

Fiscal Consequences of the Federal Reserve's Balance Sheet

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ECONOMIC POLICIES FOR THE 21ST CENTURY

1. Introduction and Summary

Major changes in Federal Reserve policies over the last decade have raised concerns that some of its actions have crossed the line from monetary to fiscal. Policies that have drawn attention for potential fiscal implications include the five-fold growth in the Federal Reserve's balance sheet since 2007, its continuing investments in mortgage-backed securities (MBSs), and the creation of (now-expired) large-scale emergency liquidity facilities during the financial crisis.

In this note I suggest several possible criteria for classifying central bank policies as fiscal, and provide estimates for the dollar size of the main fiscal effects that are identified. My preferred definition classifies a central bank policy as fiscal when it confers a subsidy, or when it has a direct effect on government spending or revenues. However, the definition excludes pecuniary externalities that arise from its influence on market prices. Significant Federal Reserve policies identified as fiscal under this criterion include: (1) accommodation of additional federal spending arising from the misleading cash accounting for Federal Reserve remittances; and (2) uncompensated risk-bearing arising from purchases of securities at below market prices through some of the emergency liquidity facilities.

The effects of the Federal Reserve's balance sheet expansion on the size of its remittances--and hence on reported budget deficits--is significant. Remittances over the 2007-2016 period totaled \$742 billion, which is about \$363 billion more than had those payments grown at a 2% annual rate from the same 2007 starting point.

The budget treats remittances as revenues that have no offsetting costs. However, the main generator of remittances is net interest from economically neutral transactions: the Federal Reserve funds open market security purchases by issuing liabilities in the form of reserves of equal value. Although the combined transactions do generate cash flows that on average are positive because there is a market return for bearing risk, there is no value creation. The budgetary treatment obscures the financial status of the government by effectively treating as free money the market premiums earned on the Federal Reserve's portfolio that are compensation for the costs of interest rate, prepayment, and liquidity risk that ultimately fall on taxpayers. The appearance of profits also accommodates higher spending levels than would likely occur under a more accurate accounting regime.

The emergency liquidity facilities created during the financial crisis created the prospect that the Federal Reserve would be called upon to buy trillions of dollars of commercial paper and asset-backed securities. However, because those facilities were structured so as to protect the Federal Reserve from most of the associated risks, the fiscal effects were modest. For the most part credit risk was absorbed by Treasury through the Troubled Assets Relief Program, or participants were charged fees commensurate with

the risk transferred. A 2010 study by the Congressional Budget Office concluded that the subsidies associated with uncompensated risk-bearing by the government on those facilities at their inception totaled \$21 billion on a fair value basis.¹ The costliest individual program, the Term Asset-Backed Securities Loan Facility also known as TALF, had a subsidy of about \$2 billion.

Some have suggested that the Federal Reserve's purchases of non-Treasury securities—particularly its \$1.8 trillion in MBS holdings--constitutes fiscal policy. However, those securities are bought and sold at market prices and hence no subsidies are conferred from the Federal Reserve's activities. The pecuniary externalities from those purchases are qualitatively similar to those associated with traditional monetary policies that alter prices in credit markets. Under the proposed taxonomy, open market transactions involving non-Treasury securities would not be considered fiscal.

In sum, the largest fiscal effects of Federal Reserve policy are through remittances and their disposition through the budget process. With the massive expansion of asset holdings and the shift to longer-term and riskier holdings, remittances have created hundreds of billions of dollars of budget capacity. While this fiscal effect may be unintentional on the part of the Federal Reserve and not under its direct control, the situation is problematic. The budgetary treatment of remittances obfuscates the true financial position of the government and the risks borne by taxpayers through the government's consolidated balance sheet. The situation also entails risk for the Federal Reserve and its independence. How dependent is Congress on this source of revenues? How will legislators react if rate increases, or a balance sheet contraction, cause revenues to sharply fall or even become negative? A straightforward way to reduce the distortions would be to change the accounting for remittances so as to eliminate the appearance of a free lunch, but lawmakers are unlikely to show enthusiasm for a change that further ties their hands. Shrinking the Fed's balance sheet would reduce but not eliminate those tensions.

2. What Makes Federal Reserve Policies Fiscal?

There is not a conceptual agreement among economists about when monetary policy crosses the line into fiscal policy. Stock definitions tend to equate monetary policy with the actions of central banks, making the actor and purpose focal. For example, the Federal Reserve states, "Monetary policy is the Federal Reserve's actions, as a central bank, to achieve three goals specified by Congress: maximum employment, stable prices, and moderate long-term interest rates in the United States."² By contrast, fiscal policy is typically synonymous with a government's tax and spending policies. It

¹ Congressional Budget Office, "The Budgetary Impact and Subsidy Costs of the Federal Reserve's Actions During the Financial Crisis," May 2010

² <https://www.federalreserve.gov/monetarypolicy.htm>

emphasizes actions rather than intent, and pertains to a wide variety of government actors (e.g., legislatures, federal agencies, state and local governments).

Some hold the view that all central bank policies that affect real resource allocations should be considered fiscal because their effects are equivalent to what could be achieved through a combination of tax and spending policies. From that perspective, only price level or inflation policies could be considered purely monetary. I am sympathetic to this viewpoint. However, the aim here is to more narrowly identify and quantify Federal Reserve policies that have fairly direct analogs in policies that typically require legislative authorization and that have budgetary consequences.

To that end, the working definition used here is: *a central bank policy is fiscal when it confers a net subsidy to a private entity, or when it has a direct effect on government spending or revenues*. Central banks confer subsidies when they purchase securities or provide services at below-market prices. The potential for such subsidies was evident in the emergency liquidity purchase facilities that were created during the financial crisis. As explained in the next section, the main channel for direct effects from Federal Reserve policies on the federal budget is via the remittances that the Federal Reserve pays to Treasury, which arise from the excess of cash earnings on balance sheet assets and other revenues over interest payments and other expenses.

Note that this definition makes no special distinction between transactions involving Treasury securities and those involving private securities. If the Federal Reserve were to purchase a Treasury bond at an above-market price it would have a fiscal effect measured by the amount of the overpayment. However, if the Federal Reserve were to purchase a high-risk mortgage or corporate bond at a fair market price, there would be no fiscal effect because there is no subsidy. Relatedly, the assumption of credit risk is not in itself fiscal; along with other priced risks such as prepayment, interest rate and liquidity risk, it only gives rise to fiscal effects when the Federal Reserve transacts at non-market prices.

This definition also excludes pecuniary externalities that arise from a central bank's influence on market prices. The justification for treating pecuniary externalities as monetary rather than fiscal is that in fact a well-established role of monetary policy is to influence interest rates, and thereby the relative prices of goods and services that are interest rate sensitive. The mechanism is similar whether those relative price changes are accomplished through transactions involving government securities or through purchases and sales of other types of credit instruments.

A practical effect of these exclusions is that I do not treat the reductions in mortgage interest rates arising from the Federal Reserve's open market purchases of MBSs as

fiscal.³ It should be noted that the MBSs currently held by the Federal Reserve are insured against credit risk by Fannie Mae or Freddie Mac, which in turn have a Treasury backstop that makes them effectively government securities.

3. Fiscal Effects of Remittances

Remittances to Treasury grew from \$34.6 billion in 2007 to a peak of \$107 billion in 2015 (Figure 1). The 2015 figure includes a special assessment of \$19.3 billion that was part of a surface transportation bill known as the FAST Act. Remittances are projected to decline as the balance sheet begins to shrink and the share of MBSs is reduced.

Remittances, which are paid from the Federal Reserve's cash receipts net of its expenses, are largely driven by the difference between the interest the earned on its portfolio of assets and the interest it pays on its liabilities. The interest rate differential is typically positive for several reasons. The maturity of its liabilities, which consist primarily of currency and bank reserves, is much shorter than that of its assets, and short-term rates at a given point in time are generally lower than long-term rates. This has led to the description of the Federal Reserve's balance sheet as a classic "carry trade," the strategy of financing long-term investments by rolling over short-term borrowing. A carry trade is a risky strategy.⁴ Although likely to yield positive cash flows, a sufficiently large increase in interest rates could cause financing costs to exceed interest earnings. The investments in MBSs involve additional risks as well, exposing the Federal Reserve to prepayment risk along with interest rate risk.⁵

A useful abstraction is to consider a simplified version of the balance sheet consisting only of long-term Treasury securities financed with excess reserves. To attract excess reserves the Fed has to pay banks a market rate of interest. At the same time the Fed earns a market rate of interest on its Treasury holdings. If the Federal Reserve increases excess reserves by \$1 million and uses the proceeds to buy \$1 million of additional Treasury securities, the net present value of the transactions is zero – there has been no change in its net worth. Nevertheless, the Federal Reserve, or any financial institution that engaged in similar transactions, could expect future cash flows to increase because of the term premium.

It is well understood by market participants that the positive expected cash flow is compensation for the risk of holding the longer-term Treasury securities funded with short-term liabilities, and that there is no free lunch from that transaction. The astute investor is also aware that the risk associated with the transaction has to be absorbed by

³ Several studies by Federal Reserve researchers and others have attempted to quantify those effects with mixed conclusions.

⁴ The S&L crisis is one example of how a carry trade can go awry.

⁵ Although the mortgages backing the MBSs involve credit risk, the Federal Reserve is protected from credit losses by Fannie and Freddie guarantees and ultimately by Treasury backing.

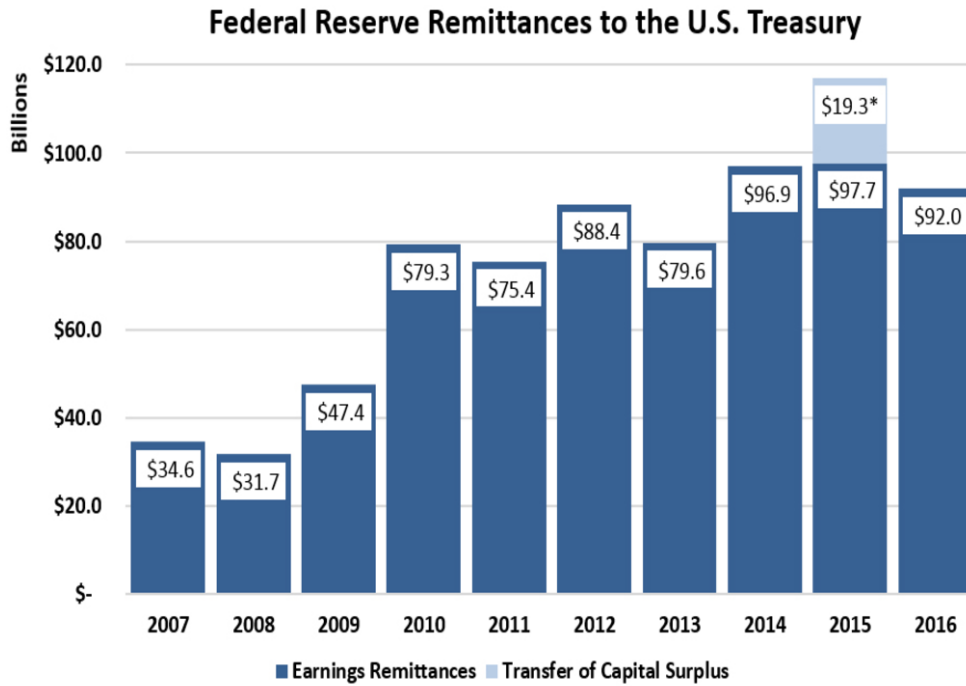
some form of equity. That is, the reserves are only risk-free if there is a source of funds available to ensure they are repaid if the value of assets proves to be insufficient.

The same logic applies to the portfolio investments of a central bank. Positive cash flows arising from a carry trade strategy should be viewed as compensation for risk, not as free money. The risk ultimately falls on taxpayers, who serve as (conscripted) equity holders for any risky government investment. When the budget treats cash flows generated from a market risk premium as revenues but does not recognize an offsetting cost, it is arguably equivalent to levying a hidden tax that confiscates the risk premium to pay for additional spending.

It is well understood that cash accounting for financial transactions is misleading. That recognition has changed the way that most government credit programs are accounted for in the U.S. budget, which is on an accrual basis.⁶ Switching to accrual accounting for the Federal Reserve in the federal budget, if done correctly, would recognize that issuing \$1 million of reserves to fund \$1 million in assets creates no net profits, and would be a positive step towards reducing the fiscal effects of monetary policy in the United States.

⁶ The current accrual treatment of credit only partially aligns with the underlying economics, and the situation is worse in many other countries. For an in-depth discussion of the accounting issues see: D. Lucas, "Evaluating the Cost of Government Credit Support: The OECD Context," *Economic Policy*.

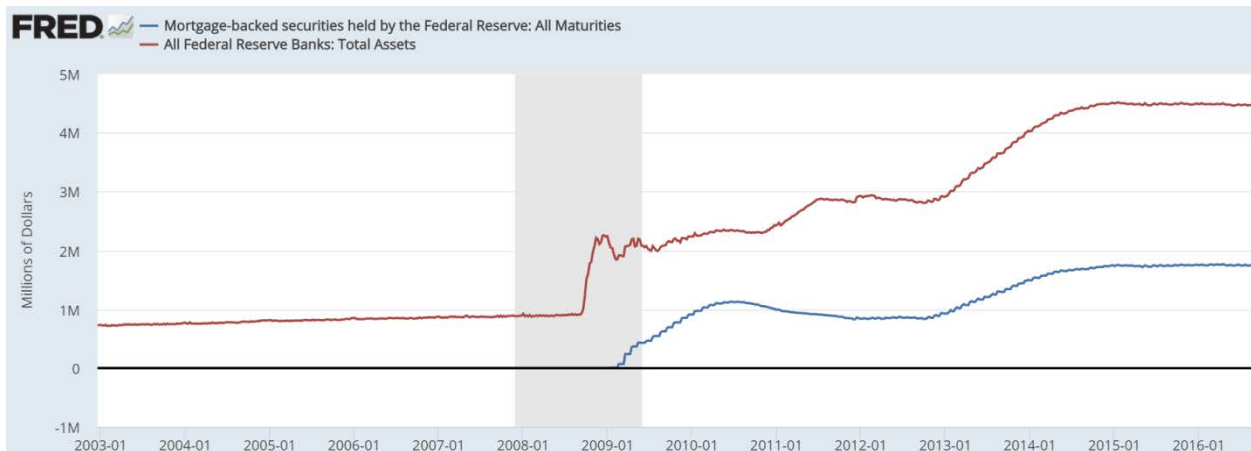
Figure 1:



* The Reserve Banks transferred to the Treasury \$19.3 billion from their capital surplus on December 28, 2015, which was the amount necessary to reduce aggregate Reserve Bank surplus to the \$10 billion surplus limitation in the Fixing America's Surface Transportation Act (FAST Act) that was implemented via an amendment to the Federal Reserve Act.

Source: Federal Reserve Press Release, January 10, 2017, "Federal Reserve Board announces Reserve Bank income and expense data and transfers to the Treasury for 2016"

Figure 2: Federal Reserve Total Balance Sheet Assets and MBSs 2003-2017

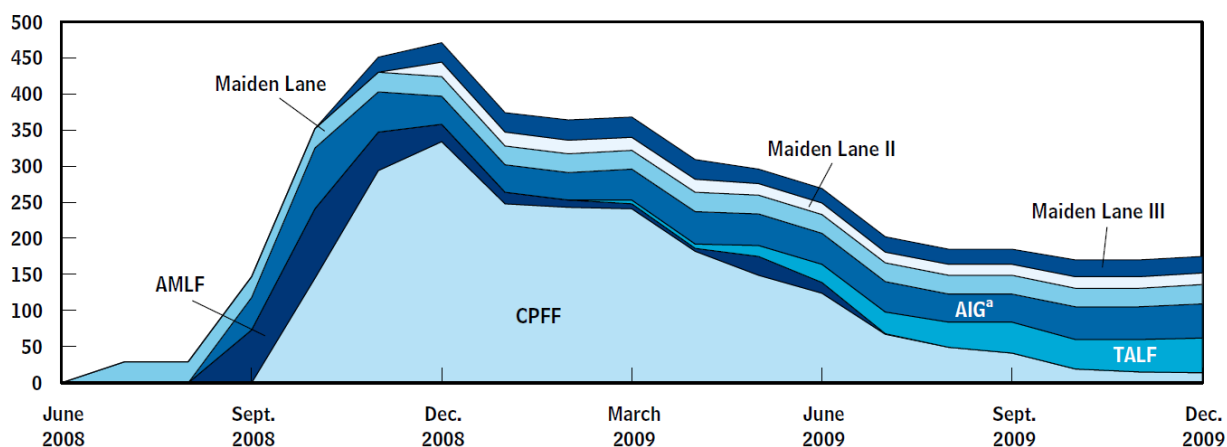


4. Fiscal Effects of the Fed's Emergency Liquidity Facilities

To help restore liquidity and confidence to the financial sector during the financial crisis, the Federal Reserve created a variety of facilities through which it stood willing to purchase certain types of securities subject to various terms and restrictions. It also purchased assets from distressed financial institutions, such as purchases from AIG and Bear Stearns through its Maiden Lane facilities. The realized take-up amounts for those facilities are shown in Figure 3.

Figure 3:
Funding Provided Through Selected Federal Reserve Programs

(Billions of dollars)



Source: Congressional Budget Office based on data from the Federal Reserve.

Notes: Further information on the programs can be found in Appendix A.

TALF = Term Asset-Backed Securities Loan Facility; AMLF = Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility; CPFF = Commercial Paper Funding Facility.

- a. The data for the American International Group (AIG) comprise the outstanding balance on the line of credit plus equity holdings in AIA Aurora Limited Liability Company (LLC) and ALICO Holdings LLC.

Analyzing the fiscal effects of the emergency facilities is a challenging undertaking. It requires understanding the structure of the many different facilities and the terms offered, and gathering often scarce information about the relevant prices and risks associated with the securities purchased under those facilities. Many judgements must be made about values in illiquid markets. Fortunately CBO undertook that task in 2010, using a definition of fiscal that is similar to the one proposed here.⁷ I will briefly highlight the most relevant findings, but would encourage interested readers to look at that study.

⁷ For full disclosure, I was one of the authors of the CBO study.

The total fiscal cost of the emergency facilities was estimated by CBO to be \$21 billion. That figure is the present value of net payments from the government evaluated on a fair value basis over the expected life of the facilities. There are several reasons that the fiscal cost was found to be modest. Some programs involved large amounts of collateral and short loan maturities that protected the Federal Reserve from losses. Others, like the Maiden Lane facilities, exposed the Federal Reserve to considerable credit risk. However, most of those transactions were carried out on a fair value basis or through an auction mechanism that suggested the subsidies were negligible. Furthermore, some of the transactions shielded the Federal Reserve by putting TARP funds in a first-loss position. The programs judged to involve fiscal costs, most notably TALF, involved loans from the Federal Reserve that were backed only by risky collateral, that had administratively set rather than market-based interest rates, and that extended over horizons of months or years.

A few methodological notes may be useful in interpreting those findings. The fiscal cost concept used in CBO's analysis was *ex ante* fair value. The cost was evaluated prospectively, based on available information at the time a given facility was approved, requiring estimates of projected take-up rates over its lifetime. Caps on some of the facilities were increased or removed after their initial creation. Most of the facilities had a capacity far in excess of realized take-up rates, and the cost estimates included the possibility that market conditions could have further deteriorated or improved, affecting usage and security prices. During that period there was often a considerable difference between market prices and inferred fair value. Had the calculations been done at market prices the reported fiscal costs would have been considerably higher, but still modest relative to the amount of credit extended by the Federal Reserve under the facilities.

Fiscal effects throughout this note have been measured in terms of cost and not of benefit. That is in keeping with the normal practice in budgetary accounting of only quantifying costs. The broader societal benefits could be much larger than the costs; they are certainly harder to estimate. The less ambitious goal here is to measure fiscal actions by the Federal Reserve in a way that is comparable to how other fiscal actions are evaluated.

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Congressional Budget Office, "The Budgetary Impact and Subsidy Costs of the Federal Reserve's Actions During the Financial Crisis," May 2010

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