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A Companion Guide to Reducing the Federal Reserve's Balance Sheet

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Introduction

This paper provides a detailed explanation of the policy proposals presented in (Anderson et al., 2026). It begins by outlining the key concepts and definitions necessary to understand these proposals, and then explains each proposal in a clear and sequential manner. The objective is to present the proposals in a more accessible and operational form, without extending beyond the scope of the original analysis.

Fundamental Concepts and Definitions

1- The Federal Reserve Balance Sheet

The Federal Reserve’s balance sheet consists of key asset and liability components. On the asset side, the primary items include securities—such as U.S. Treasury securities and agency mortgage-backed securities (MBS)—as well as loans and repurchase agreements. On the liability side, the main components are reserve balances, currency in circulation, the U.S. Treasury General Account (TGA), and reverse repurchase agreements.

Fed

U.S. Treasury securities	Currency in circulation
MBS	TGA
Loans	Reverse repurchase agreements
Repurchase agreements	Reserves

Source: Yilmaz (2025)

This framework highlights the most important elements of the Federal Reserve’s balance sheet. For a more detailed breakdown of these items, see (Fed, 2026a), and for statistical data, refer to (Fed, 2026b).

2- Reserve Regimes

a-Abundant reserves:

A regime in which reserve balances are very high relative to demand. Additional reserves do not affect short-term interest rates, which are determined by administered rates.

b-Ample reserves:

A regime in which reserve balances are sufficient to meet banks' needs with a buffer. Changes in reserves have little effect on short-term interest rates.

c-Scarce reserves:

A regime in which reserve balances are limited and banks actively compete for reserves. Small changes in the supply of reserves lead to significant changes in short-term interest rates.

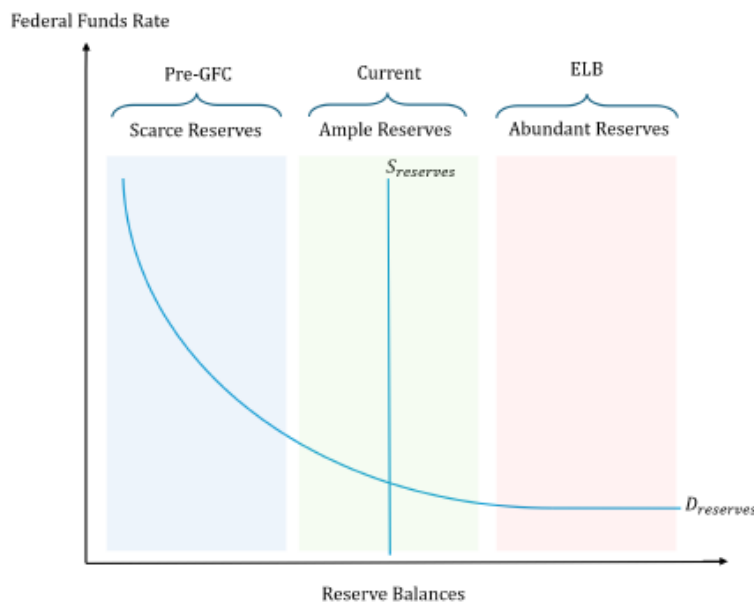


Figure 1: Demand and Supply Curve for Reserves

Source: Anderson (2026, p:5)

Ample is the band that separates scarce from abundant, and the demand curve for reserves is modestly downward sloping. (Afonso (2020), Ihrig (2020), Logan (2019))

3- Liquidity Coverage Ratio (LCR)

The Liquidity Coverage Ratio (LCR) is a regulatory measure designed to ensure that banks can withstand short-term liquidity stress. It requires banks to hold a sufficient amount of high-quality liquid assets (HQLA)—such as reserves or government securities—that can be quickly converted into cash. The purpose of the LCR is to make sure that, even in a stressed scenario where funding conditions deteriorate, a bank can continue to meet its cash outflows for at least 30 days without relying on external support.

$$\text{LCR} = \frac{\text{High-Quality Liquid Assets (HQLA)}}{\text{Total Net Cash Outflows over 30 days}}$$

This requirement is typically set at 100%, though the requirement is tailored down to 85% or 70% depending on the bank's size and reliance on short-term wholesale funding. In the numerator, HQLA include reserves, Treasury securities, and certain other government issued or guaranteed securities. These are examples of Level 1 liquid assets. The LCR rule also allows the inclusion of certain other sovereign obligations and obligations of government-sponsored enterprises as Level 2A HQLA and certain publicly traded securities as Level 2B HQLA. Level 2A and 2B assets are subject to quantity limits and haircuts.

TABLE 1 TO § 249.91(A)—DISCLOSURE TEMPLATE

XX/XX/XXXX to YY/YY/YYYY (in millions of U.S. dollars)	Average unweighted amount	Average weighted amount
High-Quality Liquid Assets: 1. Total eligible high-quality liquid assets (HQLA), of which: 2. Eligible level 1 liquid assets. 3. Eligible level 2A liquid assets. 4. Eligible level 2B liquid assets. Cash Outflow Amounts: 5. Deposit outflow from retail customers and counterparties, of which: 6. Stable retail deposit outflow. 7. Other retail funding outflow. 8. Brokered deposit outflow. 9. Unsecured wholesale funding outflow, of which: 10. Operational deposit outflow. 11. Non-operational funding outflow. 12. Unsecured debt outflow. 13. Secured wholesale funding and asset exchange outflow. 14. Additional outflow requirements, of which: 15. Outflow related to derivative exposures and other collateral requirements. 16. Outflow related to credit and liquidity facilities including unconsolidated structured transactions and mortgage commitments. 17. Other contractual funding obligation outflow. 18. Other contingent funding obligations outflow. 19. Total Cash Outflow. Cash Inflow Amounts: 20. Secured lending and asset exchange cash inflow. 21. Retail cash inflow. 22. Unsecured wholesale cash inflow. 23. Other cash inflows, of which: 24. Net derivative cash inflow. 25. Securities cash inflow. 26. Broker-dealer segregated account inflow. 27. Other cash inflow. 28. Total Cash Inflow.		
Average Amount ¹		
29. HQLA Amount. 30. Total Net Cash Outflow Amount Excluding the Maturity Mismatch Add-on. 31. Maturity Mismatch Add-on. 32. Total Net Cash Outflow Amount. 33. Liquidity Coverage Ratio (%).		

Source: Board of Governors of the Federal Reserve System, “Liquidity Coverage Ratio: Public Disclosure Requirements,” Final Rule, Federal Register Vol. 81, No. 248, December 27, 2016, p.94930.

4- The Discount Window

The discount window is a facility through which the central bank (the Federal Reserve) provides short-term loans to banks facing temporary liquidity shortages. Banks can borrow reserves directly from the Federal Reserve by pledging eligible collateral. This allows them to meet their funding needs when market sources of liquidity are limited or unavailable (Discount, 2026) (Nelson, 2002)

5- The Standing Repurchase Agreement, or Standing Repo (SRP)

Standing repo operations support monetary policy implementation and smooth market functioning (SRP, 2026). Although both the Standing Repo Facility (SRF) and the discount window provide liquidity from the Federal Reserve, they differ in their structure and purpose. The SRF operates through repo transactions, allowing eligible institutions to obtain reserves by temporarily exchanging high-quality securities such as U.S. Treasuries. It is designed as a market-wide backstop to support smooth functioning in short-term funding markets and to prevent sudden increases in interest rates. In contrast, the discount window is a direct lending facility through which banks borrow reserves from the Federal Reserve by pledging collateral. It is primarily used to

address institution-specific liquidity needs and serves as a lender-of-last-resort mechanism. *In this sense, the Fed has installed two liquidity backstops. The SRF is the one to support the overall market liquidity level; and, the discount window is the one to provide a temporary bridge for an individual bank to handle its own liquidity trouble (Cloud,2025).*

Policy Option 1: Recognize Discount Window Capacity in the LCR

Proposal 1 suggests that banks' borrowing capacity at the Federal Reserve's discount window should be included in the Liquidity Coverage Ratio (LCR).

Explanation:

Currently, banks can only use reserves, U.S. Treasuries, and MBS to meet LCR requirements. Discount window capacity is not counted, even though it provides access to liquidity.

With this proposal:

Banks can count discount window borrowing capacity as part of their liquidity. This adds a new source of liquidity alongside reserves.

A bank had:

Reserves (60) + Treasuries (20) + MBS (20) = **100**

Net cash outflows (30 days) = **100**

With this proposal:

Reserves (40) + Treasuries (20) + MBS (20) + Discount Window (20) = **100**

Net cash outflows (30 days) = **100**

Policy Option 2: Recalibrate LCR Requirements During Stress Periods

This proposal suggests that the Liquidity Coverage Ratio (LCR) should be temporarily adjusted during periods of financial stress.

Explanation:

Banks are required to keep $LCR \geq 100\%$ at all times—even during stress. This creates a problem: In stress periods, banks do not want to use their liquidity buffers because using them may push LCR below 100%, which is seen negatively.

With this proposal:

If regulators allow temporary flexibility: Banks know they can let LCR fall below 100% in stress So they do not need to hold large precautionary reserves.

A bank had:

$LCR \geq 100\%$

With this proposal in crisis:

$LCR = 100\%$

Policy Option 3: Reform ILST Expectations to Recognize Discount Window Capacity and Other Public Sector Liquidity Sources

This proposal suggests that internal liquidity stress tests (ILST) should be revised to recognize discount window capacity.

Explanation:

ILST frameworks often ignore discount window facility.

With this proposal:

If ILST frameworks are revised, banks can include discount window capacity. Banks recognize they have additional liquidity access in stress and they do not need to hold large precautionary reserves.

A bank had:
Expected stress outflows = 100
Available HQLA (reserves, etc.) = 130
Conservative ILST (ignoring DW):
Buffer = 30

With this proposal:

Expected stress outflows = 100
Discount window capacity = 40
Available HQLA (reserves, etc.) = 90
Buffer = 30

Policy Option 4: Revise Resolution Liquidity Requirements

This proposal suggests revising resolution liquidity rules to better reflect access to the discount window and reduce trapped reserves within bank subsidiaries.

Explanation:

Banks designated as G-SIBs must prepare for failure under resolution frameworks such as **Single Point of Entry (SPOE)**.

However, current resolution liquidity rules create significant inefficiencies:

- Liquidity must be **prepositioned at each subsidiary**
- Funds cannot be easily transferred across entities during stress
- Internal liquidity stress assumptions are highly conservative

With this proposal:

If resolution liquidity rules are revised:

- Discount window access can be maintained during resolution
- Liquidity can be treated more flexibly across subsidiaries

A bank had:

Expected stress outflows = 150

Prepositioned liquidity (subsidiaries) = 180

Buffer = 30

With this proposal:

Expected stress outflows = 150

Prepositioned liquidity (subsidiaries) = 130

Discount window capacity = 50

Buffer = 30

Policy Option 5: SLR Relief for Dealer Intermediation

This proposal suggests modifying the Supplementary Leverage Ratio (SLR) to reduce constraints on dealer balance sheets and improve Treasury market intermediation.

Explanation:

The **Supplementary Leverage Ratio (SLR)** requires banks to hold capital against total exposures, including: Reserves at the central bank, U.S. Treasuries and, Reverse repos and other low-risk assets

This creates a key problem:

- Dealer banks face constraints in expanding balance sheets
- Intermediation in the **U.S. Treasury market** becomes limited
- During stress, dealers may be unable to absorb large flows

With this proposal:

If SLR is adjusted (e.g., excluding reserves and/or Treasuries):

- Dealer balance sheet capacity increases
- Treasury market intermediation improves
- Market liquidity becomes more resilient in stress

Bank had

Tier 1 capital = \$100 billion

Total exposure = \$2,000 billion (Treasury holdings = \$200 billion)

Required eSLR = 5%

With this proposal:

Tier 1 capital = \$100 billion

Total exposure = \$1.800 billion (Treasury holdings = 0)

Required eSLR = 5.56%

If several large dealer banks gain similar balance sheet room, the Treasury market can absorb much more supply during reduction. This reduces stress in repo markets and makes it easier for the Federal Reserve to continue shrinking its balance sheet without triggering market dysfunction.

Policy Option 6: Equalize Supervisory Treatment of Treasury Bills and Reserves

This proposal recommends aligning the regulatory and supervisory treatment of U.S. Treasury bills (T-bills) with central bank reserves, recognizing their near-identical liquidity and safety characteristics.

Explanation:

Under the current regulatory framework, central bank reserves are treated as the highest form of liquidity, while Treasury bills—despite being similarly risk-free and highly liquid—are often subject to less favorable treatment in supervisory and stress-testing frameworks. This asymmetry creates a structural preference for reserves over Treasury bills, encouraging banks to hold excess reserves rather than substituting into short-term government securities. As a result, reserve demand remains artificially elevated, limiting the Federal Reserve’s ability to reduce its balance sheet without disrupting market conditions.

With this proposal:

If Treasury bills are treated equivalently to reserves:

- The bank can shift part of its holdings into T-bills
- For example:
 - **\$60B reserves + \$40B T-bills** instead of \$100B reserves

Total liquidity remains unchanged, but reserve demand declines.

Policy Option 7: Conducting Policy with EFFR Above IORB

This proposal recommends allowing the Effective Federal Funds Rate (EFFR) to trade modestly above the Interest on Reserve Balances (IORB), rather than strictly enforcing a floor system where IORB caps overnight rates.

Explanation:

Currently, banks have little incentive to lend in the unsecured interbank market because the Effective Federal Funds Rate (EFFR) remains below the Interest on Reserve Balances (IORB) rate.

Under the current system:

- **IORB = 3.65%**
- **EFFR \approx 3.64%**

Result: Limited interbank activity

With this proposal:

- **IORB = 3.65%**
- **EFFR \approx 3.70%**

Banks now have an incentive to: Lend reserves at higher rates in the market

Policy Option 8: Tiering Reserves

This proposal recommends introducing a tiered remuneration system for reserve balances, where different portions of bank reserves earn different interest rates.

Explanation:

Under the current framework, all reserve balances held at the Federal Reserve earn the same rate of interest (IORB), regardless of the quantity held. This creates an incentive for banks to hold large amounts of reserves, as excess balances are remunerated at the same rate as required or operational balances.

With this proposal:

A tiered reserve system would differentiate between “required” or “operational” reserves and “excess” reserves. The first tier would earn the full IORB, while balances above a certain threshold would earn a lower rate—or potentially no interest. This structure reduces the incentive to hold excess reserves while preserving the benefits of interest on reserves for payment system stability.

Example:

A bank holds:

- **\$100 billion in reserves**
- Current system: all earns **3.65% IORB**

No penalty for holding excess reserves

With tiering:

- First **\$60B** → earns **3.65%**
- Remaining **\$40B** → earns **2.00% (or lower)**

The bank now has an incentive to:

- Reduce excess reserves
- Reallocate into other assets (e.g., T-bills, repo lending)

Policy Option 9: Expand Access to FIMA Repo Facility

This proposal recommends expanding access to the Federal Reserve's Foreign and International Monetary Authorities (FIMA) repo facility to a broader set of eligible counterparties and increasing its usability during periods of market stress.

Explanation:

The FIMA repo facility allows foreign central banks and official institutions to obtain U.S. dollar liquidity by temporarily exchanging their U.S. Treasury holdings for cash. This mechanism provides an alternative to outright asset sales during periods of stress. However, access to the facility is currently limited and not always fully utilized. As a result, foreign holders of Treasuries may be forced to sell assets in secondary markets when facing dollar funding pressures, contributing to market volatility and upward pressure on yields.

Example:

A foreign central bank holds:

- **\$50 billion in U.S. Treasuries**

During a dollar shortage:

Without FIMA:

- The institution sells Treasuries in the market
- Prices fall, yields spike

With expanded FIMA access:

The institution instead:

- Uses Treasuries as collateral
- Borrows dollars via repo from the Fed

Policy Option 10: Address FBO Reserve Demand with Swap Lines and Foreign Regulator Coordination

This proposal recommends reducing structural reserve demand from Foreign Banking Organizations (FBOs) by strengthening central bank swap lines and enhancing coordination with foreign regulators on liquidity requirements.

Explanation:

Foreign Banking Organizations (FBOs), particularly large foreign bank branches operating in the United States, hold a significant share of total reserve balances. Their demand for reserves is often driven not only by U.S. regulatory requirements but also by home-country liquidity rules and internal liquidity risk management practices. During periods of global dollar funding stress, FBOs tend to increase their demand for reserves as a precautionary buffer, contributing to upward pressure on aggregate reserve demand in the U.S. system.

Example:

A foreign bank branch in the U.S. holds: **\$80 billion in reserves**. Not only for U.S. needs, but also to: hedge against global dollar funding stress and meet home-country liquidity expectations.

Without coordination:

- The bank hoards reserves in the U.S.
- Aggregate reserve demand remains elevated

With this proposal:

During stress:

- The foreign central bank accesses **Fed swap lines**
- Provides dollar liquidity to its domestic banks

The FBO no longer needs to pre-ward reserves in the U.S.

- Reserves fall from **\$80B** → **\$50B**
- Remaining liquidity need is met via swap-supported funding

Policy Option 11 (a): Using Communication to Reduce Stigma of SRP

This proposal recommends using clear and proactive communication strategies to reduce the stigma associated with the Federal Reserve's Standing Repo Facility (SRF), thereby encouraging its use as a routine liquidity backstop.

Explanation:

The Standing Repo Facility (SRF) is designed to provide overnight liquidity to eligible counterparties in exchange for high-quality collateral such as U.S. Treasuries. In principle, it should function as a reliable and stigma-free backstop for short-term funding markets. However, in practice, institutions may be reluctant to use the SRF due to concerns that accessing central bank facilities signals financial weakness.

Without stigma reduction:

The bank avoids using SRF

- Fears negative market perception

Instead:

- Hoards reserves
- Pulls back from lending and market-making

With effective communication:

The bank confidently uses SRF

- Posts Treasuries as collateral
- Borrows from the Fed
- No need to hoard reserves.

Policy Option 12: Sterilize TGA Fluctuations with T-Bills (On Fed Balance Sheet)

This proposal recommends that the Federal Reserve actively use Treasury bills (T-bills) on its own balance sheet to offset fluctuations in the Treasury General Account (TGA), thereby stabilizing reserve levels in the banking system.

Explanation:

Fluctuations in the Treasury General Account (TGA) create large swings in bank reserves. When the Treasury increases its cash balance, reserves are drained; when it spends, reserves are injected back into the system. Under the current framework, these fluctuations are not systematically offset, leading to volatility in reserve levels and instability in short-term funding markets.

Example:

The Treasury increases TGA by: +\$100 billion. This causes: -\$100 billion in bank reserves

Without sterilization: Reserves fall sharply

The Fed offsets the drain:

Purchases \$100B of T-bills (or runs a smaller runoff)

This injects: +\$100B reserves

Net effect:

TGA: +\$100B

Fed T-bill purchase: +\$100B

Reserves unchanged

Policy Option 13: Implement a Liquidity Savings Mechanism for Fedwire

This proposal recommends introducing a Liquidity Savings Mechanism (LSM) within the Fedwire payment system to reduce intraday liquidity needs and lower structural reserve demand.

Explanation:

Fedwire is a real-time gross settlement (RTGS) system, meaning that payments are settled individually and immediately using reserves. While this ensures safety and finality, it also requires banks to hold large amounts of reserves throughout the day to meet payment obligations. As payment volumes increase, banks tend to maintain substantial precautionary reserve buffers to avoid intraday shortfalls. This contributes to persistently high structural demand for reserves.

Example

Without LSM (Pure RTGS)

Bank A needs to pay Bank B \$100. Bank B needs to pay Bank A \$95.

Each payment settles instantly and independently: Bank A must have \$100 in reserves ready and Bank B must have \$95 in reserves ready.

Total reserves needed: \$195

With LSM

Both payments sit in a queue. The system offsets them simultaneously:

Net Settlement= $100-95=\$5$

Only \$5 in reserves actually moves

Total reserves needed: \$5

Policy Option 14: Reforms to Treasury General Account (TGA) Management

This proposal recommends reforming the management of the Treasury General Account (TGA) to reduce volatility in reserve balances and improve coordination with monetary policy implementation.

Explanation:

Historically, the U.S. Treasury used the Treasury Tax and Loan (TT&L) program, which allowed tax receipts and other inflows to be temporarily held in commercial bank accounts rather than immediately transferred to the TGA at the Federal Reserve. This system helped smooth reserve fluctuations by delaying or distributing the impact of Treasury cash flows. In the current framework, the reduced use of TT&L-type mechanisms has increased the direct and immediate impact of TGA changes on reserves, amplifying volatility in money markets. Reintroducing or expanding TT&L-style arrangements—alongside improved coordination with the Federal Reserve—would allow Treasury cash flows to be managed more gradually, reducing abrupt changes in reserve levels.

Example:

Treasury receives:

- **+\$100 billion in tax payments**

Without TT&L:

Funds move directly into TGA

- **Bank reserves fall by $-\$100\text{B}$ immediately**

With TT&L mechanism:

Funds remain temporarily in commercial banks:

- Reserves remain largely unchanged initially
- Funds are transferred gradually to TGA

Reserve impact is smoothed over time

Policy Option 15: Discourage Use of the Foreign Reverse Repo Pool

This proposal recommends reducing reliance on the Federal Reserve's Foreign and International Monetary Authorities (FIMA) Reverse Repo Pool by adjusting its terms and relative attractiveness, thereby encouraging foreign official institutions to reallocate funds into private markets or alternative facilities.

Explanation:

The Foreign Reverse Repo Pool allows foreign central banks and official institutions to invest U.S. dollar cash at the Federal Reserve overnight, earning a risk-free return. While this facility provides a safe investment option, it also effectively absorbs liquidity from the private financial system. As usage of the facility increases, reserves are drained from the banking system and redirected into the Federal Reserve, contributing to tighter liquidity conditions and elevated demand for reserves. This dynamic can weaken money market functioning by reducing the availability of funds for repo intermediation and private sector lending. By making the facility less attractive—through adjustments to its rate, limits, or access conditions—foreign official institutions would be incentivized to place funds in private repo markets or Treasury bills instead, supporting broader market liquidity.

Example:

A foreign central bank holds:

- **\$80 billion in dollar cash**

Current behavior:

Invests in the Foreign RRP Pool

- Earns risk-free return at the Fed
- Funds are removed from private markets

With this proposal:

Lower relative attractiveness of the facility:

- Institution reallocates funds into:
 - Treasury bills
 - Private repo markets
 - Liquidity remains within the financial system

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