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Possibilities for Reducing the Long-Run Size of the Federal Reserve's Balance Sheet¹

In its 2014 Policy Normalization Principles and Plans, the Federal Open Market Committee said it “intends that the Federal Reserve will, in the longer run, hold no more securities than necessary to implement monetary policy efficiently and effectively.” This memo provides a catalog of steps Federal Reserve System policymakers could take to reduce the size of the Federal Reserve's balance sheet in support of that objective and to enhance public understanding of the balance sheet's composition and purpose.

The steps fall into four categories. The first three are: reducing banks' demand for reserves; reducing the Federal Reserve's non-reserve liabilities; and reducing the buffer of additional reserves needed in an operating regime of abundant excess reserves. Most of the possibilities considered would reduce the size of the balance sheet only in the long run, not immediately. Many could also be challenging to implement, could have an uncertain impact on the total size of the balance sheet, and could raise challenging public policy tradeoffs. Policymakers may prefer to consider the fourth category of steps: communicating more effectively about factors determining the size of the balance sheet.

All of the Federal Reserve's liabilities have grown over time for important reasons. The memo does not examine the liabilities' net or relative benefits or analyze the options in depth. Rather, the memo describes each possibility briefly and highlights a few of the key tradeoffs, as a means to provide background and gauge policymakers' level of interest in developing full assessments. Staff would be prepared to provide more complete analysis of any options of particular interest.

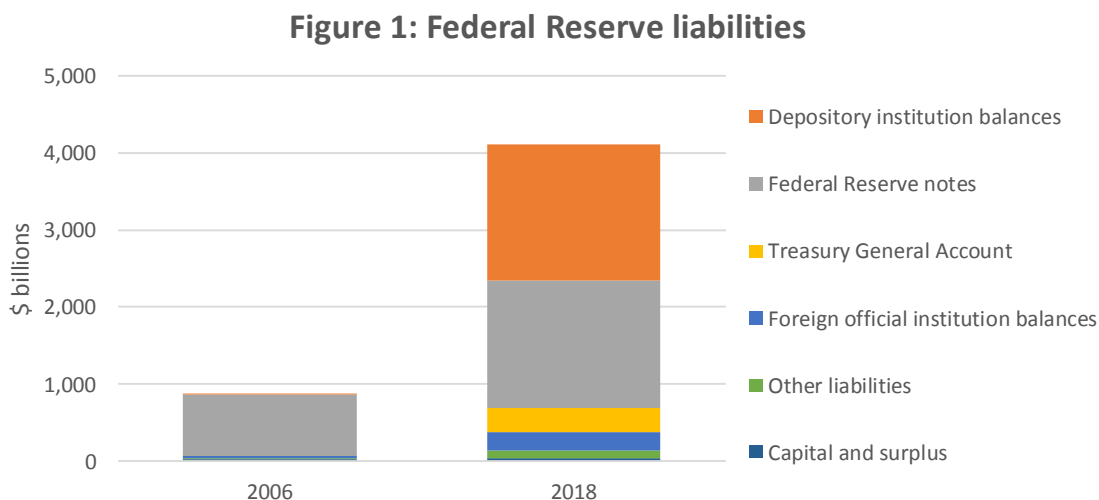
Many of the items, while within the scope of the Federal Reserve System's responsibilities, do not fall under the purview of the FOMC.² The memo aims to provide a comprehensive outline of possibilities that Federal Reserve policymakers might examine. The relevant governance bodies would ultimately need to consider the possibilities in order to move forward.

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² Some possibilities also would require action by agencies outside the Federal Reserve System.

1. A review of the Federal Reserve’s liabilities

Federal Reserve liabilities serve as safe and liquid assets held by the public, the banking system, the U.S. government, and certain other institutions. Since the financial crisis, the size of the Federal Reserve’s balance sheet has been primarily determined by decisions about how many assets to purchase in order to provide economic stimulus. In the long run, as crisis-era policies continue to unwind, the size of the balance sheet will be importantly determined by factors affecting the size of Federal Reserve liabilities. Figure 1 breaks down these liabilities.



Source: Board of Governors.

- Depository institution balances were about \$1.8 trillion in late November of this year, up from around \$13 billion at the end of 2006. Reserve balances enable final settlement of payments. Maintaining a precautionary balance of reserves allows a bank to absorb daily payment flows without borrowing funds or selling assets. This ability to absorb shocks can be particularly important in times of stress.
- Federal Reserve notes in circulation were about \$1.7 trillion, a bit more than double the pre-crisis level. U.S. currency is an important store of value and medium of exchange both domestically and abroad, and historically has been by far the largest of the Federal Reserve’s liabilities.
- The Treasury General Account (TGA) was \$317 billion, up from around \$5 billion before the crisis. By statute, the Federal Reserve serves as the federal government’s fiscal agent. The TGA is used to receive taxes and proceeds of bond sales and to pay the government’s bills. Since 2015, Treasury has generally maintained a substantial precautionary balance in the TGA to help ensure that

disruptions in market access will not lead to a technical default, which could have grave consequences for financial stability.³ Treasury previously allowed its cash balance to fall to low levels on many days, posing a risk that the government would be unable to pay its bills if extreme weather or other technical or operational events disrupted access to debt markets.⁴

- Liabilities to foreign official institutions were \$240 billion, up from \$32 billion. Accounts at the Federal Reserve provide foreign official institutions with access to immediate dollar liquidity to support operational needs to clear and settle securities in their accounts, and serve as an important tool to address unexpected dollar shortages or exchange rate volatility, particularly for institutions that do not have dollar swap lines. Liabilities to foreign official institutions consist primarily of a repo pool, a service that allows overnight cash balances at the Federal Reserve to be remunerated through transactions with the System Open Market Account. Similar to other reserve currency central banks, the Federal Reserve has long offered this service as part of a suite of banking and custody services to central banks, governments, and international official institutions. Balances grew in part because the Federal Reserve relaxed and then removed account-level targets for the use of the pool as the balance sheet expanded following the financial crisis.⁵ Globally, cross-border deposits by central banks with other central banks have grown since the financial crisis by more than \$700 billion, to \$1 trillion, as central bank foreign exchange reserve managers have sought to increase their liquidity buffers and minimize their counterparty credit risk.
- Other liabilities were \$94 billion, compared with \$11 billion before the crisis. The increase is largely due to the creation of accounts for designated financial market utilities (FMUs). These institutions provide the infrastructure for transferring, clearing, and settling payments, securities, and other transactions among financial institutions. Title VIII of the Dodd-Frank Act allows FMUs designated as systemically important by the Financial Stability Oversight Council to maintain and earn interest on accounts with the Federal Reserve. Other liabilities also include accounts of government-sponsored enterprises and miscellaneous items.
- Capital and surplus were \$39 billion, up from \$31 billion.

The balance sheet totaled \$4.1 trillion in late November, or about 20 percent of GDP, up from \$874 billion and 6 percent of GDP pre-crisis. As shown in Figure 2, the Federal Reserve's balance sheet remains smaller relative to GDP than those of central

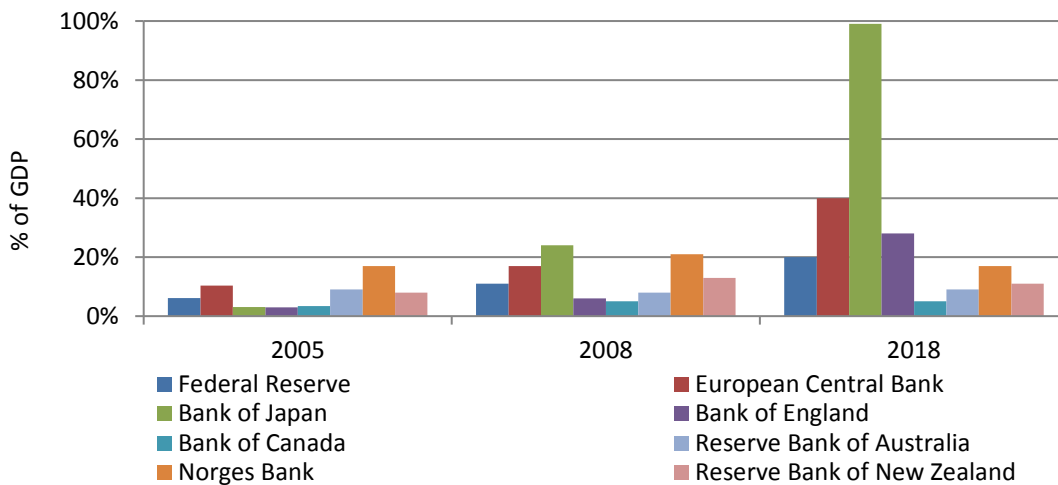
³ Treasury seeks to maintain a minimum balance sufficient to cover five days of outflows, subject to a floor of roughly \$150 billion.

⁴ In addition, before 2008, Treasury kept most of its funds in banks. These accounts fluctuated from near zero on some days to near \$100 billion on other days.

⁵ See "Updates to Foreign Repurchase Agreement Pool Terms of Service," memo to the FOMC, July 17, 2015.

banks in other large economies, though larger than the balance sheets of some, such as the central banks of smaller countries that have lower levels of currency in circulation or operate in systems of limited excess reserves.

Figure 2: Central bank balance sheets relative to GDP



Source: Haver Analytics, Bloomberg, central banks.

2. Options for reducing banks’ demand for reserves

Banks’ demand for reserves appears to be notably higher since the financial crisis as a result of decreases in risk appetite and an increased focus on liquidity risk management in the context of regulatory changes, as well as an environment in which market interest rates are close to the interest rate on excess reserves (IOER). Although many banks’ current reserve holdings are substantially higher than the lowest levels they say they would be comfortable holding with market rates close to IOER, the total of reported minimum comfortable levels remains orders of magnitude higher than pre-crisis reserve levels.⁶ The August 2018 Senior Financial Officer Survey (SFOS) uncovered substantial heterogeneity in banks’ reported reserve demand that could not be readily explained by differences in observable bank characteristics. While some of this heterogeneity likely reflects unobserved differences in bank business models, it may also indicate that some banks reporting higher reserve demand could safely operate with lower minimum reserve levels. The options in this category involve reducing reserve demand in various ways, some of which could be implemented more rapidly than others.

⁶ However, there is a great deal of uncertainty about whether reserve demand will evolve in line with survey estimates because banks’ business models may adjust in response to different market environments. See “The Federal Reserve’s Long-Run Operating Regime” and “Recent Developments in Reserve Markets and Understanding Reserve Demand,” memos to the FOMC, October 19, 2018.

Introduce a facility to allow banks to monetize high-quality liquid securities on demand: Some banks hold substantial quantities of reserves in their liquidity buffers out of concern that it would be difficult to rapidly convert a large quantity of Treasury securities to cash, particularly in a stress event. This difficulty could arise because markets for selling or financing Treasury securities are not open late in the day when unexpected cash outflows may occur, because the bank fears harm to its reputation from selling a large quantity of securities, or because the bank thinks it would receive a below-market price or be unable to find a buyer if it attempted to sell a large quantity of securities.⁷ These concerns might be alleviated, allowing banks to shift their liquidity portfolios toward Treasury securities instead of reserves, if the Federal Reserve offered a facility at which firms could obtain cash in exchange for Treasury securities late in the day.

Impose quotas or tiered remuneration for excess reserves: Other central banks that faced growing demand for reserves have imposed quotas on the quantity of reserves that can be remunerated at the policy rate, with reserves above a threshold remunerated at a lower rate.⁸ Such an approach makes it costly for banks to hold higher reserve balances, which can encourage redistribution of reserves to the institutions that value them most and decrease the total demand for reserves. However, to operate on the flat part of the demand curve for reserves, each bank would need to be allowed to earn the highest interest rate on more reserves than the minimum it would demand at the highest rate; otherwise, the system would be operating on the steep part of the demand curve, with market rates responding to small changes in reserve supply. Tiered remuneration is therefore more useful for resolving an inefficient distribution of reserves and preventing demand from growing than for driving aggregate reserve demand lower. Implementing a tiered remuneration system would also require developing formulas to set banks' remuneration tiers in an objective manner and systems to compute the remuneration thresholds.

Reduce reserve requirements or set them to zero: Required reserve balances stood at \$135 billion as of late November. Under current regulation, required reserve balances do not count toward a bank's Liquidity Coverage Ratio (LCR), and large banks typically do not view them as a source of liquidity in internal liquidity stress tests, because required reserve balances are effectively encumbered by the expectation that banks must meet their reserve requirements. If reserve requirements were lower, banks subject to the LCR and internal stress tests could satisfy these needs while holding lower total reserve balances, which could reduce reserve demand to some degree. Banks not subject to the LCR might also hold lower reserve balances if they did not face reserve requirements.

⁷ See "Recent Developments in Reserve Markets and Understanding Reserve Demand," memo to the FOMC, October 19, 2018.

⁸ See "The Foreign Experience with Monetary Policy Implementation," memo to the FOMC, July 8, 2016.

However, setting the required reserve ratio to zero might make it difficult to explain any future decision to reintroduce a positive reserve requirement.⁹

Encourage the use of daylight overdrafts: Since 2011, the Payment System Risk (PSR) policy has provided for free collateralized daylight overdrafts. Nonetheless, some banks report that the need to meet routine intraday payment flows is an important consideration in determining their desired level of reserves.¹⁰ Firms' resolution plans may be one driver of this type of reserve demand, because the PSR policy, like the discount window policy, does not permit a bank that is approaching failure to count on access to central bank credit. The Federal Reserve could examine whether it is possible to reduce reserve demand by encouraging banks to be more willing to incur daylight overdrafts without creating undue risks.

Review the influence of supervision on the demand for reserves: The Federal Reserve could review supervisors' communications with banks to ensure that banks are not inadvertently being discouraged from holding high-quality liquid assets (HQLA) other than reserves in their liquidity portfolios, in situations where non-reserve HQLA would be sufficient to meet financial stability needs. This review could require coordination with other agencies. The scope for change may be limited because the LCR regulation already draws no distinction between reserves and Treasury securities and because holding reserves can be an important component of a bank's liquidity risk management.

Use outreach to better understand and address unexpectedly high reserve demand at specific banks: Reserve holdings are highly concentrated in a small number of banks. If total reserve demand proves to be significantly higher than expected, it may be because a few large reserve holders maintain higher reserve balances than the minimum comfortable levels they are currently expected to have. The Federal Reserve could ask such firms why they were holding unexpectedly large reserve balances and, depending on the reasons given, respond to whatever concerns motivate large reserve holdings.

3. Options for reducing the size of non-reserve liabilities

Even at the current elevated levels of reserve balances, non-reserve liabilities make up more than half of the Federal Reserve's balance sheet, so reducing their size could meaningfully reduce the total balance sheet.

⁹ Alternatively, regulations could be revised to count required reserves toward the LCR, but this would require the agreement of other agencies and might not affect demand associated with stress tests.

¹⁰ See "Recent Developments in Reserve Markets and Understanding Reserve Demand," memo to the FOMC, October 19, 2018.

Adopt policies to limit the size of liabilities to foreign official institutions: The Federal Reserve could re-impose account-level targets for foreign official institutions' balances or could encourage large account holders to reduce their use of the repo pool, through either outreach or reduced remuneration rates. Account holders could place money in Treasury securities or at commercial banks instead. However, such changes might reduce foreign official institutions' access to immediate dollar liquidity. The dollar has a large role in finance and trade and in official and private balance sheets in nearly all foreign jurisdictions. If foreign official institutions did not have large balances at the Federal Reserve, they might need to respond to financial shocks by selling dollar-denominated assets, withdrawing cash from commercial banks in the United States, or financing securities in U.S. repo markets – all of which could increase risks to U.S. financial stability.

Introduce a facility to allow foreign official institutions to monetize Treasury securities on demand: Like banks, foreign official institutions sometimes hold funds at the Federal Reserve because it could be difficult to rapidly liquidate large quantities of Treasury securities. The Federal Reserve could reduce foreign official institutions' demand for its liabilities by offering a repo facility to allow these institutions to exchange Treasury securities for cash. Other reserve currency central banks provide similar facilities for government debt owned by foreign central banks. However, such a facility would pre-commit the Federal Reserve to expanding its balance sheet as needed by foreign official institutions, at least under certain predetermined conditions.

Work with the Treasury Department to reduce the size of the TGA: The Federal Reserve and Treasury could explore options for reducing the minimum cash balance that is maintained as a safeguard against loss of market access, or for keeping more Treasury balances in commercial banks. However, reducing the minimum cash balance would increase the risk of a technical default by the Treasury in the event of operational disruptions. Banks also may be unwilling to pay competitive interest rates on Treasury deposits given the volatility of those deposits and the balance sheet costs associated with post-crisis regulations. In a regime of abundant excess reserves, if banks paid interest rates below IOER, shifting Treasury balances to banks from the Federal Reserve would be a net cost to the taxpayer.¹¹

¹¹ If Treasury transfers \$1 from TGA to an account at a commercial bank, reserves increase by \$1, and, in a regime of abundant excess reserves, the Federal Reserve does not sterilize this change. The Federal Reserve's total interest payments to banks rise by \$1 times IOER, reducing remittances to Treasury by the same amount. However, Treasury receives interest from the bank. On net, Treasury's income changes by \$1 times the difference between the bank interest rate and IOER. There would also typically be a net cost to the taxpayer in a regime of limited excess reserves, though the mechanics would be different.

Reduce the growth rate of demand for currency by encouraging the use of electronic payments: In recent years, the value of currency in circulation has grown at a rate of about 7 percent per year, faster than nominal GDP. It would be difficult to remove currency already in circulation, but it might be possible to slow the growth of currency demand. For example, if the Federal Reserve improved the retail payments system or conducted public relations campaigns to encourage electronic payments, the demand for currency might be reduced over time. However, the impact could be limited because people hold Federal Reserve notes for many purposes besides payments – for example, as a store of value and medium of exchange in countries experiencing economic or political instability – and because some forms of electronic payments might increase the demand for reserves.¹² Lower use of currency would also have costs. Currency is the government’s least expensive liability because it does not pay interest. Reducing currency outstanding would reduce Federal Reserve remittances to the Treasury and increase the consolidated government’s net interest expense. In addition, electronic payments systems may be less accessible to low-income households. Cash transactions also can be more private than electronic transactions, although this privacy is not purely beneficial from a societal perspective because it can be used to conceal criminal activities.¹³

4. Options for reducing the buffer of additional reserves

A regime of abundant excess reserves would require a buffer of additional reserves above the minimum quantity demanded by banks in order to ensure that shocks to reserve supply and demand did not move the banking system onto the steep part of the demand curve and thereby drive the targeted rate above the FOMC’s target range.¹⁴ The options in this category involve methods for operating with a smaller buffer than would otherwise be needed.

Tolerate more volatility in the target rate: If the FOMC were willing to accept some risk of shocks temporarily driving the targeted rate above the target range, a smaller buffer would be needed to absorb such shocks. However, the FOMC might then have less control over market rates than it desires.

Prepare for larger or more frequent open market operations: With a smaller buffer, more shocks can move the system to a point of reserve scarcity, meaning that larger or more frequent open market operations will be needed to adjust reserve supply in order to

¹² Regarding demand for currency, see Ruth Judson, 2012, “Crisis and Calm: Demand for U.S. Currency at Home and Abroad from the Fall of the Berlin Wall to 2011,” International Finance Discussion Paper 1058.

¹³ See Charles M. Kahn, James McAndrews, and William Roberds, 2005, “Money Is Privacy,” *International Economic Review* 46(2), 377-399, and Kenneth S. Rogoff, 2017, *The Curse of Cash*. Princeton, N.J.: Princeton University Press.

¹⁴ See “The Federal Reserve’s Long-Run Operating Regime,” memo to the FOMC, October 19, 2018.

remain in a regime of abundant excess reserves. It may be difficult for transactions with the Desk's existing primary dealer counterparties to add a sufficient quantity of reserves in a single day to offset large drops in reserve supply caused by increases in other liabilities. Larger transactions could be possible, allowing the Desk to offset more sizable shocks, if additional counterparties were added, such as large or mid-sized banks that are eligible as counterparties in the overnight reverse repo facility. However, policymakers would need to assess the benefits and risks of taking on additional counterparty types. Alternatively, large single-day operations might not be needed if the Desk developed precise, accurate tools to forecast changes in reserve supply, along with the ability to layer small operations to increase reserve supply over time in advance of anticipated shocks. But there may be limits to the quality of forecasts, and more frequent operations or more detailed forecasting would increase the complexity of the operating regime, removing one potential benefit of a regime of abundant excess reserves.

Adopt policies to limit the volatility of foreign official accounts: Increases in the balances in foreign official accounts at the Federal Reserve reduce the supply of reserves. A buffer of additional reserves would prevent these shocks from leading to reserve scarcity. The Federal Reserve could reduce the need for a buffer by limiting the volatility of foreign official accounts, either by policy or through dialogue with account holders. However, such changes might reduce foreign official institutions' use of accounts at the Federal Reserve, with some of the same drawbacks as policies to limit the size of such accounts.

Encourage the Treasury to reduce the volatility of the TGA: Increases in the TGA balance absorb reserves and, if they are too rapid or too difficult to predict, imply the need for a buffer of additional reserves. The Federal Reserve could work with Treasury to identify ways to smooth increases in the TGA over time, such as by spreading out Treasury auctions over more days, though such changes might have only a modest effect on the need for a buffer.¹⁵

5. Options for communicating more effectively about the size of the balance sheet

The size of the Federal Reserve's balance sheet has been the subject of public criticism, which might be mitigated by better explaining the sources of that size.

Focus communications on the balance sheet's size as a percentage of GDP: The Federal Reserve's balance sheet today is substantially larger than pre-crisis in nominal dollar terms. Although most of the increase is the result of large-scale asset purchases in

¹⁵ Rapid decreases in the TGA, which have commonly been associated with debt ceiling events, would not need to be smoothed. Decreases in the TGA cause the supply of reserves to increase and would not move reserve supply to a point of scarcity.

response to the crisis, the balance sheet measured in nominal dollars would have grown in any event as a result of inflation and economic growth. In speeches, publications and other communications about the balance sheet, the Federal Reserve could focus on the size as a percentage of GDP, rather than in nominal dollars. This focus would show clearly that the balance sheet tends to grow along with the economy. However, it would create new communication challenges. Because currency in circulation has tended to grow faster than GDP, the balance sheet as a percentage of GDP would tend to grow over time. And in recessions, the balance sheet relative to GDP would grow even if assets were constant in dollar terms. Changes in communications might also have only a limited impact on public criticism. The Federal Reserve would continue to be required to publish a weekly balance sheet and annual audited financial statements in nominal dollars, so outside observers could easily continue to comment on the dollar size.

Better explain the sources of demand for Federal Reserve liabilities: Many of the Federal Reserve's liabilities arise from statutory responsibilities other than monetary policy implementation – for example, providing currency and serving as the Treasury's fiscal agent. These liabilities have grown substantially over time and are expected to continue to do so. The Federal Reserve could use speeches, publications, and other communication vehicles to better explain why its balance sheet has reached its current size.¹⁶

¹⁶ For examples of such explanations, see Lorie Logan, "Operational Perspectives on Monetary Policy Implementation: Panel Remarks on 'The Future of the Central Bank Balance Sheet,'" May 4, 2018, and Thomas Haasl, Anna Paulson and Sam Schulhofer-Wohl, "The Structure of Federal Reserve Liabilities," *Chicago Fed Letter* No. 395, 2018.