Testimony of

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To the Task Force on Monetary Policy, Treasury
Market Resilience, and Economic Prosperity
of the
Committee on Financial Services
U.S. House of Representatives

Hearing on “Striking the Right Balance Sheet”
January 14, 2026

Mr. Chairman, Ranking Member Vargas, and Members of the Task Force, it is an honor to be here with you today to discuss issues related to the Federal Reserve's balance sheet. My name is Jim Clouse, and I am currently a Senior Fellow at the Andersen Institute for Economics and Finance. Prior to joining Andersen, I was a deputy director in the Monetary Affairs Division at the Federal Reserve Board for many years with much of that time spent focusing on issues related to the Federal Reserve's balance sheet and monetary policy implementation. In other related work, I served as the Secretary of the FOMC for five years. Before turning to the subject at hand, I wanted to express my deep admiration, respect and support for Chair Powell and his leadership of the Federal Reserve.

1. The Fed's Balance Sheet: Nuts and Bolts

Just by way of preliminaries, the Federal Reserve's balance sheet refers to its assets and liabilities. The Federal Reserve Act specifies the types of assets the Federal Reserve can hold. For the most part, Federal Reserve assets are limited to securities issued or guaranteed by the U.S. Treasury or by an agency of the United States. Other Federal Reserve assets include loans to depository institutions, liquidity provided through central bank liquidity swap lines, and holdings of foreign currency denominated assets. On the other side of the balance sheet, the Federal Reserve's primary liabilities include physical currency and reserve balances held by depository institutions. The Treasury also maintains an account at the Fed—the Treasury General Account or TGA; the average level of balances in that account is sizable and there can be wide swings in the TGA, especially around tax dates and during periods when the debt ceiling is binding. At times, there are sizable balances placed with the Federal Reserve by counterparties in overnight reverse repurchase agreement operations. Foreign official institutions and a range of government agencies also maintain accounts and place balances with the Federal Reserve. In addition, under the provisions of the Dodd-Frank Act, designated financial market utilities maintain balances at the Federal Reserve.

By statute, the Federal Reserve publishes detailed information on its balance sheet each week. In addition, the Federal Reserve also publishes full quarterly financial statements and provides quarterly reports on balance sheet developments to Congress. Financial statements audited by an independent public accounting firm are published every year. Detailed information on the Federal Reserve's holdings of securities is published regularly on the website of the Federal Reserve Bank of New York. In addition, the Federal Reserve Bank of New York publishes an annual report on open market operations that includes a wealth of information on balance sheet developments over the past year. And under the Dodd-Frank Act, transaction level detail on open market operations and loans to depository institutions is published with a two-year lag.

2. The Role of the Balance Sheet in the Implementation of Monetary Policy

Prior to the Global Financial Crisis

For much of the Federal Reserve's history, the role of the balance sheet in the implementation of monetary policy centered on managing the quantity of reserves in the banking system to achieve desired conditions in money markets. For example, in the so-called "scarce reserves" operating regime in place prior to the Global Financial Crisis (GFC), the Federal Reserve regularly used open market operations to align the daily supply of reserves in the banking system with the daily

demand for reserves at the targeted federal funds rate. Under this framework, the Federal Reserve's balance sheet expanded gradually over time to accommodate the trend growth in banks' demand for reserves and the trend growth in the public's demand for currency. On average, the size of the Federal Reserve's balance sheet as a share of nominal GDP held steady at about 6 percent. On the asset side of the balance sheet, the Federal Reserve accommodated the trend growth in the demand for its liabilities with commensurate increases in its securities holdings. In doing so, the Fed generally also opted to maintain a maturity structure of its securities portfolio that was roughly comparable to the maturity composition of all outstanding Treasury debt.

The Global Financial Crisis and Aftermath

The Federal Reserve's balance sheet thus always played a critical role in the implementation of monetary policy but prior to the GFC, it generally was in the background and mostly the realm of technical experts. All that changed with the onset of the Global Financial Crisis in 2008. Following the failure of Lehman in the fall of that year, the FOMC swiftly reduced the level of the federal funds rate—its traditional tool for adjusting the stance of monetary policy—to the effective lower bound by December. The economy was in freefall at that point, and it was clear that additional policy accommodation was desperately needed. Against that backdrop, the FOMC announced the first of several programs of large-scale asset purchases. Under these programs, the Federal Reserve purchased large volumes of longer-term Treasury and agency securities with the aim of putting downward pressure on longer-term interest rates and easing overall financial conditions. All other major central banks faced similar circumstances with their short-term interest rates pinned at the effective lower bound, and they also resorted to asset purchases and nontraditional tools to provide additional policy accommodation. As the Federal Reserve's assets expanded, there were corresponding increases in Federal Reserve liabilities, principally an increase in reserves in the banking system.

Over the following years, as the economy gradually recovered, the FOMC also gradually reduced the size of its balance sheet through the passive runoff of maturing securities. At the end of 2018, the FOMC judged that it was appropriate to begin returning the federal funds rate to a more normal setting. At the time, however, the level of reserves in the banking system was still very large by historical standards. The Federal Reserve was able to adjust the level of short-term interest rates by adjusting so-called "administered rates"—the interest rate on reserve balances (IORB) and also the offered rate on overnight reverse repurchase agreement operations. Absent these tools, the Federal Reserve would not have been able to increase the level of short-term interest rates without very large and rapid sales of securities holdings to reduce reserve levels. This new approach to adjusting the level of short-term interest rates through changes in the Federal Reserve's administered rates proved very effective, even with very elevated levels of reserves in the banking system.

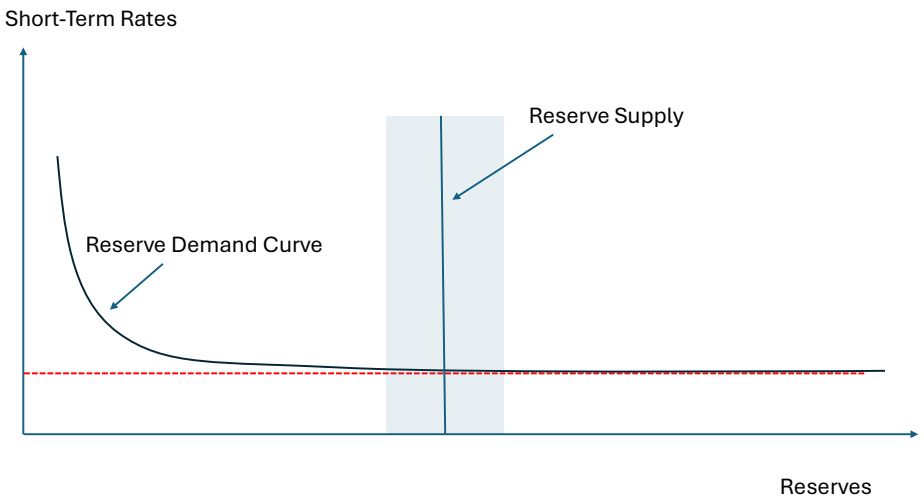
Transition to Ample Reserves

The level of reserves in the banking system continued to gradually decline in 2018 and 2019. During this period, it became apparent that the demand for reserves had dramatically changed from the period prior to the onset of the GFC. In the years just prior to the GFC, the banking

system operated very effectively with only about $10 billion in reserves each day. In 2018, with reserves still very elevated by historical standards, overnight interest rates in the federal funds market and repo market began to gradually edge higher relative to the interest rate on reserve balances as reserve balances moved lower. The upward move in short-term rates was an early sign that the banking system's demand for reserves was much higher than in the period prior to the GFC. Changes in bank liquidity regulations and generally more cautious attitudes toward liquidity risk management following the GFC likely contributed to higher demand for reserves. Other structural changes affected the volatility of reserve supply. The Treasury moved to a cash management regime with sizable balances placed in the TGA on average and considerable variability in the daily level of TGA balances. And other entities including foreign official institutions and designated financial market utilities began to hold sizable balances with the Federal Reserve. All else equal, variations in all of these types of balances implied wider swings in the supply of reserves in the banking system.

Partly in recognition of these and other structural changes, the FOMC announced in early 2019 that it intended to continue to operate in a so-called "ample reserves" regime. Under this operating framework, adjustments in short-term interest rates are achieved through adjustments in the Federal Reserve's administered rates and active management of the daily level of reserves is not required. Under the ample reserves regime, the Fed seeks to supply a level of reserves so that the system operates on the "flat portion" of the aggregate reserve demand curve. Figure 1 shows one way of visualizing this key characteristic of an ample reserves regime. The solid line depicts a hypothetical reserve demand curve that is steep at low levels of reserves and flattens out close to the level of IORB at high levels of reserves. If the Fed supplies a sizable quantity of reserves, short-term interest rates move close to IORB. Moreover, shocks to the supply of reserves (depicted by the shaded area) have little if any effect on the level of short-term interest rates.

Figure 1: Ample Reserves



The ample reserves regime has many attractive features. First and foremost, it delivers excellent interest rate control for the Fed even in environments with very large quantities of reserves in the banking system. In addition, the ample reserves regime is also a very simple system to operate for both banks and the Fed. In contrast, the prior scarce reserves regime with reserve requirements was very complicated operationally and burdensome for both banks and the Fed.

Finding Ample the Hard Way: The Fall of 2019

A challenge in implementing the ample reserves regime is that while "ample" is reasonably clear conceptually it is not easy to quantify in practice. In the fall of 2019, with reserves till very elevated by historical standards, a confluence of factors including large settlements of Treasury auctions and sizable tax-related flows and corresponding reductions in reserves led to a brief period of severe stress in the repo market that spilled over to the federal funds rate.[1] The FOMC judged that the level of reserves had moved below ample and authorized a program of purchases of Treasury bills to return reserves to ample levels. That process was nearly complete in early 2020 when the pandemic struck.

Balance Sheet Developments from the Pandemic to Present

With the onset of the pandemic, the Federal Reserve once again lowered the federal funds rate to the effective lower bound and once again turned to large scale asset purchases to address severe stress in financial markets and to provide much needed additional policy accommodation. The Fed's balance sheet expanded greatly over the period from 2020 through 2021. In light of the severe strains in Treasury markets observed at the outset of the pandemic as well as the period of repo market strains in September 2019, the FOMC established two new standing liquidity programs in July of 2021—the Standing Repo Facility (the SRF) and the FIMA Repo Facility—to serve as backstops in money markets to support the effective implementation of monetary policy and smooth market functioning. Under the SRF, primary dealers and depository institutions may obtain overnight repo financing against Treasury securities and agency MBS securities at a fixed rate set somewhat above the general level of short-term interest rates. Similarly, the FIMA repo facility allows foreign official institutions to obtain overnight repo financing against their Treasury securities held in custody at the Federal Reserve Bank of New York.

By the end of 2021, the U.S. economic recovery was well along, labor market conditions were tight, and supply and demand imbalances were generating significant inflation pressures. Against that backdrop, the FOMC moved aggressively to tighten the stance of monetary policy beginning in 2022. Also in 2022, the Committee published its principles and plans for reducing the size of the balance sheet.[2] The principles for reducing the size of the balance sheet indicated that the Committee intended to operate with securities holdings in the amounts needed to implement monetary policy efficiently and effectively. The Committee also indicated that it

[1] For more detail on this episode, see Sriya Anbil, Alyssa Anderson and Zeynep Senyuz The Fed - What Happened in Money Markets in September 2019?

[2] See Federal Reserve Board - Principles for Reducing the Size of the Federal Reserve's Balance Sheet and Federal Reserve Board - Plans for Reducing the Size of the Federal Reserve's Balance Sheet.

intended to hold primarily Treasury securities in its portfolio, thereby minimizing the effects of the Federal Reserve's holdings on credit allocation across sectors of the economy.

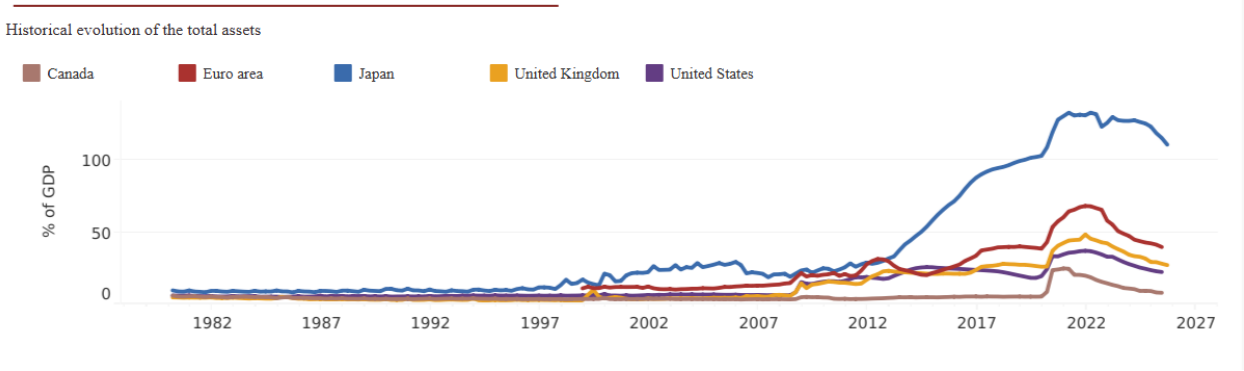
Consistent with these plans, the Federal Reserve began reducing the size of its balance sheet in June of 2022 and that process proceeded smoothly through much of last year. Partly to help avoid a repeat of the 2019 scenario, the Committee slowed the pace of balance sheet runoff in June of 2024 and again in April of 2025 as the level of reserves in the banking system moved substantially lower. Over the course of the year, there were some signs of tightening conditions in the repo market, particularly around month- and quarter-ends. To help address these pressures, the FOMC took steps to enhance the effectiveness of standing repo operations including conducting operations earlier in the day and encouraging counterparties to participate in these operations when market conditions tighten.

In September of last year, money market conditions began to firm rather quickly, and the Committee took that as a sign that the system was approaching ample reserves. At its October meeting, the Committee announced that it would cease balance sheet runoff beginning in December. And at its December meeting, the Committee authorized a program of so-called reserve management purchases of Treasury bills. As Chair Powell noted in his remarks following the December FOMC meeting, this program is intended to build up a buffer of reserves now ahead of an anticipated drop in reserves around the April tax season. In contrast to large scale asset purchases of longer-term Treasury securities, these purchases of short-term Treasury bills should have little effect on overall financial conditions and the economy. The balance sheet actions announced in October and December were consistent with the balance sheet plans the Committee had announced in 2022.

3. International Perspectives on Central Bank Balance Sheet Developments

The discussion above detailed Federal Reserve balance sheet developments from a U.S. perspective. As shown in figure 2, the balance sheets of nearly all major central banks have evolved following broadly similar contours. The surge in central bank balance sheets began with the onset of the global financial crisis (GFC) in 2008 and was amplified over time by the European crisis in 2012 and most recently the response of central banks to the pandemic. The expansion of central bank balance sheets reflected increased lending through various emergency credit programs and the purchase of large volumes of securities and other financial assets, the latter intended to help provide policy accommodation with short-term interest rates pinned at the effective lower bound. The bulk of the expansion in central bank balance sheets was financed by increases in reserves held by depository institutions along with other short-term liabilities. As the global economy recovered in the post pandemic period, most central banks have been in the process of gradually paring the size of their balance sheet. Still, the size of central bank balance sheets as a share of nominal GDP for all major central banks is notably larger than in the period prior to the GFC. In figure 2, the size of the balance sheet for the Fed as a share of nominal GDP (dark blue line) currently stands at about 22 percent. Balance sheet sizes as a share of GDP for the Bank of England, ECB and BoJ are higher at 27 percent, 39.5 percent and 110.6 percent, respectively.

Figure 2: The Size of Central Bank Balance Sheets as a Share of Nominal GDP



Source: Bank for International Settlements (see Central bank total assets - dashboards | BIS Data Portal)

4. Selected Balance Sheet Issues

At present, the Federal Reserve and other central banks appear to be approaching a "new normal" in terms of the size of the balance sheet going forward. Nonetheless, a number of important balance sheet issues remain, and the discussion below touches on a few issues that have garnered attention.

RSTAR and the Potential Need for Future QE

Researchers have identified a global trend toward lower long-run real interest rates in the United States and other countries.[3] In part, this trend may reflect changes in structural factors such as slower productivity growth or aging populations or a global savings glut. An important implication of this trend is that on average, the long-run level of the federal funds rate is lower now than in the past. And all else equal, that implies that the Federal Reserve has less scope to lower the federal funds rate in response to very adverse economic shocks such as the Global Financial Crisis or the pandemic. That more limited scope for adjusting the primary tool of monetary policy suggests that episodes in which the federal funds rate is constrained by the effective lower bound may be more frequent than in the period prior to the GFC. And a corollary then is that the Federal Reserve might need to turn to large scale asset purchases to provide policy accommodation more frequently than in the past. In its recent update of the Statement of Longer Run Goals and Monetary Policy (consensus statement), the FOMC reaffirmed that it is prepared to use all of its tools to promote maximum employment and stable prices, particularly when the federal funds rate is constrained by the effective lower bound.

[3] See for example estimates of Kathryn Holston, Thomas Laubach and John Williams Measuring the Natural Rate of Interest - FEDERAL RESERVE BANK of NEW YORK.

Economic Effects of Quantitative Easing (QE)

Researchers have pointed to a number of channels through which large scale asset purchases may affect the economy.[4] A common view is that such programs adjust the supply of longer-term securities available in the private sector and so affect the prices of those securities. The corresponding changes in longer-term interest rates then filter through to changes in broad financial market conditions. In many respects, this view of the transmission channel for large-scale asset purchases is similar to that for Federal Reserve actions to adjust the current and anticipated path of future short-term interest rates. That said, there is significant uncertainty about the effects of large-scale asset purchases, and the FOMC has indicated that adjustments in short-term interest rates remain its primary tool for adjusting the stance of monetary policy.

The efficacy of QE is a matter of continuing study among economists and likely will be for many decades to come. Some authors have suggested that QE may only have effects for relatively brief periods or may only have effects by influencing expectations about the future course of short-term interest rates. The workhorse models of QE at the Federal Reserve Board embed the view that QE works by affecting the current and anticipated future supply of longer-term securities available to the private sector. This framework is grounded in theoretical models and careful empirical work. As a response to very adverse economic shocks, large-scale asset purchases have helped to keep longer-term interest rates lower than would otherwise be the case and, in doing so, have provided meaningful support to the economy.

Reserve Management Purchases

In contrast to quantitative easing, the reserve management purchases recently announced by the Committee will have little if any effect on longer-term interest rates and broad financial conditions. Instead, these purchases are intended to maintain ample reserve conditions over coming months including the period in late April when tax receipts typically generate a spike in balances in the TGA and a corresponding decline in reserves in the banking system. The Committee elected to begin a program of steady Treasury bill purchases now to build a buffer of reserves ahead of the April tax date.

The Long Run Composition of the Balance Sheet

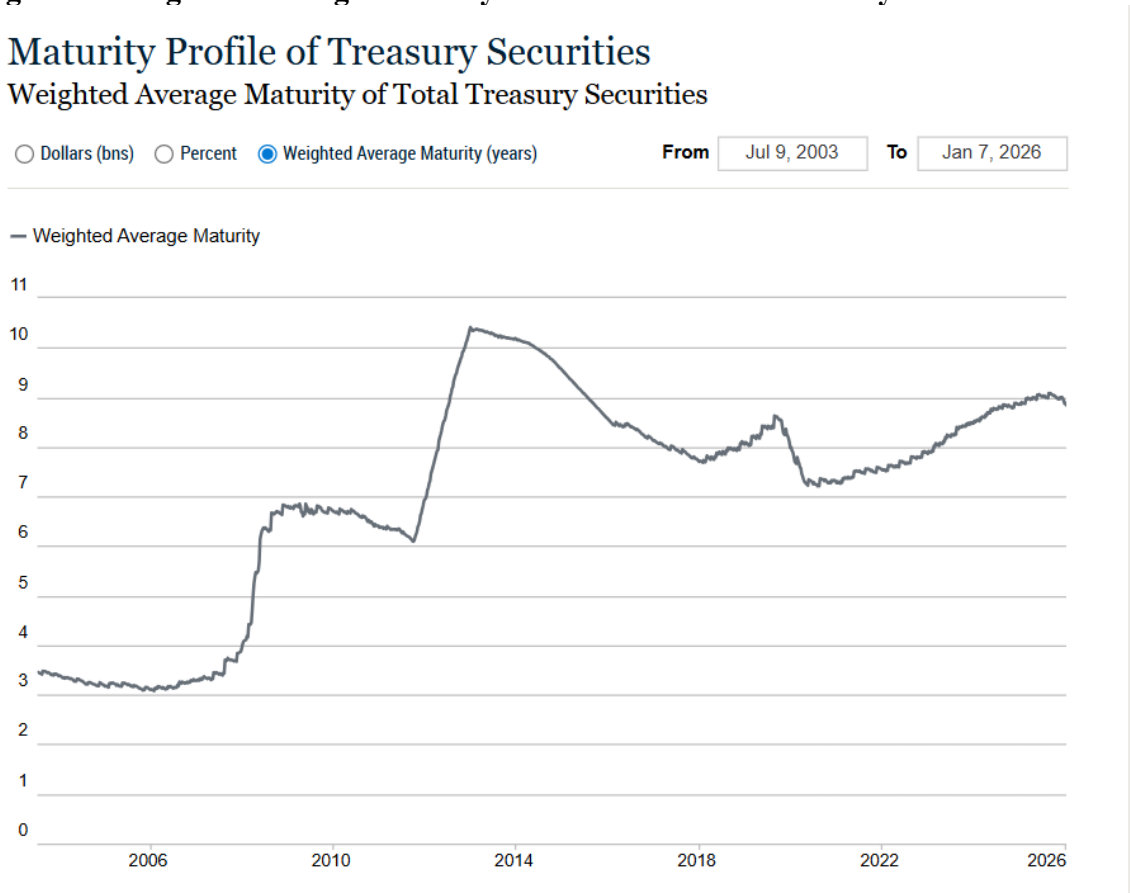
While the size of the Federal Reserve's balance sheet may have reached a new normal, the composition of the balance sheet is still a long way from normal. The Committee has indicated that it intends to hold primarily Treasury securities over the longer run. However, the Federal Reserve still holds more than $1 trillion in agency MBS that are slowly running off the balance sheet. In its annual report on open market operations, the Federal Reserve Bank of New York includes projections for the size and composition of the balance sheet under a number of

[4] For more details, see Arvind Krishnamurthy and Annette Vissing-Jorgensen, 2011b_bpea_krishnamurthy.pdf, Josheph Gagnon, Policy Brief 16-4: Quantitative Easing: An Underappreciated Success, and Eric Engen, Thomas Laubach, and David Reifschneider The Fed - The Macroeconomic Effects of the Federal Reserve's Unconventional Monetary Policies.

plausible assumptions. In those projections, agency MBS continue to run off well into the next decade.[5]

The maturity structure of the Federal Reserve's securities holdings is also far from normal. Past large scale asset purchase programs have resulted in a portfolio heavily weighted toward longer-term securities. As a result, the weighted average maturity (WAM) of the Fed's Treasury portfolio (Figure 3) is just a little below 9 years, well above the WAM of the portfolio prior to the GFC (about 3 years) and also well above the WAM for all Treasury debt outstanding (about 6 years). The FOMC's current practice of concentrating reserve management purchases and purchases reflecting the reinvestment of maturing agency MBS in Treasury bills will help to shorten the WAM of the Fed's portfolio.

Figure 3: Weighted Average Maturity of Federal Reserve Treasury Portfolio



Source: Federal Reserve Bank of New York

Challenges in Managing the Balance Sheet

The more active use of balance sheet policy over recent years has been helpful in addressing the severe economic and financial disruptions of the global financial crisis and the pandemic. That said, there are significant challenges in managing the balance sheet. One basic issue is that some aspects of the Federal Reserve's balance sheet management are complicated and technical and

[5] For more details, see the annual report on open market operations at omo2024-pdf.pdf.

are not easy to explain to the general public. In that environment, Committee communications about the balance sheet can be tricky. One notable example of this occurred during the so-called "taper tantrum" of 2013. In the spring of 2013, Chair Bernanke offered some remarks intended to provide greater clarity about the likely path of the Federal Reserve's balance sheet. Even though the substance of the Chair's remarks were thought to be already well understood in markets, longer-term interest rates moved up sharply in the late spring and summer. Moreover, it appeared that market participants were drawing inferences about the likely path of future short-term interest rates from statements about the anticipated path of the balance sheet. More generally, it can be complicated to orchestrate and communicate the use of multiple tools, particularly when economic conditions are changing quickly.

Ensuring the Balance Sheet is not Used to Finance Fiscal Policies

It is important to note that in conducting large scale asset purchases, the Federal Reserve did not "finance the deficit" in any meaningful way. The Federal Reserve does not participate as a competitive bidder in Treasury auctions. Moreover, the Federal Reserve did not purchase newly-issued "on-the-run" securities. Rather, all of the Treasury securities purchased in large scale asset purchase programs were "off-the-run" securities that had been issued in the past and traded in secondary markets since then. All purchases were conducted through a competitive auction process and executed at market-determined prices.

Of course, any use of the Federal Reserve's balance sheet to finance fiscal policies would have very adverse economic effects and would be wholly inconsistent with the Federal Reserve Act and the intent of Congress in prescribing clear long-run macroeconomic objectives—maximum employment and stable prices—to guide the conduct of monetary policy.

More broadly, it is essential for all central banks to be insulated from political pressures that could otherwise adversely affect their ability to promote macroeconomic objectives. A large body of economic research has shown that overall economic performance is adversely affected when central banks are not effectively insulated from political pressures. Indeed, many observers have pointed to political influences as a factor contributing to the very adverse economic outcomes for the United States in the 1970s.

Recognizing these issues, the Congress established the modern version of the FOMC in 1935 with a number of safeguards in place.[6] This basic structure was strengthened in 1977 when the Congress established clear macroeconomic objectives for monetary policy—maximum employment and stable prices—and requirements for the Federal Reserve to regularly report to Congress on its policy decisions and actions. Maintaining the integrity of this statutory oversight framework should guard against clearly inappropriate uses of the Federal Reserve's balance sheet.

[6] See the recent article by Gary Richardson and David Wilcox, Retrospectives: How Congress Designed the Federal Reserve to be Independent of Presidential Control for a discussion of the 1935 Banking Act and the debate around Federal Reserve independence.

Interest on Reserves

As discussed above, the interest rate on reserve balances is the essential tool used by the Federal Reserve to adjust the level of short-term interest rates. Some observers have suggested that the authority to pay interest on reserves should be revoked or constrained as a way to reduce Federal Reserve interest expenses and boost Fed remittances to the U.S. Treasury. Such suggestions are deeply misguided. Eliminating the Federal Reserve's authority to pay interest on reserves would not boost Federal Reserve remittances to the U.S. Treasury. Moreover, it would require wholesale changes in the entire framework for the implementation of monetary policy.[7] And eliminating interest on reserves would also likely undercut the effectiveness of crisis management tools such as large-scale asset purchases. Absent interest on reserves, the public and market participants would recognize that the Federal Reserve would need to sell assets in the future when the economy had recovered. And those expectations in turn would reduce the efficacy of large-scale asset purchases in putting downward pressure on interest rates and providing policy accommodation at the time when it is most needed.

Alternative Operating Regimes

Some observers have suggested that it may be possible for the Federal Reserve to return to an operating regime with scarce reserves and a much smaller balance sheet than at present.[8] To be sure, there could be some technical advantages to returning to a scarce reserves regime if that were possible. A smaller Fed balance sheet would make it far less likely that the Federal Reserve would experience a period with negative net income. And a smaller Fed balance sheet with scarce reserves would likely be accompanied by more active trading in the federal funds market and a smaller footprint in markets more generally with less scope for interaction with Treasury debt management.[9]

That said, the world has changed since 2007 and it simply may not be possible to return to anything like the pre-GFC operating regime. The demand for reserves in the post GFC world seems to be volatile and the supply of reserves may be more volatile as well. The experiences in September of 2019 and more recently suggest that there may be stronger connections now than in the past between the Fed's balance sheet and the smooth functioning of the Treasury and repo markets. Moreover, the ample reserves regime provides for effective control of the federal funds rate and other short-term interest rates even in any future periods of quantitative easing. Some other central banks (the BoE and ECB in particular) have indicated that they are transitioning toward so-called "demand-driven" operational frameworks. Such frameworks place less emphasis on providing a sizable quantity of reserve ex-ante and, instead, rely on liquidity operations to provide the marginal quantity of reserves in the banking system. It is far from clear that such demand-driven systems will dramatically reduce the size of the balance sheet. Indeed, as noted above, the BoE and ECB balance sheets are currently both larger relative to nominal

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[7] For more discussion of these points, see William English and Don Kohn, What would happen if Congress repealed the Fed's authority to pay interest on reserves?| Brookings, and Don Kohn, Kohn-testimony-12-11-25.pdf, and also Eliminating Interest on Reserves - Andersen Institute.

[8] See for example remarks by William Nelson, Nelson-remarks.pdf.

[9] See Federal Reserve Independence, Federal Finance, and the Uneasy Relationship - Andersen Institute for a discussion of potential interactions between fiscal pressures and Federal Reserve balance sheet policies.

GDP than the Fed's. The experience of the BoE and ECB with their operating regimes over coming years may provide helpful information about the extent to which such alternative operating regimes can reduce the size of central bank balance sheets.

Balance Sheet Strategy

The Group of 30 Report on the Federal Reserve's Monetary Policy Framework offered many thoughtful suggestions for enhancing and clarifying aspects of the conduct of monetary policy, and a number of these were incorporated in the FOMC's revised Statement of Longer Run Goals and Monetary Policy Strategy (consensus statement) released last year.[10] The Group of 30 Report had suggested an expansive statement regarding the overall strategy for the use of the Federal Reserve's balance sheet along with a framework for analyzing the costs and benefits of QE. In the event, the FOMC elected only to reaffirm the role of adjustments to the federal funds rate as its primary tool for adjusting the stance of policy and noted that other tools (including balance sheet actions) could be used, particularly during periods when the federal funds rate is pinned at the effective lower bound.

Producing a comprehensive strategy statement for the use of the balance sheet— and particularly one that could be embraced by all members of the FOMC—along the lines suggested by the G-30 report would be a very challenging endeavor. Although the FOMC does not have a full "playbook" for balance sheet actions as envisioned by the G-30 report, it seems clear that the Federal Reserve would likely resort to large scale asset purchases only when the funds rate is at the effective lower bound. Based on the current understanding of the effects of asset purchases, it also seems likely that any future asset purchase program would again be focused on purchases of longer-duration securities. And it also seems likely that the Federal Reserve would follow an approach to balance sheet normalization similar to that it has followed from 2022 to present.

[10] See the full report at G30_Fed-Reserve-Framework_D.pdf