and the top of the target range for the federal funds rate to zero. The Board announced that discount window borrowers could borrow for up to 90 days, prepayable and renewable on a daily basis. On March 12, the Desk announced a $1.5 trillion expansion in repo operations. Following its March 15 meeting, the FOMC announced that "to support the smooth functioning of markets for Treasury securities and agency mortgage-backed securities" the Committee would increase its holdings of Treasury securities by at least $500 billion and its holdings of agency MBS by at least $200 billion. After a March 23 FOMC call, the Committee changed those instructions to the Desk to direct them to purchase Treasury securities and agency MBS "in the amounts needed to support smooth market functioning and effective transmission of monetary policy to broader financial conditions," and to include agency commercial MBS in its purchases as well.[37]

The Fed also dusted off some of the programs it had deployed in the GFC to support the commercial paper market, money market funds and primary dealers. The Fed went beyond the scope of GFC interventions, however, "racing across red lines" to launch unprecedented programs to purchase corporate bonds, both from issuers and on the secondary market. (Smialek 2023) "They were not overly nice about credit ratings, either, taking on below-investment grade exposure via exchange traded funds." (Lacker 2023) They launched a program to support municipal securities and eased qualification requirements several times in order to boost participation. Municipal securities were given consideration in 2008-2009 but were then viewed as beyond the pale, given the Fed's traditional restriction to financial institutions. "In fact, just nine months before the pandemic crisis, Powell had pushed back on the suggestion of a progressive member of Congress that the Fed set up a municipal lending program in the next downturn, saying "I think that's something for Congress to do. I don't think we want to be

[37] See Cochrane and Seru (2024) for a critical analysis of the Fed's approach to Treasury market functioning.

picking winners and losers,... " (Smialek 2023, 208) "And yet, the design of Fed credit programs unavoidably did just that, particularly the municipal bond program, where initial size cut-offs were modified after political blowback." (Lacker 2023)

The Fed saw a gap between companies big enough to issue bonds, and thus benefit from the Fed's corporate bond buying program, and the small businesses eligible for the Paycheck Protection Program, the initiative to make loans through the Small Business Administration and then forgive them. The Fed introduced a program to provide term funding to financial institutions backed by their PPP loans. To fill the gap between bond issuers and small business, the Fed rolled out the Main Street Lending Program, a set of facilities to lend to small and medium-sized businesses and nonprofits.[38] "Not only did the Main Street program involve another nonfinancial credit sector that the Fed had studiously avoided for the previous half-century, but the Fed's announcement was viewed as preempting work underway in Congress to design a similar relief effort. Moreover, when the program was announced, Congress had not yet authorized the Treasury participation that Fed lawyers viewed as essential. Negotiations were going on behind the scenes between the Fed and the Treasury on the design of the program even as Congress was considering program legislation. Indeed, one Senator was promoting his own mid-tier program that was far more expansive than the Fed wanted." (Lacker 2023)

The Fed's credit policy in 2020 thus broke new ground on two fronts. They intervened in a far broader array of markets, crossing clear precedential boundaries that had previously been viewed as limiting the Fed's lending remit. And the Fed was by many accounts far more deeply entwined in legislative deliberations than before. Prior to the GFC, in accord with long-standing practice, Fed chairs would not comment on fiscal policy proposals other than to repeat that standard endorsement of containing deficits to reasonable levels. This self-imposed restraint was meant to reciprocate, and thereby affirm, deference by the administration and Congress to the Federal Reserve in matters of monetary policy.[39]

It was striking, therefore, to read that Chair Powell told Speaker of the House Nancy Pelosi to "think big" when it came to the fiscal package being negotiated in mid-March 2020. (Smialek 2023, 181) At that time, the Fed was deeply entangled in the design of credit programs being considered by Congress and the administration, fending off Congressionally-built programs in favor of their own, and Treasury's, discretionary initiatives. Marvin Goodfriend and other members of the SOMC had warned for years that credit policy ran the risk of entangling the Fed in distributional politics, and it is hard to imagine a more distributional question than who should get federal emergency relief. The advice to "think big" was taken too far in early 2021, as is now painfully clear. In response to the resulting surge in inflation, the Fed maintained an

[38] The name harkened back to critics who said the Fed rescuing "Wall Street" in 2008, which then Fed chair Ben Bernanke claimed it did to rescue "Main Street."

[39] For example, the January 2001, testimony of Alan Greenspan to Congress in support of the tax proposals of incoming President Bush was seen as such a noteworthy departure from practice that Greenspan prefaced his remarks with the statement that: "I speak for myself and not necessarily for the Federal Reserve," a standard disclaimer for other Fed officials but highly unusual for the Chair.

accommodative stance well into the following year. Could the Fed have felt hesitant to pivot from an expansionary policy stance so shortly after enactment of a large fiscal stimulus program that it was, behind the scenes, involved in crafting? (Lacker 2024) Could this have been an instance of the monetary policy impediment that Goodfriend feared might result from Fed fiscal entanglement? Could this have contributed to the dilatory monetary policy of 2021-22?

The Fed's programs to buy corporate bonds and municipal securities violated long-standing System taboos. Michael Bordo noted at the September 2020, SOMC meeting that the Treasury provided an equity investment equal to 10 percent of the total program size, using funds appropriated by the CARES Act, in order to absorb a first tranche of losses; this was a welcome departure from the GFC, he argued, when the Fed undertook credit programs on their own account, without formal Treasury support. Also welcome were the reports that Fed staff resisted some Congressional ideas about broader roles in the relief agenda, saying "The Fed can do lending, not spending." (Smialek 2023, 180)

Nonetheless, the break from past precedent of limiting emergency credit market intervention to financial institutions and their obligations rings a bell that cannot be unrung. (Heine 2020) The fact that corporate debt issuers did not cause the pandemic does not magically negate moral hazard effects, as some Fed officials seemed to claim. That would be like saying flood insurance has no incentive effects because homeowners do not cause floods. Over their lifetime, debt instruments can be expected to encounter a variety of circumstances, many, if not most, outside the control of the issuer or the purchaser. Preparation for those circumstances is their responsibility, or at least it was. After 2020, any unanticipated increase in economic uncertainty that widens bond spreads by enough will raise expectations of Fed intervention to cap and reduce spreads.

The Shadow Open Market Committee on Fed Credit Policy in the Pandemic

The Fed's race across red lines in 2020 raises the critical question: What is the Fed's credit policy? Kathryn Judge, a guest speaker at the September 2020, SOMC meeting, made the case for "Why the Fed Should Issue a Policy Framework for Credit Policy." (Judge 2020) She argued that, unlike monetary policy, where the Fed has invested in developing and promulgating a detailed policy statement (though some SOMC members argue nonetheless that clarity can be improved there), "the Fed has no broadly agreed upon framework for credit policy." (6) The ambiguity is apparent from a cursory review of the range of pandemic credit market programs. Some were the Fed's responsibility—corporate bonds and mid-size business. And some were not—small businesses, for example, where the Fed's role was limited to accepting PPP loans at the discount window. It is hard to see where a bright line might credibly be drawn.

In 2022, even while the inflation surge focused many economists attention on the Fed's monetary policy responsibilities, members of the SOMC were closely attentive to the credit policy developments of 2020. At the February meeting, Charles Calomiris presented a trenchant review of what he called "the institutional devolution of government financial policy." (Calomiris 2022b) Surveying central bank history back into the late middle ages, he portrayed progress up

until 2006 as imperfect but evident. Institutional arrangements and political bargains contributed to accountability, established fair rules and procedures, developed implicit or explicit policy frameworks and balanced internal governance. Calomiris saw the present state as less heartening. The Fed "operates as a state-owned bank" but with unclear authority, it's regulatory and supervisory powers "have exploded," and the Fed operates across the Treasury maturity spectrum, muddying what should be the Treasury's responsibility. Fed governance is highly concentrated at the Board, which works closely with one political party. It feels, Calomiris writes, "like to early 1970s" and "it has to get worse before it can get better."

Michael Bordo, at the November 2022, SOMC meeting, also surveyed the central banking landscape from a historical perspective, but came away less despondent. Central banks have learned over time how to achieve monetary stability and a measure of macroeconomic stability through the use of countercyclical monetary policy, he said. "The spread of government guarantees and the development of the 'Too Big to Fail' doctrine in the 1970s converted classic banking panics into fiscally resolved banking crises which involved increasingly larger fiscal costs. Moreover, central banks have recently expanded the lender of last resort function to nonbank financial intermediaries and have used credit policy, a form of fiscal policy, to bail them out." (Bordo 2022, 4) The "present conundrum," as it puts it, includes: the expansion of central bank stability mandates to include leaning against credit cycles, which has not historically been successful; falling behind the curve in the inflation surge of 2021—hinting at the historic disaster of the Great Inflation; picking credit policy winners and losers—historically abandoned for threatening independence; and the challenges posed by digitization of finance and money. He draws lessons from history that, if heeded, may brighten the outlook. Central banks need to subdue inflation quickly, beware the threat to independence posed by expanded credit policy, stick to their monetary stability knitting rather than add climate and social issues to their objectives, and explore the promise of digitization.

Bank Failures in 2023

In the wake of the Fed's campaign against inflation, the spring of 2023 saw three regional banks fail as a result of losses on holdings of long-term Treasury securities and later be placed in FDIC receivership: Silicon Valley Bank, Signature Bank and First Republic Bank.[40] The first of these went down in spectacularly rapid fashion, with large deposit outflows in a matter of hours. Fed lending then was constrained by the fact that the collateral SVB had pledged to the Federal Home Bank of San Francisco could not operationally be transferred to the Fed in time, so the FDIC was forced to close the bank mid-day Friday.[41] The Treasury Secretary invoked the systemic risk exemption and guaranteed the uninsured deposits. Although the systemic risk clause must be certified bank-by-bank, convincing signals were sent that the Secretary would make similar designations going forward, effectively extending implicit deposit guarantees to all similarly-sized institutions. That weekend, the Fed launched a Bank Term Funding Program offering loans up to one year in maturity against U.S. Treasuries, agency securities, and agency mortgage-

[40] On the failure of Silicon Valley Bank, the most prominent case, see Seru (2024), Quarles (2024) and Duffie (2024).
[41] The Fed did extend substantial credit to the bridge bank set up by the FDIC as receiver for SVB.

backed securities, with no haircuts imposed. Total borrowing soared, both at the discount window and the BTFP, in part as a result of the arbitrage opportunity to borrow at the program rate—the one-year overnight index swap rate plus 10 basis points—and leave the funds on deposit at the interest rate on reserves.

Much has been made of how the failing banks' access to funds was impeded by collateral that was pledged to a Federal Home Loan Bank being difficult to transfer to the Fed's discount window. A chorus of commentators are calling for an array of efforts to encourage banks to "pre-position" collateral with their Federal Reserve Bank to facilitate emergency lending should they need it, and other efforts to dispel discount window "stigma." The difficulty, however, was that the FHLB would not lend, and its easy to see why—SVB, like the other banks who failed, was clearly insolvent. (Seru 2024) This just highlights the different lending incentives of the private sector and the Fed. Commentators should be asking why the Fed is so eager to lend to insolvent banks that cannot get credit in the marketplace.

Consistent with the Reluctant Samaritan dynamics, the failed banks were on the boundary of the financial safety net. The 19 largest banks that participated in the SCAP in 2009 were clearly treated as too big to fail. The smallest of those, adjusted for inflation, amounted to a $198 billion bank in early 2023. Silicon Valley Bank had approximately $212 billion in assets when it failed in March 2023 (Board of Governors of the Federal Reserve System 2023, 2), just inside the safety net boundary. Apparently depositors of Silicon Valley Bank were not sure their uninsured deposits were implicitly protected. Again, fragility is driven by safety net ambiguity.

Where is the new safety net boundary? The smallest of the three failing banks provides an updated upper bound estimate: Signature Bank had about $110 billion in assets at the end of 2022, just before it failed. Reluctant Samaritan dynamics suggest that we should expect: a crackdown on the risky activity that was the proximal cause among similarly situated institutions [although that will be hard as long as held-to-maturity portfolios are full of underwater Treasuries (Jiang et al. 2024)]; a solidification of rescue expectations in the territory newly annexed to the safety net; and the emergence of risk and fragility just beyond the new boundaries.

A New Lending Doctrine for the Twenty-First Century?

What principles does the Federal Reserve believe guide its lending in the twenty-first century? What is the Federal Reserve's current lending doctrine? Fortunately, a section of the Board of Governors' website provides some clues. (Board of Governors of the Federal Reserve System, n.d.-a) The Fed now presents itself as operating under a *financial stability mandate*, a broad public responsibility to use its authorities to alleviate financial distress. A financial system provides households and businesses with financing to invest and grow, it says, but "in an unstable system, an economic shock is likely to have much larger effects, disrupting the flow of credit and leading to larger-than-expected declines in employment and economic activity…. In times of crisis, the financial markets that businesses and households rely on may experience severe stress or, in extreme cases, effectively cease to function…. Because these markets are

vital to the economy, the Federal Reserve—like many central banks—is empowered to take actions that can restore the normal flow of credit needed to support employment and the broader economy." Under the tab "Responding to Financial System Emergencies," the Board's financial stability webpage notes that monetary policy "can support the flow of credit," and then lists dollar funding facilities, emergency lending under section 13(3), and the raft of "special programs" through which the Fed intervened in credit markets [all of which fall under the heading credit policy, not monetary policy, under the definition of Goodfriend and King (1988)]. So, an "unstable" financial system underperforms in response to adverse shocks and Fed intervention in credit markets is needed to restore the "normal" flow of credit to improve economic outcomes.

The current articulation of Federal Reserve credit policy principles, together with the record of twenty-first century credit policy actions, displays some continuity with twentieth century doctrines.

- Current credit policy shares with the Monetary Stability Doctrine a keen interest in preventing runs that would lead to a collapse of the money stock, as occurred in the Great Contraction of 1929-1933, although this interest is implicit and embedded in the apparent goal of alleviating *all* types of runs. Fortunately, this risk has not arisen in since the Great Contraction, deposit insurance and TBTF having significantly dampened the risk a flight to currency.
- Current credit policy shares with the Real Bills Doctrine the premise that, in the absence of appropriate central bank intervention, credit markets are subject to excessive credit booms and busts that amplify economic fluctuations. (Mints 1945, 207)
- Current credit policy shares with Warburg's Mercantilism a pre-occupation with short-term wholesale funding markets and a desire to support global dollar hegemony.
- And current credit policy shares with the Reluctant Samaritan Doctrine an aversion to commitment and a focus on mitigating problems ex post.

A case can be made, however, that the expansive new approach to financial stability that emerged in 2007 represented a fundamental doctrinal discontinuity.

- Both stated policy and actual practice now go well beyond what is required for the central bank monetary stability function envisioned by Thornton and Bagehot, even though twenty-first century policymakers are fond of cloaking their innovations in the mantle of the "classical lender of last resort."
- The Federal Reserve has acquired or lent on financial instruments well beyond the tightly defined set deemed appropriate by the Real Bills Doctrine.
- Similarly, the Fed has intervened far beyond the bankers' acceptance market (or even the commercial paper market more broadly) that was Warburg's concern.
- The general reluctance of the Fed in the twentieth century to extend credit too broadly has disappeared. Taboos against lending beyond banking and thrift institutions, or intervening directly in securities markets are gone. The twenty-first century Federal

Reserve has intervened in markets and institutions considered beyond the pale just a few years earlier.

- Most twentieth-century lending doctrines were grounded in the legal monopoly status of Federal Reserve liabilities. The Monetary Stability and Real Bills Doctrines envisioned unsterilized lending aimed at appropriately regulating the supply of monetary instruments that only the Fed could legally supply. In contrast, Fed lending in this century is disconnected lending from its monetary liabilities. The Federal Reserve Banks were always government-sponsored enterprises as a legal matter; now, as Calomiris pointed out at the March 2022, SOMC meeting, the Fed now "operates as a state-owned bank." (Calomiris 2022b)

Microfoundations?

What accounts for the significant departure from twentieth century doctrine? One plausible candidate is the influence of ideas. The interventionist perspective of the 21st century might reflect in part the influence of several threads late 20th century in economic theory. Building on the achievements of general equilibrium theory in the 1950s, a veritable explosion of literature in the 1970s and 1980s explored models with limited information. Models of financial arrangements in the presence of hidden actions, hidden information about states of the world, or costly information gathering give rise to recognizable financial contracts, such as debt, and recognizable multilateral financial arrangements, such as banks. The models are stark and stripped down and sometimes compared disparagingly to less formal "real world" reasoning, but they make the storytelling visible and disciplined in a way that less formal storytelling is not. Because these models are explicit about the preferences of agents, their endowments, and the technologies they have available to them, including conditions governing the arrival and dissemination of information, one can be more confident in the coherence of the story and can evaluate the efficiency of outcomes and the effects of government interventions on agents' well-being. Motivating a role for government intervention in such models turns out to be surprisingly tricky, however, because for government intervention to improve upon laissez-faire allocations, it must enjoy some sort of comparative advantage, despite being subject to the same informational and technological constraints as private agents. Nonetheless, models of financial arrangements under limited information have demonstrated that in certain models and under certain conditions government intervention is capable of improving on laissez-faire outcomes. Understanding the domains in which these *possibility propositions* hold is important for understanding whether they can be relied upon as a guide to policy making in any given application. Three types of possibility propositions stand out as influential.

Runs The celebrated paper by Diamond and Dybvig (1983) might be the most widely-cited explanation for central bank crisis lending. [See Bryant (1980) for an earlier version of the model.] There can be multiple equilibria their model, one in which depositors do not withdraw funds if they do not need them immediately, which is rational if they expect other patient depositors to exhibit similar patience, and another in which it is rational for depositors to withdraw funds if they expect other depositors also to do so. The first outcome is preferred by all over the second. The authors argue that deposit insurance or central bank lending can rule

out the second equilibrium. Diamond and Dybvig's results were the subject of intense scrutiny from the beginning.[42] "As it turns out, the original Diamond-Dybvig framework does not produce clear-cut prescriptions about the value of having in place a discount window facility." (Ennis 2016, 5) Their possibility proposition about the benefits of government intervention has proven to be sensitive to specific details of the model environment.

- One especially critical model feature is that depositors are isolated and cannot communicate with each other at the time they make their decisions about whether or not to run. Neil Wallace (1988) pointed out that this "sequential service constraint" was crucial to the existence of the run equilibrium. If depositors are gathered together at the crucial time, the interaction of patient and impatient depositors leads to efficient outcomes without runs.[43] (See Jacklin 1987)
- Another crucial feature is the form that deposit contracts can take. Wallace notes, and Diamond and Dybvig acknowledge, that a payment scheme that involves the suspension of convertibility after a certain amount of withdrawal requests, a feature commonly observed in historical bank panics and modern investment arrangements, is sufficient to rule out inefficient bank runs.[44]
- A third feature that is critical to the Diamond-Dybvig result is that the bank and its depositors operate in a closed environment. A government that has access to resources external to the bank and its depositors can provide deposit insurance that defeats runs, but the bank could prevent runs itself if it had the same access, for example, by going to an interbank market.
- A broader challenge for the application of the Diamond-Dybvig model to real world policy settings is that it is easy to envision other models in which runs occur in response to changes in fundamentals, such as the solvency of the bank. (Allen and Gale 1998) Not every sudden surge in deposit withdrawals needs to be the outcome of a Pareto-dominated, self-fulfilling prophecy. Some episodes that are typically called "runs" could simply represent efficient depositor responses to updated information about the fundamental condition of their bank.
- Related, there is a vast literature on the historical characteristics of bank runs and failures. SOMC member Charles Calomiris (2007; 2022a), a leading contributor to that literature, concludes that unwarranted "panic" withdrawals of the type portrayed in Diamond and Dybvig's model have generally played only a small role in bank failures.

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[42] For a thorough survey of much of the subsequent literature, see the First Quarter 2010, Special Issue of the *Federal Reserve Bank of Richmond Economic Quarterly*, particularly the review essay by Huberto Ennis and Todd Keister (2010). See also the survey of models of discount window lending by Ennis (2016).

[43] Note that the sequential service constraint is violated in the famous bank run scene in the movie *It's a Wonderful Life*. (Capra 1946)

[44] This insight was later deepened by Ed Green and Ping Lin (2000; 2003), who derived the optimal partial suspension bank deposit contracts in a version of the Diamond-Dybvig model. Eighteenth century Scottish banks issued "option notes" giving the bank to right to delay redemption of their notes for up to six months, with interest. (See Goodspeed 2016; Pressnell 1956) These were later prohibited by legislation. Suspension of convertibility of deposits into currency were frequent during late nineteenth century U.S. banking panics. (Calomiris and Gorton 1991; Wicker 2008) Many modern investment arrangements feature "gating" or other restrictions on immediate withdrawals.

> Rather, withdrawal pressures appear to reflect real concerns about solvency risk at weak banks and do not generally bring about the demise of solvent institutions.

While runs were mentioned quite frequently during the GFC, there was no apparent interest in whether the conditions underlying the Diamond-Dybvig possibility proposition were a good replica of the economic environment we faced—no staff analysis, no briefings, virtually no policymaker inquiries. The idea that a "run" might be occurring or was about to occur was often taken as prima facie evidence that intervention of some sort would provide benefits, even if some costs were involved.

Segmentation Another literature strand finds a role for central bank lending in the possibility that limited participation across various financial markets may cause market segmentation and "cash-in-the-market" pricing in which financial asset prices are determined by the (limited) funds available to the agents that are actively participating in the market. The essential feature is that a cost of some sort is associated with each "market" an agent participates in, so that in equilibrium agents do not participate in every market. In a version of this type of model with banks, a run may trigger a "fire sale" of bank assets that yields less than the price that would be obtained if participation was not limited. (Allen and Gale 1998) A central bank that lends to the bank can prevent the need for the fire sale. Chairman Bernanke suggested this type of model as a rationale for the TAF.[45] (FOMC Transcript, September 18, 2007, 147) As a rationale for the TAF, however, several questions immediately come to mind.

- Is the cash-in-the-market feature a realistic representation of the ABCP market in September 2007? There was abundant evidence at the time that substantial funds were "on the sidelines."[46]
- Were banks in dire need of funding in September 2007? There was abundant evidence at the time that they were not.[47]
- Is it possible that rational revisions in risk assessment were responsible for the August shift in financial market conditions? If so, could bank funding positions have been constrained not by the cash in the market but by the views in the market?
- Federal Reserve lending programs such as the TAF were completely sterilized. In models of central bank lending to alleviate cash-in-the-market pricing, it is essential that the additional cash not be offset by reductions in the cash in the market. Did the Fed's

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[45] Bernanke also tutored U.S. Senators about fire sales while testifying in favor of the TARP legislation in the fall of 2008. He asked the members to think of complex mortgage-related securities as having two different prices: one, a "fire-sale" price that it would fetch today if sold quickly into an illiquid market, and the second is the "hold-to-maturity price"—what the security would be worth eventually when the income from the security was received over time." (Bernanke 2015, 314)

[46] For example: "Hedge funds and private-equity firms, the most visible scratch-and-dent buyers this year, have moved to the sidelines because of the deep uncertainty in the mortgage market." (Berry and Terris 2007)

[47] For example: "All the big banks have plenty of capital and plenty of deposits, so they do not need to go to the window," said James Reichbach, a managing partner at Deloitte & Touche in New York. Bert Ely, an independent analyst in Alexandria, Va., said, "Banks are saying we don't need 5.75% money. We can borrow cheaper in the fed funds market." (Rehm 2007)

sterilizing sales of Treasuries draw cash from outside the fire sale market? If so, what prevents the bank itself from accessing those markets?
- A gap between the fire sale price and the fundamental price gives rise to an incentive for outsiders to participate in that market. How long can that gap persist?

I know of no quantitative or qualitative assessments by Federal Reserve System staff of the assumptions or predictions of any “cash in the market” models. No investigation of barriers to entry, either transitory or persistent, into investing in the ABCP market. No measurement of the amount of idle funds potentially available to invest in the beleaguered sector. No quantitative assessment of “held to maturity” prices of ABCP versus the “fire sale” prices.
Allen and Gale’s possibility propositions seemed to be taken as enough. It was not deemed necessary to compare that perspective to the hypothesis that risks were being rationally reassessed.

Adverse selection The perception that discount window stigma is a problem that needs to be addressed was prominent from the beginning of the GFC, and was cited as motivation for the strenuous efforts to promote use of the window in August 2007 and the TAF. That perception is still with us today. A cursory attempt to think about modelling the phenomenon provides an alternative perspective. Entities borrow all the time, and doing so reveals information if made known to others. When a large bank receives an equity investment from an overseas entity, market participants are avidly interested in the terms, knowing that due diligence is likely to have provided the investor with material information on the bank’s current condition. That revelation may have influenced the bank’s willingness to raise equity on those terms. If so, that is a real cost of the transaction and can’t be wished away. Put another way, discount window stigma is just equilibrium Bayesian updating.[48]

Careful models of stigma at central bank lending facilities were not available in 2007, but the logic behind them was intuitive and similar models were familiar. Indeed, many FOMC participants at the September 2007, meeting expressed skepticism about whether the proposed TAF would have much of an effect on discount window stigma. When a revised proposal came forward for consideration on a December 6, FOMC conference call, briefing materials contained no meaningful analysis of stigma as an adverse selection problem. Bernanke speculated that the auction format might possibly reduce stigma, but he did not cite that as the primary reason for the facility. The motivation was that getting funding, particularly term funding, had become quite difficult for banks. No staff work addressed the question of any market imperfection that the TAF might address, or whether observations were inconsistent with a well-functioning interbank market reacting rationally to rising counterparty risk. The deciding consideration was simply reducing bank funding costs.[49]

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[48] For models of discount window stigma, see Ennis and Weinberg (2013) and Ennis (2019) and the citations there. For a nontechnical exposition, see Ennis and Price (2020).
[49] I wrote a letter to my colleagues prior to the meeting pointing out the weaknesses in what I thought was the best theoretical rationale for the TAF. (Lacker 2007)

The Credit View Ben Bernanke extracted from the outpouring of research on the economics of financial arrangements under limited information a perspective he calls the "credit view." His address to a 1993 New York Fed conference[50] provides a comprehensive statement. (Bernanke 1993) Two lessons from the new literature stood out to Bernanke: the special nature of banks and other financial intermediaries, and the structure of financial contracts. The first he reads as buttressing the premise of his widely-cited 1983 article arguing that Depression-era bank failures extinguished valuable lending expertise and as a result had an independent dampening effect on economic activity, above and beyond the effect of the contraction in the money supply. The second he takes as pointing to the critical role of borrowers' balance sheets, particularly when borrowers' net worth constrains economic activity in a downturn. Bernanke contrasts his credit view with a "money view" that he identifies with the conventional IS-LM model, in which monetary policy affects aggregate demand through the effect of the money supply on short-term interest rates. (55) The credit view, he argues, is an alternative channel for the transmission of monetary policy which "allows for more general patterns of asset substitutability" and "can explain the apparent potency of monetary policy actions." (56) He sees a "financial accelerator" in which credit market frictions amplify and propagate nonfinancial shocks and monetary policy impulses. (64)

The Federal Reserve's lending policies are directly implicated by the credit view, according to Bernanke. He notes the debate about whether the Fed should "content itself with protecting the money supply"—here he cites Goodfriend and King (1988), but Meltzer (1974) and Schwartz (1986) were making the same case—or whether it "should act more aggressively to protect lending and other functions of banks (and other financial institutions as well)." (61) "Clearly," he says, "the issue turns on whether major problems in the banking system or other major institutions would be disruptive to the economy for reasons over and above any effects they had on the money supply."

The relation between the latter claim and the theoretical literature Bernanke cites is not at all clear. He seems to be saying that if informational frictions make intermediation quantitatively important to economic activity, in the sense that reduction in the scale of intermediation results in reduction in economic output, then government intervention is warranted. The research he cites does not support that assertion. His series of papers with Mark Gertler study a set of models of financial arrangements under limited information, but outcomes in those environments, as in many such models, are Pareto optimal, as they readily admit. (Bernanke and Gertler 1990, 104–6; 1987; 1989) Informational frictions imply that intermediation is costly, not that government would be any better at it. Bernanke's lecture highlights a model (Akerlof 1970) in which a market "could break down completely," (Bernanke 1993, 52) and yet agents in the model are doing as well as they possible can given the circumstances and constraints the face. Bernanke and Gertler argue that their model supports a case for subsidized central bank lending in financial panics, because it increases (bank) borrower net worth and thereby reduces

[50] Colloquium on the Credit Slowdown in the Recent Recession, held at the Federal Reserve Bank of New York on February 12, 1993. The proceedings were published in the *Federal Reserve Bank of New York Quarterly Review* 18, no. 1 (Spring 1993).

the agency costs associated with informational frictions. (Bernanke and Gertler 1990, 106) Reducing those agency costs can increase per capita output even if it comes at the expense of transfers from other agents. Such transfers resemble "bailouts" of debtors, they argue. (106)

I know of no staff research before, during or after the crisis that aimed at quantifying the social welfare trade-offs involved in this credit channel rationale for intervention, nor was the magnitude of transfers acknowledged in program proposals.[51] As with other strands of the microfoundation literature, there was no direct contact in policy deliberations, aside from Bernanke's reference to the book by Allen and Gale (2007) in September 2007, to models in the credit view literature. The specific circumstances under which intervention was useful in particular theoretical models were of no apparent interest. Nor was the question of whether the assumptions of particular models about the physical, informational and legal environment were a persuasive replica of observed banking and financial markets. Instead, broadly inspired by the microfoundations literature, the *potential* for remediable inefficiencies in some models seemed to rationalize a sweeping impulse to intervene whenever perceived "distress" exceeded a subjective qualitative threshold for particular financial institutions or markets. When pressed, a gesture toward possibility propositions was deemed analytically sufficient.

Even if Fed staff took seriously the application of well-specified models of financial arrangements to the data and looked for market imperfections that might warrant official intervention, they would have to contend with the powerful competing hypothesis that observed financial fragility was the result of expectations of official intervention, built up over decades of accumulated precedents. Heavy reliance on short-term demandable wholesale funding, "over" leverage, credit "booms," would seem like predictable effects of the decades of rescue precedents. Whether these fragilities were inherent features of modern financial markets or induced by the financial safety net was not on the agenda.

Without meaningful contact with explicit underlying models, the financial stability program is left untethered, dependent on subjective words like "distress," "dysfunction," and "strained." These descriptive terms connote some sort of theoretically modeled market failure, but they have no clear economic meaning outside of a given model and central bank financial stability practitioners have not provided us with their model. We are left without any principles to guide assessments of things like "how distressed" is sufficient to require intervention, or when is a market "not functioning"? If prices and quantities both fall, could that be a market functioning the way it should when the facts change, when uncertainty rises, when expected future cash flows fall? Staff provides no quantitative estimates of discrepancies between fire sale prices and fundamental values. During the GFC, virtually all of the staff's efforts were devoted to program design and implementation. They seemed well aware that sharing quantitative estimates of fundamental values would have raised a host of uncomfortable questions, such as "how long do you expect that discrepancy to last?" and "why should your estimate be accorded more confidence than the collective wisdom embodied in market prices"?

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[51] See Lucas ([2018] 2019) for rigorous estimates of Fed credit program costs.

Politics

A second candidate explanation of the twenty-first century discontinuity in Fed credit doctrine is politics. The distributional nature of Fed credit policy choice places the Federal Reserve at the very center of the fraught and fluid relationship between banks and the state, the history of which Calomiris and Haber (2015) so vividly describe. Early twentieth-century credit policy owed as much to politics, such as that expressed in Warburg's Mercantilism, as it did to theoretical ideas, such as the age-old Real Bills Doctrine. The evolution of Fed credit policy in the second half of the twentieth century was also a product of its political environment and governance. Having an independent balance sheet with which it could intervene, after the Accord, without monetary policy consequences, left the Fed exposed, in possession of a vestigial tool of keen interest to the banking industry but subject to a serious time consistency problem. The Reluctant Samaritan fed and was fed by the growth of large banks, but would have struggled, by itself, to meet the challenge of subprime losses in 2007, given the induced fragility of the system.

The influence of politics and the inherent fragility perspective have been complementary. The credit view emerged alongside and rationalized the growing interventionism of central banks and fed itself on fashionable new economic theories that interpreted Fed-induced financial fragility as an inherent property of a laissez-faire system, to be remedied ex post by discretionary technocratic credit market interventions and ex ante by macroprudential regulators and financial stability monitors. In 2007, the credit view's commitment to interventionism dovetailed with the self-interest of Wall Street and exacerbated moral hazard. The resulting turbulence provoked a fierce populist backlash, but for now the inherent fragility view seems to have prevailed.

The Pursuit of Financial Stability in Practice

The credit market interventions during the GFC and the pandemic were redistributional, a fact often lost sight of during the crises. While interventions are frequently criticized for being capricious, a broad pattern is discernable and it is striking. Sellers of ABCP benefitted, not the opportunistic investors looking for bottom-feeding opportunities to buy the paper for less. Borrowing banks (that is, banks selling interbank obligations) were aided by the TAF; banks were disadvantaged that could have earned a spread by lending to other banks rather than holding the Treasuries that the Fed sold to finance the program. Similarly, borrowing dealers benefitted from the Primary Dealer Credit Facility at the expense of potential lenders wanting compensation for risk-taking. The assistance for the Bear Stearns merger was a transfer to help prop up the price of toxic securities, and to aid the sale of Bear's shares to JPMC shareholders. The AIG rescue supported a seller of default insurance. Similarly, other credit programs aided borrowers or security sellers and took away profit opportunities from investors that had money on the sidelines, waiting for prices to fall to levels they saw as warranted. These interventions all had in common that they transferred resources to the sellers of claims of various types, who were unable to obtain funding or sell securities at prices they viewed as satisfactory, in circumstances in which the fundamental value of those claims was unusually uncertain. This

suggests an apt characterization of the Federal Reserve's new twenty-first century lending doctrine:

> **Lending Doctrine 5: Sell-Side Savior** The Federal Reserve intervenes in any credit market at its discretion to restore the *normal* flow of credit to borrowers when financial markets experience *stress*. Interventions are designed to be seen as fair.

The wording is adapted from the Board of Governors website titled "Responding to Financial System Emergencies," including the undefined italicized terms.[52] The term *normal* is taken to mean non-crisis, non-recessionary times with low unemployment and low uncertainty. As with the Reluctant Samaritan Lending Doctrine, the Fed's credit policy actions are chosen ex post, without pre-commitment. In contrast to the Reluctant Samaritan Doctrine, however, the domain is broad and any credit flow is in scope. Circumstances are ostensibly limited to occasions when financial markets are experiencing "stress," but the Fed reserves the discretion to define that as it sees fit. Note that minimizing political blowback from non-intervention, a key objective for the Reluctant Samaritan, is omitted here, reflecting how supportive the Fed's political environment now is toward intervention. Instead, the political imperative is to intervene in ways that are perceived to distribute benefits *fairly* across business and household sectors. Popular attitudes toward potential beneficiaries, particularly in the financial sector, are likely to be important in assessing fairness; hedge funds, for example, became societas non grata in the 2000s and it would likely generate political criticism if they benefited from targeted rescues. Small businesses, on the other hand, perennially evoke political sympathy, even if credit programs targeting them tend to generate adverse ex post publicity around cases of fraud or abuse.

The Shadow Open Market Committee

The SOMC has witnessed and illuminated the remarkable evolution of the Fed's lending over the last 50 years. Members highlighted the importance of Monetary Stability and pointed out how Fed lending had strayed from and was no longer needed for that purpose. They counseled humility and transparency in credit policy, advocating for clearly articulated principles and limits. Members predicted the housing-finance crisis and ambiguity-induced turmoil of the GFC. Members warned that a swollen Fed balance sheet risked large losses if inflation emerged. Members cautioned that credit market intervention put monetary independence at risk and might inhibit the Fed in an inflation fight; the record suggests that may have happened. Members called for an explicit statement by the Treasury and the Fed about respective credit policy responsibilities, a call that was heeded, though with somewhat disappointing results.

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[52] "In times of crisis, the financial markets that businesses and households rely on may experience severe stress or, in extreme cases, effectively cease to function. Employers often rely on these markets to raise the cash they need to meet payroll and cover near-term operating costs. These markets also serve households as investment options for their savings or to facilitate loans to buy cars and homes or to attend college. Because these markets are vital to the economy, the Federal Reserve—like many central banks—is empowered to take actions that can restore the normal flow of credit needed to support employment and the broader economy." First paragraph from (Board of Governors of the Federal Reserve System, n.d.-c)

Above all, SOMC members have collectively deepened our understanding of Federal Reserve credit market activities.

Prospects for a Volckeresque recovery of the Fed's reputation for more limiting lending, as many SOMC members have advocated over the years, appear dim. Sell-Side Savior Doctrine moves decidedly in the opposite direction. A legislative solution, as suggested by Anna Schwartz, seems hopeless without political will. Marvin Goodfriend and I (1999) conjectured that successively more costly financial crises could prompt political demand for pullback and reform, just as late 1970s inflation, combined with the recognition, championed by the SOMC, that the Fed was responsible for the bad outcomes, built political support for Volcker's disinflationary campaign. Instead, in the next crisis the Fed blamed the fragility on markets, the way Arthur Burns shifted responsibility for inflation to a raft of special factors. The success of the SOMC campaign against inflation provides an example, however, of how a patient, relentless pursuit of the truth can bear fruit. The ability of ideas and understanding to exert, from time to time, an influence on Federal Reserve doctrine and practice provides perhaps the best basis for a hopeful outlook.

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