Crisis and Credit Allocation

The Effect of Ideology on Monetary Policy during the Great Depression and the Great Recession

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Often, the policy of a central bank may be described as *easy* or *tight* depending upon the rate of new money creation or the interest rates charged or targeted by the central bank. When the bank increases the rate of money creation, that is a sign of easy money. When it lowers interest rates, that is yet another sign of easing. Movements in the opposite direction are believed to indicate monetary tightening. The devil, however, is in the details. Policies that one might characterize as being easy or tight may be incorrectly attributed one of the descriptions (Sumner 2021). For example, lowering interest rates during recession without simultaneous expansion of circulating currency appears an ineffective policy for lifting aggregate demand back to the pre-recession trend. The problem of evaluating policy is compounded by ideological blinders. Guided by ideology, a policymaker prefers one policy or policy regime to another. That same policymaker will apply theory in a manner consistent with his or her ideology. Evaluation of the effects of policy will also depend on one's interpretive lens.

In this paper, I consider two regimes in which descriptions of policy as being *easy* or *tight* were incomplete: Adolph Miller's Fed, guided by the Real Bills Doctrine

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to hold speculative activity suspect, and Ben Bernanke's Fed, guided by a belief that large financial institutions should be kept from failing in order to maintain macroeconomic stability. For both of these cases, I argue that the interpretation of monetary policy must include not only changes in policy variables, but the ideologies of those who shaped policy. Ideology informs the aims of policymakers and their interpretation of data. We can judge the motivations for, and the structure of, policymaker strategy and also better understand the long-term effects of these different regimes on the structure of U.S. monetary policy by considering the interaction between the ideology and theory that guides the policymaker.

I begin by defining ideology and elaborating its relationship to monetary policy. Then, I describe the ideology that guides policy in each case and consider the structure of policy implementation and the effect of the policy on resource allocation and the extent of resource employment. The policies of both Bernanke and Miller presumed inherent instability of financial markets, at least for the conditions under which they implemented their policies. Both policymakers sought discretionary allocation of credit and, therefore, real resources. I compare this to Walter Bagehot's prescription for monetary policy, which only indirectly influences allocations by setting the rate charged by the central bank or, more liberally interpreted, by open market operations intended to impact lending rates. Finally, I argue that Bernanke's policy and its transformation of the Federal Reserve operating framework were sustained because Bernanke's policy framework significantly benefited the U.S. Treasury. Similarly, Miller's Federal Reserve Board set precedent for supporting the U.S. Treasury by purchase of government debt, setting the stage for cooperation with the U.S. Treasury that continued at least until the 1951 Treasury–Federal Reserve Accord (Bordo 2015, 230).

The Role of Ideology

Although interpretation of events in monetary history ought always to include the significance of changes in the supply of and demand for money and credit, monetary and price aggregates are insufficient for understanding the nature of *particular* economic fluctuations (Wagner 2020). Explanation of the unraveling of monetary events must include the beliefs of actors responsible for policy along with a detailed presentation showing how the path of policy implementation influenced economic outcomes (Mises [1957] 2007, 266).[1]

What follows builds on the work of institutional scholars (Buchanan 1964; Buchanan and Wagner 1977; Buchanan 1979; Denzau and North 1994; North 2005; Lewis and Dold 2020) who assert that the neoclassical framework leaves an

1. "It is the knowledge of the social environment in which a man lives and acts or, with historians, of a foreign milieu about which he has learned by studying special sources. If an epistemologist states that history has to be based on such knowledge as thymology, he simply expresses a truism" (Mises [1957] 2007, 266).

incomplete view of human decision making. All decision making is supported by mental models of actors. Even subtle differences between otherwise similar approaches can lead to vastly different outcomes.

An ideology that ties together different ideas often differentiates itself by means of a particular goal or disposition. To clarify its significance, we must elaborate ideology in theoretical terms. Melvin Hinich and Michael Munger provide several "prominent interpretations" of ideology:

> Ideologies are collections of ideas with intellectually derivable normative implications for behavior and for how society should be organized.
>
> Ideologies are economizing devices by which individuals understand, and communicate about, politics.
>
> Ideologies are complex, dogmatic belief systems by which individuals interpret, rationalize, and justify behavior and institutions.
>
> . . .
>
> Ideologies perform an important psychological service because without them people cannot know, assess, and respond to much of the vast world of social relations. Ideology simplifies a reality too huge and complicated to be comprehended, evaluated, and dealt with in any purely factual scientific, or other disinterested way. (1994, 10)

Building on these ideas, the authors summarize that "an ideology tells us what is good, who gets what, and who rules" (1994, 11). Although the authors claim that an ideology is "[a]n internally consistent set of propositions that makes both proscriptive and prescriptive demands on human behavior," they allow for a weaker claim concerning logical consistency. Logical inconsistencies do not promote the health of an ideology, but it is quite difficult to iron out all inconsistencies in one's worldview, if only owing to human ignorance and particular circumstances that make perfect application of ideology especially costly. Persistent inconsistencies can spell the end of an ideology whereas the ability of an ideology to adapt in the direction of consistency can enable its persistence. The success of an ideology depends in part on its ability to coherently integrate empirical observations and beliefs in the relevant domain of agents and social activity.

Arthur Denzau and Douglass North view ideology as artifacts developed through communications of agents who employ shared mental models. Communication "allows the creation of ideologies and institutions in a co-evolutionary process" (1994, 20). The evolutionary nature of shared mental models and ideologies allows for internal consistency to serve as a likely guiding force in their development but is not a strict requirement of either category, at least not in application. The success of an ideology depends on the ability of a simple principle to economize on decision making in a manner that adherents believe to promote future states that manifest the *good*.

Ideology serves as a means of coordinating shared perception within a community of actors. It simplifies rankings of desired states of the world according to some general end that can, ideally, allow actors to conform their own preference rankings according to the principles of ideology. As Hinich and Munger point out, reducing the problem space to a consistent application of a general end helps actors to economize on costs of coordination. "If some entrepreneur can identify a single issue that unites the apparently disparate disputes into a single cause, the situation is ripe for the propagation of a successful ideology" (1994, 64). Without ideology, communicating about phenomena within the community and advocating for particular outcomes and institutional orientations would be ineffective. Although ideology reduces the costs of communicating, it also anchors interpretation in a manner that privileges certain events as being more significant and certain interpretations as being more valid. As F. A. Hayek (1949) recognized, ideology plays a pivotal role in coordinating beliefs of intellectuals and, over long periods of time, these beliefs tend to exert significant influence over politics and culture. This is, of course, true of coordination of beliefs in all communities.

Ideology and Monetary Policy

Concerning monetary policy, ideology is an interpretive anchor upon which also rests policymakers' beliefs about monetary policy. Policymakers with beliefs not representing the status quo who are also Big Players may have opportunity to transform policy by articulating new policy frameworks or transforming existing frameworks (Koppl 2002). The policymaker's own theoretical assertions about the relationship between the object of intervention and the entity carrying out the intervention will be embedded in the resultant framework.

Those who shape and administer monetary policy are concerned about the relationship between financial markets and the central bank. A policymaker's conception of this relationship includes assertions about the state of this object of intervention absent such intervention. In other words, the policymaker employs a theory about financial markets, however crude or sophisticated, that predicts how these markets would operate absent monetary intervention. This theory is itself situated within the policymaker's more general ideology.

In analysis of the ideology guiding monetary policy, it is necessary to view ideology at differing levels. Ideologies are domain specific. Some ideologies are all encompassing. This is certainly the case, for example, with religious ideologies. Obviously, ideology guiding monetary policy will tend to be more limited than, say, religious ideology. I will, therefore, relate policymaker ideology to the broader currents identified above in terms of the efficacy of competitive financial markets. Although I orient the ideology of the policymaker in terms of broader ideological currents, elaboration of these broader currents is beyond the scope of this study.

Since the turn of the twentieth century, ideologies in the United States have tended to congeal around the level of power that should be allocated to the federal government. This lends itself to beliefs about the level of monetary intervention required to promote macroeconomic stability. One standard approach to monetary policy holds that, aside from hiccups owing to fluctuations in the level of aggregate demand, markets are capable of allocating resources in a manner that promotes the general welfare. In this view, monetary policy ought to smooth over these hiccups, offsetting excessive downward pressures on aggregate demand by providing emergency liquidity while otherwise letting market processes continue as normal. An opposing view—one that might be described broadly as Keynesian—holds that macroeconomic activity must be moderated by persistent intervention as monetary disequilibrium is itself a persistent phenomenon.[2] In this other view, speculators drive irrational oscillations leading to overinvestment during economic booms and underinvestment during economic downturns. The monetary regimes under consideration are formed around ideologies of the latter kind. These fit within a broader ideology that tends to be more supportive of social and economic intervention.[3]

Likewise, we might compare the policies of Miller and Bernanke to Bagehot's prescription for monetary policy. Bagehot's prescription advises that central banks should:

1. lend freely,
2. lend at "high" (penalty) interest rates,
3. lend on bank paper that would be good when conditions were normal,
4. advertise this policy boldly, and
5. "carry on" until all the banks' gold reserves are gone. (Humphrey and Timberlake 2019, 82)

In the two largest crises of the modern era, instead of following Bagehot's protocol, and therefore allowing markets to determine the quantity and allocation of credit, Federal Reserve policy actively determined the quantities of credit made available and for whom these should be available. Miller's preoccupation with the illegitimacy of easy money led not simply to a tightening, but to a denial of credit to particular lenders deemed to support speculation. Bernanke, as we will see later, believed that he lived up to the spirit of Bagehot's rule, though he admits that policy was in violation of Bagehot's prescription. In both cases, ideology that rejected the efficacy of the Bagehot protocol superseded commitment to it (Hogan, Le, and Salter 2015).

To coherently assess these policies, one must employ a body of theory whose breadth matches the breadth of strategies implemented by these policymakers. We will consider the strategies and tools used by each regime to provide a substantive picture of policy surrounding both crises. In both cases, ideology suspicious of the

2. Hetzel (2012) divides monetary policy between these two views.

3. Miller's regime preceded the ascension of Keynesian macroeconomics. Yet his belief that speculators drove persistent misallocation, although subject to agrarian disposition, fits within this paradigm.

ability of financial markets to efficiently coordinate resources shaped Federal Reserve policy and transformed the relationship of the Federal Reserve to the Treasury.

The Miller Fed and the Great Depression

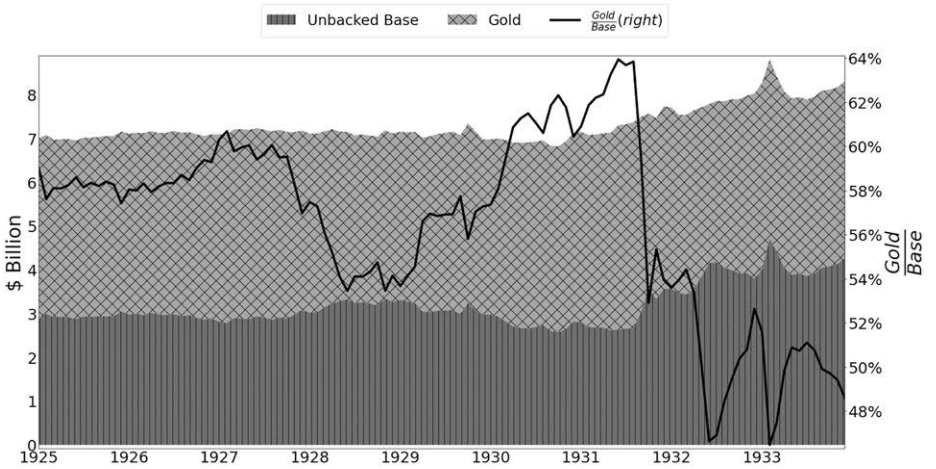
The Great Depression was initiated due to relatively tight monetary policies of central banks around the world that resulted in negative aggregate demand shocks, both domestically and across gold standard economies (Hawtrey 1947; McCloskey and Zecher 1984; Glasner 1989; Eichengreen 1995; Irwin 2012; Sumner 2015). It persisted in countries where authorities refused to ease policy, and it grew increasingly severe as these tight monetary policies made the gold exchange standard dysfunctional. In the United States, tight monetary policy led to a collapse of thousands of banks due to the fragility of the unit banking system while its neighbor Canada, which lacked a central bank and the same restrictions, experienced no banking crisis at all before finally establishing a central bank in 1935 (Friedman and Schwartz [1963] 1971; Selgin, Lastrapes, and White 2012).

The Great Depression was propagated largely by persistent negative aggregate demand shocks. Adolph Miller, who navigated the road to tight monetary policy and its implementation, tended not to concern himself with descriptions in terms of monetary aggregates and, therefore, did not recognize monetary tightening as problematic. Miller wanted to stamp out the devil of speculation that he believed was driven by the easy money policy of New York Fed governor Benjamin Strong. Miller saw Strong's expansion as counterproductive and responsible for excesses in financial markets. In the spirit of the Real Bills Doctrine, Miller noted that the Fed's monetary policy in 1927 was too accommodating because "[t]hat was a time of business recession. Business could not use and was not asking for increased money at that time" (U.S. Senate 1931, 134, qtd. in Wheelock 1992, 8). Not only monetary ease in the face of recession was inappropriate to Miller; he also sought to discipline banks he believed were engaged in inappropriate activity.

The path Miller took to vanquish speculation that he believed to be excessive was to deprive banks he deemed guilty of supporting speculation from receiving any funding even in times of liquidity shortage. He described this policy as using "direct pressure" and also as "moral suasion." In 1929 the Federal Reserve, led by Miller, implemented policy whereby "banks which were making loans in the stock market should not borrow from Federal Reserve banks" (Warburton 1966, 320). Benjamin Strong had taken to using open market operations to adjust the quantity of base money with the intention of stabilizing the price level (Humphrey and Timberlake 2019, 57–78).[4] He was able to maintain this stability until his death in October

4. Although Humphrey and Timberlake assert, in accordance with Friedman and Schwartz, the significance of Strong's management of monetary policy, Mark Toma (2013) questions Strong's significance with regard to price level stabilization.

Figure 1
Fraction of Monetary Base: Gold and Non-Gold Components
January 1925–December 1936



Sources: Friedman and Schwartz 1963, 801–4; Board of Governors 1943, 536–37. All data can be found at: https://github.com/jlcatonjr/ProjectRepositories/tree/main/Crisis%20and%20Credit%20Allocation.

1928. When Miller took the helm at the Fed, he allowed for a modest contraction of the monetary base, reducing the quantity of unbacked Federal Reserve notes in circulation and allowing the fraction of the monetary base composed of gold to rise (figure 1). Miller was concerned that Strong's policy was "strip[ping] your regional banks of their separate control of credit . . . when you operate with their resources in the central money market of the country" (United States Senate 1931, 140, qtd. in Wheelock 1991, 70). Miller continued to echo this view several years later, when arguing against allowing leaders of particular banks to take on a major role in steering monetary policy through the open-market committee. The monetary authority should have "a national viewpoint," he argued, and "[i]ts judgment should not be warped by the viewpoint of any particular section of the country" (Miller 1935, 458). Monetary contraction was the consequence of Miller's denying credit to banks that had supported speculation.

Miller's concern about Real Bills as a guide for monetary policy is peculiar. As George Selgin outlines, monetary theorists who articulated the Real Bills Doctrine beginning in the nineteenth century "saw an inherent futility in all programs aimed at bureaucratic control of the credit supply . . . [and] sought to understand those mechanisms which could cause the credit supply to adjust *automatically* to the requirements of the market" (Selgin 1989, 504). These theorists embraced the *law of reflux*. They sought to explain the forces that actually constrain credit creation

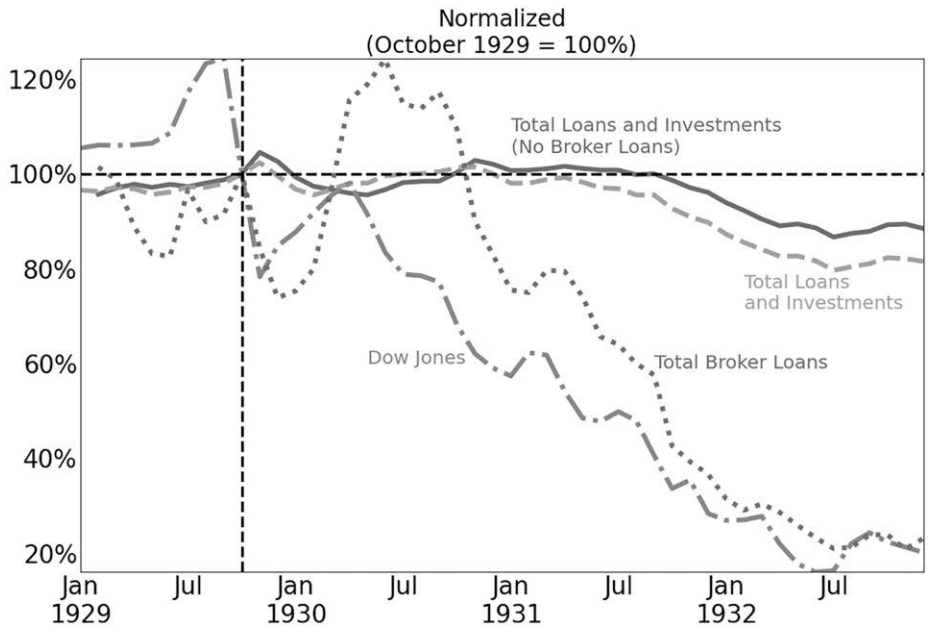
by the financial sector. Their answer was that productive opportunities constrained the volume of lending (see also discussion by White [1984] 1995, 121–28).

Miller, on the other hand, saw the Real Bills Doctrine as a guide for policy precisely because he lacked a belief that there were factors that naturally and rationally constrained credit creation within major financial centers. When applied to monetary policy, the Real Bills Doctrine advises that only credit of brief duration supporting productive activities should be provided by the monetary authority. Thus, one can rationalize Miller's concern that "[b]usiness could not use" the additional money provided by the Strong regime and, further, his concern that provision of funds to financial centers would not promote a sound economy but, rather, only spark unmerited speculation. As proclaimed by Philadelphia Fed governor George Norris, "We have been putting out credit in a period of depression, when it was not wanted and could not be used" (Friedman and Schwartz [1963] 1971, 373).

Miller was clear about his actions and his intent in regard to speculation in the stock market: "In the circumstances which existed at the time when the Board made its announcement with regard to 'direct pressure,' the speculator did not ask what was the cost of money but whether he could get it at any price" (1935, 455). Miller's presupposition was that financial markets did not efficiently allocate credit for productive purposes, especially when supported by monetary ease. For Miller, "direct pressure" was necessary to ensure that resources were not lent for the improper purpose of speculation. Miller admitted that such a bank would be required "to show that it was entitled to accommodation" (455). This represents a reversal of what he perceived to be the situation under Strong, whose policy he believed drew resources from the rest of the nation in support of speculative pursuits on Wall Street. Miller was suspicious of monetary expansion administered during the 1920s when, in the words of Phillips, McManus, and Nelson, "[b]usiness neither demanded nor needed additional credit for commercial purposes" (1934, 90). Miller thus oversaw a contraction of money and credit, promoting a recession as he intentionally deprived Wall Street investors of funds (figure 2).

Miller's approach was much in line with the political pressure exerted by Senator Carter Glass (D-VA), who believed that "[i]t is the business of the Federal reserve bank to know what the borrowing [bank] is doing and for what purpose it is doing it" (United States Senate 1931, 53–55, qtd. in Wheelock 1991, 98). In the words of Governor Norris of the Philadelphia Fed, who opposed "direct pressure," "[o]ur 5 percent [discount rate] is equivalent to hanging a sign over our door 'Come In' and then we have to stand in the doorway and shout 'Keep Out'" (Chandler 1958, 467–68, qtd. in Humphrey and Timberlake 2019, 85). Under Miller, "credit of all kinds to all kinds of users was restricted" (Chandler 1967, 4), with special emphasis on restricting banks holding speculative assets. Open-market purchases of mostly private bonds that had characterized Strong's Fed were considered inappropriate by Miller because the procedures did not promote the allocation of credit that he believed to be ideal.

Figure 2
Member Bank Loans and Dow Jones Average, January 1929–December 1932



Source: Board of Governors of the Federal Reserve 1943, 142–45.

Miller's Board fought against the influence of the New York Federal Reserve, which had followed Bagehot's recommendation to lend freely to institutions whose finances would be sound during normal times. David Wheelock concludes that with this determination of credit allocation by Miller's Fed, "the shift of power away from New York probably reduced the Fed's willingness to use open-market operations during the depression" (1991, 99). Eugene White observes that the Federal Reserve Board denied the claim by the Federal Reserve Bank of New York that:

> the Federal Reserve could not refuse to discount otherwise eligible assets for its individual members and that it was impossible to control credit selectively. . . . Between February 1929 and August 1929, the directors of the Federal Reserve Bank of New York frequently voted to raise the discount rate, only to be turned down by the Board, which reaffirmed its policy of direct pressure. (1990, 74)

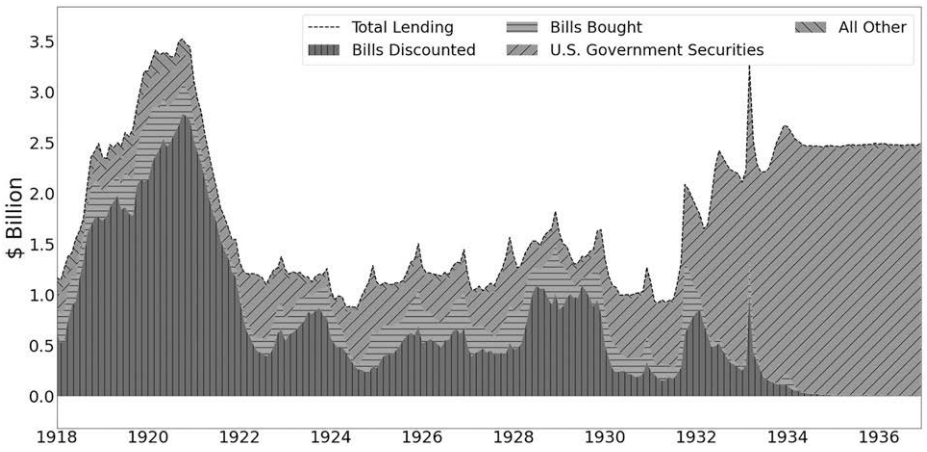
In line with Bagehot, the Federal Reserve Bank of New York preferred to allow interest rates to allocate credit. Governor Harrison speculated that "moral suasion" had "made banks less willing to borrow at the Fed in the early 1930's" (Chandler 1967, 4),

which, if true, means that Miller's policy also indirectly limited the quantity of reserves made available to the financial system as a whole.

The diminishment in broker loans across the early 1930s was not offset by an increase in lending elsewhere (figure 2). The level of nonbroker loans, however, remained stable until late 1931. It appears the use of "moral suasion" allowed Miller to defend against gold outflows without drawing credit away from what he deemed to be legitimate economic activity. It may not have been the intention of Miller to promote monetary disequilibrium, because he did not think in these terms, but the result was to promote "an ongoing disequilibrium that continued for four years" (Humphrey and Timberlake 2019, 83). Miller's policy of "moral suasion" culminated not only in a contraction of the portion of the monetary base controlled by the Federal Reserve but also in a persistent reduction of the level of deposits and a swift increase in the rate of collapse of banks in the United States by 1931 (Harris 1933, 539–51; Board of Governors 1943, 16–17).

Because Miller believed that investment channeled to Wall Street tended to be wasteful, the fall in stock prices did not concern him. Rather, he interpreted this as a sign of health. It is not difficult to imagine that in light of the steady level of nonbroker loans, the Miller-led Board would have felt reassured that nonspeculative investment was not negatively impacted (figure 2). Miller saw his policy as successful and not as adversely affecting economic activity he perceived to be legitimate. Tight money, as reflected by the Federal Reserve's contraction of reserve credit outstanding (figure 3), and expectation that support of speculation would be greeted with punishment from the Federal Reserve, choked the financial system.

Figure 3
Reserve Credit Outstanding, January 1918–December 1936



Source: Board of Governors 1943, 370–72.

Even as the Board's use of "moral suasion" eased in June 1930, collapse continued as the general stance of monetary policy remained otherwise unchanged (Humphrey and Timberlake 2019, 83 n6). This was not an environment inviting to speculative excess. Throughout the period, the Federal Reserve accumulated gold that it could have used to justify monetary expansion, but the Board was persistently concerned with the possibility of generating gold outflows (Eichengreen 1995, 295; Timberlake 2007). Under Miller's influence, and in spite of gold inflows, the Federal Reserve Board would not allow for a monetary expansion before the end of 1931 for fear of promoting speculation (figures 1 and 3).

The trend of systemic collapse finally reversed in 1933. Had Miller allowed the discount rate to operate as Bagehot suggests, it is quite unlikely that America's Great Depression would have included persistent economic turmoil for four years. More likely, many banks that had been denied support by Miller would have survived and the banking system would, therefore, have avoided the secondary collapse that began in 1931. Gary Richardson and William Troost (2009), for example, suggest that liquidity provisions provided by the Atlanta Fed were effective in limiting the magnitude of collapse after 1930 and preparing the South for recovery after 1933. Perhaps GDP per capita in the U.S. would have avoided a fall of nearly 30 percent, which was significantly more than that experienced by Britain, France, and Germany (Bolt et al., 2018). In the end, the Real Bills Doctrine did not promote economic health, and neither did it benefit the U.S. Treasury. Only expansion of support for the Treasury, not the Real Bills Doctrine, persisted beyond Miller's tenure.

The Bernanke Fed and the 2008 Crisis

Much as Miller had spent significant energy determining which banks should or should not receive funds, Bernanke's initial strategy was to lend to particular institutions that were struggling while offsetting the impact of this lending on the monetary base by selling U.S. Treasuries. An important distinction between the two approaches: Bernanke was happy to expand operations of the Federal Reserve far beyond the bounds of earlier precedent. As the system developed, Bernanke found it necessary to expand the Federal Reserve's balance sheet while simultaneously sterilizing the effects of this expansion on total spending. The Bernanke Fed created new base money to purchase assets and simultaneously prevented the money from entering circulation. By this method, Bernanke prevented the emergence of inflation that has traditionally served the role of maintaining the neutrality of money.

As with Miller, Bernanke believed that provision of liquidity during crisis was not sufficient for self-correction. For Bernanke, such a policy was neither efficient nor appropriate. Bernanke emphasized twin concerns: keeping large financial institutions functioning and maintaining stable inflation expectations, even in the short run (Bernanke 1983; 2007). This not only guided his monetary policy during the

2008 crisis, it transformed the Federal Reserve so that, even a decade later, Jerome Powell uses the same tools and the same frame to guide monetary policy.[5] Unconventional monetary policy has become conventional.

Before Bernanke left his imprint on American monetary policy, two goals appear to have guided the policy of the Federal Reserve under his predecessor of two decades, Alan Greenspan. First, maintain a moderate and stable rate of inflation over the long run. Second, provide liquidity to the market via open-market operations when short-term troubles in the financial sector threaten a negative shock to aggregate demand that would likely spill over to the labor sector.[6] In order to mitigate volatility in the level of total expenditures that could threaten a significant recession, Greenspan often provided short-term liquidity that temporarily increased the quantity of base money above values consistent with its long-run growth rate. This would expand the quantity of base money in circulation, whose value strongly correlated with the size of the Federal Reserve's balance sheet before the 2008 crisis. The interventions were often self-reversing because the money created to purchase these financial assets was returned to the Federal Reserve with interest upon the asset's maturity. As a result of confidence supported by the "Greenspan put," velocity of the stock of currency in circulation tended to be stable over the course of the Greenspan era.

The distinctions between policy under Greenspan and under Bernanke clarify this distinction in ideology. Bernanke's views aligned with a "perspective [that] focuses attention on central bank control over excessive risk taking in financial markets" whereas Greenspan focused "attention on central bank control over money creation and the role of the real interest rate in mitigating fluctuations in real output around trend" (Hetzel 2012, 9). Greenspan trusted that so long as fluctuations in the supply of and demand for money did not generate extreme swings in aggregate demand, markets would take care of themselves.[7] He agreed generally with the presupposition of Friedman (1968) that the role of monetary policy is to promote stable expectations and that this stability allows for financial markets to function efficiently.

5. In August 2020, Powell announced that the Federal Reserve's Open Market Committee will target average inflation, a policy that will promote a higher level of and greater variance in inflation observed over the long run.

6. Legally, the mandate is to maintain low and stable inflation while maximizing employment. Both of these are promoted by maintenance of stable inflation expectations. Under Greenspan long-run inflation expectations were well anchored. Greenspan also fostered expectation that he would provide ample liquidity during a downturn.

7. Exceptions include monetary expansion that indirectly supported international bailouts, including response to financial crises in Mexico, Asia, and Russia, as well as coordination of a bailout for Long-Term Capital Management (Hetzel 2008, 206–26). These crises were associated with increasing demand for dollars, which served as a safe haven asset during these crises. Although liquidity provisions might be interpreted as supporting bailouts, one might also view the responses by the Greenspan Fed as attempts to stabilize dollar velocity by building confidence that insolvencies from a particular financial institution or sector would not develop into financial contagions.

Greenspan trusted financial markets to facilitate resource allocation that swiftly returned productivity to its long-run trend. The Bagehot protocol may not have been followed perfectly—one might argue that the federal funds target remained too low for too long between crises or that the Fed's facilitation of bailouts worked against this ideologic current—but the Bagehot prescription was followed as the norm with the bounds of exceptions being limited. Further, exceptions were just that: exceptions.

The ideology that has coordinated policy since the end of the Greenspan era holds that policymakers must do more than engage in a general monetary easing during crises and that interventions must be sustained over the course of years, rather than only during and immediately following the briefer period of a crisis. Ben Bernanke's strategy for confronting the financial crisis sought to stabilize large financial institutions at risk of insolvency while preventing this support from elevating the rate of inflation. Bernanke violated the maxim that central banks should only lend on or, by extension, only acquire paper that would be good in normal times. Unlike under Greenspan, during which the Federal Reserve facilitated bailouts through easy monetary policy, policy under Bernanke has entailed acquisition of toxic assets—loans whose collateral was greatly devalued—from "too-big-to-fails" by the Federal Reserve.

In reflecting on his experience during the crisis, Bernanke asserts that "as of December 2008, conventional monetary policy was exhausted. We could not cut the federal funds rate any further. And yet, the economy clearly needed additional support" (2013, 102). He fails to mention, however, that he had removed from his option set the traditional tactic of uncompensated increase of the monetary base being allowed to circulate through the financial system. Jeffrey Hummel states that under Bernanke the Fed took on an "incredibly expanded role in allocating the country's scarce supply of savings" (2011, 509). Those savings were steered toward institutions that had acquired toxic assets.

Beyond Bagehot: Expanding the Balance Sheet without Inflation Expansion

This reallocation of resources likely goes unnoticed by most observers due to the complex array of tools available to the Fed. Monetary policy might be easier to interpret if it were presented using more familiar terms that capture the nature of the policy. Any central bank has essentially two tools that it uses to accomplish its ends. These institutions provide loans and purchase financial assets, usually securities that entail a promise to repay a loan to the holder. During the year preceding the start of the 2008 crisis, the Federal Reserve initially expanded its lending operations, reducing its holdings of U.S. Treasuries as a result. Trouble had started in August 2007 when investors grew suspicious of the subprime mortgage market. As default rates

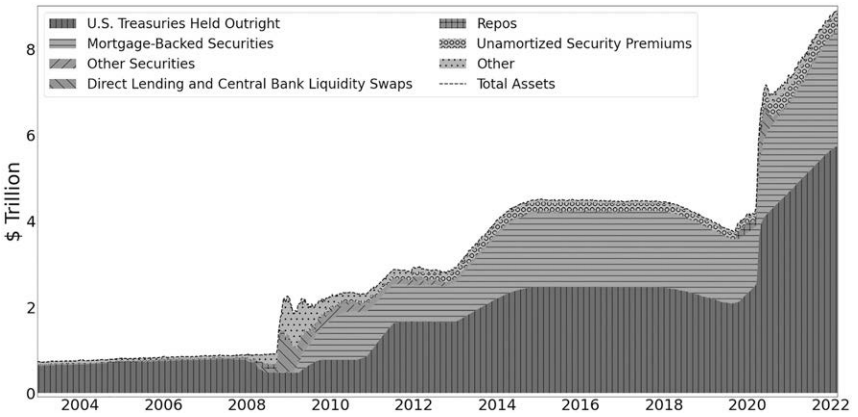
among subprime borrowers began to rise, the price of credit default swaps began a climb that would not peak until early 2009.

It was in response to this early hiccup in the subprime market that the Federal Reserve established the Term Auction Facility (TAF) in December 2007 to provide direct short-term loans to foreign banks with branches in the United States. These banks were not confident that their own governments would be willing to bail out institutions that were insolvent due to investment in the United States (Hetzel 2012, 245). The Federal Reserve also used liquidity swaps during this period to provide dollars to foreign central banks. The Fed provided dollars in exchange for foreign currency. Foreign central banks would then lend the dollars received through these swaps to banks under their purview of governance. This was followed by the Federal Reserve's bailout of Bear Stearns, providing $30 billion for the particular financial institution that was acquired by JP Morgan Chase (246). As with TAF, this lending was offset by reduction in holdings of U.S. Treasuries by the Federal Reserve. The policy targeted the composition of the Federal Reserve's balance sheet. It included modest expansion of the balance sheet, but this expansion did not translate to a proportional expansion of the stock of circulating currency.

When the market faced turmoil in October 2008, the Federal Reserve expanded its lending operations without further diminishing its holdings of securities. In their 2019 book, *Firefighting: The Financial Crisis and Its Lessons*, Bernanke, Timothy Geithner, and Henry Paulson reflect that early in the crisis it was "starting to look like a problem the traditional Bagehot playbook could not solve" (42). They note that the Federal Reserve was unsuccessful in attracting banks to use the discount window and that this motivated the Fed "to launch two novel efforts to boost liquidity, taking a tentative step beyond basic Bagehot into uncharted waters" (42). In September 2008, the Fed levered up its provision of central bank liquidity swaps that it had begun offering at the end of 2007.

The Federal Reserve thus acted as "the lender of last resort for the world" (43). The Federal Reserve also began lending directly to insolvent institutions to directly support bailouts, such as those for AIG as well as of Fannie Mae and Freddie Mac. These latter institutions were bailed out with direct support from the U.S. Treasury. The bailout policy pursued was discretionary. Bernanke and Paulson also selected which institutions would *not receive* a bailout. Notably, Lehman Brothers was allowed to fail amid the flurry of bailouts to other institutions, sending a message from the U.S. Treasury to investors that bailouts were not guaranteed to struggling financial institutions. Only a month later, the message transmitted through denial of a Lehman bailout would prove to be an ineffective commitment. In early October, the Emergency Economic Stabilization Act of 2008 would be passed. This act authorized the Troubled Asset Relief Program (TARP), whereby the U.S. government would purchase toxic debt and bail out companies including AIG, Bank of America, and General Motors. The Federal Reserve also participated, supporting TARP by purchase of toxic assets conducted through the Term Asset-Backed Securities Loan Facility.

Figure 4
Composition of Federal Reserve Assets, July 2003–February 2022



Source: Board of Governors 2022a.

Although the Federal Reserve expanded the number of policy instruments available to it, its augmentation of open-market operations, both in terms of quantity of funds and types of securities purchased, is probably the most significant and lasting development. By early 2009, the Federal Reserve had greatly expanded its balance sheet to include mortgage-backed securities and soon began increasing its holdings of U.S. Treasuries (figure 4). By 2010, with the crisis having subsided, the vast majority of the balance sheet consisted of securities.[8]

The Federal Reserve would engage in two more major expansions of the balance sheet—quantitative easing (QE2 and QE3). At the end of QE2, the Fed also increased the average maturity of its holdings of U.S. Treasuries. Under QE3, the Fed more than doubled its holdings of mortgage-backed securities. And again, under Jerome Powell, the Federal Reserve doubled the size of its balance sheet in response to the economic shutdown surrounding COVID-19. These deviations from Bagehot's prescription have significant implications for the Federal Reserve's relationship to the Treasury, which we explore in the final section.

Sterilizing the Inflationary Effects of Monetary Expansion

In spite of explicit recognition of deviation from Bagehot's playbook, Bernanke believes that he followed the spirit of Bagehot in that "the basic idea of providing short-term liquidity in order to stem a panic was very much what Bagehot envisioned when he wrote *Lombard Street* in 1873" (2013, 97). But the new policy regime does

8. See also Hetzel 2012, for composition of the Federal Reserve's Balance Sheet.

not attempt to maintain monetary neutrality, instead favoring particular financial institutions and particular sectors of the economy. It is difficult to imagine Bagehot approving of the direct control of credit allocation and the acquisition of toxic assets by a central bank.

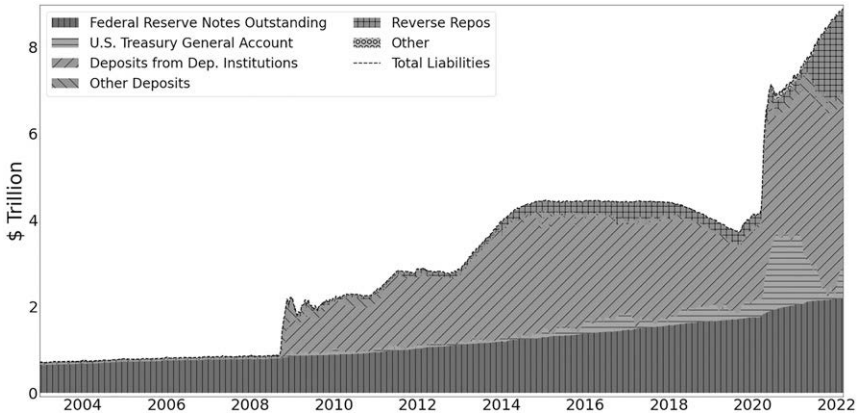
Strangely absent from Bernanke's playbook was any traditional expansion in the form of additional short-term liquidity provided by uncompensated open-market purchases used by his predecessors. Even if interest rates are at zero, nothing stops the Federal Reserve from making major purchases of short-term instruments. The reason he did not, however, was that he placed primacy on maintaining stable short-run inflation expectations.

Even before the expansion of the Fed's balance sheet, Bernanke, wary of short-term fluctuation in the expected rate of inflation, offset expansion enabled by the TAF, "pulling money out of the economy by selling Treasury securities" (Hummel 2011, 500; figure 4). In the early days of the crisis, Bernanke attempted to calm growing economic turmoil not by boosting aggregate demand with an acceleration of monetary expansion, but by choosing which sectors ought to receive credit. Bernanke sold U.S. Treasuries as he transferred liquidity to the overnight lending markets and increased direct lending to particular financial institutions. When Bernanke finally did increase the rate of expansion of the Federal Reserve's balance sheet, he did so not as part of a plan to provide temporary liquidity to financial markets, but to significantly and permanently expand the balance sheet of the Federal Reserve.

Bernanke frames this activity in a slightly different way. Where Milton Friedman would have been concerned about stabilizing expectations concerning the growth rate of the quantity of money with the goal of stabilizing the level of total expenditures (Friedman 1968; Friedman 1971; Hummel 2011, 491–96), and where Greenspan would have accomplished this task indirectly through procyclical interest rate targeting, Bernanke saw the new strategy as having "supportive, stimulative effects on the economy" (2013, 104). After the 2008 crisis, both nominal and real income plummeted, and both failed to return to trend.

Unable to accomplish his goals through discount lending and unwilling to accomplish them using standard operating procedure that he inherited from Greenspan, Bernanke concentrated on reducing the cost of borrowing long by accumulating Treasuries with longer maturities. To prevent inflation, the Fed "paid for those securities by crediting the bank accounts of the people who sold them to us" (2013, 105). He goes on, "So the Fed is a bank for the banks. Banks can hold deposit accounts with the Fed. . . . And so as the purchases of securities occurred, the way we paid for them was basically increasing the amount of reserves that banks had in their accounts with the Fed" (105). Bernanke explains that "the amount of currency in circulation has not been affected by these activities" (106). Bernanke artificially increased demand to hold base money. With this strategy, there has developed a division in the uses of the stock of base money. A portion of the base consists of currency circulating in the financial system, and the remainder exists on account at the Fed.

Figure 5
Composition of Federal Reserve Liabilities, December 2002–February 2022



Source: Board of Governors of the Federal Reserve System 2022a.

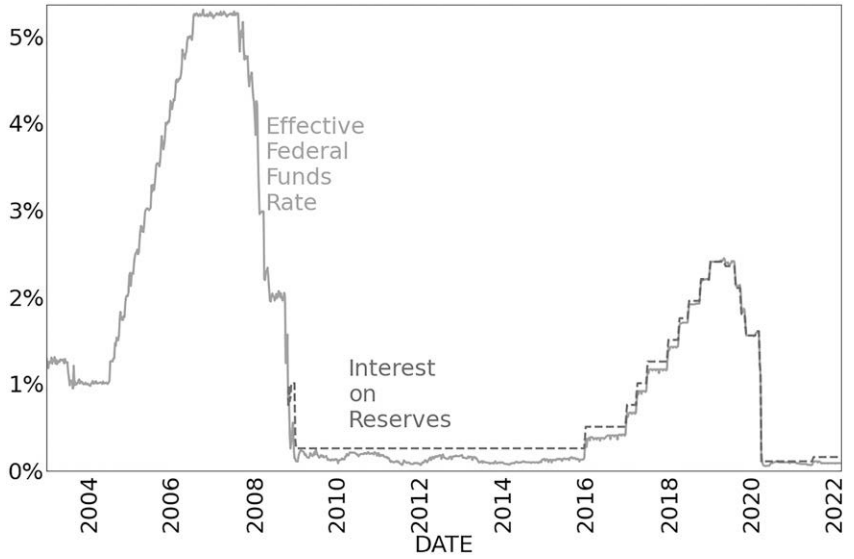
The latter portion is therefore not liable to be spent and thereby promote a consequent increase in nominal expenditures that might also increase inflation (figure 5).

The Federal Reserve incentivizes banks to hold funds on deposit by payment of interest on these deposits. The most relevant rate of comparison for interest paid on these accounts is the federal funds rate. If the rate paid on reserves is higher than the federal funds rate, there will be significantly less lending in the overnight market. Lending in this market will increase with each marginal drop in the rate paid on reserves relative to the federal funds rate.

From the bank's perspective, the change in the composition of their investments does not matter so long as those responsible for investing the bank's resources are pleased with the rate of return received. Holding money on account at the Fed is certainly less risky than lending in the overnight market when nominal returns offered by either commitment match or if the nominal rate in the overnight lending market is lower than the rate paid by the Federal Reserve. From the time of the crisis until summer 2018, the rate of interest paid on reserves was set as the upper target of the federal funds rate, and lending in the market was diminished (Hogan 2018; Selgin 2018, 41–42; figure 6).

Payment of interest on reserves supports a second goal of the new policy regime. Alongside allocation of credit to particular sectors and institutions, the new operating framework also increases the Fed's control of short-term interest rates. Before the policy change, "[t]he short-term interest rate was market determined once the Fed set the amount of reserves" (Taylor 2016, 716). The connection between the level of reserves and the short-term interest rates has been broken owing to the control exercised by the payment of interest on reserves. Able to exercise control, rather than

Figure 6
Federal Funds Rate and Interest Rate Paid on Reserves, December 2002–February 2022



Source: Board of Governors of the Federal Reserve System 2022b.

letting competitive markets set the short-term rate, "the Fed can reliably control short-term interest rates using this framework" (Foerster and Leduc 2019, 4). In addition to setting the rate paid on reserves, after the financial crisis the Federal Reserve also began borrowing large quantities of funds from the overnight lending market. This improves its ability to control the quantity of currency in circulation without increasing the rate paid on reserves. It institutionalized this activity with the Reverse Repurchase Agreements facility. By borrowing from the overnight lending market, the Federal Reserve increases the number of parties able to leave their funds inactive at the Federal Reserve.

Finally, the Federal Reserve has also begun to act in cooperation with the U.S. Treasury. When the Federal Reserve expands its holdings of Treasuries, the U.S. Treasury can deposit unspent funds in its General Account at the Federal Reserve to offset any inflation that might result from the monetary expansion (Jordan 2017; see figure 5). This cooperation represents another means by which the Federal Reserve can maintain support for federal borrowing while sterilizing the effects of its intervention.

This policy framework is an artifact of theory and ideology. Following the assertions that financial markets are not self-correcting during a downturn and that significant, self-reversing liquidity injections generate inefficiencies whose avoidance can reduce welfare losses, the Bernanke Fed developed a complex system based on a

simple principle: prevent monetary expansion from directly supporting increases in total expenditures. Instead, policy aims to stimulate particular financial institutions and particular markets and to provide this support over long stretches of time.

The persistence of the framework since the 2008 crisis has left a heavy mark on the ideology of monetary policy. Unlike Miller's implementation of the Real Bills Doctrine, Bernanke's transformation of the framework governing monetary policy was not followed by deepening of the economic crisis. Therefore, it is not obvious, as it was in the case of the Great Depression, that Bernanke's strategy does not promote the economic health. Thus, for more than a decade, policymakers have continued to approach financial markets in a manner that presumes balance sheet expansion is warranted more often than it is not. Expansion from QEs 1, 2, and 3 spanned from 2008 to 2015. After less than two years of shrinking the balance sheet, Jerome Powell reversed a sudden spike in overnight lending rates in September 2019 with a balance sheet expansion of greater than $400 billion. In response to the pandemic-related financial crisis in 2020, the Federal Reserve more than doubled its balance sheet, with similar patterns for its holdings of U.S. Treasuries as well as its holdings of mortgage-backed securities (figure 4). Chairman Jerome Powell oversaw this expansion while also calling for cooperation from the U.S. Treasury, which it supported with its expansion of the balance sheet (figure 5).

Policy Longevity and the U.S. Treasury

Both Miller and Bernanke distrusted that market mechanisms would facilitate economic resilience and health. Miller believed that urban financial centers were prone to reckless speculation that, if supported with easy money, would draw resources away from economic activity outside of those centers. Monetary ease during crisis would only reinforce the perceived imbalance. Likewise, Bernanke believed that traditional means of monetary easing by general provision of liquidity were insufficient to promote economic recovery from a severe crisis because the strategy (1) unanchors short-run inflation expectations and (2) may not be sufficient to channel resources to insolvent institutions deemed "too big to fail." Unlike Bagehot, whose strategy would have been to lend only to solvent institutions, Bernanke's strategy was to make those large institutions solvent by having the central bank assume ownership of these institutions' riskiest assets. In both cases, ideological predisposition distrustful of market allocation mechanisms led to the development of policies that increased the scope of the Federal Reserve's influence over allocation.

Although both Miller and Bernanke favored credit allocation, the short- and long-term effects of their strategies differ. In both cases, the policy changes that became a fixture as part of the *status quo* tended to benefit the U.S. Treasury. Unlike Bernanke's policies, Miller's Real Bills–inspired policy led to a net contraction of credit. His preference for influence over the allocation of credit grew less relevant as

the Great Depression drew to a close. When the Federal Reserve began to engage in monetary expansion at the end of 1931, it quickly shifted activity away from lending to private institutions in favor of providing support for the U.S. Treasury (figure 3). Although Miller's emphasis on the Real Bills Doctrine would not live on at the Fed, growing support for the Treasury would, and this would be according to Miller's preference that a "single body" govern policy guided by "public interest" (1935, 457). The Board of Governors emerged as just this preferred group, channeling funds to the federal government instead of to private borrowers. Federal Reserve treatment of U.S. Treasury debt as the primary asset on its balance sheet continued through the close of the century.

Similarly, Bernanke's *unconventional* monetary policy has, by now, become *conventional*. This system of credit allocation continues to benefit the U.S. Treasury because large-scale asset purchases most often include Treasuries. The Fed has also transformed the maturity structure of their holdings to the benefit of the U.S. Treasury. Bernanke's operating system has persisted beyond his tenure as federal indebtedness has continued its trend into record territory. The system essentially offers the federal government a free lunch. So long as the Federal Reserve suppresses circulation of the expanded base, its support of federal spending does not promote an increase in the rate of inflation. This sort of behavior has made persistent and significant support of the U.S. Treasury by the Federal Reserve the status quo. In spite of being generated to confront a financial crisis, its long-run effect has been to intertwine monetary and fiscal policy.

Prior to the crisis, changes in the level of U.S. Treasuries held by the Federal Reserve were a function of changes in the federal funds rate target. Despite insistence by Bernanke that the significant expansion of the balance sheet is meant to unwind in calmer times, this expansion has become a permanent feature (Selgin 2020, 8). Crisis provided an opportunity to implement a policy framework that greatly expanded the scope of intervention by the Federal Reserve. Before the 2008 crisis, Bernanke would have been unable to implement a policy of quantitative easing, as is evidenced by his pre-crisis policy that altered only the composition of the Federal Reserve's balance sheet, not its growth path. This transformation has had the effect of supporting an unprecedented level of indebtedness by the federal government and of increasing risk faced by the Federal Reserve. If interest rates rise significantly, leading "the Fed's losses [to] become large enough, such negative cash flows might end up entirely depleting its capital" (Selgin 2020, 63).

Crisis catapulted an unorthodox ideology to prominence, and with it the total value of assets owned by the Federal Reserve now persistently exceeds the value of circulating currency, often by a factor greater than three. Quantitative easing is the status quo. It also revived the Keynesian strategy of attempting to increase aggregate demand by an increase in deficit spending. We have seen record expansions of federal indebtedness as a percentage of GDP under the Bernanke framework. Federal debt held by the public as a percentage of GDP increased from 36 percent in early

2008 to approximately 70 percent by the end of 2012. With the federal government's response to COVID-19, this value has now settled to greater than 95 percent of GDP (U.S. Office of Management and Budget and Federal Reserve Bank of St. Louis 2022; see also Congressional Budget Office 2021). The nearly century-old habit of ratcheting up federal expenditures in time of crisis has simply met a new form (Higgs 1987).

New or old, the ideology guiding monetary policy has moved that policy into uncharted waters. It is unclear whether there is a limit to the level of support that the Federal Reserve will provide to the U.S. Treasury. Until the recent jump in inflation, which was preceded by a significant expansion of circulating currency, the Fed had been able to limit inflation by maintaining a modest rate of circulating currency. But the stability will ultimately depend on more than this. Investors must expect that the government is capable of repaying its debts without resorting to inflation. Before becoming Fed chair, Janet Yellen observed that "we must keep a close eye on both inflation and inflation expectations to ensure that we continue to earn the inflation credibility that we have built up over the past two and a half decades" (2008). When pushed, the central bank must be able to maintain that credibility and show that there is a limit to the support that it will provide the Treasury. Otherwise, investors might be convinced that policy is more likely to promote devaluation than stable and low short-term inflation.

Perhaps not obvious to observers, this system requires maintenance of fiscal discipline. Investors must expect that there are bounds to the level of support that the central bank is willing provide to the U.S. Treasury, probably best defined in terms of its holdings of U.S. Treasuries as a percentage of GDP. Investor expectations not only concern the rate of monetary expansion in the past, but conditions that indicate its future trajectory. At what point does a growing national debt enabled by support from the Fed become an abhorrent moral hazard in which maintenance of the debt necessitates further expansion of the Fed's balance sheet? If investors perceive that we have reached such a point, expectation of devaluation could encourage lessened exposure to dollars and dollar-denominated debt. To avoid this scenario, investors must expect that the value of the Federal Reserve's balance sheet as a share of GDP will not continually expand to increase the level of support provided to the U.S. Treasury. A 2021 report from the Congressional Budget Office predicts that federal debt held by the public will exceed 200 percent by 2051 and that interest payments on the debt will exceed 7 percent of GDP (Congressional Budget Office 2021, 6).

Ideology guiding monetary and fiscal policy has, at best, supported a limited concern for fiscal discipline. Absent a change in the monetary regime, the Federal Reserve's balance sheet will grow with each crisis. If the Federal Open Market Committee is cognizant of the problem, its members should recognize a need to reduce the size of the balance sheet in preparation for future downturns (Bullard 2017). The "unpleasant monetarist arithmetic" of Sargent and Wallace (1981) seems more relevant than ever. One must hope that somewhere in the Fed's playbook is a contingency plan for the case that investor faith is shaken by a lack of fiscal discipline.

Conclusion

Ideology plays a critical role in guiding human action in all walks of life, including in development of policy decisions that guide the operation of governments (Buchanan and Wagner 1977; Leighton and Lopez 2013). The advice of Deng Xiaoping, who several decades ago led market reform in China, to "seek truth from fact" is more difficult than one might imagine due to philosophical and ideological blinders inherent in any worldview. Even after his policy prescription led to the most severe downturn in American history, one that was significantly worse for the U.S. than for other nations, Miller remained convinced that the worst misdeeds of policy occurred under the leadership of Benjamin Strong. It was policy under Strong, that for Miller showed that the Federal Reserve "did not, in its actual working, produce a satisfactory result" (Miller 1935, 457). In the court of the opinion of scholarship, it is as clear as ever that Miller's policies were responsible for deepening the Great Depression.

It is more difficult to judge Bernanke's action by the meter of history, because not even two decades have passed since the 2008 crisis. Still, we can identify that, like Miller, Bernanke's policies were driven by a particular set of beliefs concerning the cause of financial collapse and the role of monetary policy in preventing such a collapse. Despite his apparent agreement with Friedman and Schwartz that they were "right" that the Federal Reserve was responsible for the Great Depression, Bernanke took away a very different lesson from their study (Bernanke 2002). The policy that has resulted from his interpretation displaced the old regime and has made allocation of credit by the Federal Reserve the status quo. Only time will tell the long-run impact that these policies will have on economic growth. The less than impressive recovery from the 2008 crisis and the growing dependence of fiscal policy on support from the Federal Reserve seem, to this author, not to be precursors of a takeoff in economic growth. One thing is certain, however. Changes to the framework governing monetary policy that benefit the U.S. Treasury have staying power.

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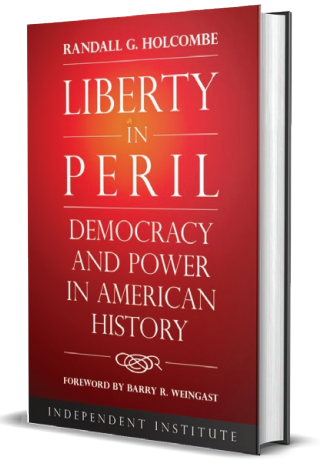

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