

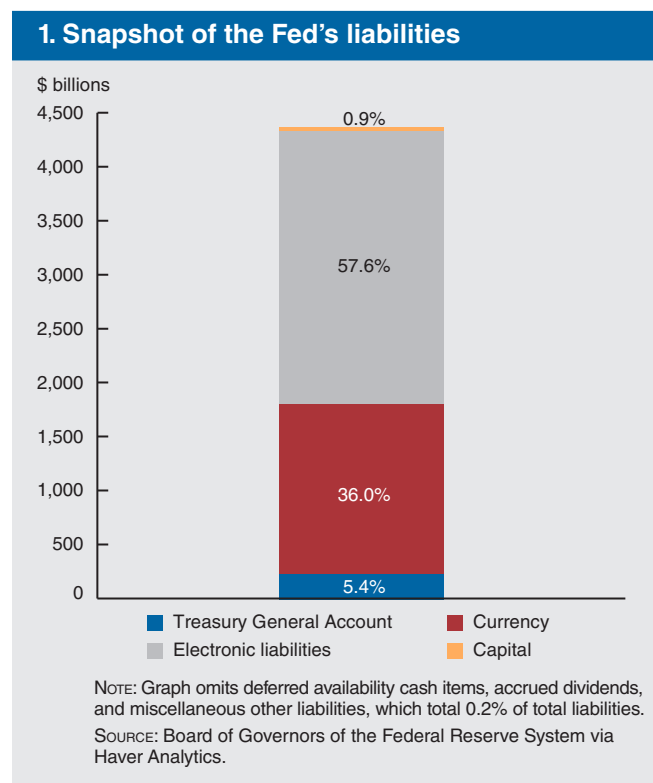
# Chicago Fed Letter

## The structure of Federal Reserve liabilities

by Thomas Haasl, research assistant, Anna Paulson, senior vice president, associate director of research, and director of financial markets, and Sam Schulhofer-Wohl, senior economist and research advisor

Throughout the financial crisis and its aftermath from late 2008 through October 2014, the Federal Reserve used asset purchases as a potent tool of monetary policy—buying longer-term Treasury and mortgage-backed securities to provide economic stimulus beyond what traditional policy approaches could produce. Consequently, the size and composition of the Fed’s balance sheet changed significantly over this period.

As the economy returns to normal, the Fed is “normalizing” its balance sheet and the conduct of monetary policy. But what does that mean? In this *Chicago Fed Letter*, we discuss the Fed’s liabilities,



which will play a significant role in determining the size of its balance sheet in the long run.<sup>1</sup> We describe the basic structure of these liabilities and how they have changed in recent years. We divide liabilities into four categories based on whether they are liabilities to the U.S. Department of the Treasury, electronic liabilities to other entities, currency, or the Fed’s capital stock.

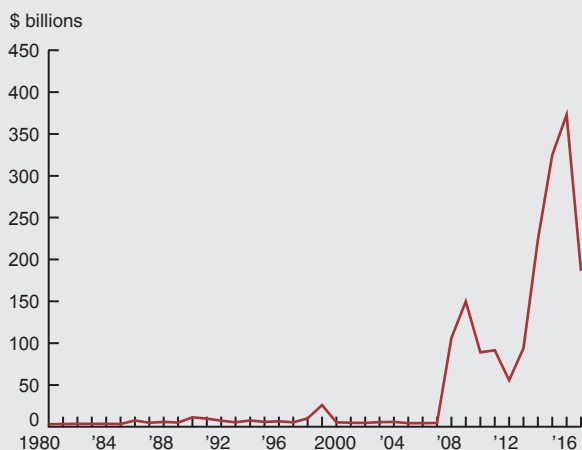
Figure 1 illustrates the make-up of the Fed’s liabilities as of March 14, 2018. Together, currency and electronic liabilities account for more than 90% of the Fed’s financial obligations. The Treasury’s balance at the Fed is roughly 5% of all liabilities, and the capital stock is comparatively negligible. But the size and importance of each of these items to the Fed’s balance sheet has changed substantially over the years. We turn now to more-detailed descriptions of the underlying categories, beginning with the Treasury.

### Treasury General Account

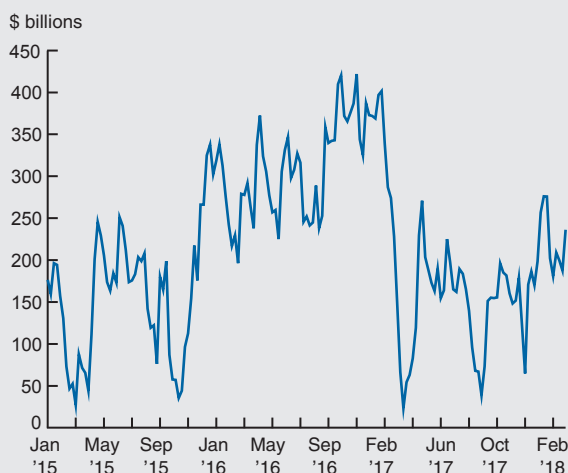
The Fed has a special role as “fiscal agent” or banker for the federal government. The U.S. Department of the Treasury keeps its main checking account, the Treasury General Account (TGA), at the Fed. Taxes paid to the U.S. government flow into this account, and the government’s bill payments—

## 2. U.S. Treasury General Account

A. Annual data, final week in December



B. Weekly data



SOURCE: Board of Governors of the Federal Reserve System via Haver Analytics.

from Social Security checks to payroll for government workers to interest on the federal debt—flow out. Funds in the TGA are an asset to the federal government and a liability to the Fed, just like funds in checking accounts are assets to the households or firms that use the accounts and liabilities to commercial banks.

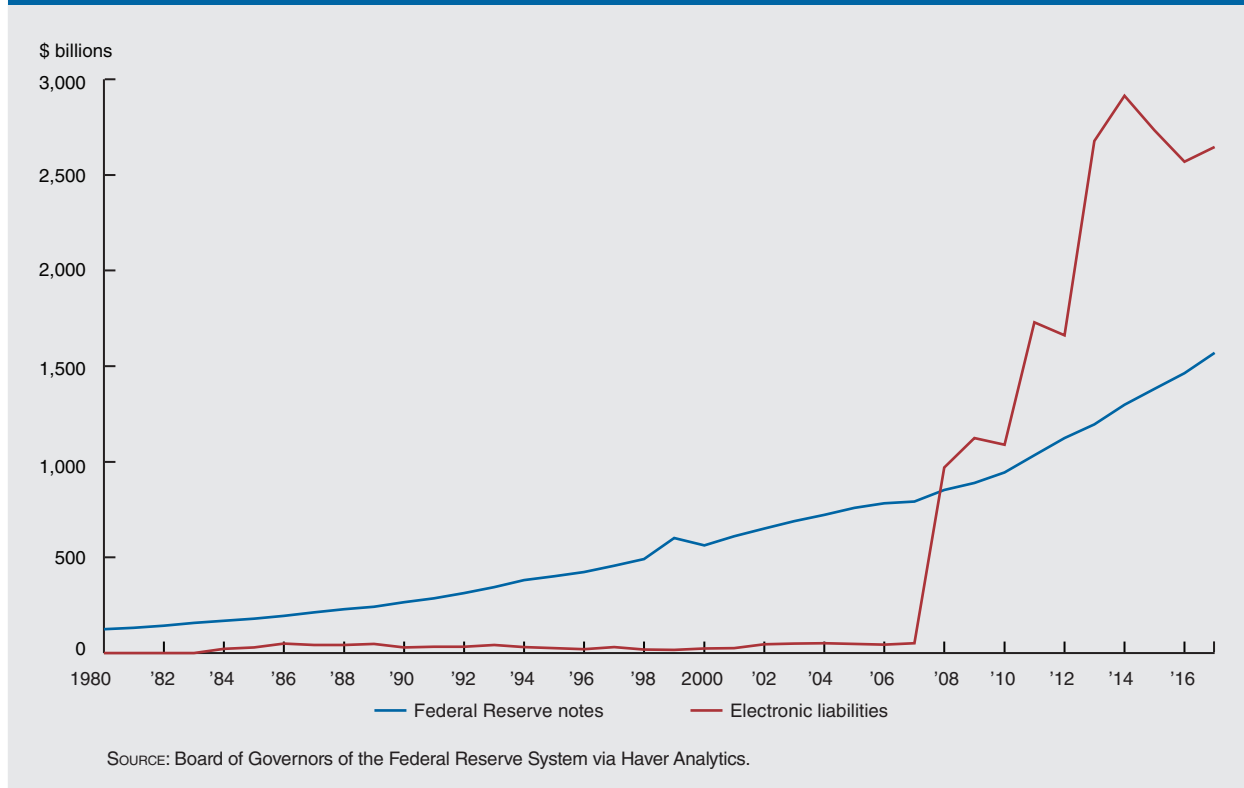
How does the flow of funds into and out of the TGA impact the size and make-up of the Federal Reserve's liabilities? When the U.S. government makes a payment, funds are withdrawn from the TGA and sent to the bank accounts of individuals or businesses. These transfers increase the reserves of the commercial banks that hold the private accounts. Similarly, when the government receives a payment, the source of the payment is an individual or business account at a commercial bank and, ultimately, the reserves of the commercial bank. Like balances in the TGA, commercial banks' reserves are Fed liabilities—they account for a large part of the electronic liabilities category in figure 1. As a result, when the government uses its checking account, the size of the Fed's liabilities remains the same, but the composition changes.

The behavior of the TGA has changed substantially in recent years. Before the financial crisis, the Treasury mainly used accounts at commercial banks, known as Treasury Tax and Loan Note (TT&L) accounts, to receive income and make payments. As shown in the annual data in panel A of figure 2, during this period the TGA balance at the Fed was small, only around \$5 billion. Keeping the Treasury's money at commercial banks helped prevent large payments to or from the Treasury from causing large fluctuations in the supply of bank reserves, which was important for the stability of money market interest rates in an era when bank reserves themselves were small.

But with the expansion of the Fed's balance sheet during the financial crisis, it was no longer as important to prevent fluctuations in the now much larger supply of bank reserves. In addition, when the Fed began paying interest on reserves in October 2008, the formulas that determined the interest rates on TT&L accounts meant that it was less expensive for the Treasury to keep its money in the TGA than to use TT&L accounts.<sup>2</sup> The Treasury therefore shifted essentially all of its balances to the TGA, resulting in the first upward jump shown in panel A of figure 2, in 2008.

In 2015, the size of the TGA took a second jump upward when the Treasury decided to maintain a substantial balance in the account at all times to ensure it could pay the government's bills even if a disaster interrupted access to financial markets.<sup>3</sup> The Treasury now aims to have enough cash on hand to cover one week of payments, subject to a minimum of \$150 billion at times of the year when one week's payments are expected to be small.

### 3. Federal Reserve notes and electronic liabilities



The expansion of the TGA has also made the account’s balance much more volatile, as illustrated by the weekly data in panel B of figure 2. The account now fluctuates between about \$20 billion and nearly \$450 billion. This volatility has two sources. First, the government’s income and outlays are naturally volatile, with large tax payments arriving in some weeks and large expenditures leaving the account in other weeks. Second, as the figure shows, the Treasury occasionally reduces the account balance below the \$150 billion minimum that it ordinarily targets. These reductions generally occur when the Treasury approaches the debt ceiling—a limit set by Congress on the amount of money the government can borrow. Similar to a household that wants to pay its bills without taking out a loan, the Treasury, when it faces a tight debt limit, must spend down its checking account until Congress allows it to borrow more. These factors mean that if the Treasury maintains its current approach to cash management, the Federal Reserve’s liabilities to the Treasury in future years will be both larger and more volatile than they were before the financial crisis.

## Currency

Figure 3 shows the annual history of Federal Reserve notes that make up the vast majority of paper currency in the United States.<sup>4</sup> Currency is an asset to the households and firms that hold it, because they can exchange their currency for valuable goods and services. But currency is a liability to the central bank that issues it—a promise to stand behind the currency’s value in the future.

Currency has traditionally been the Fed’s largest liability. The Federal Reserve Act, the law that created the Fed in 1913, sets out as one of its purposes “to furnish an elastic currency.” Policymakers have interpreted this mandate as calling for the Fed to provide enough currency for the wheels of commerce to turn smoothly. When the U.S. economy grows, households and firms want to make more transactions, and hence need more currency. Figure 3 shows that the Fed’s currency outstanding has grown smoothly over time as the U.S. economy has expanded, and now stands at about \$1.6 trillion, or nearly 8% of gross domestic product (GDP). Of course, a variety of factors other than economic growth, such as foreign demand for U.S. currency, have also affected the amount of currency outstanding. (We explore these factors in more detail in another *Chicago Fed Letter*.)

## Electronic liabilities to non-Treasury entities

Although paper money is a convenient way to pay for small transactions, the costs of counting, transporting, and safeguarding currency make it impractical to use for larger payments. (A million dollars in \$100 bills—the largest denomination currently issued—weighs 22 pounds.) When banks make large payments to each other, therefore, they do so electronically, using accounts at the Fed.

The Fed provides bank accounts to depository institutions, including commercial banks, savings banks, credit unions, and savings and loan associations (thrifts). Depository institutions are legally required to hold a certain amount of reserves either in these electronic Fed accounts or as cash in their vaults. If a bank keeps more money in its Fed account than is legally required, the additional funds are considered excess reserves. Depositories earn interest from the Fed on both required and excess reserves.<sup>5</sup>

When one bank wants to make a payment to another bank, the paying bank instructs the Fed to transfer reserves from its reserve account to the reserve account of the receiving bank. This system also makes it possible for individuals and businesses to make large payments through their banks, by having their banks send payment instructions through the Fed, a process known as a wire transfer.

In addition to bank reserves, the Fed has various other electronic liabilities that are held by banks, certain other financial institutions, and foreign governments that wish to have a reserve of U.S. dollars. For example, government-sponsored enterprises (GSEs) and designated financial market utilities (DFMUs) keep accounts at the Fed. GSEs are financial intermediaries chartered by the federal government that primarily facilitate the flow of credit to housing and agriculture. Fannie Mae, Freddie Mac, and the Federal Home Loan Banks are all GSEs. FMUs provide the infrastructure for transferring, clearing, and settling payments, securities, and other financial transactions.<sup>6</sup> The Financial Stability Oversight Committee has designated as systemically important eight FMUs whose failure or disruption could threaten the stability of the U.S. financial system. These DFMUs include the Clearing House Interbank Payments System and the Chicago Mercantile Exchange. The Federal Reserve is authorized to pay interest on the accounts of DFMUs<sup>7</sup> but not on the accounts of GSEs.

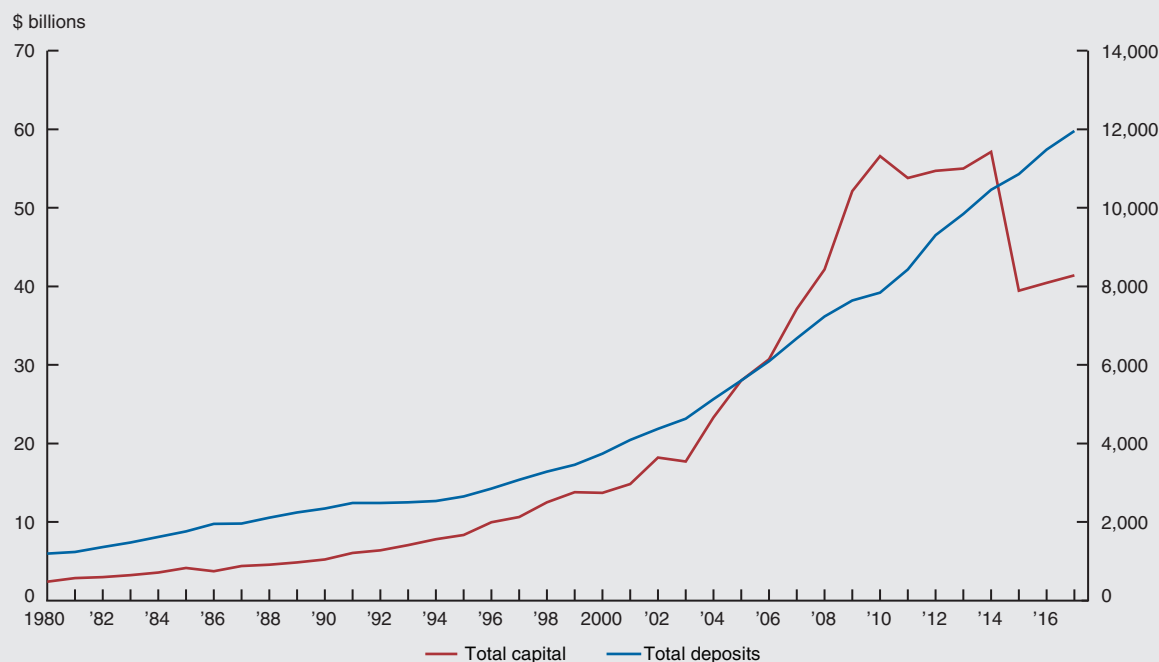
The electronic liabilities of banks, other financial institutions, and foreign governments all serve essentially the same purposes as paper currency—they allow entities outside the U.S. Treasury to easily make payments and to save their money in the form of dollars. Figure 3 plots the historical size of reserves and other electronic liabilities against the size of currency. Historically, reserves and other electronic liabilities were only a tiny part of the Fed's balance sheet. However, when the Fed made large-scale asset purchases to stimulate the economy during and after the financial crisis, it paid for these purchases by creating bank reserves. The resulting expansion of the Fed's balance sheet thus entailed a rapid increase in the quantity of electronic liabilities. As illustrated in figure 3, these liabilities now stand at nearly \$3 trillion, almost twice the value of currency in circulation.

## The capital stock

The Fed's assets—mainly Treasury and mortgage-backed securities—total \$4.407 trillion, while its liabilities to the private sector and the Treasury total \$4.368 trillion. The bulk of the difference is the Fed's capital stock, currently at \$39 billion.<sup>8</sup>

The capital stock has two components. First, commercial banks that are members of the Federal Reserve System are required to pay into the Fed's capital in proportion to the capital they themselves hold. Second, while the Fed remits virtually all of the earnings on its assets to the Treasury, it historically has retained some earnings as capital. Until 2015, the retained surplus was set equal to the capital paid in by commercial banks. Thus, the Fed's total capital—the amount paid in by commercial banks plus the retained surplus—grew in proportion to the size of the banking system,

## 4. Total Federal Reserve capital and total commercial bank deposits



SOURCE: Board of Governors of the Federal Reserve System via Haver Analytics.

as shown in figure 4. However, in 2015 Congress passed a law limiting the Fed's surplus to \$10 billion, and in February 2018, Congress further reduced the limit to \$7.5 billion. To comply with the limit, the Fed transferred some of its surplus to the Treasury, reducing the amount of total capital. Going forward, the retained surplus will remain at \$7.5 billion, while capital paid in by commercial banks will continue to reflect the size of the banking system.

## Conclusion

In this article, we have described the Fed's four major categories of liabilities: liabilities to the federal government, electronic liabilities to other entities, currency, and the capital stock. In another *Chicago Fed Letter*, we examine the outlook for currency and how it may affect the total size of the Fed's balance sheet.

<sup>1</sup> We thank Katerina Powers for excellent research assistance.

<sup>2</sup> Paul J. Santoro, 2012, "The evolution of Treasury cash management during the financial crisis," *Current Issues in Economics and Finance*, Federal Reserve Bank of New York, Vol. 18, No. 3.

<sup>3</sup> U.S. Department of the Treasury, 2015, "Quarterly refunding statement of acting assistant secretary for financial markets Seth B. Carpenter," press release, Washington, DC, May 6, available online, <https://www.treasury.gov/press-center/press-releases/Pages/jl10045.aspx>.

<sup>4</sup> Historically, the U.S. Treasury also issued paper currency; a small quantity of this money is still in circulation and remains legal tender, but none has been issued since 1971. Coins are a liability of the Treasury rather than the Fed.

<sup>5</sup> In addition to these interest-bearing accounts, the Fed provides additional services to banks, such as access to payment services and the option to borrow from the Fed via the discount window (typically on an overnight basis).

<sup>6</sup> More information is available online, [https://www.federalreserve.gov/paymentsystems/designated\\_fm\\_u\\_about.htm](https://www.federalreserve.gov/paymentsystems/designated_fm_u_about.htm).

<sup>7</sup> More information is available online, <https://www.federalreserve.gov/paymentsystems/reghh-about.htm>.

<sup>8</sup> The difference between assets and liabilities also includes several small items—deferred availability cash items, accrued dividends, and miscellaneous other liabilities—which total \$7 billion as of March 14, 2018.

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