



**Federal Reserve Independence:  
Is it Time for a New Treasury-Fed Accord?**

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The Treasury-Fed Accord of 1951 was an important milestone in the transformation of the Fed into an independent central bank. Its goal was to permit the Fed to control its own balance sheet rather than have it be controlled by the Treasury for the purposes of debt management. However, following the massive interventions by the central bank in the financial crisis of 2008-09 and again in 2020-21, during the pandemic and economic shutdown, the traditional boundaries between monetary and fiscal policy has blurred. In this essay, I discuss some of the important changes in the use of the Fed's balance sheet and ask if the 1951 Accord remains a sufficient framework to ensure the Fed's independence. I conclude that it does not. Through its expansion of credit policies, the Fed has effectively engaged in fiscal policy actions that more appropriately belong to Congress. Congress, as well as the Fed, have taken actions that violate at least the spirit of the 1951 Accord. Taken together, these actions undermine the independence of monetary policy decision-making by the Fed and open the door to political and fiscal abuse of the central bank's balance sheet. Thus, it is important to strengthen Fed independence through the appropriate assignment of decision-rights and accountability required of the institution in a democratic society. I lay out a concrete proposal aimed at fostering these goals.

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**Federal Reserve Independence:  
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By

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**Introduction**

In March 1951, after a long, and at times acrimonious, debate, the US Treasury and the Federal Reserve reached an agreement that allowed the central bank to end nearly a decade of pegging the interest rate on government debt.<sup>1</sup> The country was facing uncomfortably high inflation following World War II and the Fed was frustrated by the fiscal demands of the Treasury that, in its view, rendered it unable to ensure price stability. The Treasury-Fed Accord of 1951 was an institutional arrangement, not a legal agreement, that established an understanding of how both parties would conduct policy, and it was an important milestone in the transformation of the Fed into an independent central bank. As described by Allan Meltzer (2003, p. 738), it “prevented an administration from deciding unilaterally to use monetary expansion to gain temporary political advantage or to finance too much of the budget at the central bank.” Its goal was to permit the Fed to control its own balance sheet rather than have it be controlled by the Treasury for the purpose of debt management.<sup>2</sup>

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<sup>1</sup> See Hetzel and Leach (2001) and Meltzer (2003, pp. 699-724) for further insights surrounding the creation and details of the 1951 Accord.

<sup>2</sup> Allan Sproul, then president of the Federal Reserve Bank of New York, was asked if the Fed’s efforts to break the link to Treasury funding demands might usurp the debt-management responsibilities of the Treasury. He responded:

The Accord reached its 50th anniversary in March 2001. At the time, it seemed that central bank independence with respect to monetary policy was increasingly secure and price stability was widely accepted as the primary objective of the Fed and many other central banks. Concerns about entanglements of monetary and fiscal policy were of more historical interest than pressing issues, at least in the US. But by the 70th anniversary in March 2021, following massive central bank interventions in the recession of 2008-09 and again beginning in March 2020, the traditional boundaries between monetary and fiscal policy had blurred.

In this essay, I discuss some of the important changes in the use of the Fed's balance sheet and ask if the 1951 Accord remains a sufficient framework to ensure the Fed's independence. I conclude that it does not. Through its expansion of credit policies, the Fed has effectively engaged in fiscal policy actions that more appropriately belong to Congress. Congress, as well as the Fed, have taken actions that violate at least the spirit of the 1951 Accord. Taken together, these actions undermine the independence of monetary policy decision-making by the Fed and open the door to political and fiscal abuse of the central bank's balance sheet. Thus, it is important to strengthen Fed independence through the appropriate assignment of decision-rights and accountability required of the institution in a democratic society. Later in this essay I will lay out a concrete proposal aimed at fostering these goals.

### **Some Background**

I began publicly speaking and writing on these matters during my time at the Federal Reserve (2006-15), as the Fed began its first round of quantitative easing (QE).<sup>3</sup> But like any other research, the ideas I express here have antecedents in the work of others and, in particular, that of Marvin Goodfriend. Marvin spent most of his career as a monetary economist working at the Federal Reserve Bank of Richmond.<sup>4</sup> He served as the Bank's research director and chief policy

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"Certainly not. The essence of debt-management is to tailor your offerings to the market in terms of current economic conditions, not to have the market tailored to your offerings by the central bank." See Board of Governors (1951).

<sup>3</sup> For early examples, see Plosser (2009a, 2009b, 2009c).

<sup>4</sup> In 2005, he joined Carnegie-Mellon University, adding to the proud tradition in monetary economics established by Allan Meltzer and Ben McCallum. He subsequently assumed a leadership role in the Carnegie-Rochester Conference

advisor during the tenure of President Al Broaddus. Marvin had deep knowledge and experience in policymaking as well as economic theory. His forward-looking research often identified important issues before they rose to the forefront of policy debates.

Goodfriend and King (1988) and Goodfriend (1994), for example, stress the importance of distinguishing two elements of central bank policy. The first is monetary policy, which is reflected in changes in the overall size of the Fed's balance sheet. Such actions are frequently framed in terms of interest rate policies intended to bring about desired changes in the balance sheet. The second is credit policy, which is captured by changes in the composition of assets held.<sup>5</sup> This decomposition is consistent with a long tradition in monetary economics that views central banks as unique because they alone can directly alter the amount of government-created money. Credit policy by the Fed is more correctly viewed as debt-financed fiscal policy as it inevitably (and presumably intentionally) favors one party over another and places taxpayer funds at risk. It amounts to off-budget spending since it does not go through the usual congressional appropriation process.

The notion of placing taxpayer funds at risk is important for understanding the consequences and dangers of central bank credit policy. In the case of the Fed, credit policies almost always involve substituting more risky assets for less risky assets on the balance sheet, thus shifting credit risks from individual entities (usually in the private sector) to the taxpayer. Credit policy decisions place taxpayer funds at risk and often involve complex and highly political choices. As such, they are more appropriately thought of as the responsibility of Congress and the Treasury, not the central bank. So it is important to clearly address the decision-rights and accountability of credit policies. Some examples help illustrate these points.

The government, and Congress more specifically, frequently engages in an array of credit policy actions that put taxpayer funds at risk. Some take place through the tax code, but many occur

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on Public Policy Series and joined the Shadow Open Market Committee (SOMC), two organizations in which I was deeply involved until my departure for the Federal Reserve in 2006.

<sup>5</sup> Douglas Diamond (2022), in this volume, discusses Goodfriend and King (1988) using their terminology of "banking policy" rather than the more modern "credit policy" label that I adopt. Banking policy also includes regulations, but that will not be discussed here.

through loans and loan guarantees to private entities. This is the most common form of credit allocation by the government. One high-profile example was a Department of Energy loan guarantee of \$535 million made in 2009 to the Solyndra Corp, a developer of solar panels using a new technology. It was touted as a great investment in “green” technology. The company filed for bankruptcy in 2011, and the government (taxpayer) took a loss of \$528 million.<sup>6</sup>

Goodfriend and King (1988), however, discuss central bank credit policies. One common example is lending to individual banks through the discount window. Federal Reserve Banks make such loans based on collateral posted by individual banks. The interest rate is called the primary credit rate and must be approved by the Board of Governors. The rate is typically set somewhat above the fed funds target rate determined by the Federal Open Market Committee (FOMC). Such loans are traditionally very short term, fully collateralized, and can only be made to solvent depository institutions. A discount window loan provides the individual bank with reserves so that both the assets and liabilities of the Fed increase. But such lending need not increase the balance sheet since the Fed could simultaneously sell Treasuries from its portfolio to offset or “sterilize” the transaction, leaving monetary policy unchanged. Thus, such sterilized lending would be characterized as pure credit policy.<sup>7 8</sup> The resulting composition of Fed assets would likely be riskier than the Treasuries it held before. So selling Treasuries to purchase riskier assets, credit policy by the Fed is essentially debt-financed fiscal policy.

Another example discussed by Goodfriend (1994) and Broadus and Goodfriend (1996) is Fed participation in foreign exchange intervention. Such interventions can be sterilized (through an offsetting purchase or sale of Treasury securities) or unsterilized, which allows the balance sheet size to respond. The empirical evidence suggests that sterilized foreign exchange interventions

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<sup>6</sup> See Geman (2015) for an interesting account of this episode.

<sup>7</sup> On August 16, 2007, the FOMC had just such a conversation. In discussing a proposed reduction in the discount rate from 100bp above the fed funds target to 50bp, Jeffrey Lacker, then president of the Federal Reserve Bank of Richmond and longtime colleague of Goodfriend, asked if any additional loans would be sterilized or allowed to increase the balance sheet. Bill Dudley, then manager of the System Open Market Desk, responded that there would be “offsetting adjustments.” See Board of Governors (2007, p. 4).

<sup>8</sup> As will be discussed further below, many of the lending programs pursued between 2007 and September 2008 can be thought of as pure credit policies as they were largely sterilized, thus having little direct consequence for the stance of monetary policy.

have small and temporary effects at most. Requiring or expecting the Fed to engage in credit policy in the form of sterilized foreign exchange interventions that expose the Fed to credit risk and place taxpayer funds at risk would seem to be of questionable value without explicit congressional approval.

In a remarkable stroke of foresight, Goodfriend (1994) suggested that the Fed and Treasury consider a “new Accord” to address Fed credit policies. He worried that “large federal budget deficits, a deposit insurance crisis, or a significant foreign exchange market intervention” might give rise to increased fiscal pressures on the Fed and specifically on its credit policies.<sup>9</sup>

Goodfriend (1994) recommended that such a “new Accord” be based on the following principles: “(1) liquidity assistance should not fund insolvent institutions; (2) credit policy should not fund expenditures that ought to get explicit Congressional authorization; (3) Congress should not direct the Fed to transfer assets to the Treasury in order to reduce the Federal debt.” Such an agreement, of course, has not come to pass.

Events since 2008 have strengthened the case for greater clarity of the boundaries between the Fed and both the Treasury and Congress regarding the decision-rights and accountability of credit policies.

In the remainder of this essay, I offer some general, mostly well-known, observations about the importance of an independent central bank and the critical role of institutional constraints in preserving independence. Then I highlight how changes in the use of the Fed’s balance sheet by both the Fed and the fiscal authorities (the Treasury and Congress) have potentially undermined the fragile balance established by the 1951 Accord. This discussion is followed by some suggestions -- largely compatible with those in Goodfriend (1994, 2009) and Plosser (2009a, 2009b, 2017b) -- for reclaiming both independence and accountability of the Fed by strengthening the boundaries around credit policy.

## **Fed Independence and the Role of Institutions**

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<sup>9</sup> See also Broaddus and Goodfriend (1996).

The case for central bank independence largely stems from monetary policy's unique role in providing price stability. Since a central bank can also play a role in financing government expenditures, the potential for conflicting interests between the monetary and fiscal authorities is clear, as was evident in the events leading up to the 1951 Accord. Governments can finance spending in three ways: taxation, debt (future taxes), or printing money. In this sense, monetary and fiscal policy are intertwined through the government's budget constraint. The historical record offers a strong case for the independence of monetary policy. It teaches us that without institutional or constitutional constraints of some form, governments often resort to the printing press to avoid difficult fiscal decisions, potentially undermining monetary policy's responsibility for ensuring price stability.<sup>10</sup>

Thus, there are good reasons to maintain a healthy separation between monetary and fiscal policy. The 1951 Accord is a form of institutional constraint that acknowledges that the Fed has the decision-rights to control the size of its own balance sheet to protect monetary policy from dominance by the fiscal or political authorities. But it also suggests that the Fed should refrain from active engagement in issues that fundamentally are under the purview of Congress and the fiscal authorities.

Plosser (2010, 2012, 2014) discusses some dimensions of these institutional arrangements but stresses that independence does not mean that the Fed should have unrestricted powers, nor does it mean the institution is unaccountable. In a democracy, independence requires that there be constraints on the breadth of the central bank's responsibilities and its powers.

Limits to central bank authorities can take different forms. One important element involves the breadth and scope of the bank's mandate. Narrow mandates focus the central bank on a limited set of objectives that make it easier to hold the institution accountable for success or failure.

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<sup>10</sup> See Plosser (2016a) for a brief discussion of recent events in Argentina as one example.

Narrow mandates also limit the range of the central bank’s responsibilities that it can use to justify its actions. This argues for a mandate that focuses more narrowly on price stability.<sup>11</sup>

It is also common to see restrictions on the types of assets that the central bank can buy and sell to limit its interference with market allocations of scarce capital and generally to avoid actions more appropriately left to the fiscal authorities or the market. For example, the Federal Reserve Act (FRA) limits asset purchases by the Fed to specific classes of securities.<sup>12</sup> For instance, the Fed does not have the general authority to buy private sector securities, such as equities or corporate bonds, nor can it buy securities issued by state or local governments unless they are revenue bonds or tax anticipation bonds with maturities of six months or less.<sup>13</sup>

Between 1950 and 2007, the Fed followed a policy of buying and selling almost exclusively Treasury securities. In fact, between 1951 and 2000, outright holdings of Treasury securities accounted for over 85 percent of the growth in the balance sheet and in 2000, 83 percent of total assets.<sup>14</sup> By August 2007, Treasuries securities held outright accounted for 90 percent of the Fed’s balance sheet and 92 percent of the of asset growth since 1950. Thus, the Fed operated a de facto “Treasuries-only” approach to its balance sheet. The Fed’s rationale for this approach has been an explicit desire to make its buying and selling as neutral as possible on the allocation of capital by the private sector and to ensure its portfolio is liquid, avoiding large amounts of interest rate risk inherent in longer-term bonds.<sup>15</sup>

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<sup>11</sup> Unfortunately, the trend is an expanding mandate for central banks and the Fed, in particular. They are being pressured to consider all sorts of distributional issues in the real economy from wealth inequality, inclusive employment, as well as broader issues such as climate change. Levy and Plosser (2020), for example, discuss how this arises in the Fed’s new monetary strategy adopted in August 2020.

<sup>12</sup> See Section 14(2(b)) of the FRA.

<sup>13</sup> There are exceptions such as loans at the discount window and, under extraordinary circumstances, lending under Section 13(3) of the FRA, which is considered further below.

<sup>14</sup> Outright holdings of Treasuries exclude repurchase agreements collateralized by Treasuries, which were largely temporary in nature. Including them would raise these percentages slightly.

<sup>15</sup> The Fed has frequently debated whether its holdings of Treasuries should be predominately in the form of short-term bills or a more balanced range of maturities that mimic the actual distribution of the outstanding public debt. In the 1950s the portfolio was more heavily weighted toward longer maturity Treasuries as a consequence of the accumulation of wartime bonds and the interest rate peg prior to the 1951 Accord. Gradually, the portfolio tilted toward shorter maturities, in part to improve its liquidity. There was also a desire to make the portfolio “neutral,” that is similar to the maturity structure of the outstanding public debt. There were occasions when the Treasury



Legal constraints on the central bank can sometimes provide protection from fiscal interference because these give the Fed grounds for denying requests from the fiscal authorities. Of course, Congress can change the law, but such constraints raise the bar for getting the Fed to do something that might undermine its independence. An example, which will be discussed further below, occurred in December 2008 when Senator Chris Dodd wrote a letter to Fed Chair Ben Bernanke requesting that the Fed lend money to the failing automobile companies. Bernanke said no, on the grounds that certain provisions of the FRA made it inappropriate for the Fed to intervene in the case or to engage in industrial policy. His case was weakened by the Fed's own actions to rescue Bear Stearns and AIG earlier in the year and its financial support for the GSE's through the purchases of agency debt.<sup>16</sup>

Of course, constraints and restrictions can also be placed on the fiscal authorities that limit interference in monetary policy. The 1951 Accord was just such an example, as it declared that the Treasury would not use the Fed's balance sheet to directly fund fiscal deficits. The prominent role credit policy has played since the financial crisis makes it important to reconsider the limits to the Fed's scope for such policies and do so in a way that respects and protects its independence.

### **The Fraying Boundaries**

The boundaries established in the FRA and strengthened by the 1951 Accord enhanced the credibility of the Fed as an independent central bank and its ability to achieve its mandates. Of course, performance has not been perfect, as the high inflation of the late 1960s and 1970s clearly illustrates. The fiscal authorities, including the executive branch and members of Congress, frequently express their views on the appropriateness of Fed policy, but often with

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would try to get the Fed to extend its maturity structure to accommodate Treasury's funding desires. As of 2002, the Fed's Treasury portfolio was pretty close to neutral and thus was heavily weighted toward the short end of maturity spectrum. About 65 percent of the Treasury securities had maturities of 2 years or less (compared to about 55 percent of the public debt) and a little over 10 percent had maturities of 10 years or more (compared to about 17 percent of the public debt). See Huther, Ihrig, and Klee (2017) for an interesting discussion of the evolution of the Fed's Treasuries portfolio.

<sup>16</sup> As will be discussed later, Congress ended up using fiscal policy tools to deal with the challenges facing the auto industry.

little or no effect on policy. Yet in the years leading up to the Great Inflation, President Lyndon Johnson exerted increasing pressure on Federal Reserve Chair William McChesney Martin to keep rates low to help support his spending agenda that included the Great Society programs and the Vietnam War. Martin became concerned about inflationary pressures, and many on the FOMC were even more concerned. The pressure from the White House was intense: Martin succumbed by delaying FOMC action, in part, by telling his colleagues that the Fed should keep the Treasury market on an “even keel.”<sup>17</sup> The Fed finally raised the discount rate on December 3, 1965. The president was not pleased. The political pressure from the executive branch was clearly at odds with the spirit of the 1951 Accord and was largely responsible for beginnings of the Great Inflation. In October 1969, with inflation running at nearly 6 percent, President Richard Nixon replaced Martin, who by then was committed to restraining inflation, with Arthur Burns, whom he thought would be more compliant with his political wishes. And indeed, he was. The Accord was strained, and political pressure dominated Fed decision-making. These periods under presidents Johnson and Nixon were consequential breakdowns in the traditional boundaries that had developed to support independence and avoid monetary and fiscal policy entanglements. They bear significant responsibility for the subsequent inflation.<sup>18</sup>

Following the Great Inflation, the wisdom and spirit of the Accord was mostly restored with the strong support of Fed Chair Paul Volcker and President Ronald Reagan. As mentioned at the outset, by 2001, the 50th anniversary of the 1951 Accord, central bank independence seemed well established as a principle of sound central banking and price stability was increasingly accepted as the primary objective.

Yet, beginning with the financial crisis and the accompanying recession, and continuing into the pandemic and economic turmoil it engendered, we again witnessed substantial deterioration in the traditional institutional barriers between fiscal and monetary policy, especially the willingness of the Fed to use its balance sheet to conduct credit policy. In the remainder of this

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<sup>17</sup> “Even keel” policy during the 1950s and 1960s was Fed speak for avoiding policy actions that might disrupt financing operations of the Treasury.

<sup>18</sup> See Levin and Taylor (2013) and Meltzer (2009) for a more in-depth discussion of this historic period.

section I trace how the Fed's credit policies shaped its balance sheet during the 2007 to 2021 period.

### *Balance Sheet Responses to the Financial Crisis*

*The Early Crisis and Sterilized Lending.* Early in the financial crisis, August 2007 to August 2008, the Fed aggressively used its balance sheet to conduct sterilized credit policy. As a consequence, these early credit policies had little impact on the size of the balance sheet but did significantly change its composition. As pointed out previously, in August 2007, outright holdings of Treasury securities accounted for about 90 percent of the Fed's balance sheet. One year later, in August 2008, Fed holdings of Treasuries had declined by \$305 billion, largely to fund its credit extensions. Treasuries fell to just 53 percent of assets held by the Fed. On net, the balance sheet increased by less than 4 percent, about \$37 billion over the year.

Much of the lending went to depository institutions through discount window loans and through a new program created in December 2007 called the Term Auction Facility (TAF) that supplemented traditional discount window lending but permitted longer terms. By August 2008, such lending increased by almost \$170 billion.<sup>19 20</sup>

The most significant event during this period was the Fed's steps to rescue the creditors of the investment bank Bear Stearns. Like its other actions during this period, this lending arrangement (about \$30 billion) was credit policy as it was primarily the purchase of non-Treasury securities (mostly high-yield/subprime mortgages) financed by the sale of Treasury securities. In other words, it was debt-financed fiscal policy, yet the spending did not show up as funds appropriated by Congress. The rescue was undertaken by the Board of Governors (not the FOMC) under the

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<sup>19</sup> Other assets that increased during this period included dollar swap lines with foreign central banks and repurchase agreements.

<sup>20</sup> Some ask why the Fed was concerned about sterilization and increasing the size of the balance sheet at that time. It is useful to remember that in December 2007 the CPI year-over-year rate of inflation was 4.1 percent and by August 2008 it was 5.4 percent. The Fed did reduce the funds rate from 4.25 percent, where it started the year, down to 2 percent by the end of April 2008. So, it is not entirely a surprise that the Fed was weighing the prospects for inflation as well as the risks financial instability.

authority granted in Section 13(3) of the FRA.<sup>21</sup> By the end of August 2008, sterilized lending by the Fed led its holdings of short-dated Treasuries to fall to \$22 billion. This decline made it much more difficult for the Fed to engage in further sterilization without selling long-term Treasuries.

The powers under Section 13(3) of the FRA allowed for the expanding role of the Fed into credit allocation. The provisions permitted the Board of Governors, “under unusual and exigent circumstances” to lend to private firms, individuals, and partnerships. It was originally put in place in the 1930s as a complement to the Fed’s role as lender of last resort. Yet it was almost never used.<sup>22</sup> Even in periods of severe financial strain, such as the savings and loan crisis, the failures of Enron and WorldCom, the stock market crisis in 1987, the collapse of the NASDAQ accompanying the bursting of the so-called tech bubble, and the financial stress of the terrorist attacks on 9/11, the Fed did not resort to the discretionary powers of Section 13(3) to purchase private sector risky securities.<sup>23</sup> The Fed earned a reputation, developed over nearly three-quarters of a century, that it would not use this provision to conduct credit policy. The Fed’s conduct starting in March 2008 undermined this reputation and the long-standing boundaries recognized by the Fed and the Treasury.

In many ways, the rescue of Bear Stearns was the watershed moment in the crisis. The Board used its powers under Section 13(3) for the first time since the Great Depression to engage in lending to rescue a failing private entity outside the traditional banking system. This created uncertainty about future policy actions and moral hazard that did not exist before the intervention. That is, firms could be rescued with public funds by the Federal Reserve. It set the

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<sup>21</sup> The lending to support the Bear Stearns rescue was consolidated into the Maiden Lane, LLC facility and presented as a separate item on the Fed’s balance sheet. At the time of the Bear Stearns rescue the Fed created two other Section 13(3) facilities in support of primary dealers, the Term Securities Lending Facility (TSLF) and the Primary Dealer Credit Facility (PCDF).

<sup>22</sup> Prior to 1980 the Fed did use Section 13(3) on a few occasions to permit nonmember banks to borrow at the discount window. The Monetary Control Act of 1980 eliminated the prohibition of nonmember borrowing from the Fed so any depository bank could have access to the discount window.

<sup>23</sup> During this period the Fed also declined to use its Section 13(3) authority to lend to Penn Central, New York City, Lockheed, or Chrysler, despite political pressure and claims of potential financial contagion. See Fettig (2002) and Schwartz (1992) for some additional history and discussion.

stage for the turmoil that followed in September of 2008 surrounding the rescue of AIG and the failure of Lehman Bros.<sup>24</sup>

Thus, early in the financial crisis the stage was set for a much more active role for the Fed in credit allocation and thus, a more active involvement in fiscal policy.

*The Financial Crisis Stage Two: More Credit Policy and Balance Sheet Expansion.* In September to December 2008, following the failure of Lehman Bros. on September 15, the Fed invested \$85 billion in the rescue of AIG using the Board's powers under Section 13(3). Over the course of the fall of 2008, the Board also created, again using Section 13(3), an alphabet soup of lending programs in an effort to support the broader real economy by investing in private sector securities.<sup>25</sup> It included programs to make loans to private investors to purchase asset-backed securities, commercial paper, and to support money market funds, for example. These programs would not be sterilized and thus would involve balance sheet expansion, an action impacting monetary policy.

It is important to recognize that these programs took time to establish and could have been implemented directly by the Treasury. Fundamentally, the new programs shifted credit risks from private entities to the taxpayer without explicit congressional approval. As such, they represented off-budget spending by the Fed. Even in fast-moving crises, where it may be desirable to have the Fed act with alacrity, the programs (including the lending to rescue Bear Stearns and AIG) could have been shifted over to the Treasury after a few months in exchange for government securities. This would have required legislation, but it would have meant Congress was responsible for the oversight and accountability of these taxpayer financed investments. I suggested just such an action in the FOMC meeting in December 2008 and publicly

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<sup>24</sup> The question is would Lehman Bros. (and other financial actors) have behaved differently had Bear Stearns not been rescued by the Fed? We do not know. We do know that following the failure of Lehman, other major investment banks became banks with access to the discount window, yet they were subject to more regulation and oversight (Goldman Sachs and Morgan Stanley), and another (Merrill Lynch) sold itself to a bank (Bank America). Might Lehman, along with the others, have done the same thing earlier in the year had Bear Stearns been allowed to fail, perhaps reducing some of the ensuing turmoil?

<sup>25</sup> In addition to the previously announced TSLF and PDCF, these new programs included the Term Asset Backed Loan Facility (TALF), Commercial Paper Funding Facility (CPFF), Asset-Backed Commercial Paper Money Market Mutual Fund Lending Facility (AMLF), and the Money Market Investor Funding Facility (MMIF).

in Plosser (2009a).<sup>26</sup> I will discuss this strategy more below as it is key part of my “New Accord” recommendations to clarify and constrain the use of Fed credit policies in an emergency.

Another significant step was taken in November 2008 when the Board announced it would purchase \$500 billion in agency MBS and \$100 billion of agency debt beginning in January 2009.<sup>27</sup> This was an entirely new and significant step into credit allocation. As discussed previously, the Fed had essentially operated with a “Treasury-only” portfolio since the 1951 Accord. Because the agency MBS purchases also expanded the balance sheet, it was also an important monetary policy action, although this was not emphasized by the Board of Governors at the time.<sup>28</sup> In the announcement, for example, the Fed said, “This action is being taken to reduce the cost and increase the availability of credit for the purchase of houses, which in turn should support housing markets and foster improved conditions in financial markets more generally.”<sup>29</sup> Chair Bernanke (2009) spoke specifically on this issue, saying that the Fed was using its powers to engage in “credit easing.” As he explained, the tools “... make use of the asset side of the Federal

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<sup>26</sup> In the FOMC meeting on December 15-16, 2008, I said: “As I have articulated before, I believe we need to remain cognizant of the line between monetary policy and fiscal policy. I would prefer to see us purchasing Treasuries rather than riskier assets, as I would favor the purchases of long-term Treasuries over new 13(3) facilities. ... To the extent that some of our lending programs are targeted at aiding specific markets, my preference would be to shift those assets from the Fed’s balance sheet to the Treasury and substitute Treasury securities. This would help distinguish monetary policy from credit policy and preserve our ability to conduct independent monetary policy.” Board of Governors (2008b, p. 41).

<sup>27</sup> See Board of Governors (2008a). The term agency debt refers to the direct obligations of housing-related government-sponsored enterprises (GSEs), including Fannie Mae, Freddie Mac, and the Federal Home Loan Banks. Agency MBS are the mortgage-backed securities backed by Fannie Mae, Freddie Mac, and Ginnie Mae. The credit policy dimensions of the program were made all the more apparent by the purchase of GSE debt. But this aspect of the program had multiple implications. For example, at this point the GSEs had already been placed in conservatorship, so by purchasing agency debt the Fed was supporting the fiscal policy dimensions of the government takeover of the institutions.

<sup>28</sup> There is an important underlying issue that has not received much public attention. The announcement of MBS purchases in November was made by the Board of Governors (BOG) not the FOMC. In fact, there seems to be no FOMC document or record of prior approval by the FOMC. Consequently, the BOG appears to have made an announcement of a major expansion of the Fed’s balance sheet without the explicit approval of the FOMC, which is the body responsible for monetary policy. While the expansion was approved by the FOMC at its December 2008 meeting, it was accompanied by significant discussion scattered throughout the meeting (see Board of Governors (2008b, pp. 16-103, 166-167). The commentary on pages 30-35 by Jeffrey Lacker (president of the Richmond Fed) concerning governance and the roles and responsibilities of the BOG and the FOMC regarding monetary policy and the size of the balance sheet is particularly relevant. Outside of commitments by the chair to work cooperatively with the FOMC in the future on such matters, I was unable to find subsequent documentation that these governance issues have been discussed or further clarified.

<sup>29</sup> Board of Governors (2008a). On the same day, the Fed announced the TALF program, which permitted lending to banks using asset-backed securities as collateral.

Reserve's balance sheet. That is, each involves the Fed's authorities to extend credit or purchase securities." The actions were clearly stated in terms of the Fed's intention to allocate credit to the housing sector relative to other sectors of the economy. The alternative, of course, would be to buy Treasuries.

In March 2009, the FOMC announced it would increase the intended agency MBS purchases by \$750 billion and agency debt by \$100 billion. The announcement also indicated the intention to purchase \$300 billion in longer-term Treasury securities. Purchases of agency MBS continued until the spring of 2010. At that point, the financial markets' functioning had mostly normalized, and the economy was beginning to slowly recover. The Fed, however, continued to purchase long-term Treasuries and lengthen the maturity of its portfolio.

By the summer of 2012, Fed was dissatisfied with the pace of the recovery and wanted to apply more monetary stimulus, so the rationale for MBS purchases was modified "to support a stronger economic recovery and help ensure inflation, over time, is most consistent with its dual mandate."<sup>30</sup> Purchases continued through the end of 2014.<sup>31</sup> By December 2014, the Fed's portfolio of agency MBS had grown to \$1.74 trillion, accounting for almost 40 percent of Fed assets.<sup>32</sup>

*The Treasury and Fed Joint Statement of March 2009.* After concerns expressed by FOMC members and others, the Fed and Treasury issued a joint press release on March 23, 2009, seeking to clarify the role of the Fed.<sup>33</sup> The statement made four points. First, the Fed and Treasury should cooperate in "improving the functioning of credit markets and fostering financial stability." Second, the Fed "should seek to avoid credit risk and credit allocation," noting that "(g)overnment decisions to influence the allocation of credit are the province of the fiscal

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<sup>30</sup> Board of Governors (2012).

<sup>31</sup> From 2015 through 2017, the Fed did purchase some agency MBS as a means of stabilizing the size of its MBS portfolio.

<sup>32</sup> The total size of the balance sheet in December 2014 had grown to \$4.5 trillion, more than a fivefold increase from its pre-crisis size of \$850 billion.

<sup>33</sup> See Board of Governors (2009) for the joint press release. See Lacker (2009) and Plosser (2009a) for public expressions of concerns in early 2009 and footnotes 26 and 39 regarding comments by Plosser in the transcript of the December 15-26, 2008, FOMC meeting (Board of Governors (2008b)).

authorities.” Third, it acknowledged the need for the Fed to preserve monetary stability and that lending under emergency circumstances (that is, Section 13(3)) that increased the balance sheet, “must not constrain the exercise of monetary policy.” It added that the Fed and Treasury were seeking 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.” The fourth and final point was to recognize the need for a “resolution regime for systemically critical financial institutions.” The concluding paragraph offered a tantalizing hint at Treasury’s financial responsibilities: “In the longer run and as its authorities permit, the Treasury will seek to remove from the Federal Reserve’s balance sheet, or to liquidate, the so-called Maiden Lane facilities.”

This joint statement made some good points but did not change or constrain Fed or Treasury actions in any meaningful way. The Fed continued its Section 13(3) credit policies, including its agency MBS purchases, and non-Treasury assets were never transferred to the Treasury. Moreover, as will be discussed further below, the Fed’s response to the pandemic in 2020 followed the same playbook, constructing credit programs and purchasing agency MBS in a manner similar to what it had done in the post-2007 period, except on a larger scale.

Section 13(3) and the Dodd-Frank Act of 2010. The Dodd-Frank Act of 2010 made some changes to provisions in Section 13(3) to address concerns about credit allocation and the use of emergency lending. Three provisions are relevant. First, the Fed must get prior approval from the secretary of the Treasury for any program proposed under Section 13(3).<sup>34</sup> Second, any program or facility established must be designed to provide liquidity to the financial system, have broad-based eligibility, and not be constructed in such a way as to target a single firm or entity. Three, all transactions conducted under Section 13(3) of the FRA must be with “solvent” institutions or entities only. These changes place some restrictions on emergency lending but, as we will see, they are not very limiting.

Other Forms of Risk Taking on the Balance Sheet. As previously noted, by the late 1990s and up until 2007, the Fed managed its Treasury portfolio in a “neutral” fashion. That is, it had a

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<sup>34</sup> Prior to this change, the Board of Governors could determine if circumstances could be categorized as “unusual and exigent.”



maturity structure that looked similar to the maturity structure of the overall public debt.<sup>35</sup> Beginning in 2007, the duration of the Fed's portfolio began to lengthen as its credit programs expanded and it sold short-term Treasuries to sterilize the impact on the balance sheet. So not only was the Fed taking on more credit risk, but it was also acquiring more interest rate risk. A deliberate effort to lengthen the duration of its Treasury portfolio began in March 2009 when the Fed announced that it intended to purchase \$300 billion in long-term Treasury securities. The rationale was an attempt to reduce long-term interest rates and "improve conditions in the private credit markets."<sup>36</sup>

The Maturity Extension Program and Reinvestment Policy was initiated in September 2011 and sought to lower the longer-term interest rate by selling Treasuries from the Fed's portfolio with maturities of less than three years and purchasing Treasuries with maturities of greater than six years. This changed the composition or maturity structure of Treasury securities on the Fed's balance sheet with the goal of flattening the yield curve of government debt. The Fed tried this once before in the 1960s in what was known as Operation Twist. At the time it was widely viewed as unsuccessful, although some suggest it may have been more effective than previously thought.<sup>37</sup> But regardless of its efficacy, the operation is an exercise in maturity management of the public debt, traditionally executed by the Treasury and not the Fed. Moreover, the Treasury could effectively offset the Fed's effort by issuing more long-term debt relative to short-term debt, resulting in the same distribution of maturities in the hands of the public as existed before the Fed's program. Of course, the effect on the Fed, in either case, is to increase the interest rate risk of its own portfolio by creating a greater maturity mismatch between the Fed's liabilities (bank reserves and currency) and its assets.<sup>38</sup>

*Congressional Responses to Credit Policies and Balance Sheet Expansion by the Fed.* In addition to the revision to Section 13(3) already discussed, the Fed's plunge into credit allocation generated

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<sup>35</sup> See Huther, Ihrig, and Klee (2017) for some supporting evidence.

<sup>36</sup> Of course, the purchase of agency MBS was also lengthening the duration of the Fed's portfolio.

<sup>37</sup> See Swanson (2011).

<sup>38</sup> The System Open Market Account (SOMA), comprised of securities held by the Fed, had an average duration of 2.8 years in August 2007. By December 2014 it had grown to almost six years, and by December 2020 it stood at about five years.

policy responses by Congress. For example, as discussed previously, Congress asked the Fed to consider financial aid to the automobile companies. The companies had been under financial stress prior to the crisis, but it turned more acute in 2008. Chair Bernanke turned down the request. In the end, Congress addressed the matter directly using its fiscal powers.<sup>39</sup> However, it is not difficult to understand the request from Congress. The Fed had already rescued Bear Stearns and AIG, although Lehman was allowed to fail; it had committed to providing support to the housing sector, including purchases of agency debt of the GSEs; and it was purchasing (through the CPFF) commercial paper directly from issuers. So why not provide support to the automobile industry? This illustrates the confusion created in the eyes of the public, and Congress, over the limits or boundaries surrounding Fed credit policies.<sup>40</sup>

Unfortunately, efforts to exploit the Fed's balance sheet for fiscal purposes continued. In the Dodd-Frank Act of 2010, Congress relied on the Fed for direct fiscal support. As part of the legislation, the Consumer Financial Protection Bureau (CFPB) was created. It was a vigorously debated provision. In the end, Congress created the agency and decided the Fed should fund it but gave the Fed no control or oversight authority. The result is that the CFPB is exempt from the annual appropriation process.<sup>41</sup> Of course, this mandated expenditure reduces Fed payments to the Treasury each year. Thus, the taxpayers still pay, but the agency becomes an off-budget

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<sup>39</sup> The big three auto companies received about \$80 billion in assistance through the Troubled Asset Relief Program (TARP). However, restructuring attempts failed, and in June 2009 GM and Chrysler went through a forced bankruptcy and restructuring. See Klier and Rubenstein (2012) for a review of the crisis in the auto industry.

<sup>40</sup> This issue of acceptable lending and its impact on intermediation was discussed more broadly in the December FOMC meeting and is illustrated by the following exchange. Board of Governors (2008b, pp. 235):

MR. PLOSSER. But in some sense, just to follow up on this point, the limits are what is really important here because, as long as we don't define some limits and we just say limited by TARP capital, well, that doesn't really answer the question. As long as the markets act as if we or someone else is going to step in and rescue them from any more lending arrangements they happen to be facing, the incentives for the intermediary system to repair itself or to gradually adjust are going to be limited. I'm worried about the lack of definition about what constitutes a legitimate market or instrument or firm that we wouldn't save.

CHAIRMAN BERNANKE. That's a good point, and I think one thing that is a problem now is the transition between Administrations. We'll soon have a new Treasury Secretary and a new Administration. I think it's very important—I've discussed this with Tim Geithner and others—that as soon as possible we lay out a broad strategy. What are the components of our strategy? What are we going to do going forward?

MR. PLOSSER. And what are the limits to it?

<sup>41</sup> The Fed is required to pay all expenses of the CFPB up to the equivalent of 12 percent of the Fed's own operating budget.

expenditure. Without a change in the enabling legislation, the CFPB budget is determined by Fed operating expenditures and rises with them.

In the Fixing America's Surface Transportation Act (FAST) of 2015, Congress also used the Fed's balance sheet as means of funding. Specifically, the act required that the Federal Reserve Bank surplus account not exceed \$10 billion. This resulted in almost \$20 billion being transferred directly to the Treasury to help fund the act.<sup>42</sup> In the Bipartisan Budget Act of 2018, Congress further decreased the Fed's surplus account to \$7.5 billion, resulting in another \$2.5 billion transfer to the Treasury.<sup>43</sup>

*Managing a Large Balance Sheet and the Potential for Abuse.* Unsterilized credit policy initiatives, including the large volume of agency MBS purchases, contributed to unprecedented growth in bank reserves and hence the Fed's balance sheet. The Fed has never seriously considered reducing the balance sheet sufficiently to enable a return to its precrisis operating regime, commonly referred to as a "corridor system." In this prior regime, the Fed adjusted the volume of bank reserves up and down to ensure that the fed funds rate (the rate that banks trade reserves among themselves) remained close to its target set by the FOMC. Most major central banks used this regime prior to the financial crisis.

Once bank reserves became large, this framework could not be used, as modest changes in bank reserves would have no impact on the effective fed funds rate.<sup>44</sup> As long as the fed funds target is effectively zero, this is not a major issue. It becomes a significant issue when the Fed wishes to raise the fed funds target above zero. How can it do that when the banking system is flooded with reserves? Goodfriend (2002) suggested that paying interest on reserves (IOR) would be a

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<sup>42</sup> The 2015 act also required the Fed to reduce the dividend it was paying to member banks. These changes (the permanent cap on the surplus account and reduction in the dividends) constituted a permanent increase in flow of funds from the Fed to the Treasury.

<sup>43</sup> Congress has exploited the Fed's balance sheet in this manner before. One example was in 2000 when Congress passed a budget that transferred \$3.75 billion from the Fed's surplus account to the Treasury. Goodfriend (1994) considers an even earlier example in 1993. This motivated him to include as his third principle for a new Accord quoted earlier, "Congress should not direct the Fed to transfer assets to the Treasury in order to reduce the Federal deficit." These actions to exploit the Fed's balance sheet clearly violate the spirit of the 1951 Accord.

<sup>44</sup> In December 2006, bank reserves were about \$55 billion, and by December 2015, they had reached over \$2.5 trillion. They declined to \$1.5 trillion in September 2018 when they began to rise again, reaching over \$4.4 trillion in October 2021.

way to raise rates even if a large volume of reserves existed in the banking system.<sup>45</sup> <sup>46</sup> The IOR acts as a floor on short-term rates under which banks have no incentive to lend. Thus, raising the IOR would encourage other rates to increase without shrinking reserves. In central bank parlance this is called a “floor system.” The essential policy instrument in this regime is the interest rate paid on reserves.<sup>47</sup>

In theory, this allows the Fed to manage the interest rate and bank reserves separately. The danger of this approach is that it increases the temptation to use the Fed’s balance sheet for other purposes. The Fed was forced into this arrangement by its QE policies, but the Fed has now explicitly adopted the floor system as an operating regime, although they had to give it another name. So it became the “ample reserve” regime.<sup>48</sup> The Fed has been vague as to how it will decide on the size of the balance sheet and what factors might motivate changes in the volume of purchases up or down.

A series of official statements by the FOMC on policy normalization began in 2014.<sup>49</sup> None anticipated outright sales of securities. Most who opposed sales argued that simply allowing runoffs of maturing securities would be sufficient to gradually shrink the balance sheet.<sup>50</sup> Others were concerned that the balance sheet may need to fall faster and sales may be necessary. The fact that runoffs are likely to be slower for the MBS portfolio (especially as interest rates rise) means that the role of credit policy as measured by the share of MBS would likely rise over time.

All versions of the normalization statement have similar versions of “the Committee intends to maintain securities holdings in amounts needed to implement monetary policy efficiently and effectively.” The statement also declares that “in the longer run, the Committee intends to hold

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<sup>45</sup> The Fed was granted the ability pay interest on reserves in October 2008.

<sup>46</sup> Ennis and Weinberg (2022), in this volume, discuss Goodfriend (2002).

<sup>47</sup> This creates another governance challenge because IOR is set by the Board of Governors. So technically this leaves the BOG, not the FOMC, with the ultimate authority to determine monetary policy. It seems that the FOMC can suggest the stance of monetary policy, but the BOG does not have to concur. See Plosser (2020) for further discussion.

<sup>48</sup> See Board of Governors (2019a and 2019b).

<sup>49</sup> See Board of Governors (2022a) and Board of Governors (2022b) for the most recent incarnation.

<sup>50</sup> The Fed has frequently cited concerns that outright sales of MBS risk disruptions in the financial market and the housing sector.

primarily Treasury securities in the SOMA.” These statements do not contain much information or constraints on credit policy. In this new operating regime, the Fed seems to have even more latitude to fluctuate the size and composition of its balance sheet, but it is not entirely clear to what end. Based on the arguments in this essay, the adoption of the new “ample reserve” operating regime reinforces the importance of a new credit Accord that more tightly constrains the composition of the Fed’s balance sheet. Put differently, the ample reserve regime offers no limiting principle on the size or composition balance sheet. The corridor regime constrains the balance to be a size that delivers an effective funds rate close to the target set by the FOMC to implement a monetary policy that achieves the Fed’s macroeconomic mandates.

A large unconstrained balance sheet is ripe for abuse. The fiscal authorities will be tempted to look to that balance sheet for their own purposes, including credit policy and off-budget fiscal policy. This would undoubtedly lead to the Fed being drawn into political debates on how to best “allocate” or “diversify” the Fed’s balance sheet. This further politicization of the Fed would lead to a loss of independence that could interfere with accomplishing its congressionally mandated goals.<sup>51</sup>

#### *Balance Sheet Responses to the Pandemic and Shutdowns*

Despite the concerns over the Fed’s engagement in credit policy and the entanglements with fiscal policy, during the pandemic the Fed mostly relied on the same strategy it had adopted during the financial crisis. It rapidly expanded the balance sheet and aggressively employed unsterilized credit programs authorized by the Board of Governors under Section 13(3) and approved by the Treasury secretary.

Uncertainty over the risks surrounding the pandemic emerged in the financial markets in March 2020. On March 3, 2020, the Fed announced a 50 basis point reduction its target range for the fed funds rate. This was followed on March 15, 2020, by an additional 100 basis point reduction to a range of 0 to 0.25 percent. At the same meeting, the Fed announced its intention to increase

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<sup>51</sup> See Plosser (2020) for more discussion of the floor system and the risks it poses to independence.

its holdings of Treasury securities by \$500 billion and its holdings of agency MBS by \$200 billion. The stated purpose was to support the “smooth functioning of markets” for these securities.<sup>52</sup>

In June 2020, the Fed extended, indefinitely, the asset purchases of Treasuries and agency MBS at a pace of \$80 billion and \$40 billion per month, respectively. By June 2020, financial markets were largely functioning normally so, like the shift in 2012, the Fed indicated the rationale for continued purchases was “fostering effective transmission of monetary policy to broader financial conditions.”<sup>53</sup> The Fed’s balance sheet grew by \$4.4 trillion in just 21 months (January 2020 to September 2021). Treasuries accounted for about \$3.1 trillion of the increase and agency MBS purchases were about \$1.1 trillion. These purchases were huge: following the financial crisis, it took the Fed about six years to purchase \$1.0 trillion in agency MBS while expanding the balance sheet by a total of about \$3.8 trillion.

The virus rapidly spread across the US and the world, and, by mid-March, shutdowns began across the country that resulted in economic disruption. The Fed rapidly increased and expanded the reach of its credit policies. The range of coverage was quite remarkable and extended far beyond the banking system. Various lending programs developed during the financial crisis to aid the availability of credit were revived, including those supporting the commercial paper market, the asset-back paper market, money market mutual funds, and securities lending for the primary dealers.<sup>54</sup>

But there were a number of additional programs created to target specific sectors of the economy. Several targeted the business sector by lending directly to corporations through the purchase of newly issued debt securities, including short-term commercial paper, from investment grade issuers.<sup>55</sup> Another new funding facility enabled the purchase of existing corporate bonds as well as exchange-traded-funds (ETF) in the secondary market, including those

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<sup>52</sup> From the end of March to the end of June the Fed purchased almost \$560 billion in of agency MBS and about \$240 billion of Treasuries.

<sup>53</sup> Board of Governors (2020). The housing market was at the center of the financial crisis in 2007-2010. In the recession of 2020, housing was not central to the crisis in any fundamental way.

<sup>54</sup> These revived programs included the TALF, CPFF, AMLF, which was renamed Money Market Liquidity Facility (MMLF), and PDCF (Primary Dealer Credit Facility).

<sup>55</sup> These programs included the CPFF and the Primary Market Corporate Credit Facility (PMCCF).

that primarily invested in risky US high-yield securities.<sup>56</sup> Support for mid-sized companies, including profit and not-for-profit entities, was expanded through additional Section 13(3) programs.<sup>57</sup> The Fed also created a program to lend directly to state and municipal governments.<sup>58</sup> According to Section 13(3), as updated by the Dodd-Frank legislation, the programs had to be approved by the Treasury. Many of them were structured so that the Treasury committed first-loss backing of about 10 percent.<sup>59</sup> Nonetheless, these programs all constituted fiscal policy actions by the Fed to allocate credit across the economy.

As with many of the funding facilities created during the financial crisis, all of these facilities could have been set up and administered by the Treasury without Fed involvement. They were basically debt-financed fiscal policy that transferred risk from private-sector debtholders to the government. Some argue that only the Fed can play the role in emergencies, but the Paycheck Protection Program (PPP) demonstrates that it can be done. PPP loans made to small businesses were administered and guaranteed by the Small Business Administration (SBA).<sup>60</sup> This could be an emergency model that does not use the Fed balance sheet to conduct fiscal policy.

There is an interesting twist to these most recent programs. The programs were ended in December 2020. Treasury Secretary Steven Mnuchin recommended that the programs not be renewed. He viewed the programs as having served their purpose and as no longer being the best use of funds.<sup>61</sup> Fed Chair Jerome Powell preferred to continue the programs. Congress was split on the issue. One interpretation of this episode is that, at the end of the day, the fiscal authorities ended the credit policies of the Fed over the objections of Chair Powell. The macroeconomic consequences of this action seemed undetectable. But the debate was clouded by who had the decision rights to do what. While this episode sheds some light on how Congress

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<sup>56</sup> This program was the Secondary Market Corporate Credit Facility (SMCCF).

<sup>57</sup> This was the focus of the Main Street Lending Program (MSLP).

<sup>58</sup> This refers to the Municipal Liquidity Facility (MLF).

<sup>59</sup> This backing by the Treasury does not really change anything, as the government would likely have to absorb any losses (or gains) the Fed incurs in any event. Its major effect is to acknowledge publicly that the Treasury and Congress bear some responsibility.

<sup>60</sup> The Fed's involvement was a little different in that the Fed would lend to financial institutions and take PPP loans guaranteed by the SBA as collateral. As of October 2021, approximately 76 percent of all PPP loans have been forgiven by the SBA (\$602 billion) and reimbursements paid to the lenders.

<sup>61</sup> The funds in this case were those Congress had dedicated as a limited first-loss backstop for certain 13(3) facilities.

can exercise ultimate control over certain credit policy actions by the Fed, it does not address the potential for abuse of the Fed's balance sheet for fiscal purposes. The operation of the PPP would be the better model for emergency credit policy.

### **A New Treasury-Fed Accord**

The use of the Fed's balance sheet as a tool of credit policy has taken on new dimensions since the financial crisis, entangling the Fed deeper into the realm of fiscal policy. The traditional boundaries between monetary policy and fiscal policy have been breached in ways not envisioned in the 1951 Accord. Once a central bank ventures into credit allocation and off-budget financing of fiscal initiatives, it is likely to find itself under increasing pressure from the private sector, financial markets, or the government to use its balance sheet to substitute for other fiscal decisions. In essence, groups will seek to capture the Fed's balance sheet to further their own economic and political interests. Allocating credit through its lending practices or asset purchases means the Fed can create its own form of moral hazard, as markets and governments come to see the central bank as a source of financial support or a tool of fiscal policy, thus undermining private and public fiscal discipline. This pressure will undermine central bank trust, invite politicization, and severely threaten monetary policy's effectiveness and independence.

To restore the boundaries between monetary and fiscal policy and to safeguard Fed independence, there needs to be a new Accord that clarifies and circumscribes the role of credit policy actions by the Fed. As noted at the outset of this essay, Goodfriend (1994) recognized that credit policy undertaken by the Fed poses risks to the institution. The importance of this issue has grown since the financial crisis, and it is apparent that there needs to be a clear statement of the roles and responsibilities of the Fed and Treasury to reinforce the integrity of both fiscal and monetary policy, and reduce uncertainty and moral hazard.

The original principles laid out in Goodfriend (1994) are useful, but the challenges that have materialized since the financial crisis go beyond anything Goodfriend likely envisioned in 1994. In my view, a new Accord must raise the bar on the fiscal authorities, as well as the monetary



authority, to reverse the growing abuse of the Fed's balance sheet and to support and maintain Fed independence.

Goodfriend (2009), updated Goodfriend (1994) in light of the events in 2007-08. His three principles became six. Briefly, they were as follows: (1) the Fed should "adhere to a Treasuries-only acquisition policy except for occasional and limited discount window lending;" (2) the Fed and Treasury should "co-operate" to "shrink the central bank's lending reach" through program runoff or by moving the associated assets to "be managed elsewhere in the government;" (3) the Fed and Treasury should "co-operate" so that the credit policy actions do not "undermine price stability;" (4) the Fed and the Treasury should "agree on a low long run inflation objective to anchor inflation expectations;" (5) "the Treasury should help the Fed to secure the power of 'interest on reserves;" (6) the Fed and Treasury should cooperate quickly on these matters to "secure the commitment to price stability."<sup>62</sup>

These ideas are principled but short on specificity, and the institutional mechanisms that would help ensure the boundaries on credit policies are transparent and effective. The call to "cooperate" does not change incentives or clarify the boundaries of credit policies but is most likely to result in maintaining the status-quo. The Treasury-Fed joint press release in 2009, which was a response to internal and external criticism, acknowledged many important concepts but did not change the incentives or behavior of the Fed or the Treasury. Without institutional mechanisms or constraints that limit or define the scope for actions, the incentives to abuse the Fed's balance sheet through credit policy will remain a threat to the Fed and monetary policy independence.

Early in the rush to transform the Fed's balance sheet into a tool of credit policy, I stressed two themes that would help clarify the boundaries of Fed credit policy and the resolution of conflicts.<sup>63</sup> The two themes are similar in spirit to Goodfriend's first and second principles given above. The first is to require the Fed to follow a Treasuries-only policy when conducting

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<sup>62</sup> It is worth noting that in January 2012 the Fed established, for the first time, an explicit inflation target (see Lacker {2020} for a discussion of how that came about). Also, the Fed received the authority to pay interest on reserves in October 2008.

<sup>63</sup> See footnote 26 (Board of Governors (2008b, p. 41)) and Plosser (2009a, 2009b, and 2009c).

monetary policy. This is not a new idea but a return to the practice followed by the Fed for most of the postwar period. The agency MBS purchases were a dramatic departure from that practice but were legal under the FRA. My intention is to require a Treasuries-only portfolio with the exception of collateralized lending to solvent financial institutions through the discount window. The second theme is to address the role of the Fed as a “lender of last resort,” a traditional function of a central bank, and particularly the powers embedded in Section 13(3) in emergencies.

The framework has three key features:<sup>64</sup>

1. The Federal Reserve should be required to maintain a Treasuries-only policy as it pertains to the conduct of monetary policy.
2. The Federal Reserve should be prohibited from purchasing non-Treasury securities or lending against private collateral except through traditional discount window operations with solvent depository institutions.
3. Emergency lending under Section 13(3) should be eliminated and replaced with a new arrangement where the Treasury is the responsible agency. The Treasury, however, may request assistance from the Fed in an emergency. The new provisions would require the Treasury to exchange (at book value) Treasury securities for any private or non-Treasury securities temporarily acquired by the Fed in the process.

*The Fed Should Maintain a Treasuries-Only Policy in the conduct of Monetary Policy.* From 1951 until 2007, as discussed earlier, the Fed conducted monetary policy through what can be described as a Treasuries-only policy, that is through the purchase and sale of Treasury securities. In August 2007, the balance sheet was \$873 billion, and Treasuries accounted for about 90 percent (\$785 billion) of Fed assets. As of October 2021, Treasuries only accounted for 64 percent of the balance sheet and agency MBS represented about 30 percent of Fed assets. These holdings comprised about 30 percent (\$2.5 trillion) of all outstanding agency MBS, indicating how large the credit allocation program of the Fed had become. The purpose of a Treasuries-only

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<sup>64</sup> This material follows Plosser (2017b).

policy is to prevent the Fed from subsidizing the housing sector (or any other sector) through its conduct of monetary policy. Yet, as noted earlier, the Fed explicitly stated that the purchases of agency MBS and agency debt were intended as a policy to give special credit preference to the housing sector over other sectors through monetary policy. Such credit allocation should be a fiscal policy decision and not left to the discretion of the monetary authorities.

One counterargument is that the Fed should not be limited to Treasuries, in fact, should not purchase Treasuries at all, as it ties monetary policy directly to the funding of fiscal deficits.<sup>65</sup> Allowing the Fed to purchase private sector securities (private equities, corporate bonds, etc.), so the argument goes, would help protect Fed independence by breaking the close link with government finance. Yet, this strategy seems worse than the alternative. Central banks with significant holdings of private sector securities would likely come under even more pressure from those who seek to use the balance sheet and the powers of the central bank for credit allocation in support of political or economic advantage.

The risk is real and already in play in other countries. For example, the Swiss National Bank (SNB) has come under pressure in the last decade from various groups, including the government, to manage their portfolio of investments (mostly comprised of foreign exchange reserves) to satisfy other objectives. There have been calls for the SNB to invest more in Swiss firms to support the Swiss economy, to use its portfolio to support “green” investments or sell assets in fossil fuel industries to promote a climate change agenda, and the list of requests seems to grow over time. If the Fed were free to invest in private sector assets, there would be no end to the requests from Congress and elsewhere for the Fed to tailor its asset holdings to suit a variety of interest groups, both private and public. The Fed is already under pressure by the financial sector to respond to stock prices and other asset prices during volatile times. The Fed would likely come under enormous pressure to stabilize or boost the market if it were actively buying and selling large amounts of equities, even ETFs. Imagine future confirmation hearings for the Board of Governors that focused on how a nominee would manage the asset allocation of the Fed’s

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<sup>65</sup> See Selgin (2018) for example.

multitrillion-dollar balance sheet rather than on the conduct of monetary policy.<sup>66</sup> Recently, the Fed has already accepted the premise that climate change should be a priority. There seems to be little doubt that it will come under intense political pressure to use its balance sheet to reflect this priority.<sup>67</sup>

The Fed's new "ample reserves" regime and its intention to maintain a large balance sheet increases the temptation for abuse.<sup>68</sup> For all these reasons, restricting the Fed to a Treasuries-only portfolio would be an important step in restricting its role in credit allocation, reducing moral hazard, and helping protect its independence from political encroachment.<sup>69</sup>

It would be best to implement this requirement by amending Section 14(2) of the FRA that pertains to open-market operations. The change would limit the scope of securities eligible for sale and purchase by the Federal Reserve Banks. In particular, it would remove the provisions that allow the Fed to purchase MBS and certain short-term obligations of state or local municipalities.

This change does not replace the need for the continuation of the 1951 Accord, which deals with the size of the balance sheet. The interest rate peg implemented through the 1940s, for example, was implemented with a Treasuries-only strategy. With the freedom to expand the balance sheet enabled by the ample reserve regime, there will be even more pressure to use the Fed for off-budget public spending. To protect the independence of monetary policy and allow it to best address its mandated goals, the fiscal authorities (Treasury and Congress) must refrain from

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<sup>66</sup> This is another reason the Fed's ample reserves approach to an operating regime is potentially dangerous as it gives the Fed more latitude to expand the balance sheet for purposes other than monetary policy. See Plosser (2017a and 2020). On this point, Plosser (2020) and Selgin (2018) seem to agree in preferring the Fed return to a corridor or channel regime for achieving its interest rate target.

<sup>67</sup> This pressure is evident in the early 2022 confirmation hearings of nominees to the Board.

<sup>68</sup> An alternative would be for the Fed to shrink its balance sheet so it can return to its precrisis corridor regime, but this seems increasingly unlikely.

<sup>69</sup> Broaddus and Goodfriend (2001) argued for a Treasuries-only policy, not because the Fed was violating the idea in practice, but in reaction to the unlikely event that the federal government would pay off the public debt. The impetus for such a discussion was projections by the Congressional Budget Office (CBO) in 2000 suggesting that government surpluses might be sufficient to retire all of the public debt within a decade. They argued from the work of Goodfriend and King (1988) and Goodfriend (1994), much as is argued here, that the Treasuries-only policy is a good one and that the Fed and Treasury should cooperate to ensure that there remained a sufficient stock of Treasuries to allow the Fed to conduct monetary policy using Treasuries rather than purchasing private assets.

actions that move funds directly from the Fed's balance sheet to the Treasury. There also should be a reaffirmation of the 1951 Accord that pressuring the Fed to add government debt to its balance sheet through the required purchases of Treasuries to address fiscal demands is inappropriate. Such actions violate the spirit of the 1951 Accord.

*Limited Lending to Financial Institutions.* One role of central banks is to serve as a lender of last resort (LOLR). This notion dates back, at least, to the early 19th century and the work of Henry Thornton (1802) and later Walter Bagehot (1873). The basic idea is that central banks are well suited to ensure the elasticity of the currency to address banking crises, which occur when banks, because of the maturity mismatch between their assets and liabilities, find themselves short of liquidity. In so doing, central banks can help ensure the integrity of the payment system through its provision of cash. Bagehot (1873) is credited with the recommendation that in the face of a banking crisis, the central bank should lend to solvent institutions at a penalty rate against good collateral to make sure solvent banks can easily accommodate depositors' demands for cash.

I will refer to the LOLR as the central bank lending to banking institutions. This essentially describes the functions of the long-standing discount window where the Fed lends to banks against a wide range of eligible collateral. The guidelines for borrowing from the discount window are that the firm must be solvent and the interest rate must be set above the traditional interbank lending rate, or federal funds rate. There is some logic to this as the central bank has a responsibility to support the continued functioning of the payments system in an emergency. Banks are regulated and the Fed has more ability to assess the solvency of the institution and banks remain integral to the payment system. There are debatable questions as to the breadth of firms that should have access to the discount window. I believe the criteria should hinge on the role the institution plays in the payment system, not simply that it is part of the financial sector in general. But this is not a question that will be addressed in this essay.

*Limitations on Emergence Lending to Nonfinancial Borrowers.* Many people have come to accept the notion that the central bank's LOLR function implies that it should be a backstop lender to all manner of private institutions that are in stress. Section 13(3) is considered an emergency provision that allows the Fed to lend to the private sector under "unusual and exigent

circumstances.” Apart from agency MBS and agency debt purchases, almost all the facilities discussed in this essay were established under Section 13(3).

These programs were forms of credit policy that should be the responsibility of and accountable to the Treasury or Congress. There is little reason they could not have been undertaken by the Treasury. We saw this was possible with the PPP. Even with the modified language of Section 13(3) enacted under Dodd-Frank, the Fed retains wide discretion as illustrated by the scope of programs developed in 2020. A new Accord must confront the possibility of emergencies but carefully recognize the appropriate placement of decision-rights and accountability. In Plosser (2009a), as the Fed was rapidly expanding its credit policies, I suggested that to safeguard Fed independence and ensure the integrity of fiscal policy, the Fed and the Treasury should agree to “an arrangement whereby the Treasury takes the non-Treasury assets and non-discount window loans from the Fed’s balance sheet in exchange for Treasury securities.” This would transfer funding for the credit programs to the Treasury, ensuring that credit policies that put taxpayer funds at risk are under the control of the fiscal authorities. It would also return the control of the Fed’s balance sheet to the Fed so that it can continue to conduct independent monetary policy.

This strategy suggests replacing Section 13(3) with a new arrangement to address emergency lending that would clarify the boundaries for the Fed and the Treasury.<sup>70</sup>

- In an emergency, a request could be made by the Treasury for Fed assistance in facilitating government policies to support lending to individuals, partnerships, and corporations.
- If Congress has not previously granted contingency funds for such use, the Treasury would be required to immediately seek congressional approval and funding for the projected expenditures within 30 days of the action.
- Upon congressional approval, the Treasury would, within 14 days, arrange to exchange (at book value) Treasury securities for any non-Treasury securities or assets that may

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<sup>70</sup> Such a rewrite should have occurred in the Dodd-Frank legislation.

have been temporarily acquired by the Fed. Any gains or losses would thus accrue to the Treasury.

- Should Congress not approve the necessary funds within the 30-day window, the Fed would be required to liquidate such securities within 60 days of their acquisition and the Treasury would be required to terminate the program.

By exchanging the private sector assets on the Fed's balance sheet for Treasuries, the Treasury-only requirement is restored, and the Fed can control the size of its balance sheet through normal operations. The exchange does not alter the program in any way; the credit policy or distributional aspects remain in place. The Treasury was responsible for the program and it remains responsible. If the Fed funded the acquisition of the non-Treasury assets by the sale of Treasuries (that is sterilized), the exchange would leave the balance sheet back where it stood prior to the initiation of the program. If the assets purchased were funded by an expansion of the balance sheet (that is unsterilized), the exchange would permit the Fed to shrink its balance sheet, through the sale of Treasuries, back to its previous level or not depending on what it thought was the appropriate size. These provisions incorporated into a new Section 13(3) ensure that credit policies remain the responsibility of the Treasury and Congress, reducing the threats that the Fed will be pressured to undertake further action on its own discretionary authority or that the composition of the balance sheet could impinge on monetary policy decisions.

This arrangement would clarify the boundaries of Fed credit policies in terms of decision-rights and accountability. The Fed could be a facilitator on behalf of the Treasury but would not make discretionary decisions on credit actions. Congress would have to recognize its responsibilities by agreeing in advance to the process and recognizing that the Fed would be required to sell assets if the decisions on the funds are not forthcoming.

### **Closing Thoughts**

The Treasury-Fed Accord of 1951 was a significant turning point in establishing the Federal Reserve as an independent central bank. By abandoning the Treasury's requirement that the Fed maintain the peg on government bond yields, it allowed the Fed to control its own balance sheet

and freed it to tighten monetary policy to control inflation. Over the years, but especially after 2008, the Fed and the Treasury have significantly changed their approach to the central bank's balance sheet.

Some might argue that the new Fed-Treasury approach was all driven by the confrontation with effective lower bound and the financial crisis that required unusual steps and unconventional policies. This certainly has an element of truth. This essay, however, is not intended as an evaluation of the efficacy of the programs themselves. Rather, my concern is that the deep involvement and reliance on the Federal Reserve to initiate and administer fiscal policy -- in the form of the allocation of credit -- puts at risk the political independence of the central bank and the integrity of fiscal policy.

In early 2020, more than a decade after the financial crisis, the Fed was a long way from what most would call a normal policy framework, most notably in its vast holdings of agency MBS. Its new ample reserve regime does not offer much guidance on how the balance sheet will be managed in terms of its size or its composition. Will balance sheet expansion occur at times other than when constrained by the zero bound? Will MBS purchases become a staple of future expansions? Without sales, they will remain on the balance sheet for many years. Will credit policies become a more standard feature of the operating regime? The Fed's behavior since 2007 has surely affected the public's expectations along these lines and the Fed may find it difficult to say no.<sup>71</sup> When the pandemic came and the government shut the economy down, the Fed pulled out the same playbook (zero rates, massive asset purchases combined with credit allocation policies, including purchases of MBS, and emergency lending facilities) even though the shock was quite different from the financial crisis. While to some this may appear to be a natural and even desirable step, it is both troubling and risky from the standpoint of Fed independence and the conduct of monetary policy.

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<sup>71</sup> This confusion surrounding the ample reserve regime and how it will be implemented adds uncertainty to the conduct of monetary policy, and it suggests that the Fed should consider returning to a corridor system. This would help strengthen the Fed's position against those that might seek to take advantage of the Fed's balance sheet for other purposes.



To ensure and strengthen the independence of the Fed, clearer boundaries between monetary and fiscal policies should be established. Without such boundaries, the Fed will come under increasing pressure to use its balance sheet, and especially credit policy, to further the special interests of politicians or those in the private sector. Given this “new” world and the expanded role the Fed and the Treasury have taken for the balance sheet, we must consider amending the 1951 Accord to address the new challenges to independence.

Credit policy poses a threat to Fed independence just as did the practice of pressuring the Fed to pursue an interest rate peg in the post-WWII era. This essay seeks to address the shortcomings of the 1951 Accord by restricting the Fed to holding only Treasury securities. It also recommends that Section 13(3) be replaced with a rule that credit programs should be initiated and managed by the Treasury, not the Fed. The Treasury could seek the Fed’s assistance in facilitating such programs. But the consequences must be clear in the statute. In particular, if such facilitation results in the Fed acquiring non-Treasury assets, the Treasury must replace those assets with government securities within a relatively short, predetermined time period, or they should be liquidated, returning the Fed’s balance sheet to its Treasuries-only status. These steps would strengthen the institutional framework supporting Fed independence and the integrity of both monetary and fiscal policy.

## REFERENCES

Bagehot, Walter, (1873). *Lombard Street: A Description of the Money Market*. Scribner, Armstrong & Co., New York, 1873.

Bernanke, Ben, (2009). "The Crisis and the Policy Response." Stamp Lecture, London School of Economics, London, England. January 13, 2009.

<https://www.federalreserve.gov/newsevents/speech/bernanke20090113a.htm>

Board of Governors Federal Reserve System (1951). "Minutes of the Executive Committee of the Federal Open Market Committee, February 26, 1951." Board of Governors.

<https://fraser.stlouisfed.org/files/docs/historical/FOMC/meetingdocuments/19510226MinutesECv.pdf>

Board of Governors Federal Reserve System, (2007). "Transcript: Meeting of the Federal Open Market Committee on August 16, 2007." Board of Governors.

<https://www.federalreserve.gov/monetarypolicy/files/FOMC20070816confcall.pdf>

Board of Governors Federal Reserve System, (2008a). "Federal Reserve announces it will initiate a program to purchase the direct obligations of housing related government-sponsored enterprises and mortgage-backed securities backed by Fannie Mae, Freddie Mac, and Ginnie Mae." Press release, Board of Governors, November 25, 2008.

<https://www.federalreserve.gov/newsevents/pressreleases/monetary20081125b.htm>

Board of Governors Federal Reserve System, (2008b). "Transcript: Meeting of the Federal Open Market Committee on December 15-16, 2008)" Board of Governors.

<https://www.federalreserve.gov/monetarypolicy/files/FOMC20081216meeting.pdf>

Board of Governors Federal Reserve System (2009a). "FOMC Statement." Press Release, Board of Governors, March 18, 2009.

<https://www.federalreserve.gov/newsevents/pressreleases/monetary20090318a.htm>

Board of Governors Federal Reserve System, (2009b). "The Role of the Federal Reserve in Preserving Financial and Monetary Stability Joint Statement by the Department of the Treasury and the Federal Reserve." Press release, Board of Governors, March 23, 2009.

<https://www.federalreserve.gov/newsevents/pressreleases/monetary20090323b.htm>

Board of Governors Federal Reserve System, (2012). "FOMC Statement," Press Release, Board of Governors, September 13, 2012.

<https://www.federalreserve.gov/newsevents/pressreleases/monetary20120913a.htm>

Board of Governors Federal Reserve System, (2019a). "Statement Regarding Monetary Policy Implementation." Press release, Board of Governors, October 11, 2019.

<https://www.federalreserve.gov/monetarypolicy/files/monetary20191011a1.pdf>

Board of Governors Federal Reserve System, (2019b). "Minutes of the Federal Open Market Committee, October 29-30, 2019." Board of Governors released November 20, 2019.

<https://www.federalreserve.gov/monetarypolicy/files/fomcminutes20191030.pdf>

Board of Governors Federal Reserve System, (2020). "FOMC Statement." Press Release, Board of Governors, April 29, 2020.

<https://www.federalreserve.gov/monetarypolicy/files/monetary20200429a1.pdf>

Board of Governors Federal Reserve System, (2022a). "History of the FOMC's Policy Normalization Discussions and Communications." Board of Governors, January 26, 2022.

<https://www.federalreserve.gov/monetarypolicy/policy-normalization-discussions-communications-history.htm>

Board of Governors Federal Reserve System, (2022b). “FOMC Communications Related to Policy Normalization.” Board of Governors, January 26, 2022.

<https://www.federalreserve.gov/monetarypolicy/policy-normalization.htm>

Broaddus, J. Alfred and Marvin Goodfriend, (1996). “Foreign Exchange Operations and the Federal Reserve.” Federal Reserve Bank of Richmond *Economic Quarterly*, Volume 82/1 Winter 1996.

[https://www.richmondfed.org/-/media/RichmondFedOrg/publications/research/economic\\_quarterly/1996/winter/pdf/broaddus.pdf](https://www.richmondfed.org/-/media/RichmondFedOrg/publications/research/economic_quarterly/1996/winter/pdf/broaddus.pdf)

Broaddus, J. Alfred and Marvin Goodfriend, (2001). “What Assets Should the Federal Reserve Buy?” Federal Reserve Bank of Richmond *Economic Quarterly*, Volume 87/1 Winter 2001.

[https://www.richmondfed.org/-/media/RichmondFedOrg/publications/research/economic\\_quarterly/2001/winter/pdf/broaddus.pdf](https://www.richmondfed.org/-/media/RichmondFedOrg/publications/research/economic_quarterly/2001/winter/pdf/broaddus.pdf)

Diamond, Doug W., (2022). “Banking Policy and Monetary Policy,” in *Marvin Goodfriend: Economists and Central Banker*, R. G. King and A. L. Wolman, Editors. Federal Reserve Bank of Richmond, May 2022.

Ennis, Huberto and John Weinberg, (2022). “Paying Interest on Reserves,” in *Marvin Goodfriend: Economists and Central Banker*, R. G. King and A. L. Wolman, Editors. Federal Reserve Bank of Richmond, May 2022.

Fettig, David, (2002). “Lender of More Than Last Resort,” Federal Reserve Bank of Minneapolis, December 1, 2002.

<https://www.minneapolisfed.org/article/2002/lender-of-more-than-last-resort>

Geman, Ben, (2015). “Solyndra: What a Mess,” *The Atlantic*, August 26, 2015.

<https://www.theatlantic.com/politics/archive/2015/08/solyndra-what-a-mess/446784/>

Goodfriend, Marvin, (1994). "Why we Need an 'Accord' for Federal Reserve Credit Policy: A Note." *Journal of Money, Credit and Banking*, Vol. 26, No. 3, (August 1994).

Goodfriend, Marvin, (2002). "Interest in Reserves and Monetary Policy," Federal Reserve Bank of New York, *Economic Policy Review*, Vol. 8, No. 1 (May 2002).

<https://www.newyorkfed.org/medialibrary/media/research/epr/02v08n1/0205good.pdf>

Goodfriend, Marvin, (2009). "We Need an 'Accord' for Federal Reserve Credit Policy." Prepared for the [Shadow Open Market Committee](#) (SOMC), April 24, 2009.

<https://www.shadowfed.org/archives/2009-2/>

Goodfriend, Marvin, (2011). "Fiscal Dimensions of Inflationist Monetary Policy." Prepared for the [Shadow Open Market Committee](#) (SOMC), October 21, 2011. <https://www.shadowfed.org/wp-content/uploads/2011/10/Goodfriend-SOMCOct2011.pdf>

Goodfriend, Marvin and Robert G. King, (1988). "Financial Deregulation, Monetary Policy, and Central Banking." Federal Reserve Bank of Richmond *Economic Review*, May/June 1988.

<https://www.richmondfed.org/>

[/media/RichmondFedOrg/publications/research/economic\\_review/1988/pdf/er740301.pdf](/media/RichmondFedOrg/publications/research/economic_review/1988/pdf/er740301.pdf)

Hetzel, Robert L. and Ralph F. Leach, (2001). "The Treasury-Fed Accord: A New Narrative Account." Federal Reserve Bank of Richmond *Economic Quarterly*, Volume 87/1 Winter 2001.

<https://www.richmondfed.org/>

[/media/RichmondFedOrg/publications/research/economic\\_quarterly/2001/winter/pdf/leach.pdf](/media/RichmondFedOrg/publications/research/economic_quarterly/2001/winter/pdf/leach.pdf)

Huther, Jeffrey, Jane Ihrig, and Elizabeth Klee (2017). "The Federal Reserve's Portfolio and its Effect on Interest Rates," Finance and Economics Discussion Series, Working paper 2017-075.

<https://www.federalreserve.gov/econres/feds/files/2017075pap.pdf>

Klier, Thomas H., and James Rubenstein, (2012). "Detroit Back from the Brink? Auto Industry Crisis and Restructuring, 2008-11." Federal Reserve Bank of Chicago *Economic Perspectives*, 2Q/20012. <https://www.chicagofed.org/publications/economic-perspectives/2012/2q-klier-rubenstein>

Lacker, Jeffrey M., (2009). "Government Lending and Monetary Policy," Speech delivered at the National Association for Business Economics, 2009 Washington Economic Policy Conference, Alexandria, VA, March 2, 2009.

[https://www.richmondfed.org/press\\_room/speeches/jeffrey\\_m\\_lacker/2009/lacker\\_speech\\_20090302](https://www.richmondfed.org/press_room/speeches/jeffrey_m_lacker/2009/lacker_speech_20090302)

Lacker, Jeffery M. (2020). "A Look Back at the Consensus Statement." *Cato Journal*, Vol. 40, No. 2 (Spring/Summer 2020), Cato Institute, Washington, D.C.

[https://www.cato.org/sites/cato.org/files/2020-05/cj-v40n2-3\\_1.pdf](https://www.cato.org/sites/cato.org/files/2020-05/cj-v40n2-3_1.pdf)

Levin, Andrew and John Taylor (2013). "Falling Behind the Curve: A Positive Analysis of Stop-Start Monetary Policies and the Great Inflation." In: M. Bordo and A. Orphanides, eds., *The Great Inflation: The Rebirth of Modern Central Banking*. University of Chicago Press.

Levy, Mickey D. and Charles Plosser (2020). "The Murky Future of Monetary Policy," prepared for the Hoover Institution's Monetary Policy Conference, October 1, 2020.

[https://www.hoover.org/sites/default/files/research/docs/20119-levy-plosser\\_1.pdf](https://www.hoover.org/sites/default/files/research/docs/20119-levy-plosser_1.pdf)

Meltzer, Allan H., (2003). *A History of the Federal Reserve, Volume 1 1913-1951*. Chicago: University of Chicago Press.

Meltzer, Allan H., (2009). *A History of the Federal Reserve, Volume 2, Book 1, 1951-1969*. Chicago: University of Chicago Press.

Plosser, Charles I., (2009a). "Ensuring Sound Monetary Policy in the Aftermath of Crisis," Speech delivered at the U.S. Monetary Policy Forum, New York, NY. February 27, 2009.

[https://www.philadelphiafed.org/-/media/frbp/assets/institutional/speeches/plosser/2009/02-27-09\\_us-monetary-policy-forum.pdf?la=en&hash=589F0974D1DB8BE172464D721817AC32](https://www.philadelphiafed.org/-/media/frbp/assets/institutional/speeches/plosser/2009/02-27-09_us-monetary-policy-forum.pdf?la=en&hash=589F0974D1DB8BE172464D721817AC32)

Plosser, Charles I., (2009b). "Improving Financial Stability," Distinguished Speaker Series, University of Chicago, Booth School of Business, Chicago, IL. March 31, 2009.

[https://www.philadelphiafed.org/-/media/frbp/assets/institutional/speeches/plosser/2009/03-31-09\\_booth-school-of-business.pdf?la=en&hash=8642DF59541CDF922380791C2A470938](https://www.philadelphiafed.org/-/media/frbp/assets/institutional/speeches/plosser/2009/03-31-09_booth-school-of-business.pdf?la=en&hash=8642DF59541CDF922380791C2A470938)

Plosser, Charles I., (2009c). "Sound Monetary Policy for Good Times and Bad." Speech delivered at SIEPR (Stanford Institute for Economic Policy Research), Stanford University, Palo Alto, CA. October 20, 2009.

[https://www.philadelphiafed.org/-/media/frbp/assets/institutional/speeches/plosser/2009/10-20-09\\_merk-stanford-siepr-panel.pdf?la=en&hash=0A420184C28B87A3AE055C2C73A1C701](https://www.philadelphiafed.org/-/media/frbp/assets/institutional/speeches/plosser/2009/10-20-09_merk-stanford-siepr-panel.pdf?la=en&hash=0A420184C28B87A3AE055C2C73A1C701)

Plosser, Charles I., (2010). "The Federal Reserve System: Balancing Independence and Accountability." Speech delivered at the World Affairs Council of Philadelphia, Philadelphia, PA. February 17, 2010.

[https://www.philadelphiafed.org/-/media/frbp/assets/institutional/speeches/plosser/2010/02-17-10\\_world-affairs-council.pdf?la=en&hash=49D8936E73AAE2D45720FABED0CB68CD](https://www.philadelphiafed.org/-/media/frbp/assets/institutional/speeches/plosser/2010/02-17-10_world-affairs-council.pdf?la=en&hash=49D8936E73AAE2D45720FABED0CB68CD).

Plosser, Charles I., (2012). "Fiscal and Monetary Policy: Restoring the Boundaries," Speech delivered at the U.S. Monetary Policy Forum, New York, NY. February 24, 2012.

[https://www.philadelphiafed.org/-/media/frbp/assets/institutional/speeches/plosser/2012/02-24-12\\_us-monetary-policy-forum.pdf?la=en&hash=1513935AD63409116E8F79190219C403](https://www.philadelphiafed.org/-/media/frbp/assets/institutional/speeches/plosser/2012/02-24-12_us-monetary-policy-forum.pdf?la=en&hash=1513935AD63409116E8F79190219C403)

Plosser, Charles I., (2014). "A Limited Central Bank." Cato Institute, *The Cato Journal*, Vol. 34, No. 2 (Spring/Summer 2014). Originally presented at the 2013 Cato Institute's 31<sup>st</sup> Annual Monetary Policy Conference. <https://www.cato.org/sites/cato.org/files/serials/files/cato-journal/2014/5/cato-journal-v34n2-1.pdf>

[Plosser, Charles I., \(2016a\). "Argentina Redux?" \*Defining Ideas, A Hoover Institution Journal\*, July 26, 20167.](#)

Plosser, Charles I., (2016b). "Balancing Central Bank Independence and Accountability," in *Central Bank Governance and Oversight Reform*, J. H Cochrane and J. B. Taylor, Editors. Hoover Institution Press, 2016.

[https://www.hoover.org/sites/default/files/research/docs/cochranetaylor\\_centralbank\\_ch6.pdf](https://www.hoover.org/sites/default/files/research/docs/cochranetaylor_centralbank_ch6.pdf)

Plosser, Charles I., (2017a). "The Risks of a Fed Balance Sheet Unconstrained by Monetary Policy," in *The Structural Foundations of Monetary Policy*, M. D. Bordo, J. H. Cochrane, A. Seru, Editors. Hoover Institution Press, 2017.

[https://www.hoover.org/sites/default/files/research/docs/ch01a\\_section1\\_cochrane\\_9780817921347.pdf](https://www.hoover.org/sites/default/files/research/docs/ch01a_section1_cochrane_9780817921347.pdf)

[Plosser, Charles I., \(2017b\). "Why the Fed Should Only Own Treasuries." \*Defining Ideas, A Hoover Institution Journal\*, June 10, 2017.](#)

<https://www.hoover.org/research/why-fed-should-only-own-treasuries>

Plosser, Charles I., (2019). "A Cautionary Note on Price-Level-Targeting." *Defining Ideas, A Hoover Institution Journal*, May 1, 2019.

<https://www.hoover.org/research/cautionary-note-price-level-targeting>



Plosser, Charles I., (2020). "Operating Regimes and Fed Independence." *The Cato Journal*, Spring/Summer 2020, pp. 361-371. Originally presented at the 2019 Cato Institute's 37th Annual Monetary Policy Conference.

<https://www.cato.org/cato-journal/spring/summer-2020/operating-regimes-fed-independence>

Schwartz, Anna J., (1992). "The Misuse of the Fed's Discount Window." *Review*, Federal Reserve Bank of St. Louis, Vol. 74, No. 5 (September/October 1992)

[https://files.stlouisfed.org/files/htdocs/publications/review/92/09/Misuse\\_Sep\\_Oct1992.pdf](https://files.stlouisfed.org/files/htdocs/publications/review/92/09/Misuse_Sep_Oct1992.pdf)

Selgin, George, (2018). "On Fiscally Neutral Monetary Policy." Post on Alt-M, Ideas for an Alternative Monetary Future. November 27, 2018.

<https://www.alt-m.org/2018/11/27/separating-monetary-fiscal-policy/>

Swanson, Eric, (2011). "Let's Twist Again: A High Frequency Event-study Analysis of Operation Twist and Its Implications for QE2," *Brookings Papers on Economic Activity*, Vol. 42, Issue 1 (Spring 2011)

[https://www.brookings.edu/wp-content/uploads/2011/03/2011a\\_bpea\\_swanson.pdf](https://www.brookings.edu/wp-content/uploads/2011/03/2011a_bpea_swanson.pdf)

Thornton, Henry, (1802). *An Inquiry into the Nature and Effects of the Paper Credit of Great Britain*. Reprinted by Augustus M. Kelley, New York, 1965.