Bill Purchases and the Consolidated Balance Sheet

Treasury Borrowing Advisory Committee
February 3, 2026

Charge Text:

In December 2025, the Federal Reserve began purchasing Treasury bills through open market operations in order to reinvest principal payments on its holdings of agency mortgage-backed securities as well as maintain an ample supply of reserves on an ongoing basis. Building on previous work, including the TBAC presentation from February 2020 and analyses of the effect of Federal Reserve holdings on the maturity profile and timing of rate resets for the "consolidated" balance sheet, please assess to what extent Treasury issuance plans should be affected by expected Federal Reserve purchases of Treasury securities. When evaluating its issuance mix, in what circumstances should Treasury focus on the composition of a) only privately-held Treasury securities or b) total Treasury debt outstanding (including holdings of the Federal Reserve System Open Market Account).

Contents

Executive Summary

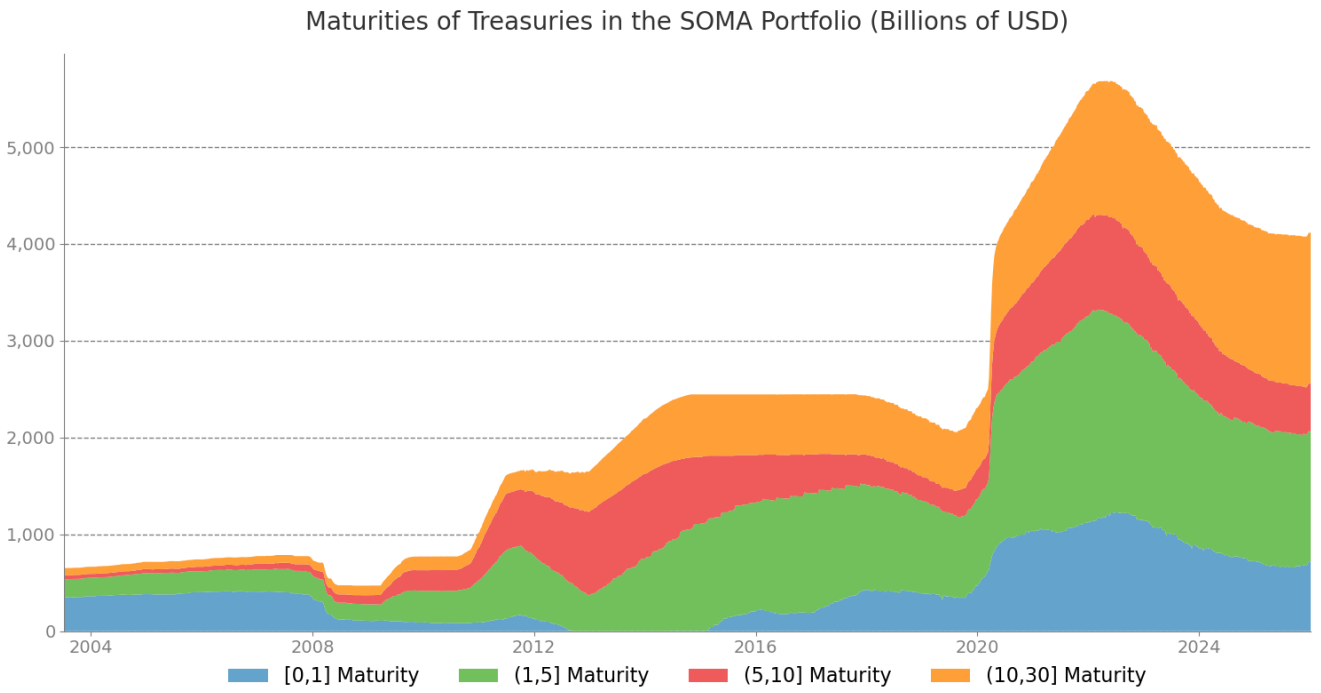
- The Treasury and the Federal Reserve have different mandates, but it is well understood that decisions made by one entity can affect the other's mandate.
- This presentation explores the evolving relationship between Federal Reserve System Open Market Account (SOMA) portfolio activity and Treasury issuance composition dynamics. In the first section, we explore the recent evolution of the SOMA portfolio.
- Federal Reserve QE purchases since 2008 have led the SOMA portfolio to sustain a longer weighted average duration (WAD) than the total stock of outstanding marketable Treasury securities (and by construction, than the WAD of privately-held Treasuries). We compare privately-held and SOMA Treasury portfolio maturity compositions.
- We revisit the concept of the U.S. government's consolidated balance sheet discussed in the TBAC presentation from February 2020, and review calculations of the total and consolidated interest rate reset risk. This is one lens through which Treasury can weigh focus on the composition of only privately-held Treasury securities versus total Treasury debt outstanding.
- The question of which measure to focus on becomes more relevant when the maturity profile of the SOMA portfolio is very different from that of the outstanding debt stock, or the difference between the two is expected to change materially.
- The Federal Reserve ended SOMA runoff in November of 2025 and has recently begun buying Treasury bills as Reserve Management Purchases (RMPs) and to replace runoff in its mortgage-backed securities portfolio.
- We illustrate two scenarios for Treasury bill issuance, taking privately-held Treasury securities composition versus total Treasury debt outstanding composition into account.
- Finally, we present an updated calibration of the optimal maturity structure model for total Treasury debt outstanding and present a stylized hypothesis of the result of running the model for the consolidated liability. We propose research to upgrade the model to examine that hypothesis.
- We conclude that Treasury should maintain a "regular and predictable" issuance strategy and take Fed balance sheet policy inflection points as opportunities to focus on the composition of only privately-held Treasury securities (and of the consolidated balance sheet) in addition to regular focus on the composition of total Treasury debt outstanding.

SOMA Portfolio Background

Policy context

- In response to the 2008 Financial Crisis, and with insight from responses to the COVID-19 pandemic and other market events, the Federal Reserve has evolved policy to a system whereby an ample supply of reserves ensures that control over the level of the federal funds rate and other short-term interest rates is exercised primarily through the setting of administered rates.
  - Interest on Reserve Balances (IORB), Reverse Repo operations (RRP), and Standing Repo operations (SRP) serve to ensure that the federal funds rate is kept within the target range set by the FOMC, and other short-term interest rates are controlled.
  - The Discount Window, the Foreign and International Monetary Authorities Repo facility (FIMA Repo), and Currency swap lines provide domestic and international liquidity.

- Before 2008, the System Open Market Account (SOMA) was slightly larger than currency in circulation and was overweight short-dated Treasury Securities.
- Today, the SOMA portfolio size is also determined by demand for reserves and other liabilities. The Fed has committed significant research, survey activity, and money market monitoring to establish estimates of the steady state demand for reserves.
- The ample reserve regime transitions to an abundant reserve regime when the Fed conducts Quantitative Easing (QE) and the SOMA portfolio grows.
- The abundant reserve regime shifts back to an ample reserve regime as the SOMA portfolio shrinks.
- Once back in a steady state, the SOMA portfolio re-grows with the demand for reserves and other liabilities.

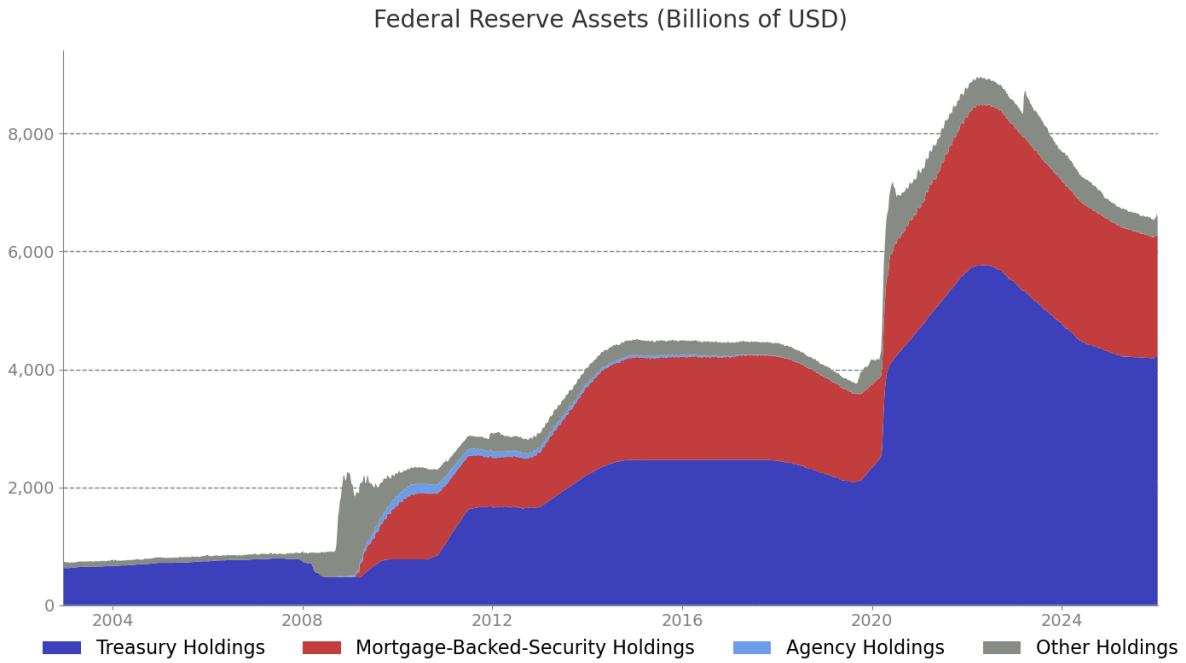


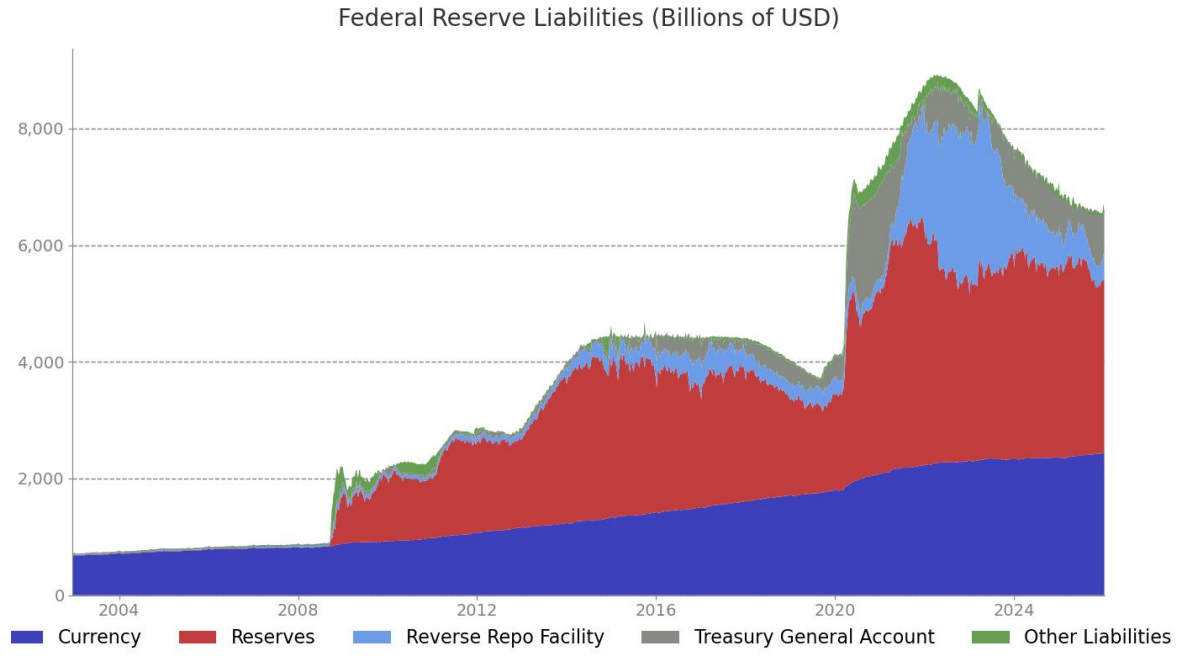
source: Soma Portfolio: https://www.newyorkfed.org/markets/soma-holdings

SOMA Portfolio Evolution

Pre-2008 to current day

- The charts below show the change in the Federal Reserve asset and liability balance in response to the combination of QE episodes and growth in the demand for reserves and other liabilities.
- Responses to the GFC, Bank regulation, ample reserve calibration, the COVID-19 pandemic, and the latest portfolio runoff are clearly visible.
- Also visible on the liability side are large changes in the TGA, which is a zero-interest liability for the Fed (and a zero-interest asset for Treasury), generally associated with debt ceiling episodes and COVID period cash management; as well as large changes in reverse repo operations associated with tightening monetary policy.



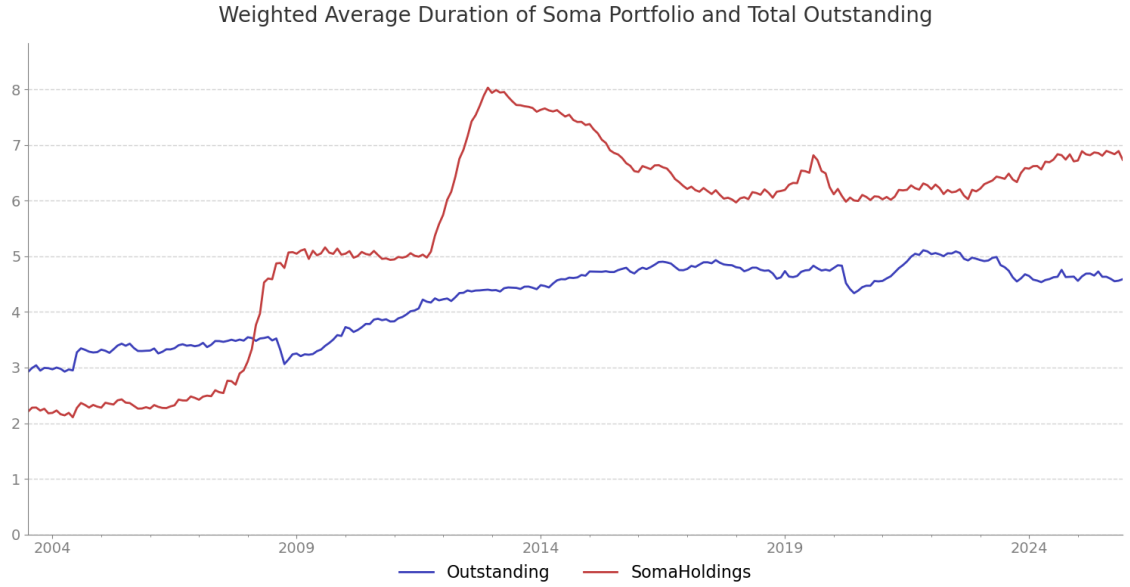


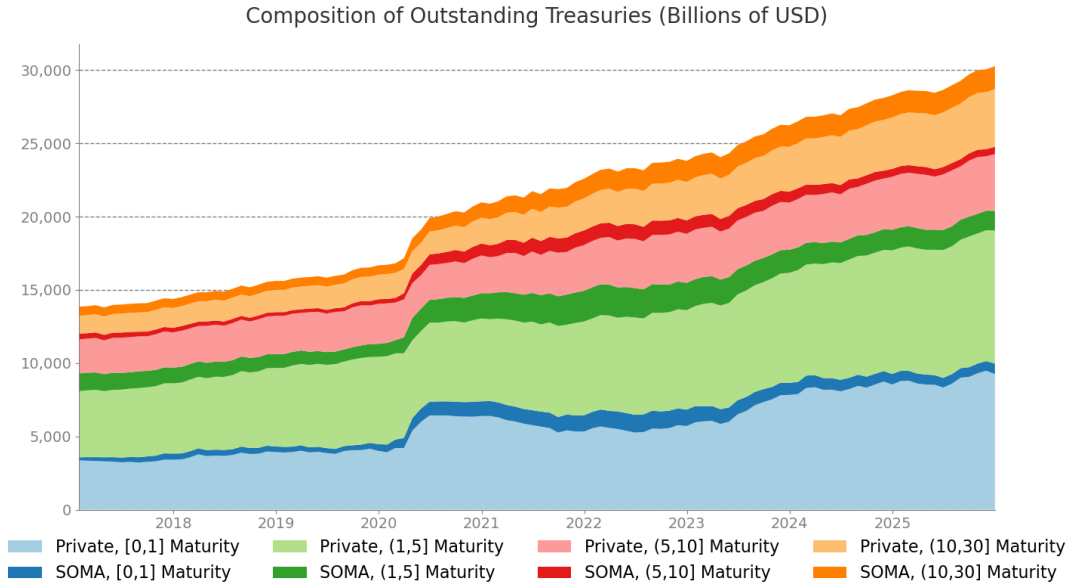
source: Federal Reserve Assets and Liabilities: https://fred.stlouisfed.org/

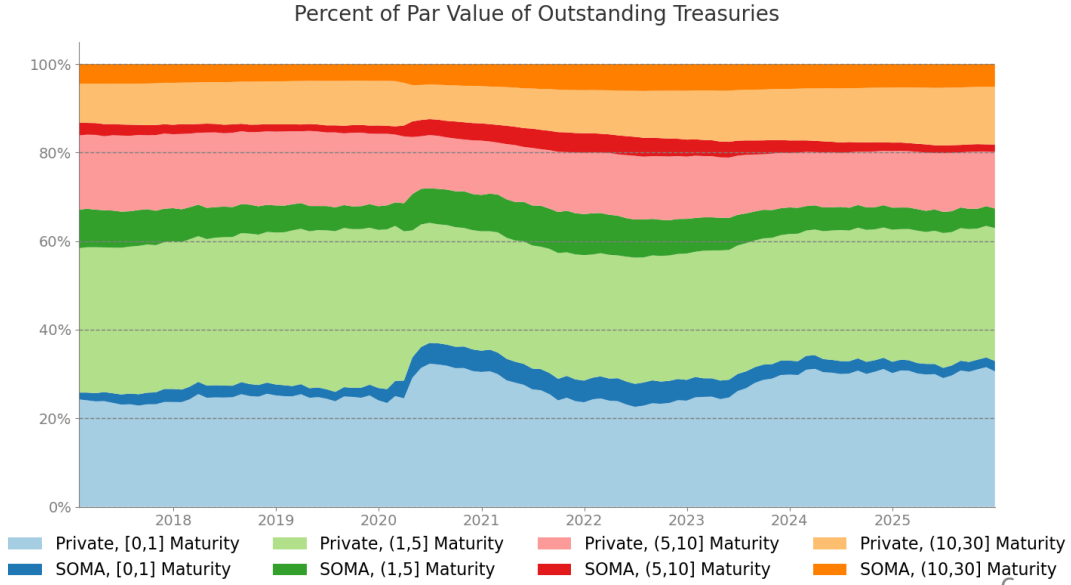
Evolution of Privately-Held and SOMA Treasuries

Composition amount and share of total

- In a steady state ample reserves framework, total SOMA portfolio size is largely determined by the public's demand for currency and the banking system's demand for reserves.
- The present composition of Treasuries held in the SOMA portfolio has evolved through the Federal Reserve's purchase program to support the economy during the GFC and COVID.
- The Fed's purchases in QE1 through 3, the Maturity Extension Program (MEP), and the COVID-19 response were substantially longer in maturity than the composition of privately-held debt.
- The SOMA portfolio has had a longer weighted average duration (WAD) than the total outstanding issuance since 2008.





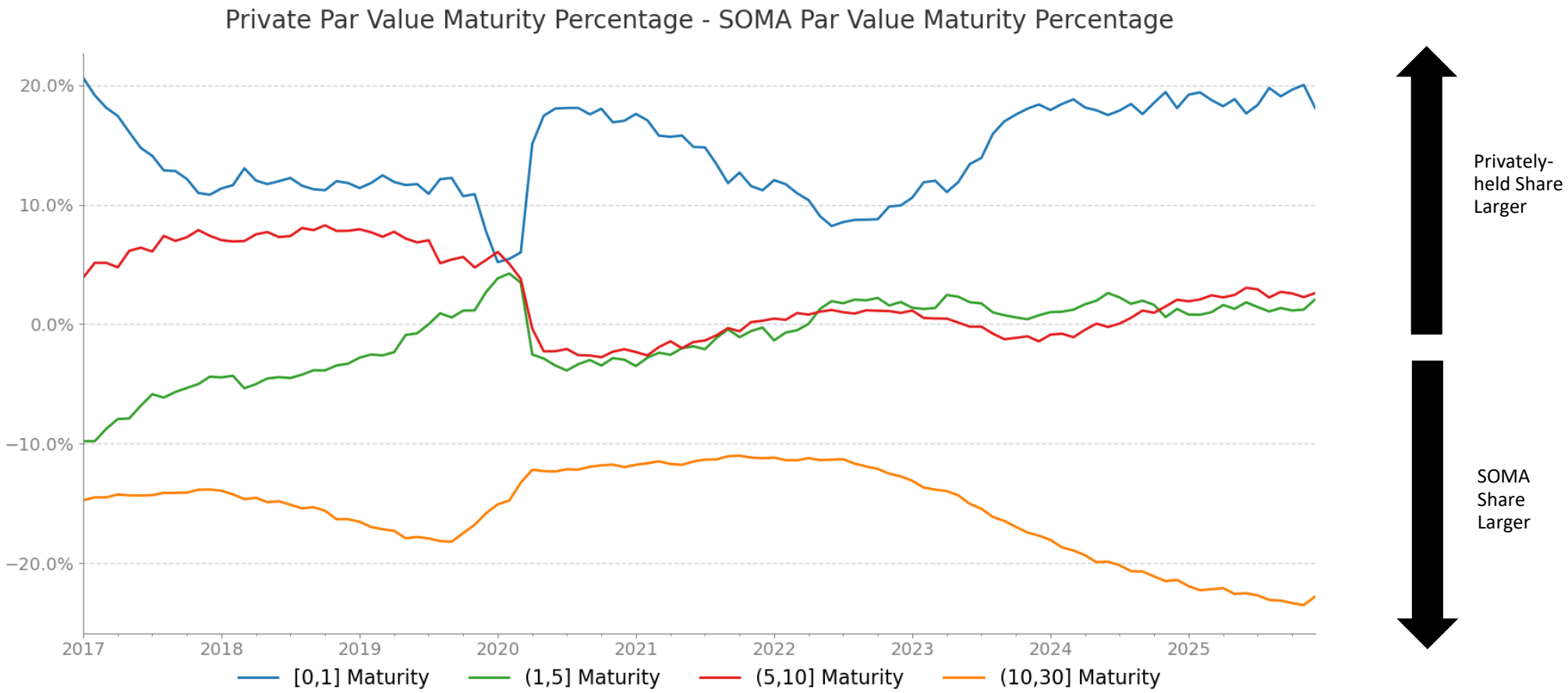


source: Soma Portfolio: https://www.newyorkfed.org/markets/soma-holdings Total Outstanding debt: https://fiscaldata.treasury.gov/datasets/monthly-statement-public-debt/.

Evolution of Privately-Held and SOMA Treasuries (cont.)

Privately-held difference to SOMA

- The chart below shows, by maturity bucket, the difference in maturity composition for privately-held Treasuries as compared to SOMA-held Treasuries.
- The most significant differences are in Bills and short coupons, and in the >10y bucket.



source: Soma Portfolio: https://www.newyorkfed.org/markets/soma-holdings Total Outstanding debt: https://fiscaldata.treasury.gov/datasets/monthly-statement-public-debt/.

The Consolidated Balance Sheet

Revisiting the basic concept from the February 2020 TBAC presentation

- The Treasury Securities held in the SOMA portfolio are offsetting liabilities of the Treasury and assets of the Fed.
- Therefore, the liability side of the government's consolidated balance sheet consists of only those Treasuries which are privately-held.
- The SOMA portfolio can be thought of on the consolidated balance sheet as converting:
  - Some Treasuries into a perpetual zero coupon liability (the component supporting currency in circulation, which pays no interest and has no obvious maturity).
  - And some Treasuries and Mortgage-Backed Securities into overnight floating interest rate bearing liabilities (the component supporting bank reserves, ON RRP, FIMA Repo, and other liabilities).
- See the below illustration of a stylized consolidated balance sheet from the February 2020 TBAC presentation.
- Whereas before the GFC, nearly all of the SOMA portfolio was held against currency in circulation, now nearly half of the SOMA portfolio (including both Treasuries and Mortgage-Backed Securities) is held against reserves and other interest-bearing liabilities.
- Furthermore, the path over the post-GFC period has had a number of inflections and transitions which present important considerations for Treasury. We will focus on this later in our presentation.

Treasury	
Assets	Liabilities
+ TGA	- Treasuries

+

Fed	
Assets	Liabilities
+ Treasuries	- Currency
+ MBS	- Reserves
+ Other	- RRP
	- TGA
	- Other

=

Consolidated	
Assets	Liabilities
+ MBS	- Privately-held Treasuries
+ Other	- Currency
	- Reserves
	- RRP
	- Other

source: Treasury Presentation to TBAC, https://home.treasury.gov/system/files/276/q12020_CombinedChargesforArchives.pdf

WANRR and WMNRR

Visualization of the interest rate reset risk of marketable Treasury related liabilities

- One important consideration is that the interest rate reset risk of the consolidated balance sheet may differ significantly from that of the total Treasury debt outstanding.
- In 2022, Treasury began including a Weighted Average Next Rate Reset (WANRR) chart and in 2024, Treasury added a Weighted Median Next Rate Reset (WMNRR)* chart in its quarterly refunding publication.
- These charts are a helpful way to visualize circumstances where Treasury might consider the composition of privately-held Treasury securities as opposed to total Treasury debt outstanding when making issuance composition decisions.
- WANRR shows three time series of weighted average next rate reset calculations:

Series	Marketable Treasuries Included	Date used for next reset in Calculation
Total	All	Stated maturity *
Private	Privately-held	Stated maturity *
Consolidated (ex-Currency and TGA)	Privately-held Portion of SOMA supporting interest-bearing liabilities	Stated maturity * Overnight

- WMNRR* shows four time series displaying the median time at which half of the portfolio experiences rate reset.
  - Three of the time series on the WMNRR chart are exactly as described above, and the additional series factors in currency in circulation and the TGA:

Additional Series	Marketable Treasuries Included	Date used for next reset in Calculation
Consolidated	Privately-held Portion of SOMA supporting interest-bearing liabilities Portion of SOMA supporting currency and TGA	Stated maturity * Overnight Infinite

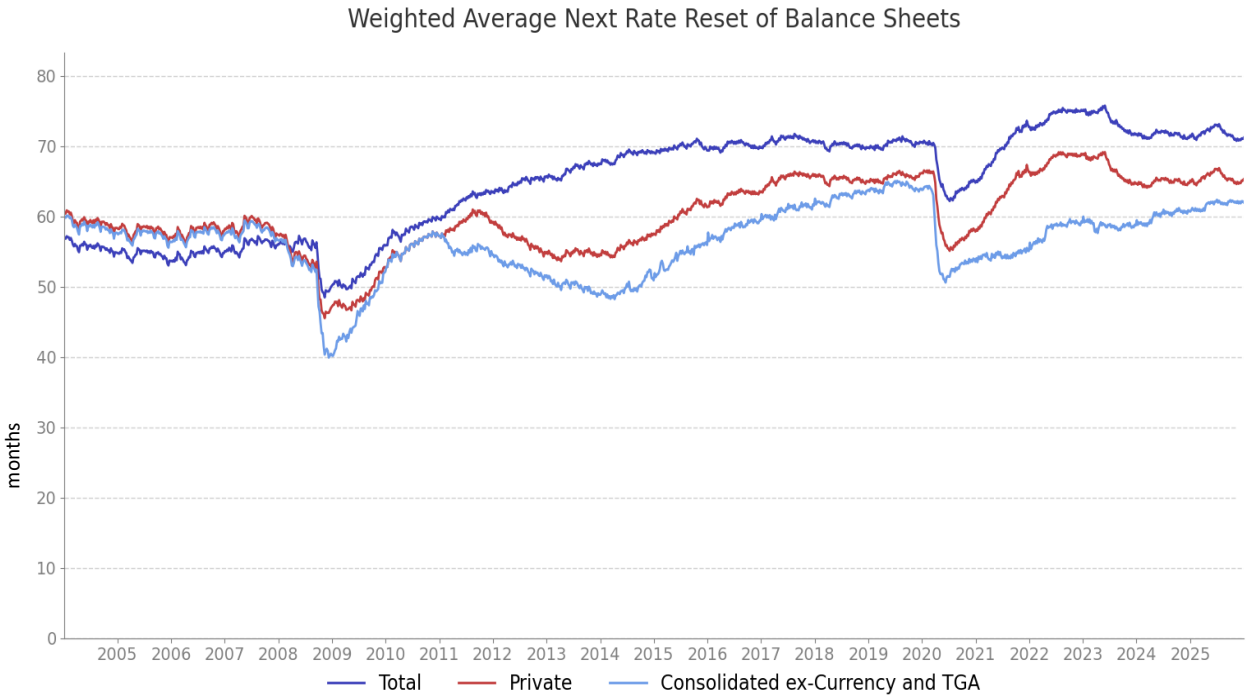
** for floating rate obligations, the shorter of the next rate reset date or maturity date is used*

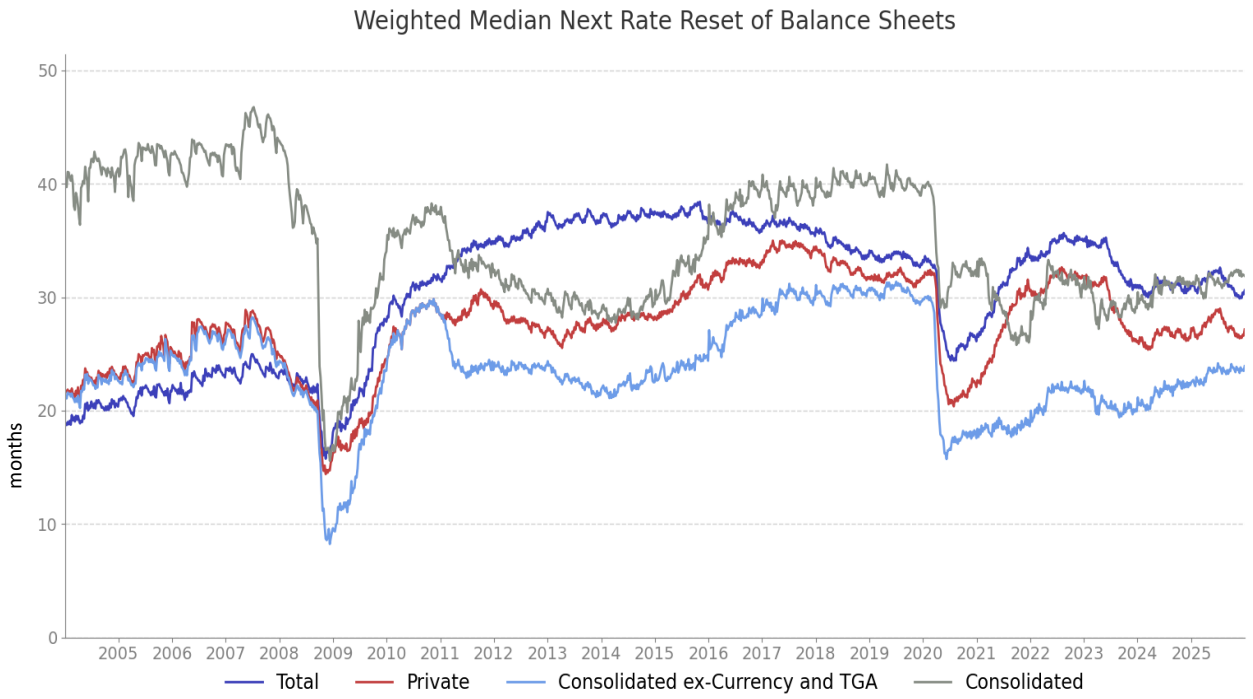
source: Treasury Refunding Archives https://home.treasury.gov/policy-issues/financing-the-government/quarterly-refunding/quarterly-refunding-archives

WANRR and WMNRR (cont.)

Visualization of the interest rate reset risk of marketable Treasury related liabilities

- WANRR is designed to answer the question: “How quickly does the net exposure to interest rates get reset on average?”
- WMNRR is designed to answer the question: “How long until half of outstanding financings experience interest rate reset?”
- The combined effects of larger Bill issuance in response to imminently increased financing needs and QE in response to crises are visible in the time series where the rate reset time measures shorten sharply in maturity.
    - These episodes may be thought of as risk-accepting future financing cost volatility to respond to rapidly changing spot financing and economic conditions.



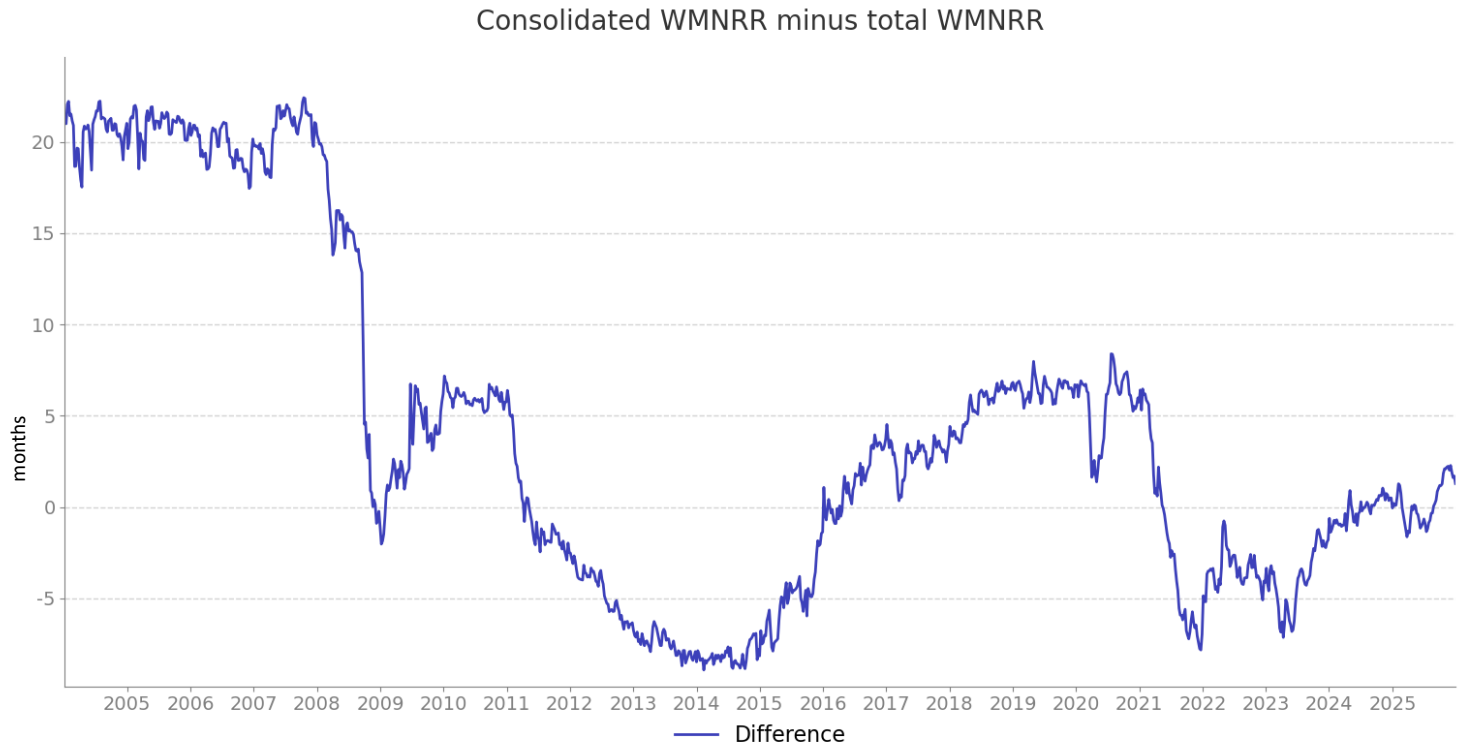


source: Soma Portfolio: https://www.newyorkfed.org/markets/soma-holdings Total Outstanding debt: https://fiscaldata.treasury.gov/datasets/monthly-statement-public-debt/. and Treasury Data https://treasurydirect.gov/

WANRR and WMNRR (cont.)

A Treasury framework for the interest rate risk of the consolidated balance sheet

- It's illustrative to take the WMNRR data and chart the difference between the Consolidated series and the Total series.
- The level of the resulting series tells us how different the interest rate reset risk is for the taxpayer on the consolidated balance sheet than it is when just analyzing the total outstanding marketable debt.
- It is particularly instructive to examine the consolidated balance sheet (and by construction also privately-held Treasuries) at times when the level of a measure like Consolidated WMNNR is significantly different from that of the total outstanding, and when the rate of change of the difference is large.
- That is to say, the question of which measure to focus on becomes more relevant when:
  - The maturity profile of the SOMA portfolio is materially different from that of the outstanding debt stock, or,
  - The difference between the two is expected to change materially.
- Case study: Fed's 2011/2012 Maturity Extension Program
  - Ahead of Operation Twist, the difference between Consolidated and Total WMNRR stood at -1 month (*consolidated = 33.4, total = 34.5).*
  - By the end of the program, the SOMA had few short-dated assets and was much longer than the market *(consolidated = 30.3, total = 36.6).*
  - During this period, Treasury extended the maturity of debt outstanding, but SOMA actions left the privately-held portfolio shorter.
    - The spread widened to as much as about -9 months as Treasury continued to extend maturity while SOMA QE3 purchases increased.



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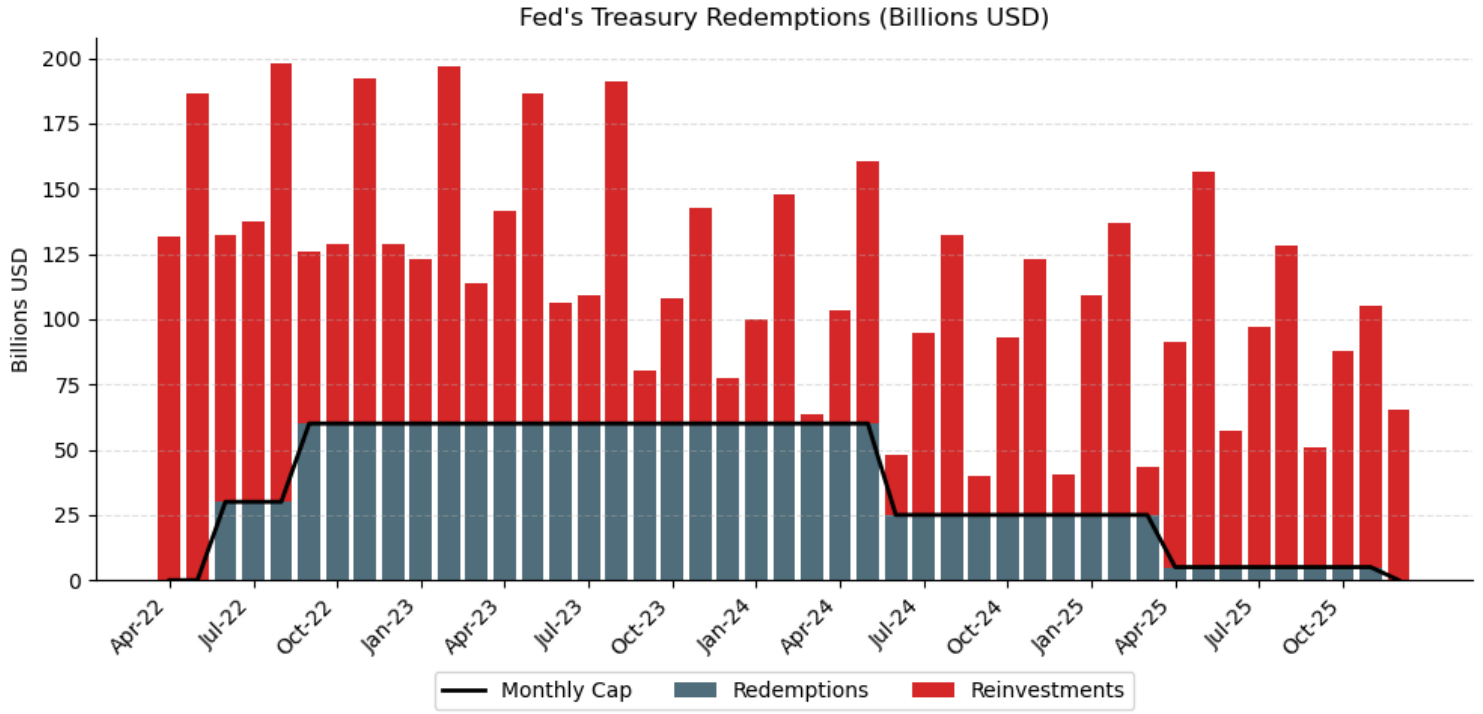
SOMA Runoff

2022 to 2025

- The Fed began allowing SOMA holdings to mature without reinvestment in June of 2022 as part of the reserve drain associated with the transition from an abundant reserves to ample reserves regime.
- SOMA runoff raises funding needs for Treasury which need to be absorbed by larger issuance to private buyers.
- As with the 2017-2019 runoff, the Fed instituted a series of redemption caps on its maturing Treasury portfolio.
- These caps served to mitigate the risk that large and short-notice shifts in Treasury issuance to private buyers would harm Treasury market functioning (and therefore the efficacy of monetary policy transmission).
- The start of SOMA runoff is a time when the composition of privately-held Treasuries has the potential to change, and by our previous assertion, a time when focusing on privately-held Treasury composition becomes more relevant.
- As the 2020 TBAC Charge noted:
  - "In theory, if Treasury could issue debt at the short end in place of SOMA run-off, that would keep the cost/risk structure of consolidated liabilities largely unchanged."
  - The portion of the SOMA portfolio supporting bank reserves can be thought of as an overnight liability on the consolidated balance sheet.
  - "In practice, rapid increases in issuance at any particular maturity or even across all maturities can put pressure on market prices and cause unfavorable outcomes for debt management."



source: Soma Holdings: https://fred.stlouisfed.org/, Reinvestments: https://home.treasury.gov/data/investor-class-auction-allotments, Runoff Caps: Various Federal Reserve Press Statements

Mechanics of current Fed market operations

Recent announcements and current considerations

- SOMA Runoff ended November 30, 2025, as announced by the FOMC at its October 2025 meeting.
  - It was also announced that the Fed would reinvest all principal payments from the Federal Reserve's holdings of agency securities into Treasury bills.
- At its December meeting, the FOMC announced that the Fed would purchase Treasury bills in the open market as follows:
  - Conduct Reserve Management Purchases (RMPs) through purchases of Treasury bills and, if needed, other Treasury securities with remaining maturities of 3 years or less to maintain an ample level of reserves.
- The portion of SOMA activity associated with MBS runoff and RMPs occurs in the secondary market, which means that if total Treasury bill net issuance were to grow by less than what the SOMA portfolio buys, privately-held bill holdings would fall.
- The FOMC maintains its reinvestment rule for maturing Treasuries:
  - It places non-competitive bids at Treasury auctions, equal in par amount to the value of holdings maturing on the issue date of the securities being auctioned, allocated proportionally to announced offering amount.
  - These reinvestments are conducted such that maturing Treasury bill proceeds are allocated proportionally to bill auctions and maturing Treasury coupon proceeds are allocated proportionally to coupon auctions.
  - Since this reinvestment of Treasury maturities occurs via proportional auction add-ons in the primary market and does not change the amount of debt held by the private sector, it is less impactful for issuance maturity composition considerations.

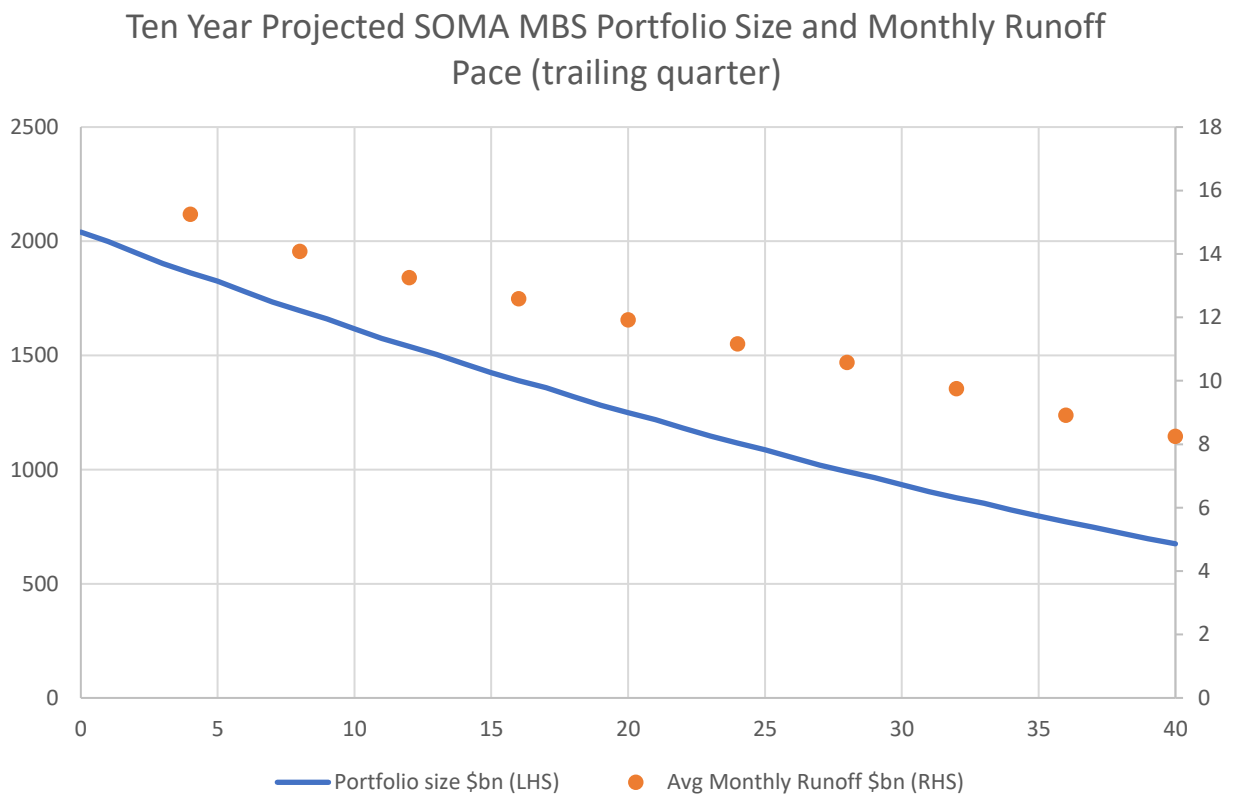
source: Federal Reserve FOMC Implementation notes https://www.federalreserve.gov/newsevents/pressreleases/monetary20251029a1.htm https://www.federalreserve.gov/newsevents/pressreleases/monetary20251210a1.htm

MBS paydowns and reserve growth

Projections affecting Treasury bill demand

- For CY 2026, we would estimate that RMPs to maintain ample reserves will total ~$360bn, and MBS paydowns will total ~$180bn, for a total of ~$540bn of Treasury bill demand in the SOMA portfolio.
  - Projections for RMP purchases come from a combination of December 2025 FRBNY and FOMC estimates (see footnote)
  - Projections for MBS runoff-related purchases come from CPR assumptions derived from the September 2024 FEDS Notes study and carried forward to the present-day SOMA MBS holdings

	Model Projection ($B)		
Month	RMPs	MBS Paydowns	Total
Jan-26	40	15	55
Feb-26	40	15	55
Mar-26	40	15	55
Apr-26	40	15	55
May-26	25	15	40
Jun-26	25	15	40
Jul-26	25	15	40
Aug-26	25	15	40
Sep-26	25	15	40
Oct-26	25	15	40
Nov-26	25	15	40
Dec-26	25	15	40



source: New York Fed statement on RMP operations https://www.newyorkfed.org//markets/opolicy/operating_policy_251210a, https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20251210.pdf and authors' calculations, https://www.federalreserve.gov/econres/notes/feds-notes/the-evolution-of-the-federal-reserves-agency-mbs-holdings-20240920.html and authors' calculations

Bill Share

Present day considerations

- This slide shows two stylized scenarios for 2026 issuance composition. It is important to note that these are meant to frame discussion and are not specific recommended issuance paths.
- In both scenarios, the SOMA portfolio grows by the $540bn in bill purchases estimated on the previous slide, and the financing need matches the median 2026 estimate of primary dealers from the November 2025 Treasury presentation to TBAC.
- In the scenario on the left, Treasury issues bills, notes/bonds, TIPS, and FRNs such that the year-end 2026 composition matches that of the 2025 year-end composition of ***total*** outstanding marketable securities.
- In the scenario on the right, Treasury issues bills, notes/bonds, TIPS, and FRNs such that the year-end 2026 composition matches that of the 2025 year-end composition of ***privately-held*** outstanding marketable securities.

Data as of Dec 31, 2025

TOTAL	$bn	
BILLS	6,547	21.6%
NOTES/BONDS	20,871	69.0%
TIPS	2,133	7.1%
FRN	700	2.3%
	30,251	

SOMA	$bn	
BILLS	234	5.7%
NOTES/BONDS	3,553	86.4%
TIPS	312	7.6%
FRN	14	0.3%
	4,113	

PRIVATE	$bn	
BILLS	6,313	24.2%
NOTES/BONDS	17,318	66.3%
TIPS	1,821	7.0%
FRN	686	2.6%
	26,138	

TOTAL	$bn
BILLS	440
NOTES/BONDS	1,403
TIPS	143
FRN	47
	2,034

SOMA	$bn
BILLS	540
	540

PRIVATE	$bn
BILLS	(100)
NOTES/BONDS	1,403
TIPS	143
FRN	47
	1,494

Projection as of Dec 31, 2026

TOTAL	$bn	
BILLS	6,987	21.6%
NOTES/BONDS	22,274	69.0%
TIPS	2,276	7.1%
FRN	747	2.3%
	32,285	

SOMA	$bn	
BILLS	774	18.8%
NOTES/BONDS	3,553	86.4%
TIPS	312	7.6%
FRN	14	0.3%
	4,653	

PRIVATE	$bn	
BILLS	6,213	22.5%
NOTES/BONDS	18,721	67.8%
TIPS	1,964	7.1%
FRN	733	2.7%
	27,632	

Data as of Dec 31, 2025

TOTAL	$bn	
BILLS	6,547	21.6%
NOTES/BONDS	20,871	69.0%
TIPS	2,133	7.1%
FRN	700	2.3%
	30,251	

SOMA	$bn	
BILLS	234	5.7%
NOTES/BONDS	3,553	86.4%
TIPS	312	7.6%
FRN	14	0.3%
	4,113	

PRIVATE	$bn	
BILLS	6,313	24.2%
NOTES/BONDS	17,318	66.3%
TIPS	1,821	7.0%
FRN	686	2.6%
	26,138	

TOTAL	$bn
BILLS	901
NOTES/BONDS	990
TIPS	104
FRN	39
	2,034

SOMA	$bn
BILLS	540
	540

PRIVATE	$bn
BILLS	361
NOTES/BONDS	990
TIPS	104
FRN	39
	1,494

Projection as of Dec 31, 2026

TOTAL	$bn	
BILLS	7,448	23.1%
NOTES/BONDS	21,861	67.7%
TIPS	2,237	6.9%
FRN	739	2.3%
	32,285	

SOMA	$bn	
BILLS	774	18.8%
NOTES/BONDS	3,553	86.4%
TIPS	312	7.6%
FRN	14	0.3%
	4,653	

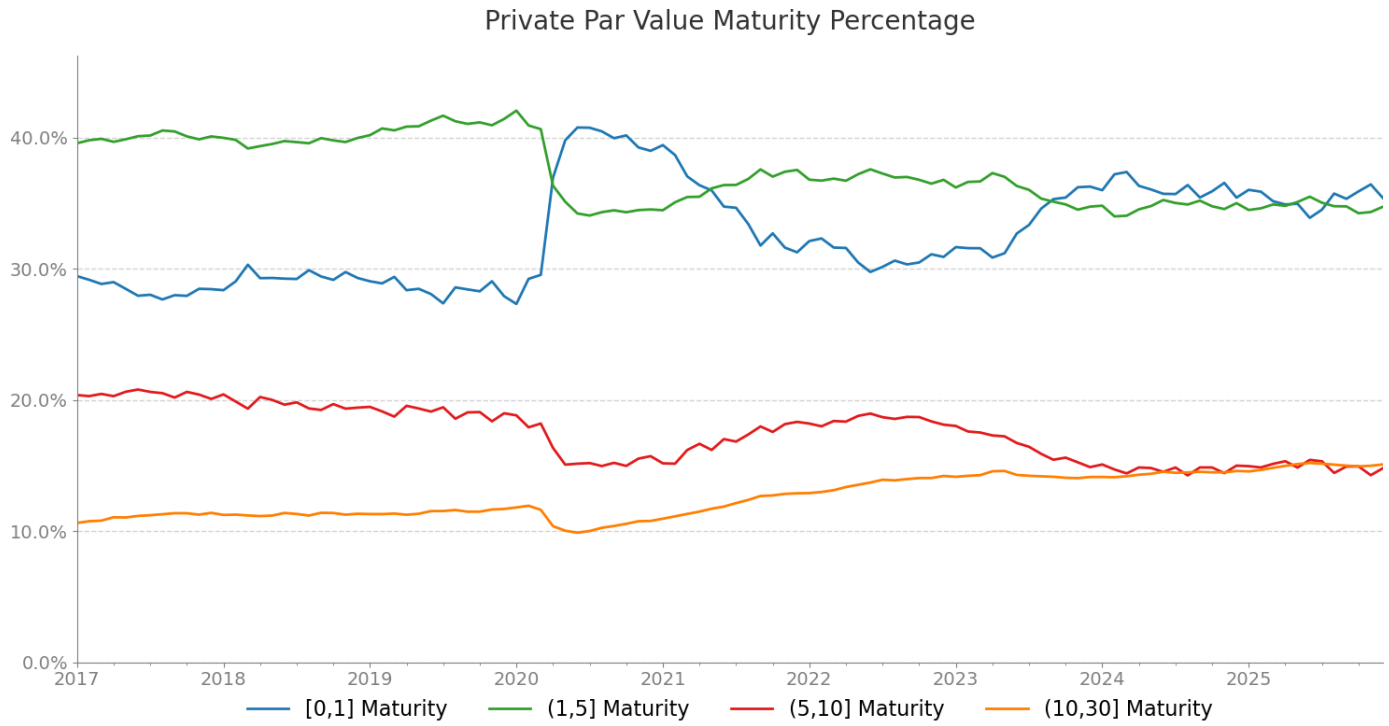
PRIVATE	$bn	
BILLS	6,674	24.2%
NOTES/BONDS	18,308	66.3%
TIPS	1,925	7.0%
FRN	725	2.6%
	27,632	

source: Nov 2025 Treasury Presentation to TBAC: https://home.treasury.gov/system/files/221/TreasuryPresentationToTBACQ42025.pdf Soma Portfolio: https://www.newyorkfed.org/markets/soma-holdings Total Outstanding debt: https://fiscaldata.treasury.gov/datasets/monthly-statement-public-debt/

Bill Share

Present day considerations

- As seen in the scenario on the right side of the previous slide, increased Treasury bill purchases in the Fed SOMA mean that even though the bill share of *total* issuance rises from 21.6% to 23.2% YoY, the share of *privately-held* debt outstanding represented by bills remains unchanged.
- The clarification that RMPs and MBS paydown reinvestments will come in the bill sector means that the duration of the SOMA portfolio is likely to continue falling and that Treasury can put significant weight on the composition of privately-held Treasuries when it determines its issuance mix in the near term.
- The share of privately-held Treasuries in the [0,1]y maturity band is currently in the middle of its recent historical range, as is the share of privately-held Treasuries in the broader [0,5]y maturity band.
- Private investor demand for bills can act as a shock absorber in the event of rapidly increased government financing needs, and so Treasury's regular monitoring of market conditions in that sector continues to be important.



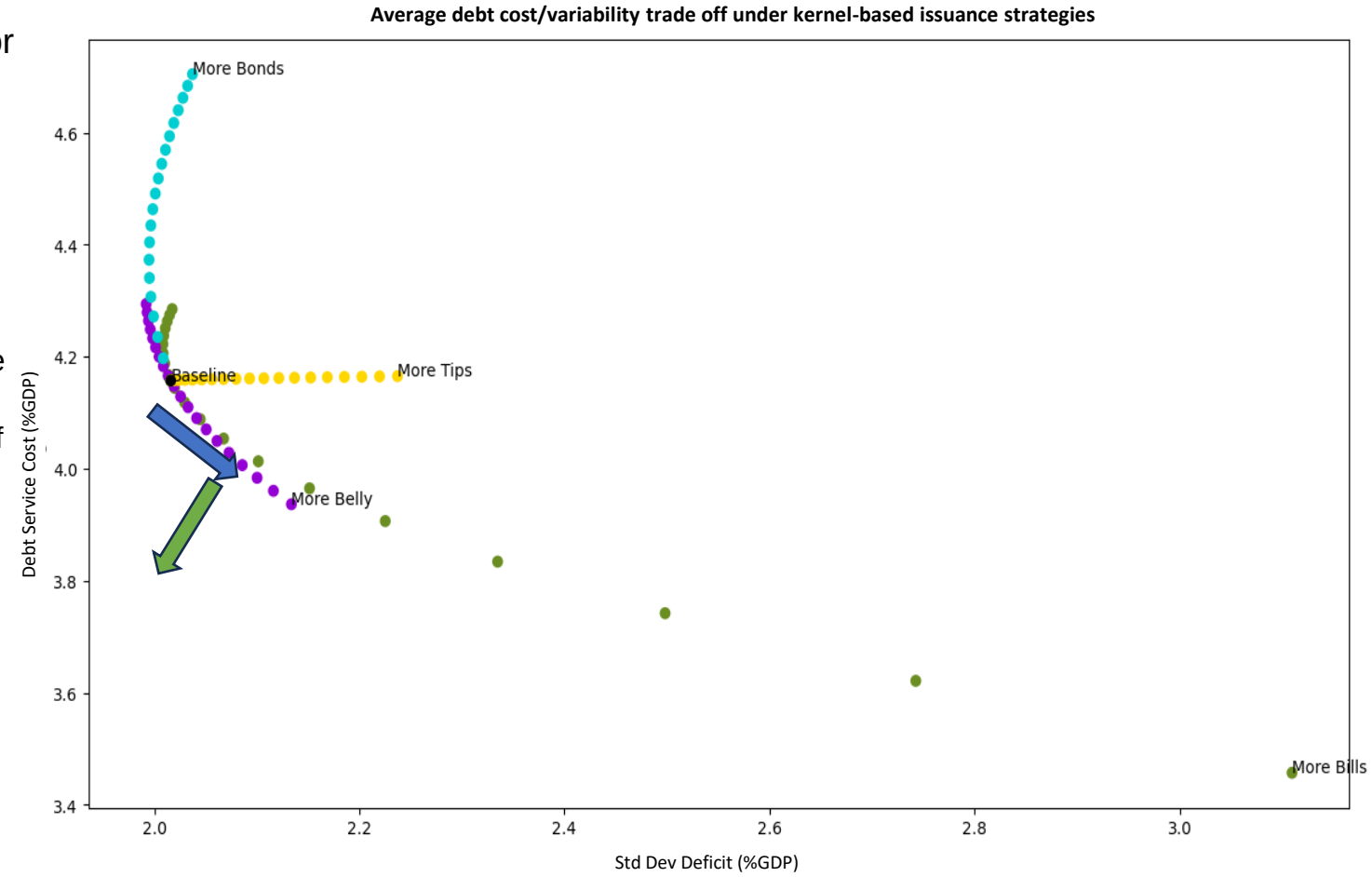
source: Soma Portfolio: https://www.newyorkfed.org/markets/soma-holdings Total Outstanding debt: https://fiscaldata.treasury.gov/datasets/monthly-statement-public-debt/.

Total and Consolidated Balance Sheet in the optimal maturity model

An update and suggestion for further study

- Zooming out to a broader conceptual lens, we also ran an updated calibration of the optimal maturity structure model.

- In the February 2020 Charge, the author ran a model calibration showing the cost vs. deficit volatility tradeoff for the Total outstanding issuance and separately for the consolidated balance sheet liability.
- When imagined in separate interest-bearing and non-interest-bearing parts,
  - the interest-bearing portion of the consolidated balance sheet is shorter in maturity than total issuance and resets to new interest rates more quickly. This effect likely shifts the baseline in the optimization down and to the right (i.e., in the direction of the stylized blue arrow).
  - the non-interest-bearing portion also shifts in the direction of lower costs but lowers volatility by virtue of the perpetual nature of currency in circulation (i.e., in the direction of the stylized green arrow).
- Innovating the optimal maturity model so that these hypothetical effects could be studied in parts and combined could prove helpful during times when the cost and risk of the consolidated balance sheet is materially different than the cost and risk of total issuance outstanding.



source: Nov 2025 Treasury Presentation to TBAC: https://home.treasury.gov/system/files/221/TBACCharge1Q42025.pdf Feb 2020 Treasury Presentation to TBAC: https://home.treasury.gov/system/files/276/q12020_CombinedChargesforArchives.pdf Public model code: https://github.com/BrookingsInstitution/Treasury-Issuance-Model and author's calculations

Conclusions

- The Treasury and Federal Reserve have distinct but interconnected mandates.
  - Yet it is well understood that actions by either party, especially policy changes with large or lasting impacts on SOMA portfolio size and composition, can impact the other's objectives and risk exposures.
- Episodes of QE have removed duration from private investors over short periods of time, opening divergence between the duration and interest rate reset risk of total Treasury issuance versus privately-held Treasury issuance.
- Fed policy inflection points are relevant times to consider the composition of privately-held Treasury securities when making issuance decisions.
  - QE that has run its policy course changes private holding composition. Treasury may find that it can make cost- and risk-efficient adjustments to its issuance mix within its “regular and predictable” framework due to resulting changes in supply and demand functions.
  - Runoff of the SOMA portfolio directly affects Treasury issuance needs, especially if it happens at a fast pace.
  - Announced changes in the maturity composition of the SOMA portfolio which are not from simple runoff and occur in the secondary market also affect the composition of privately-held Treasuries and therefore also affect supply and demand dynamics.
- The Fed recently ended SOMA runoff and announced new Treasury bill purchases to maintain reserves and reinvest MBS paydowns.
  - We illustrated two simple scenarios of compositional response in issuance.
  - In this Fed policy inflection point, it is possible to meet new demand for Treasury bills without increasing the Treasury bill share for private investors.
  - As the SOMA portfolio is shortening in duration, the rate reset risk of the consolidated liability is also decreasing. In such an environment, meeting some amount of the new Fed policy demand for Treasury bills is a reasonable strategy.
  - Private investor demand for bills acts as a shock absorber in times of increased government financing needs, making ongoing monitoring of supply and demand in the bill sector important.
- In updating the optimal maturity model, and in imagining the effect of the shorter duration mix of privately-held Treasuries and floating rate overnight liabilities on the consolidated balance sheet, we would agree with the conclusion from the November 2025 TBAC charge that increases in shorter-maturity coupon issuance relative to bills could decrease volatility in adverse scenarios without much increase in expected costs.
- While we discussed times when it is helpful for Treasury to take the composition of only privately-held Treasuries into account, focusing on the composition of total Treasury debt outstanding and of current total issuance is also important. Doing so serves to maintain medium and long-term composition expectations within the regular and predictable framework, especially during periods when the SOMA portfolio size and composition are not actively changing.

source: Nov 2025 Treasury Presentation to TBAC: https://home.treasury.gov/system/files/221/TBACCharge1Q42025.pdf