Capital Markets Strategy

Essential inCights for the C-Suite

MUFG

Inflection Points

Fiscal Dominance, Elevated Deficits & the US Treasury Market

MAY 2024

"A story is not like a road to follow…it's more like a house. You go inside and stay there for a while, wandering back and forth before settling where you like and discovering how the room and corridors relate to each other, how the world outside is altered by being viewed from these windows."

Alice Munro, Transformative Canadian short story writer & winner of the 2013 Nobel Prize in Literature (Jul 10, 1931 - May 13, 2024)

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Global Corporate & Investment Bank
Capital Markets Strategy Team

Tom Joyce

Managing Director
Capital Markets Strategist
New York, NY

Tom.Joyce@mufgsecurities.com
(212) 405-7472

Hailey Orr

Managing Director
Capital Markets Strategist
New York, NY

Hailey.Orr@mufgsecurities.com
(212) 405-7429

Stephanie Kendal

Vice President
Capital Markets Strategist
New York, NY

Stephanie.Kendal@mufgsecurities.com
(212) 405-7443

Angela Sun

Analyst
Capital Markets Strategist
New York, NY

Angela.Sun@mufgsecurities.com
(212) 405-6952

AUTHORS

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10 Notable US Rate Themes in 2024

The path for Fed policy easing, policy divergence and US rates remain highly uncertain in 2024 and beyond.

1 **A new era of fiscal dominance, with elevated structural deficits likely to continue for the rest of the decade, will complicate the Fed's reaction function.** This, in turn, will contribute to higher rate volatility and elevated term premia.

2 **With nearly $9 trillion of maturities and more than $1 trillion of deficits to finance in the year ahead, the US Treasury will have to issue approximately $10 trillion of securities (1/3 of GDP) during a period of economic and policy transition. At the same time, the investor profile for USTs has shifted markedly in recent years.** Domestic buyers now account for approximately 70% of UST purchases. Among foreign buyers, private sector purchases currently outpace public sector demand by a wide margin.

3 **5 and 10 year US inflation breakevens have been rising YTD** (sticky services and wage inflation, higher energy prices).

10 Notable US Rate Themes in 2024

The path for Fed policy easing, policy divergence and US rates remain highly uncertain in 2024 and beyond.

4 **The Fed's current policy rate is more than double their long-run estimate of equilibrium** (even as the Fed's long run forecast of neutral continues to rise, most recently from 2.5% to 2.6%).

5 **Markets have consistently mis-priced both the magnitude of current cycle tightening, and expectations for easing** (rapid 2024 pivot from "too dovish" to "hawkish").

6 **Real yields have unexpectedly risen YTD on resilient economic data, ultra-loose fiscal policy and tech-driven equity market strength.** Nonetheless, spot and forward real rates suggest that current Fed policy has become too restrictive.

7 **The current UST yield curve inversion has been the longest in 50 years (and a less reliable signal of US recession risk than prior cycles).** It will be difficult for the yield curve to dis-invert until policy rates "actually" decline, versus "expectations" of rate cuts.

10 Notable US Rate Themes in 2024

The path for Fed policy easing, policy divergence and US rates remain highly uncertain in 2024 and beyond.

8 **Historically, policymakers rarely wait for recessions to arrive before cutting policy rates.** Sticky services and wage inflation will likely slow the pace of initial rate cuts and policy normalization (compared to prior cycles). The market is currently pricing the first full Fed rate cut in November 2024.

9 **Resurgent April bond yields posed significant challenges for risk assets globally (stocks, bonds, FX).** April was also a reminder that safe haven flows into USTs during heightened geopolitical risk have been less than anticipated.

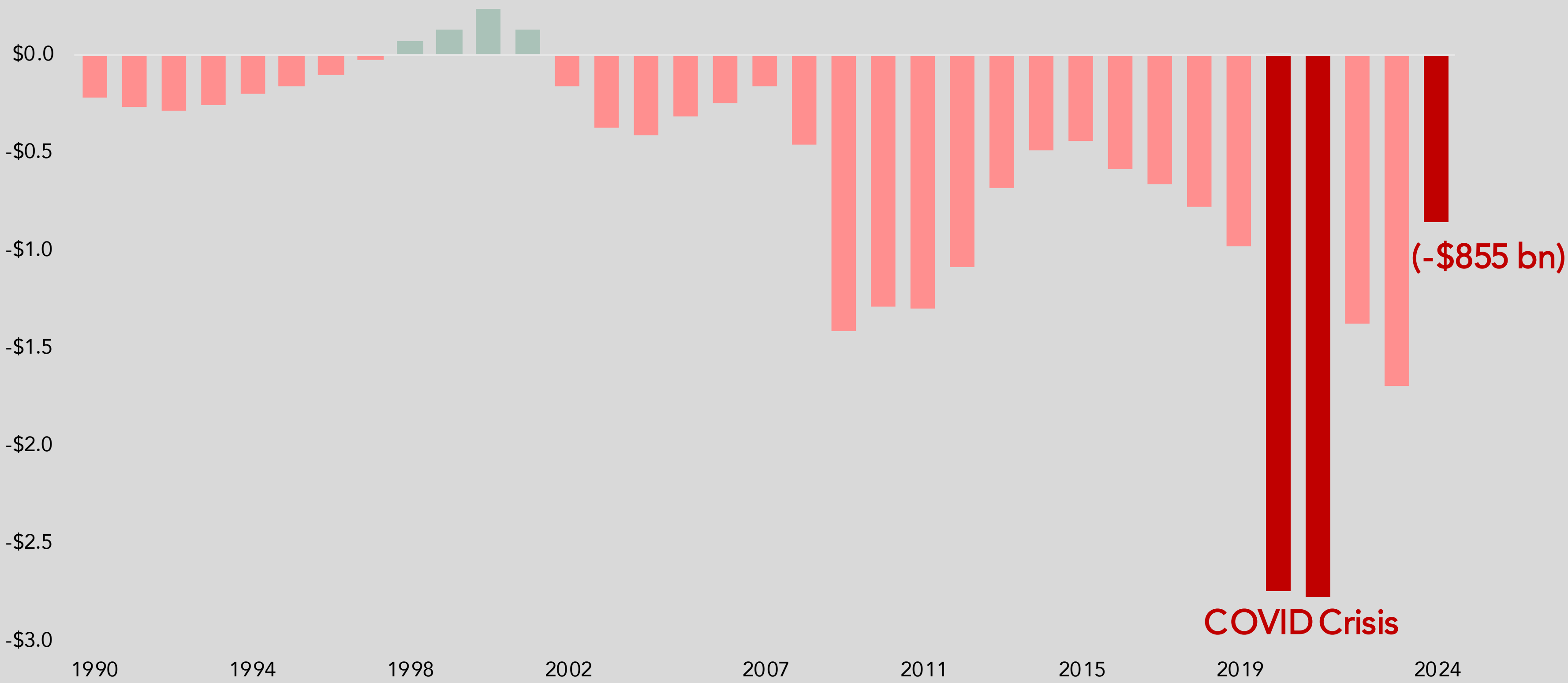
10 **MUFG is cyclically bullish UST yields into year-end, from currently restrictive levels** (forecasting cyclical lows in Q4).

A. Rising US Debt & Deficits

Rising US Budget Deficits

On Friday Oct 20, the US Treasury announced a FY 2023 US budget deficit of $1.7 trillion (for FY ended Sept 30, 2023), a 23% jump from the prior year, and the largest ever US budget deficit outside of the 2020-21 COVID period. Key drivers of the record ex-COVID deficit included declining revenue, higher interest expense, and COLA adjustments on Social Security spending.

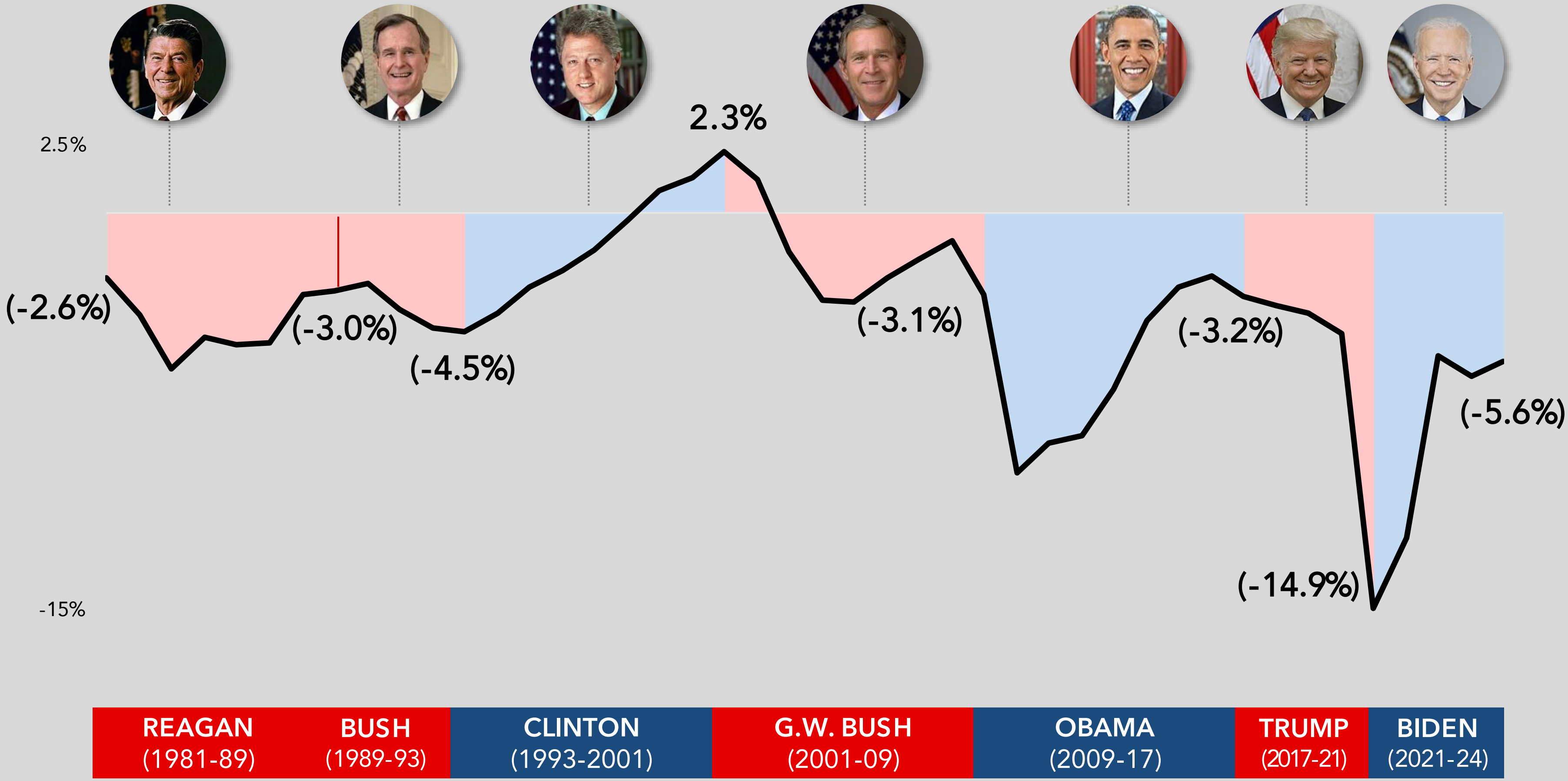
US Federal budget deficit, USD tn



Source: (1) Bloomberg. Data as of May 14, 2024. Year is by US government fiscal year. 2024 value is year-to-date.

Unusually High Deficits For An Expansion

Federal government deficit (or surplus), % of GDP

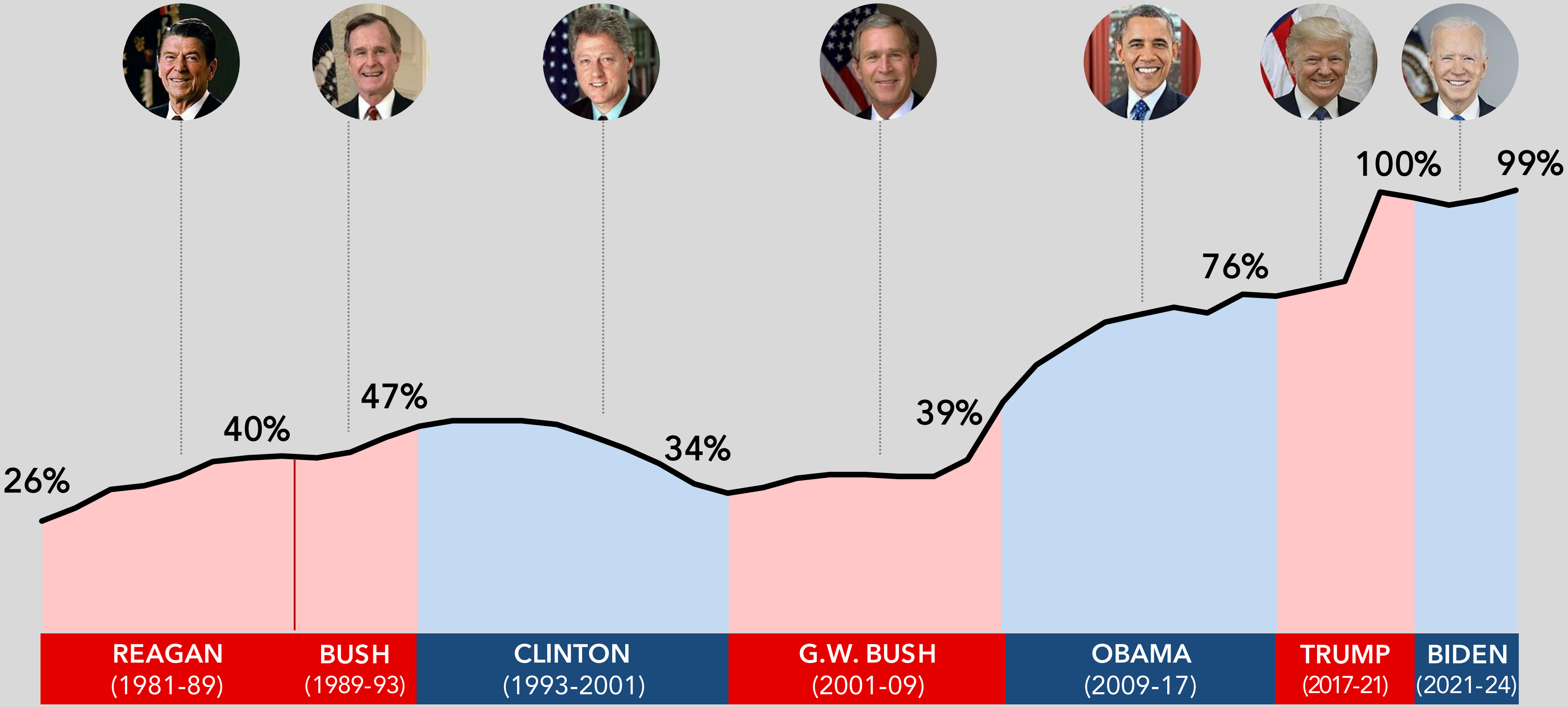


Source: (1) Congressional Budget Office. Long-Term Budget Outlook 2024 to 2054. Historical Data on federal Debt Held by the Public. Bloomberg. Data as of May 14, 2024. 2023 FY deficit is actual. 2024 is CBO forecast.

Full Decade of Debt Build During COVID

US Government Debt has risen above 100% of GDP, more than double the 39% average of the nine countries still rated AAA by Fitch. While debt to GDP has risen most significantly in response to recessions (GFC, COVID), the increase has actually spanned decades and occurred across both Republican and Democratic administrations.

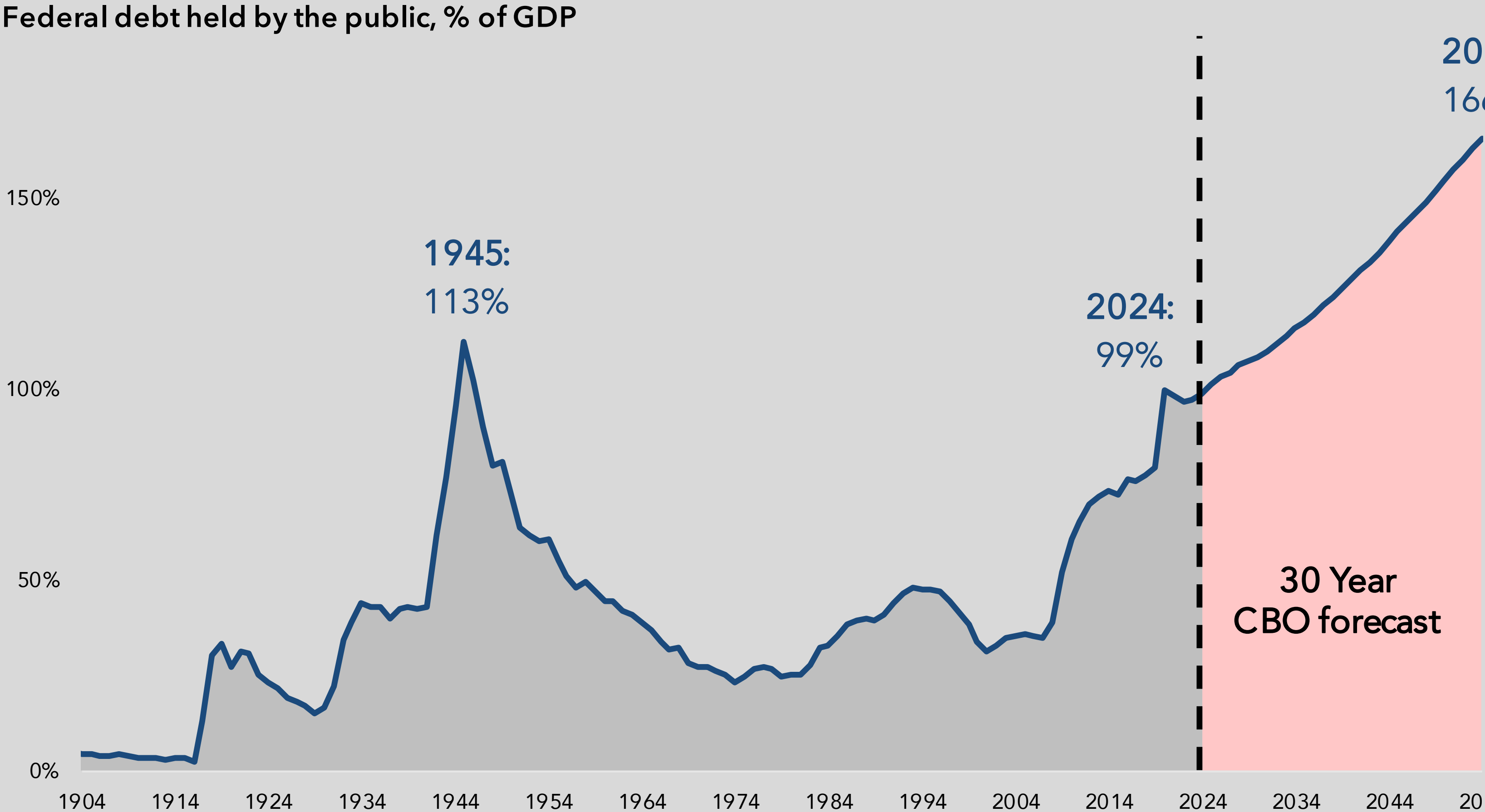
Federal debt held by the public, % of GDP



Source: (1) Congressional Budget Office. Long-Term Budget Outlook 2024 to 2054. Historical Data on federal Debt Held by the Public. 2024 Federal debt is CBO estimate.

Federal Debt to Reach 166% of GDP in 2054

Over the three years since COVID began, US Government debt/GDP increased from approximately 70% to nearly 100% today, a milestone previously not expected to be reached for a decade. Current CBO projections have US government debt rising to 116% in 2034, and 166% in 2054.

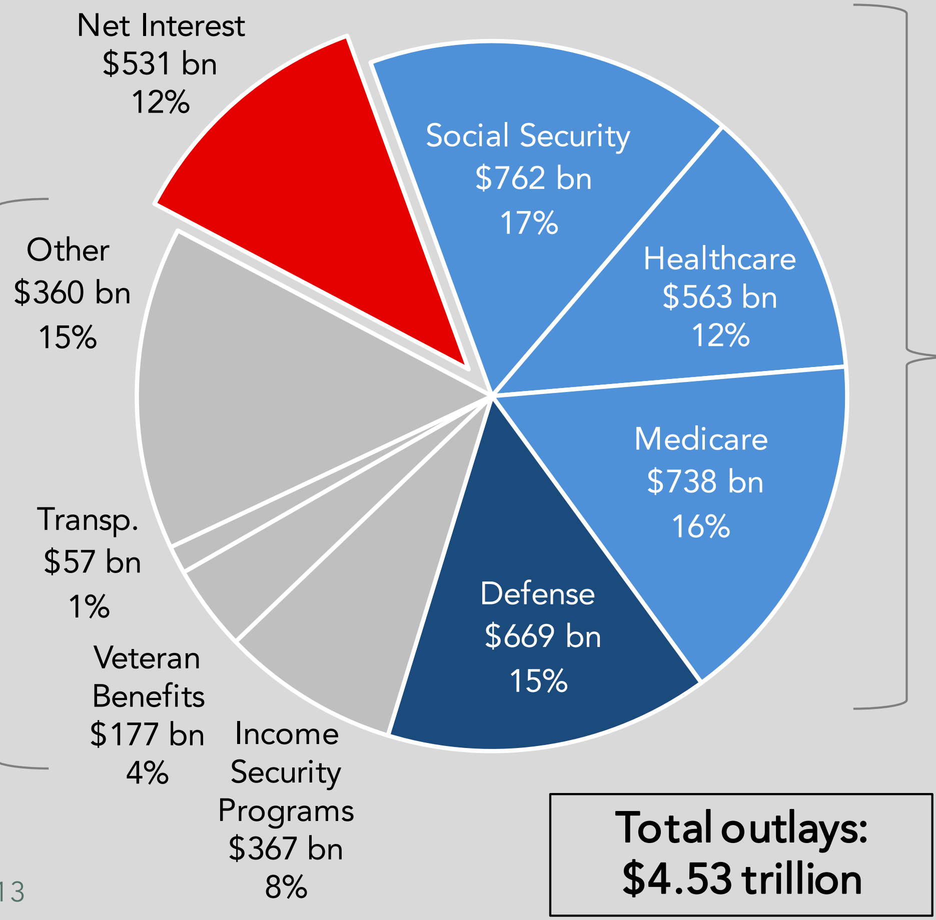


Source: (1) Congressional Budget Office. Long-Term Budget Outlook 2024 to 2054. Historical Data on federal Debt Held by the Public.

Breaking Down US Government Spending

The three largest categories of "mandatory US spending" – Social Security, Medicare and Medicaid – accounts for 45% of US Government outlays in 2024. Defense spending, which Congress is highly unlikely to reduce, accounts for an additional 15%. In the years ahead, net interest expense on US Gov't debt will rise to become the US government's largest individual outlay.

US federal budget in fiscal year 2024, USD bn



~30% of spending: Smaller discretionary buckets not easy to sufficiently cut path to debt sustainability

~70% of spending: Largely mandatory spending that Congress is either unwilling or unable to reduce **(entitlements, defense & net interest)**

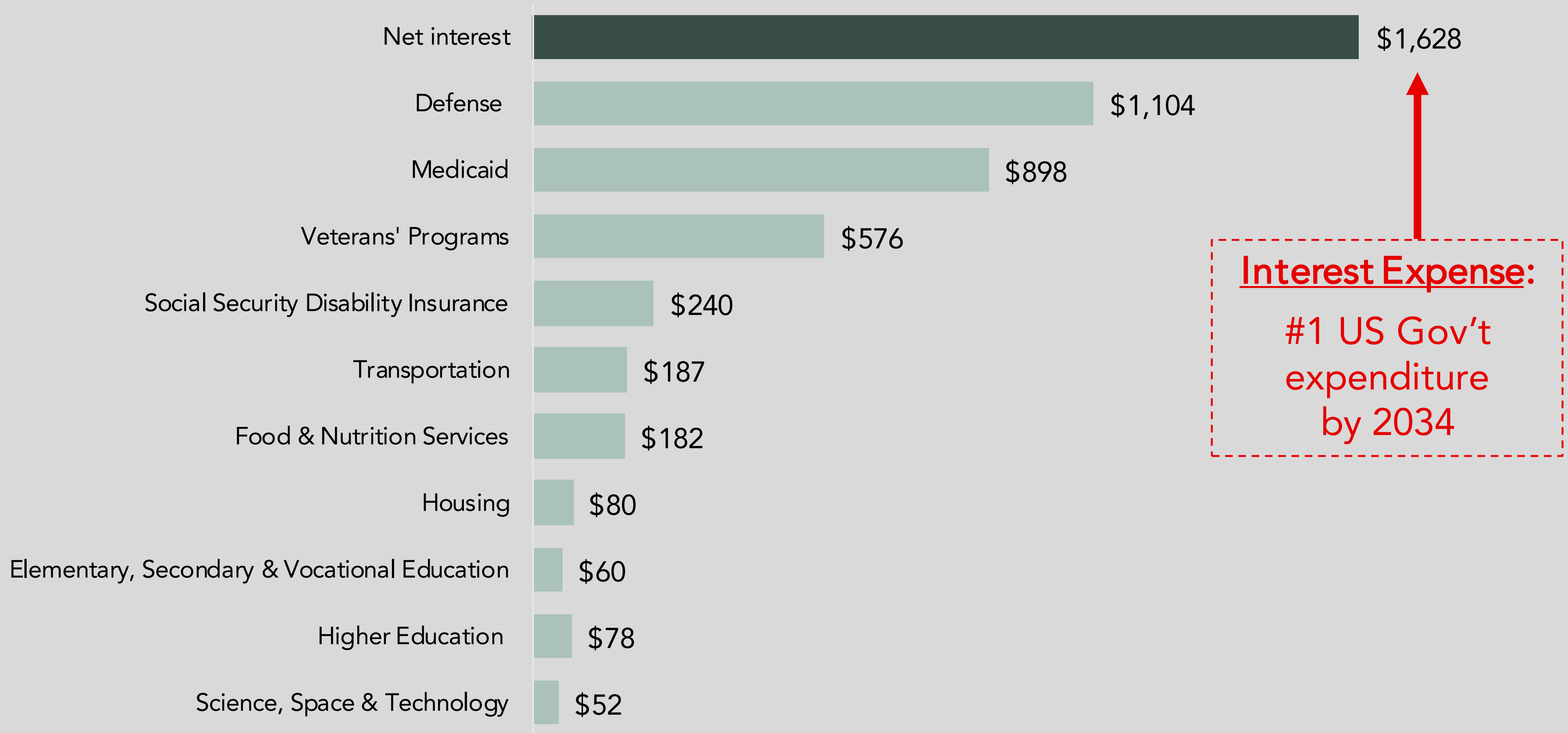
Total outlays: $4.53 trillion

Source: (1) Fiscal Data. US Treasury.

Net Interest Will Exceed Key Programs in 2034

Within 10 years, the annual net interest on US Treasury securities will become the #1 outlay for the US Government.

Estimated cost of key programs in 2034, USD bn

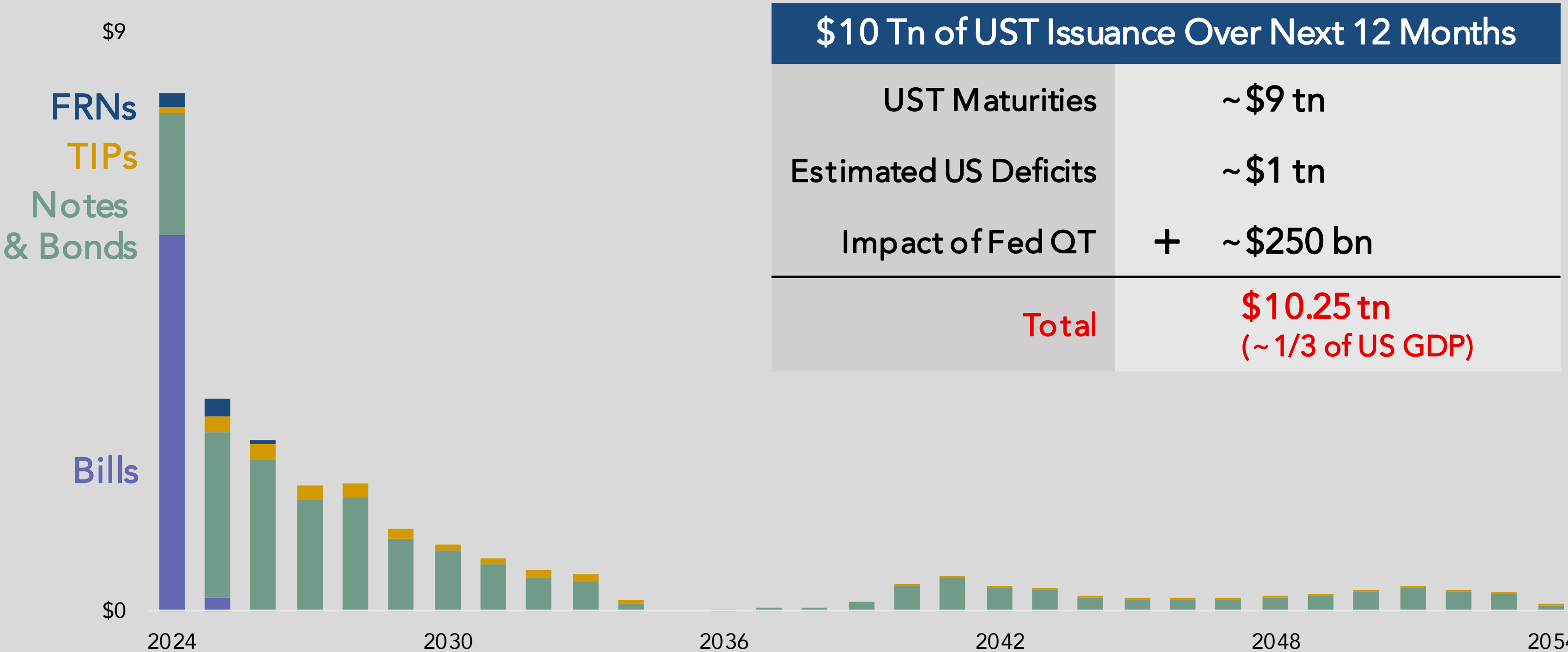


Source: (1) Congressional Budget Office.

$10 Tn of UST Issuance Over the Next 12 Months

With nearly $9 trillion of maturities and more than $1 trillion of deficits to finance in the year ahead, the US Treasury will have to issue approximately $10 trillion of securities (1/3 of GDP) during a period of economic and policy transition. At the same time, the investor profile for USTs has shifted markedly in recent years. Domestic buyers now account for approximately 70% of UST purchases. Among foreign buyers, private sector purchases currently outpace public sector demand by a wide margin.

US government debt by maturity, USD tn



$10 Tn of UST Issuance Over Next 12 Months		
UST Maturities		~$9 tn
Estimated US Deficits		~$1 tn
Impact of Fed QT	+	~$250 bn
Total		$10.25 tn (~1/3 of US GDP)

Source: (1) MUFG, "QT Taper Train Has Left the Station (cuts next)", "Walking a Tightrope: We're locking on macro divergences" (George Goncalves). Bloomberg. Data as of April 24, 2024. Impact of Fed QT implies $25 bn UST roll-off through 2024 and $12.5 bn UST roll-off starting in 2025.

What to Watch

Despite elevated debt and deficits, a US Government sovereign debt crisis is highly unlikely anytime soon. Nonetheless, with nearly $10 trillion of US Treasury financing needs over the next 12 months alone, a number of important dynamics should be watched closely.

What to watch in the months ahead?

- Performance of US Treasury auctions
- Increased US rate volatility
- Generally low liquidity in UST markets
- Impact of the Fed's QT tapering policy
- Rising UST market term premiums in 2024
- Adverse rating agency actions (warnings, downgrades)

Nine Countries with AAA Ratings

Following Fitch's downgrade of US government debt from AAA to AA+ on August 1, 2023, there are now nine remaining countries with AAA ratings from Fitch. Notably, US debt and deficit metrics deviate considerably from the AAA sovereign peer group.

Country	Fitch Rating	GDP, USD bn	General Gov Debt to GDP	Annual Deficit (% of GDP)
Germany	AAA	$4,595 bn	64.0%	(-1.4%)
Australia	AAA	$1,762 bn	48.1%	(-1.2%)
Netherlands	AAA	$1,169 bn	42.8%	(-0.7%)
Switzerland	AAA	$936 bn	26.0%	+0.2%
Sweden	AAA	$663 bn	38.7%	(-0.3%)
Norway	AAA	$625 bn	36.1%	+14.8%
Singapore	AAA	$531 bn	38.5%	+7.6%
Denmark	AAA	$424 bn	27.2%	+2.3%
Luxembourg	AAA	$88 bn	28.5%	(-1.6%)
Median			**38.5%**	**(-0.3%)**
US	*AA+*	*$28,877 bn*	*116.8%*	*(-8.1%)*

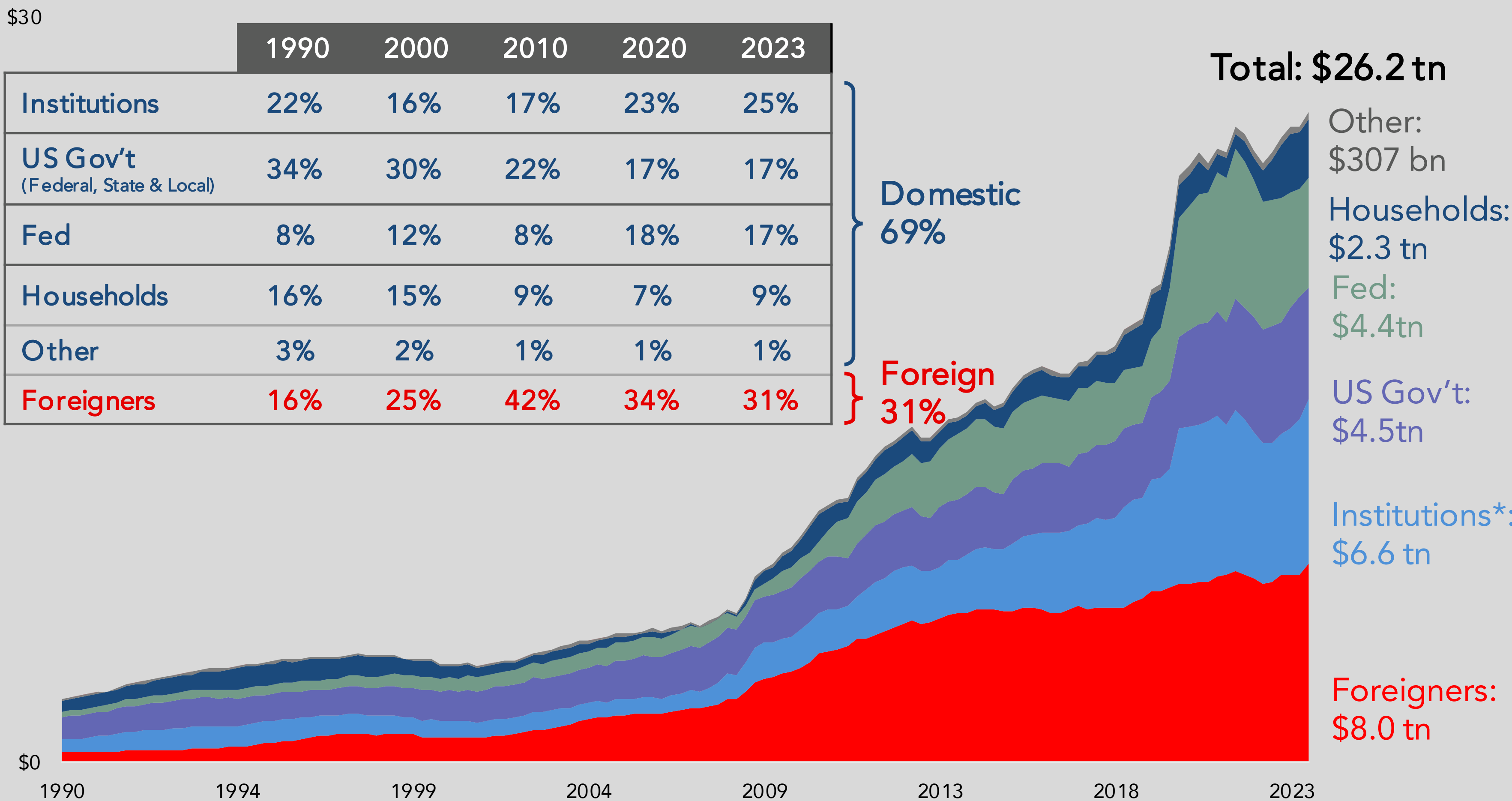
Source: (1) Fitch Ratings. Debt to GDP and annual deficits are Fitch calculated general government debt and deficits. 2024 estimates.

B. Who Owns US Treasuries?

Ownership of $26 Trillion UST Market

Holders of US Treasury securities, USD tn

	1990	2000	2010	2020	2023
Institutions	22%	16%	17%	23%	25%
US Gov't (Federal, State & Local)	34%	30%	22%	17%	17%
Fed	8%	12%	8%	18%	17%
Households	16%	15%	9%	7%	9%
Other	3%	2%	1%	1%	1%
Foreigners	16%	25%	42%	34%	31%



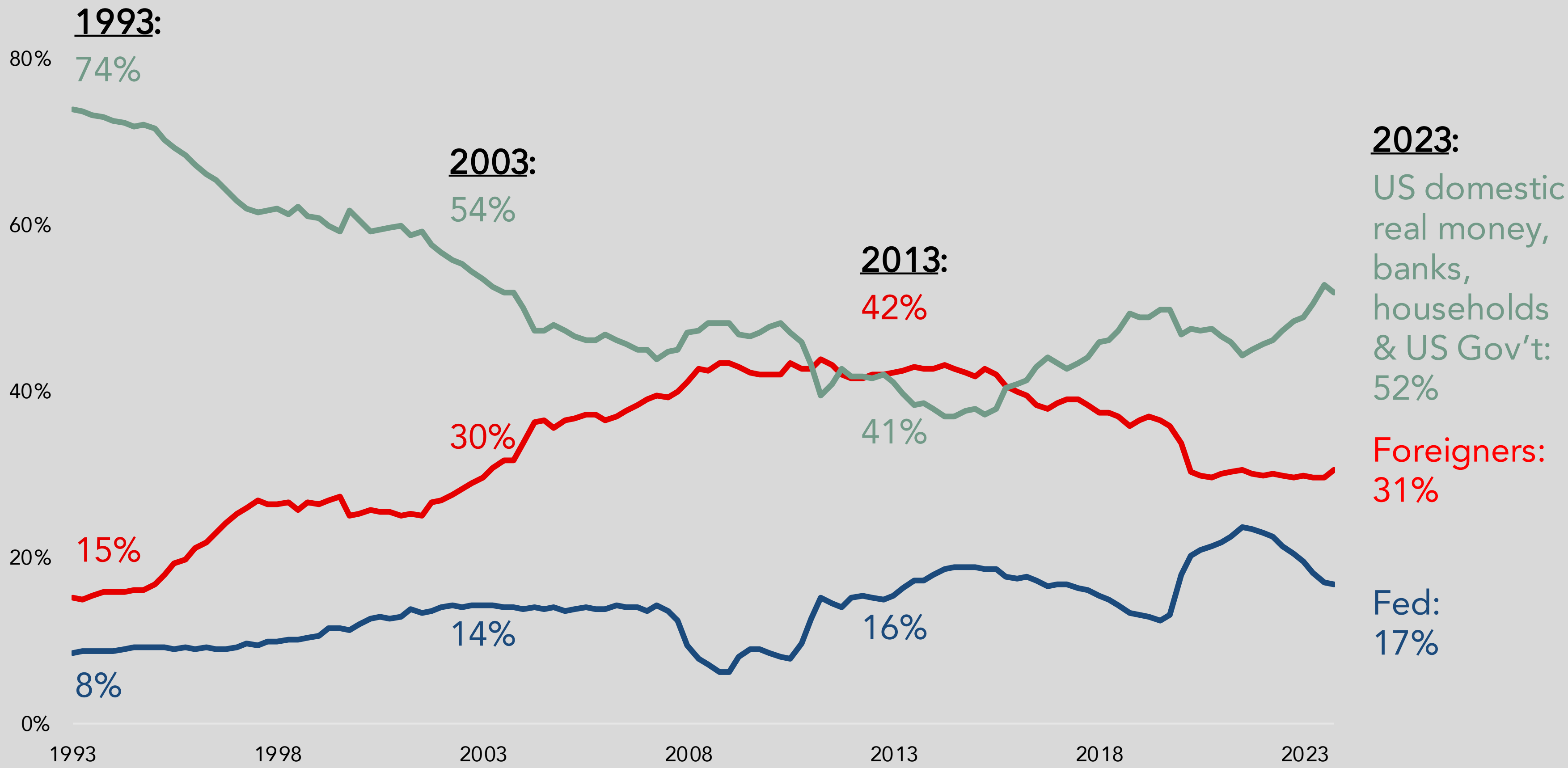
*Institutional ownership includes banks, mutual, closed-end & ETF funds, pensions, insurance, ABS issuers & broker-dealers

Source: (1) Federal Reserve. Data for fiscal year 2023. Financial Accounts of the United States, L.210 Treasury Securities. Gov't includes Federal, State & local governments, retirement funds and gov't sponsored enterprises. Total represents total marketable US Treasury debt.

Domestic & Foreign Ownership of USTs

While foreign central bank purchases of US Treasuries have increased on an absolute basis over the last decade, their relative share of today's over $26 trillion UST market has declined sharply since peak China and EM growth in 2014. Investment fund purchases of USTs (pension funds, insurance funds, money market funds) have increased notably since the Fed tightening cycle began in March 2022.

Holdings of Treasuries as a % of total Treasury debt outstanding

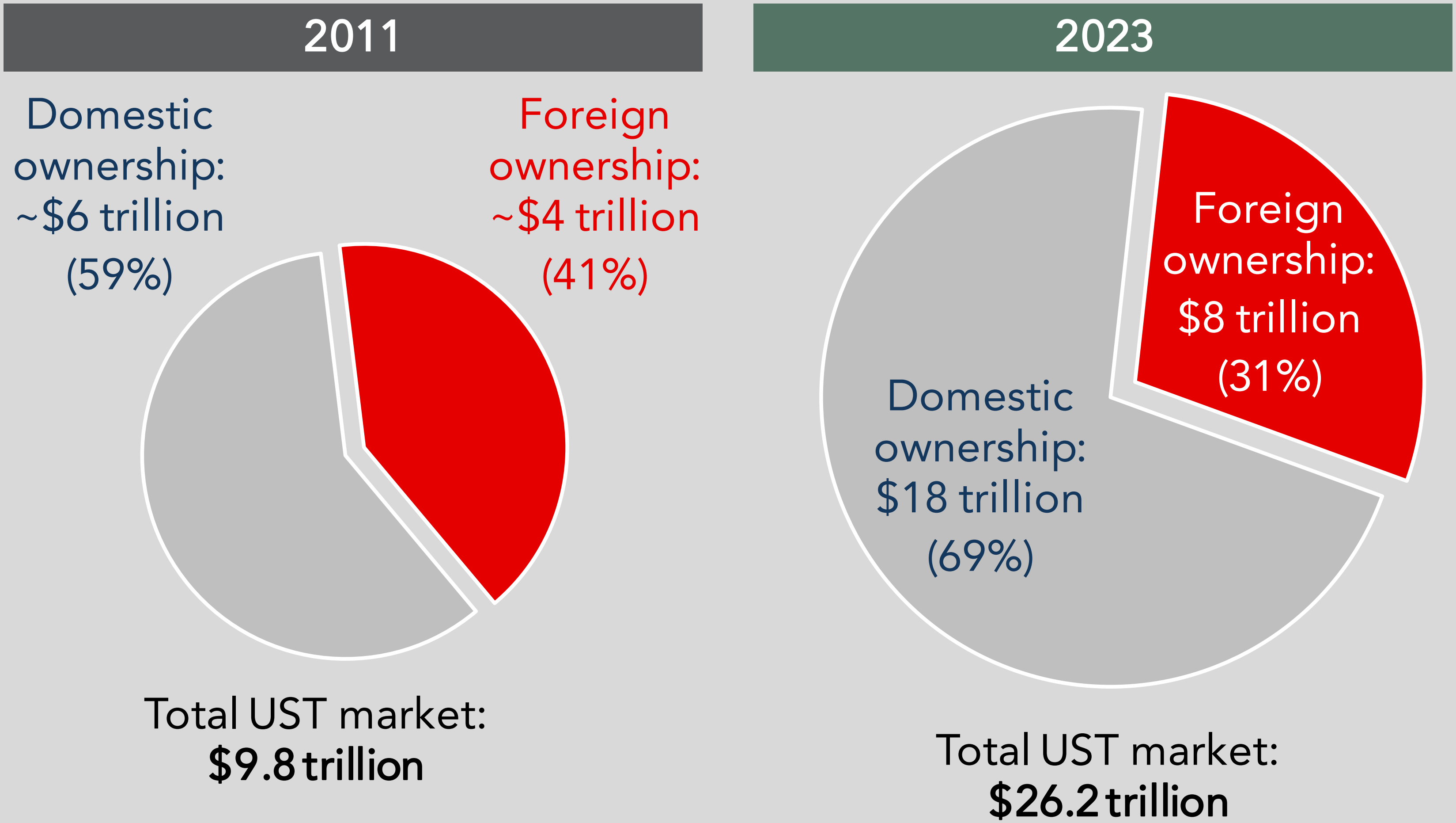


Source: (1) Federal Reserve. Data for fiscal year 2023. Financial Accounts of the United States, L.210 Treasury Securities. US Government includes Federal, State & local.

Domestic & Foreign Ownership of US Treasuries

With China and EM growth (and annual surpluses) peaking around 2014, foreign central banks' ownership share of US Treasuries has been on a multi-year decline.

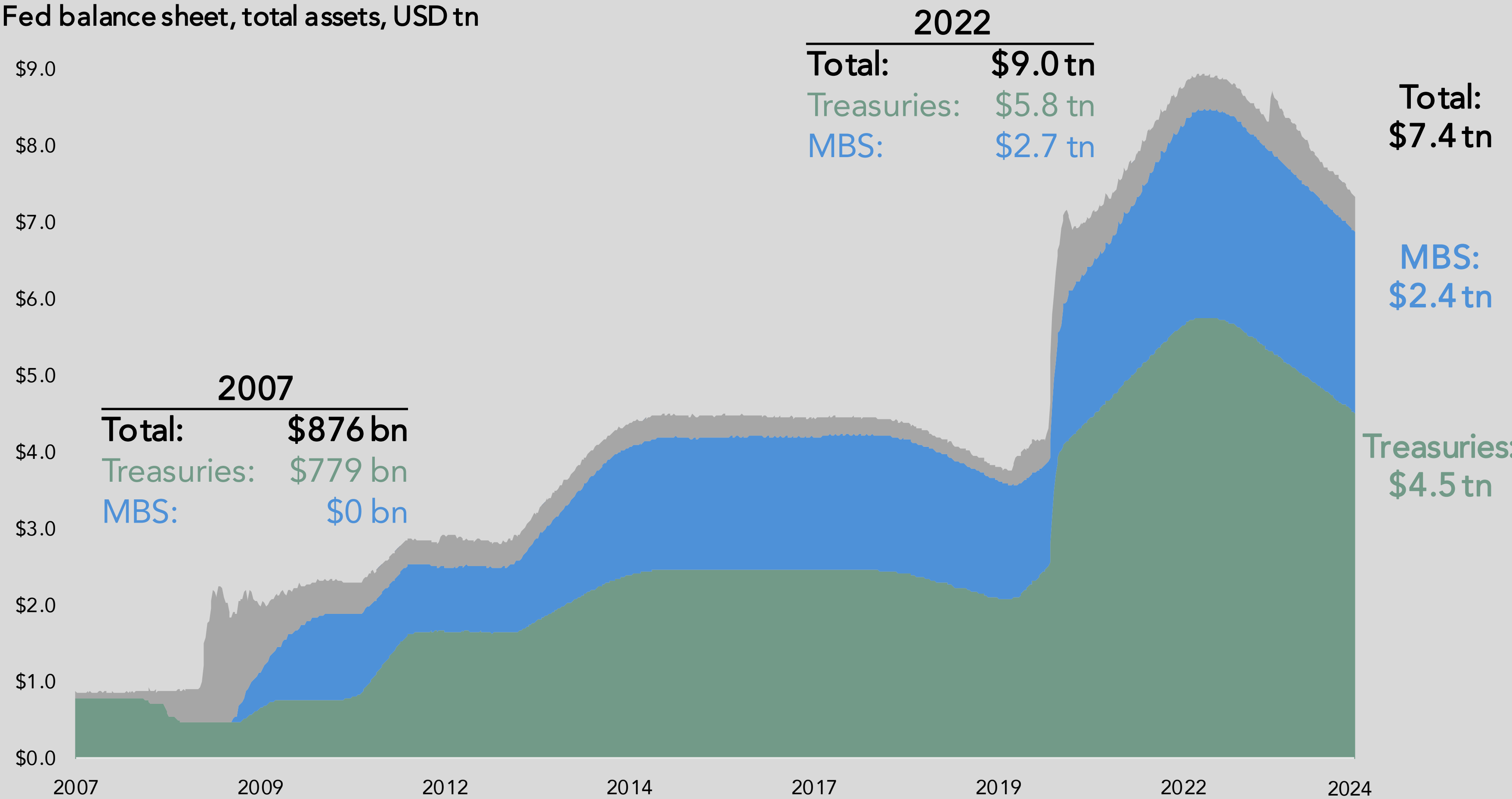
Size of US Treasury market



Fed Ownership of USTs

The Fed's Balance Sheet and UST holdings peaked at $9.0 and $5.8 trillion, respectively, in Q2 2022. Since QT began, the Fed's balance sheet has declined by over $1.5 trillion and Treasury holdings have declined by $1.2 trillion.

Fed balance sheet, total assets, USD tn

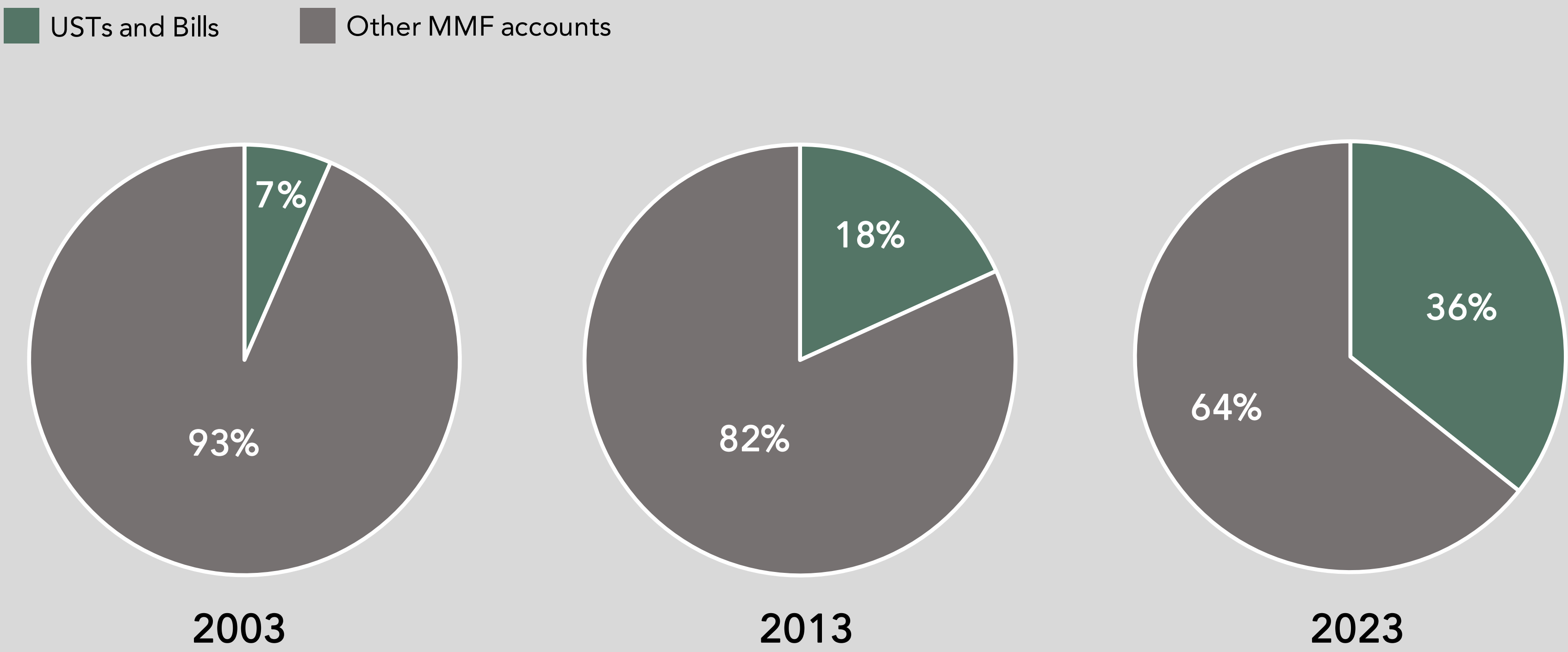


Source: (1) Bloomberg. Data as of May 8, 2024. FRED.

Evolution of Money Market Fund UST Purchases

Flows into money market funds, and money market fund purchases of UST securities, increased significantly since the Fed tightening cycle began in March 2022 - a dynamic that accelerated further post the bank sector stress of March 2023.

Money market mutual funds holdings by sector

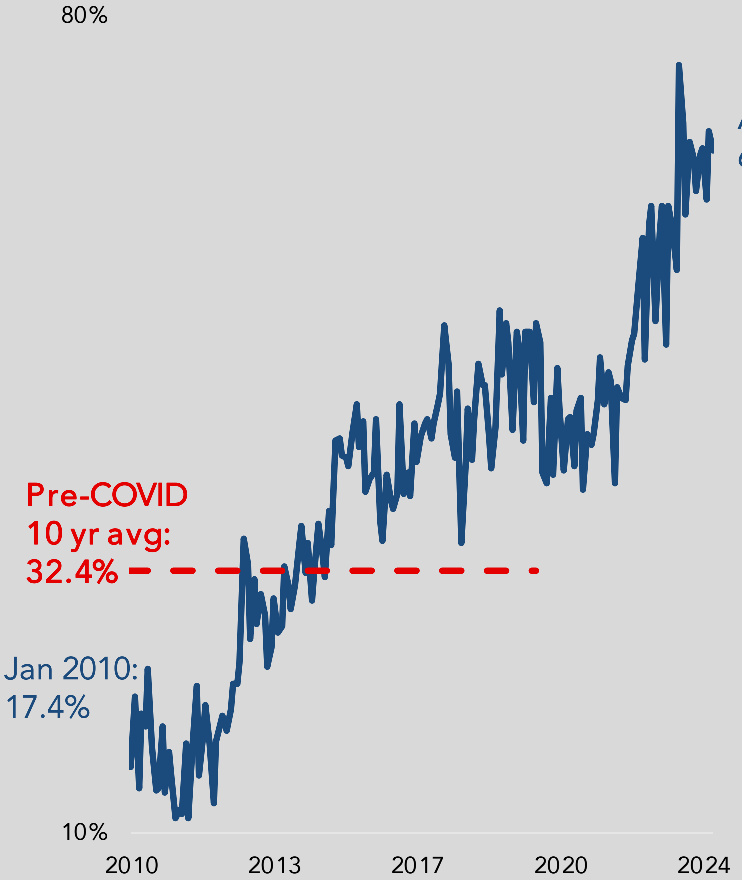


Source: (1) Federal Reserve Board. Data for fiscal year 2023.

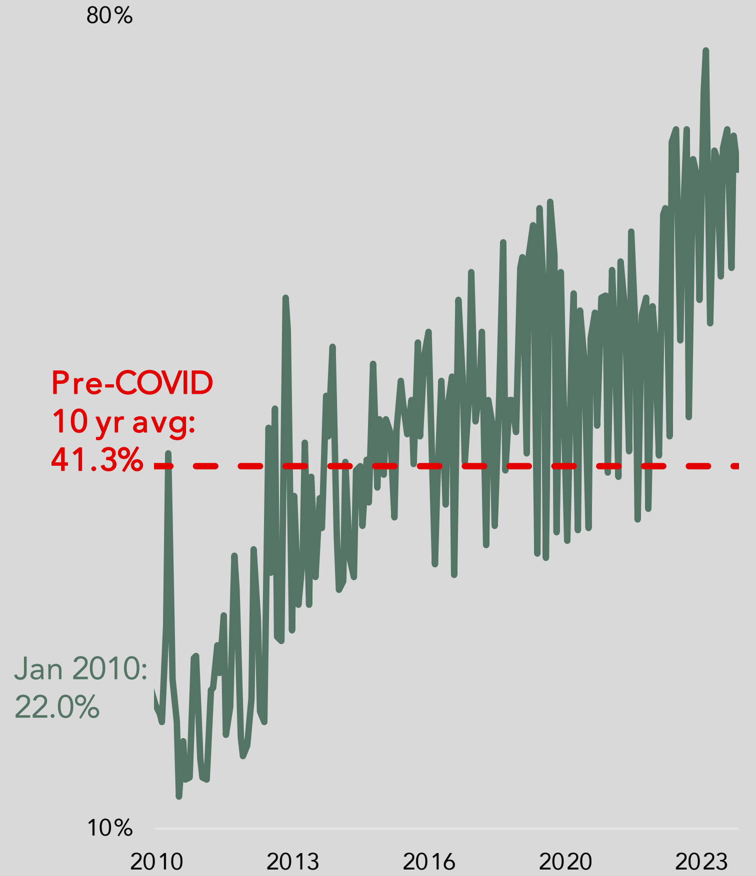
Investment Fund Purchases of USTs

Investment fund purchases of both the short and long end of the UST curve have been steadily rising for more than a decade now, and in particular, since the COVID crisis and Fed tightening cycle began.

Investment fund allotment of short duration (2-7yr)
US Treasury auctions



Investment fund allotment of long duration (10-30yr)
US Treasury auctions

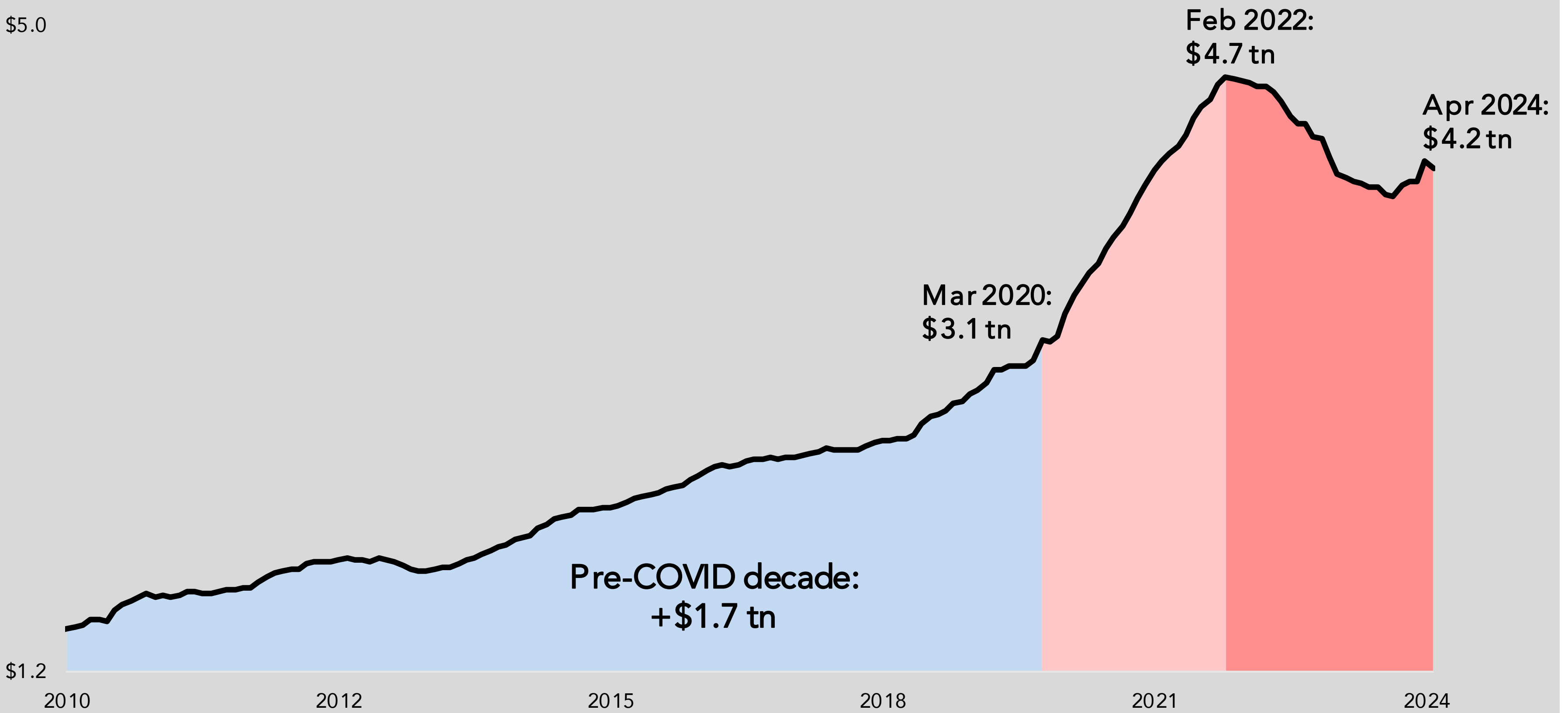


Source: (1-2) US Department of the Treasury. Data as of May 14, 2024.

COVID Era Increase in Regional Bank UST Holdings

Commercial banks significantly increased their holdings of US Treasury and agency securities during the COVID period. Those inventories peaked in early 2022 and have declined by more than $500 bn since.

Commercial bank holdings of treasury and agency securities, USD tn

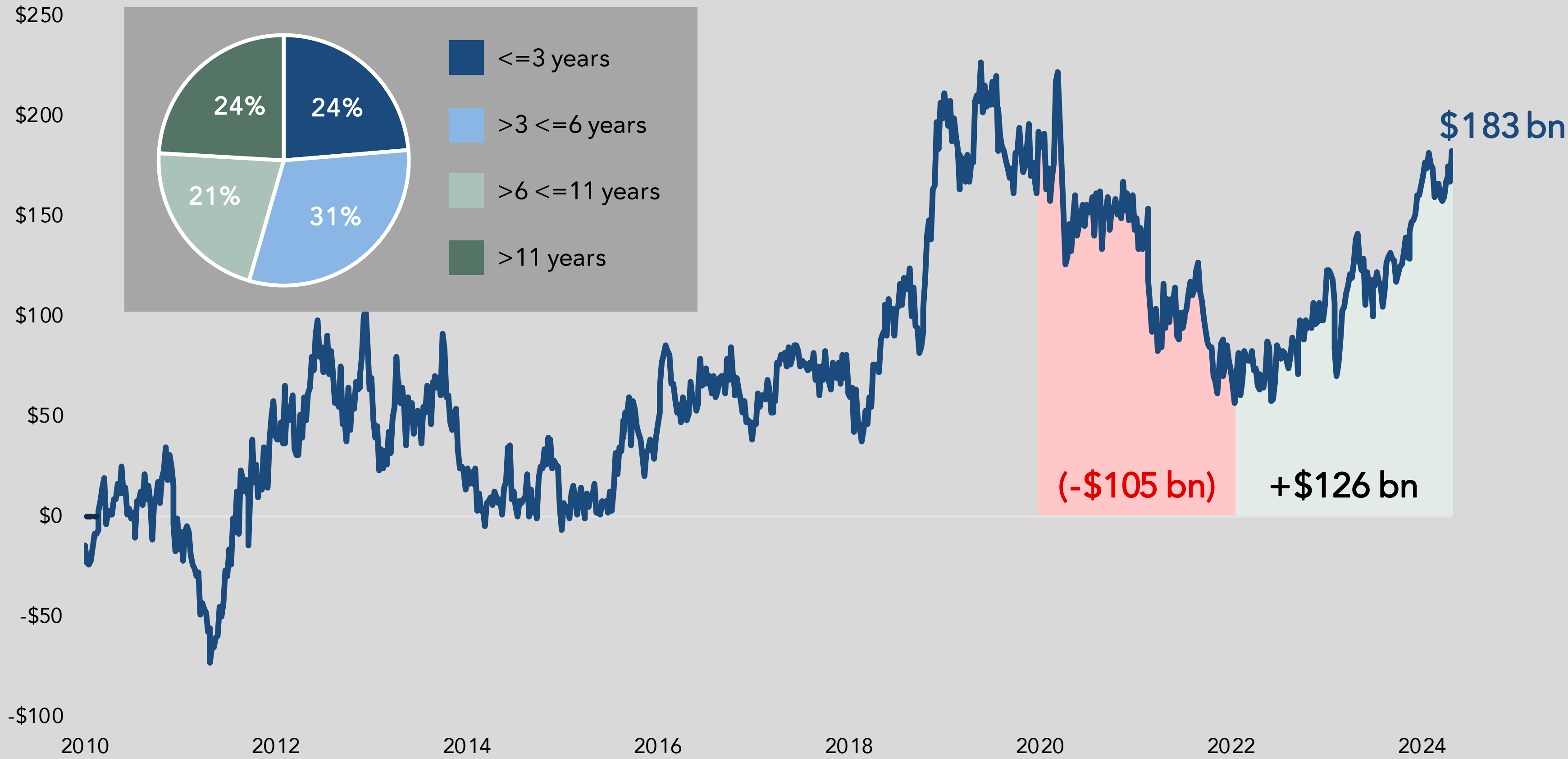


Source: (1) Federal Reserve Board. Data as of May 14, 2024.

Primary Dealers Holding Longer Dated Treasuries

Due in part to recent bank regulatory changes, primary dealer inventories of UST holdings have declined since their COVID-era peak, but the remaining inventories are heavily weighed to longer duration USTs.

Primary dealer positions in coupon treasuries by maturity, USD bn

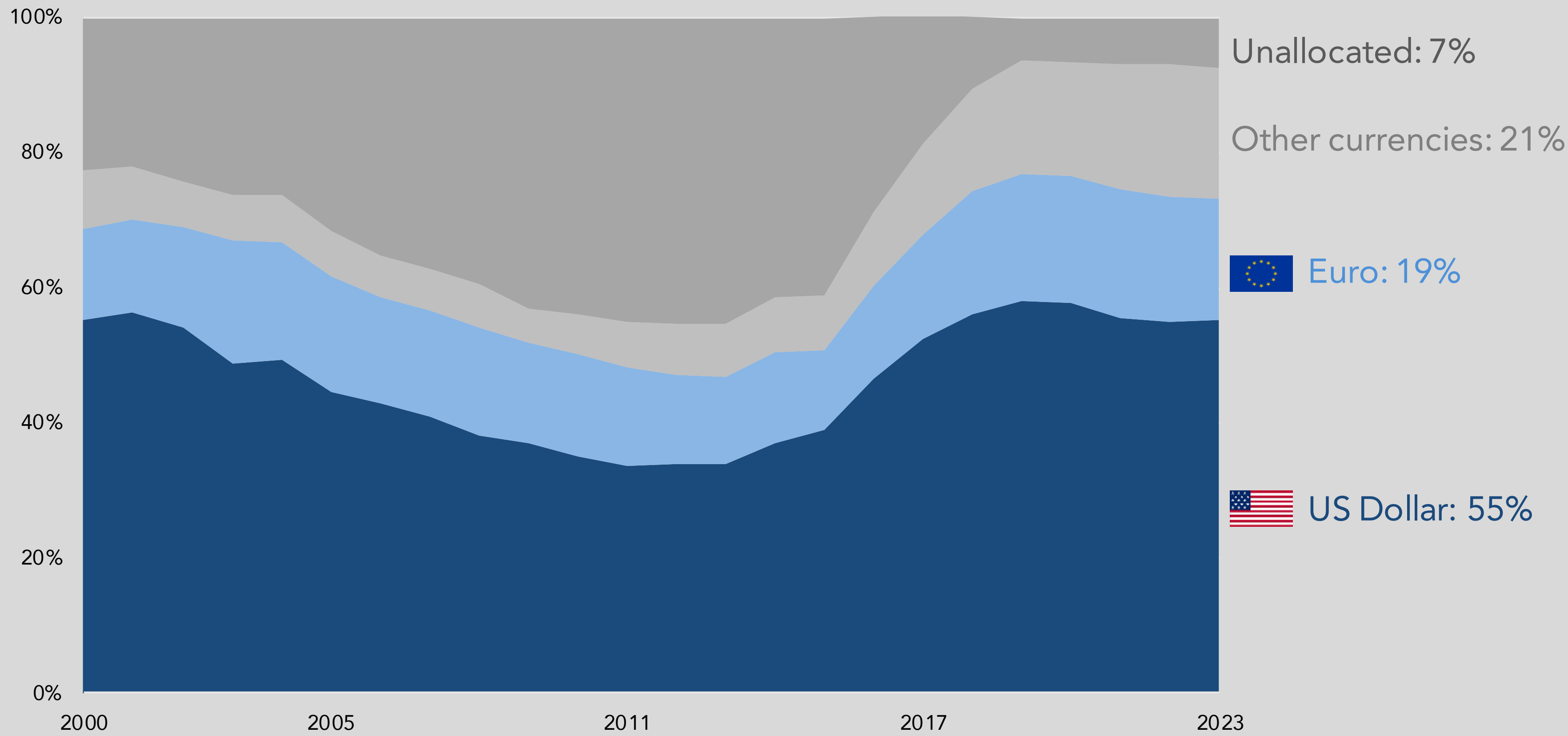


Source: (1) Federal Reserve Board. Data as of May 22, 2024.

About 55% of Global FX Reserves in USD

While multi-currency settlement has become more common in selected markets such as commodities, Central Bank FX reserves invested in US Dollars have held steady in the 50-60% range in recent years.

Reserves in different currencies

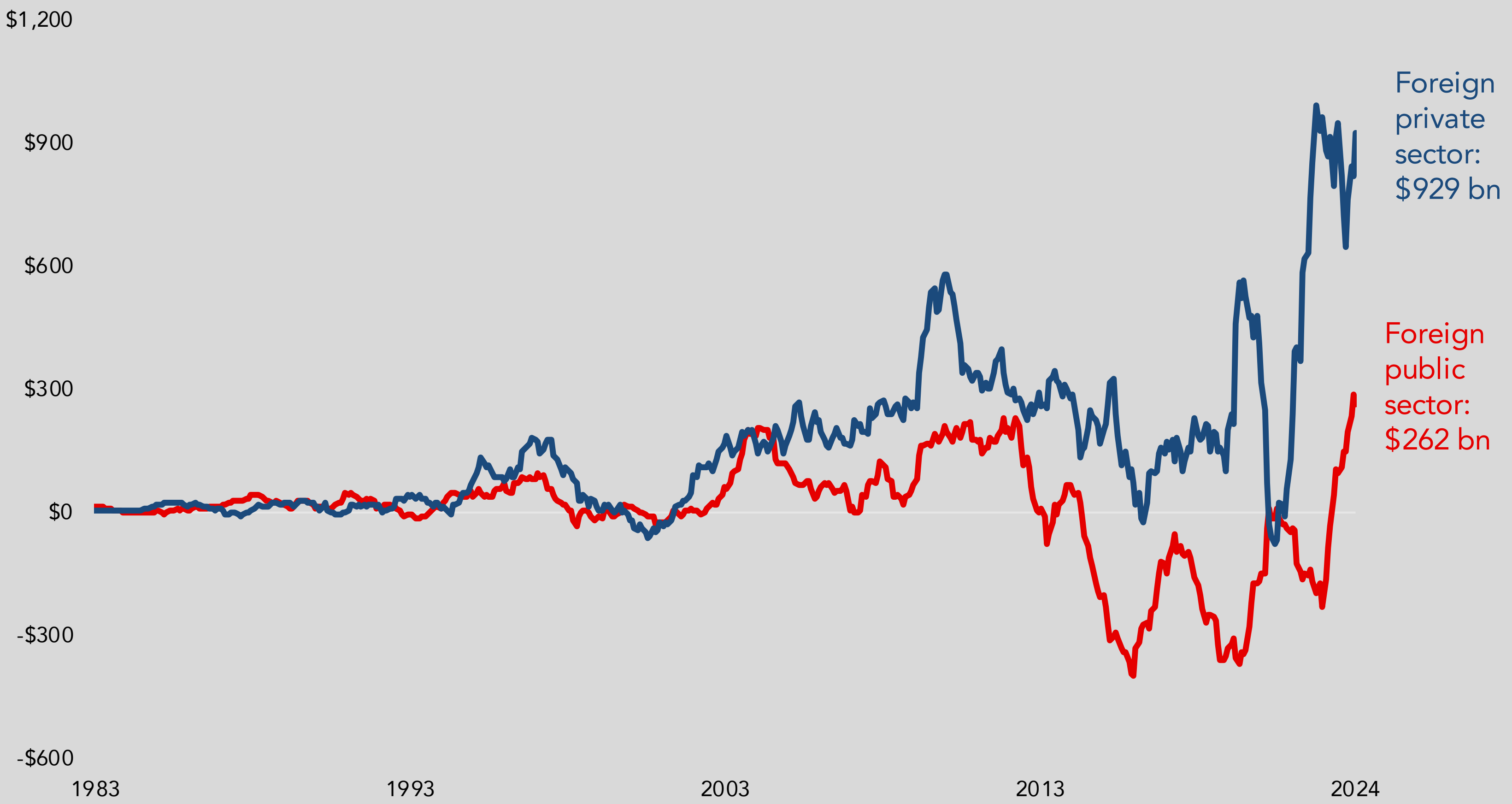


Source: (1) IMF COFER. Data through Q4 2023.

Rising Overseas Demand for USTs

Through much of 2023, foreign purchases of US Treasuries were driven by the private sector. However, in 2024, demand has increased from both public and private sector entities.

Foreign purchases of USTs by private / public sector, 12 month rolling sum (USD, bn)

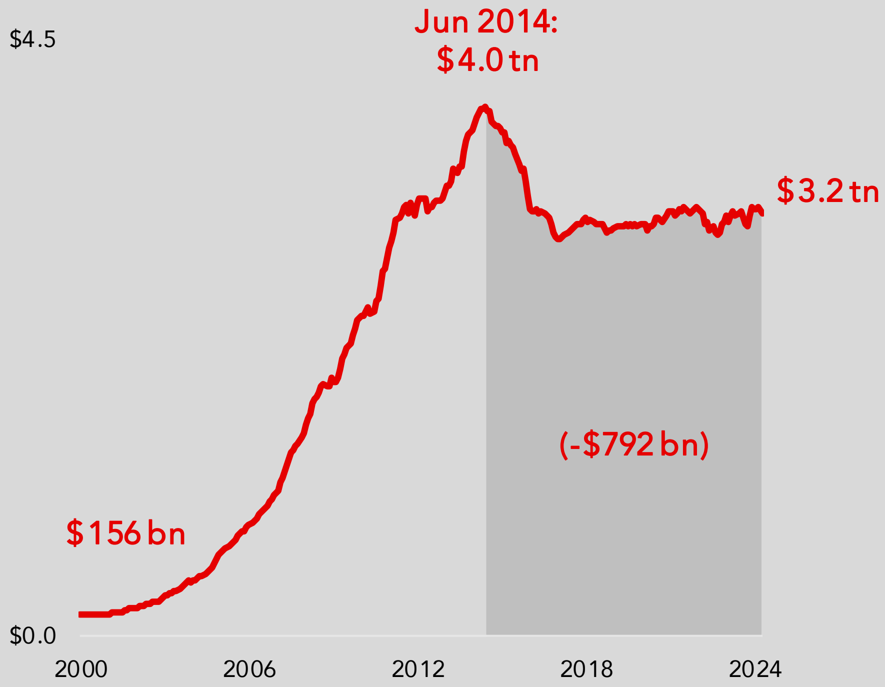


Source: (1) Bloomberg. US Treasury. MUFG US Macro Strategy. UST purchases include bonds and notes. Data through February 2024.

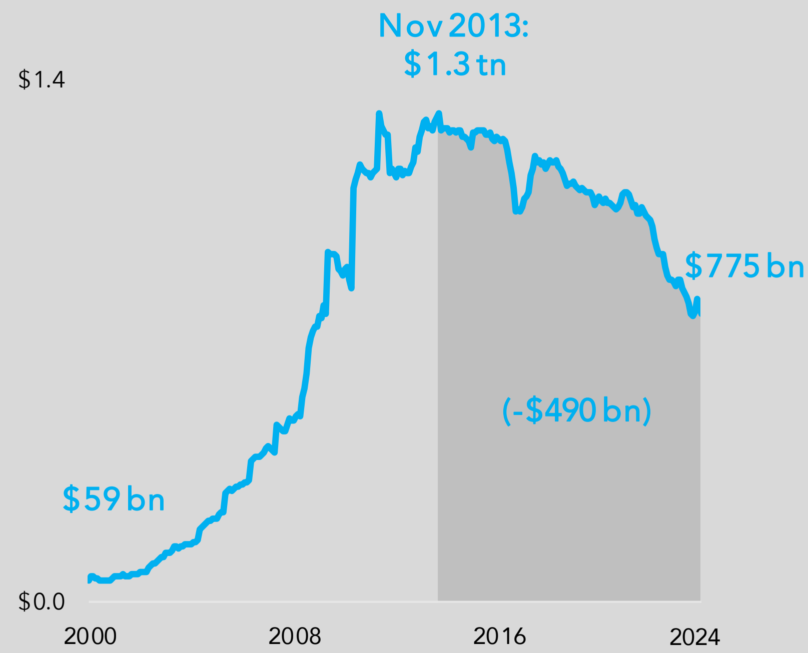
China's Recycling of Surpluses Into USTs

China's economy reached peak growth in approximately 2014, as their cumulative FX reserve balances also peaked at $4 trillion. As China's growth rate has slowed down over the past decade, and as Xi Jinping's "rebalancing efforts" toward more domestically-driven consumer growth unfolds, China's need to recycle surpluses into the large liquid UST market has also declined. We expect this directional trend to continue in the years ahead, and marginally increase as economic tensions between the US and China persist.

China's FX reserves, USD tn



China's UST holdings, USD tn

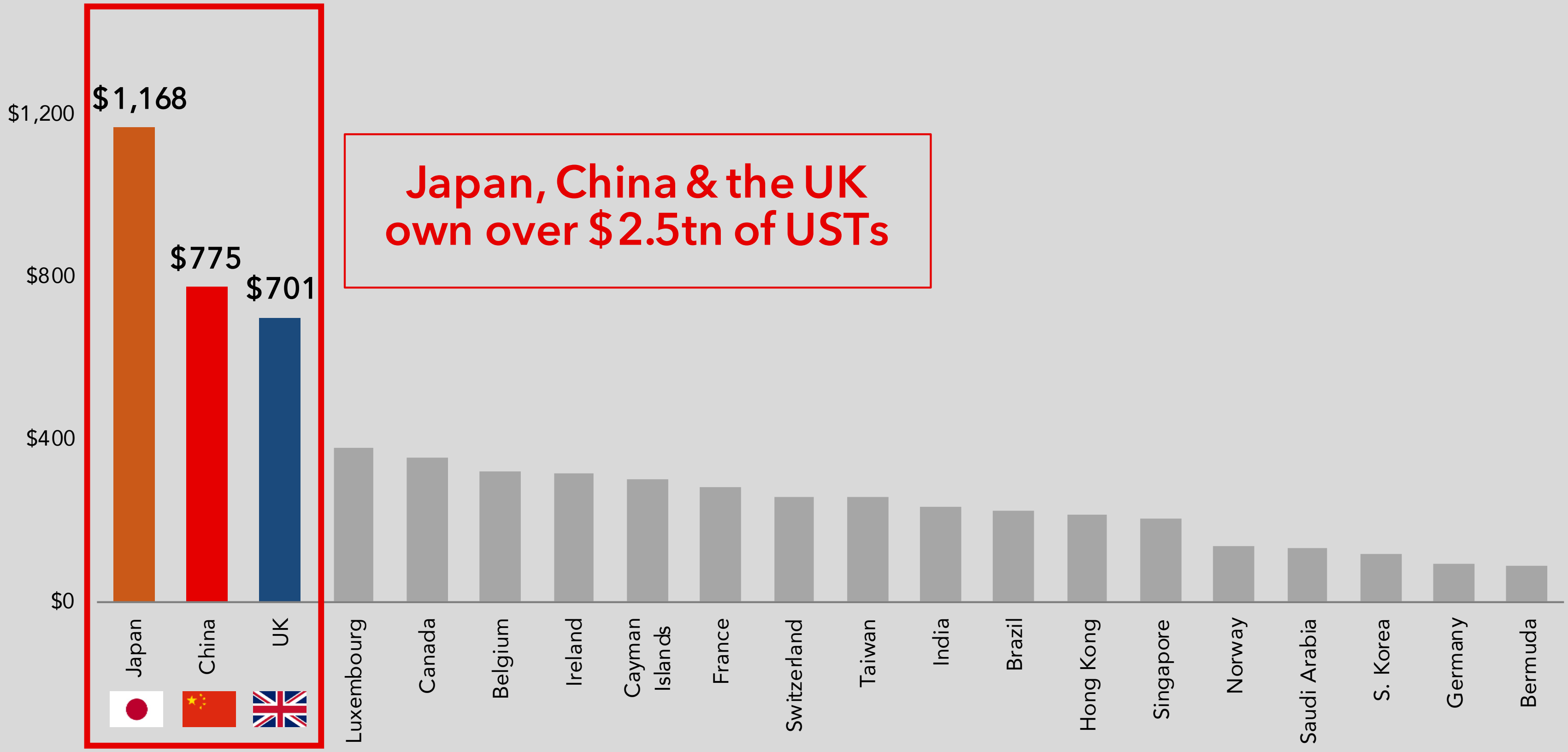


Source: (1-2) US Department of the Treasury. Data is latest available – April 2024. Reuters "China slips away from Treasuries but sticks with dollar bonds". Council on Foreign Relations "The Dollar: The World's Reserve Currency". World Bank. Central Bank of the Republic of China (Taiwan) With the exception of Taiwan, total comprise foreign exchange reserves held by monetary authorities, reserves held by the IMF, and IMF Special Drawing Rights. Bloomberg. Data as of May 14, 2024.

Largest Foreign Holdings of UST Securities

China's holdings of US Treasuries peaked in 2013 at $1.3 trillion. Despite selling over $100 bn in USTs over the past year, China is still the second largest foreign holder of US government debt. While data is not fully transparent, evidence suggests that UST sales by China have been offset by purchases of US agency debt and other USD bonds.

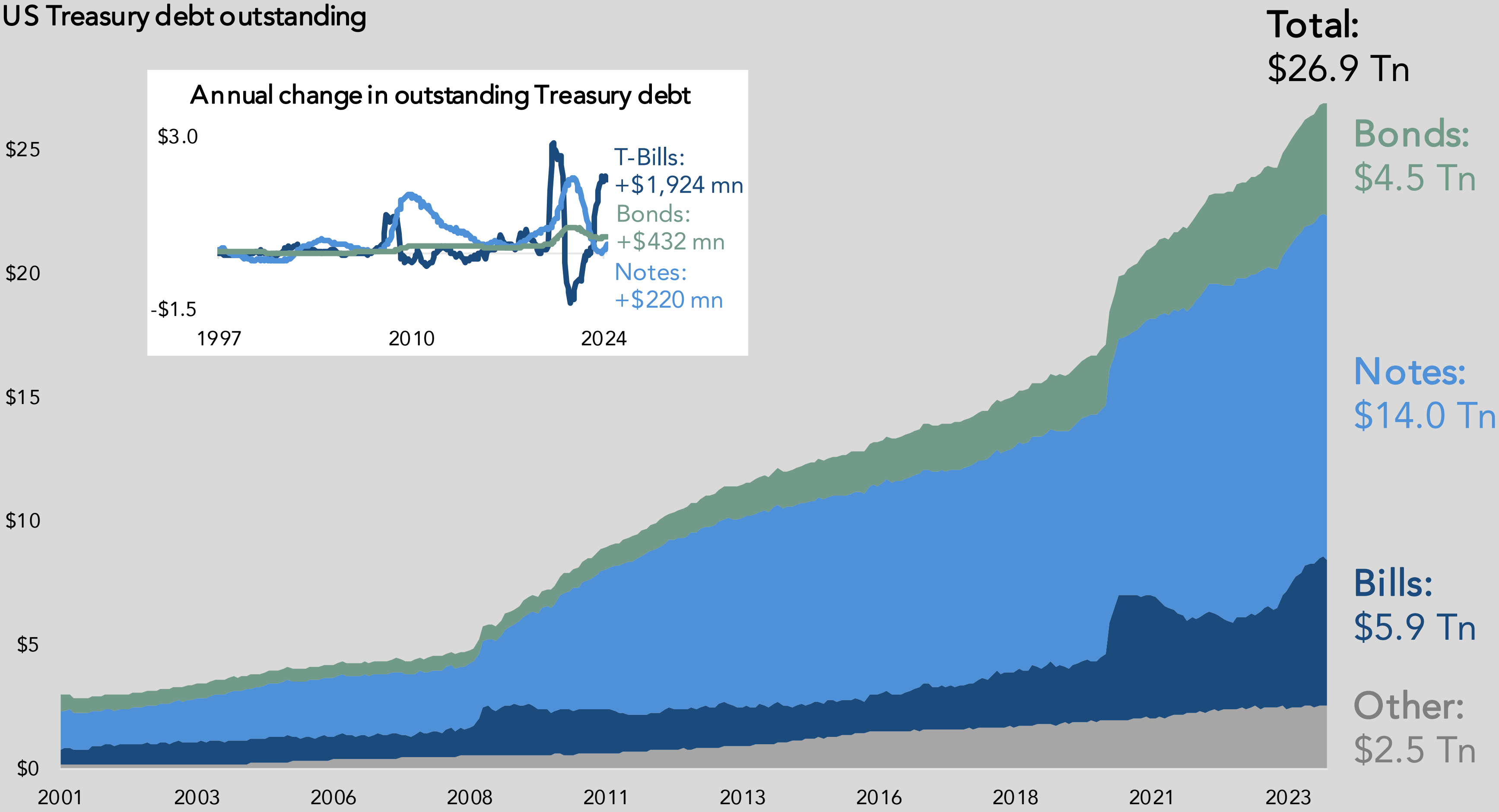
Foreign holders of US Treasury securities, USD bn



Source: (1) US Department of the Treasury. Data is latest available – February 2024. Reuters "China slips away from Treasuries but sticks with dollar bonds".

Shifts in US Treasury Supply

As the June 1, 2023 US debt ceiling approached, Secretary Yellen sharply increased the use of T-Bills to fund the US Gov't given constraints during that period. Historically, the level of term premium increases, and/or the curve steepens, when such supply shifts have occurred previously.



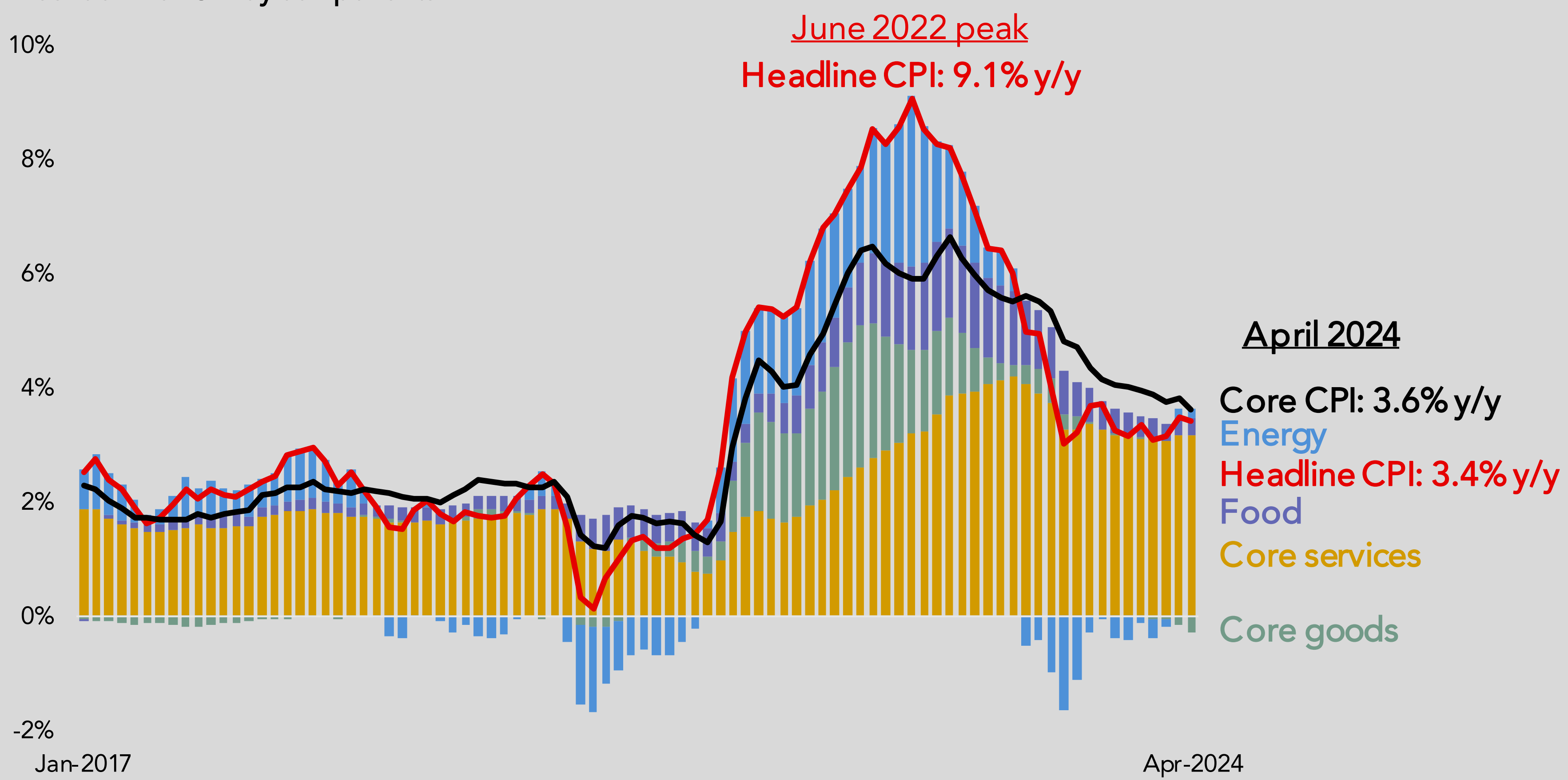
Source: (1-2) US Treasury. Total marketable debt outstanding. Data available through April 30, 2024.

Policy Inflection Points

Last Mile of Inflation Normalization Will be Slow

After three consecutive months of upside surprise, April data provided renewed market confidence that inflation is trending lower. However, sticky services and wage inflation will likely slow the pace of initial rate cuts and policy normalization (compared to prior cycles).

Breakdown of CPI by components

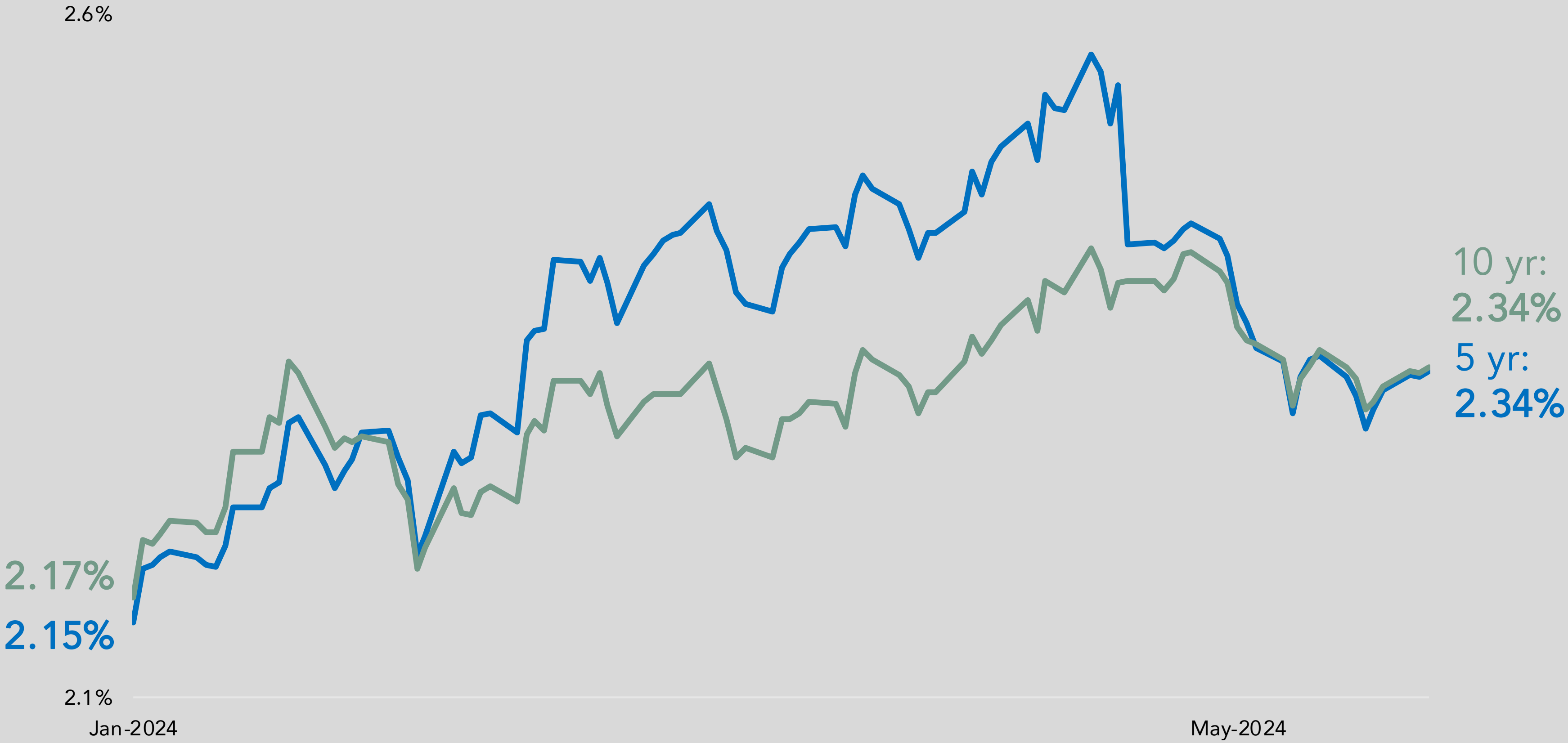


Source: (1) Bureau of Labor Statistics. CPI Report April 2024. Bloomberg. Data as of May 15, 2024.

Rising US Inflation Breakevens

Inflation breakevens peaked in April after consecutive months of upside inflation surprises drove a repricing of Fed policy and future inflation expectations. While 5 and 10 year breakevens have declined since their peak, they remain elevated relative to historical levels due to sticky services and wage inflation and higher energy prices.

5 and 10 year breakeven rates

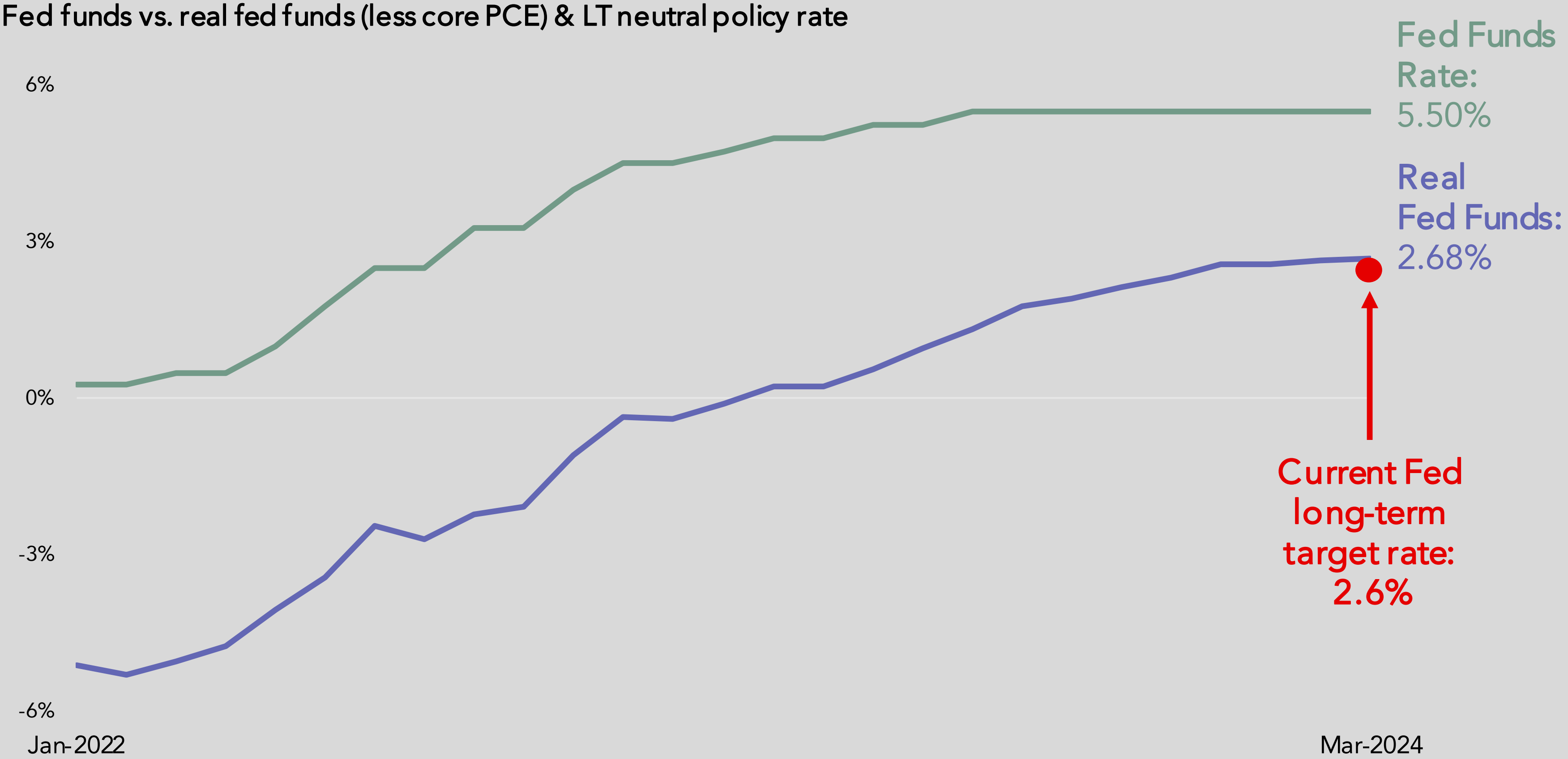


Source: (1) Bloomberg. Data as of May 22, 2024.

Fed Policy Entering Restrictive Territory

Real yields have unexpectedly risen YTD on resilient economic data, ultra-loose fiscal policy and tech-driven equity market strength. Nonetheless, spot and forward real rates suggest that current Fed policy has become too restrictive. In fact, the Fed's current policy rate is double its own long-term projections of neutral Fed funds.

Fed funds vs. real fed funds (less core PCE) & LT neutral policy rate

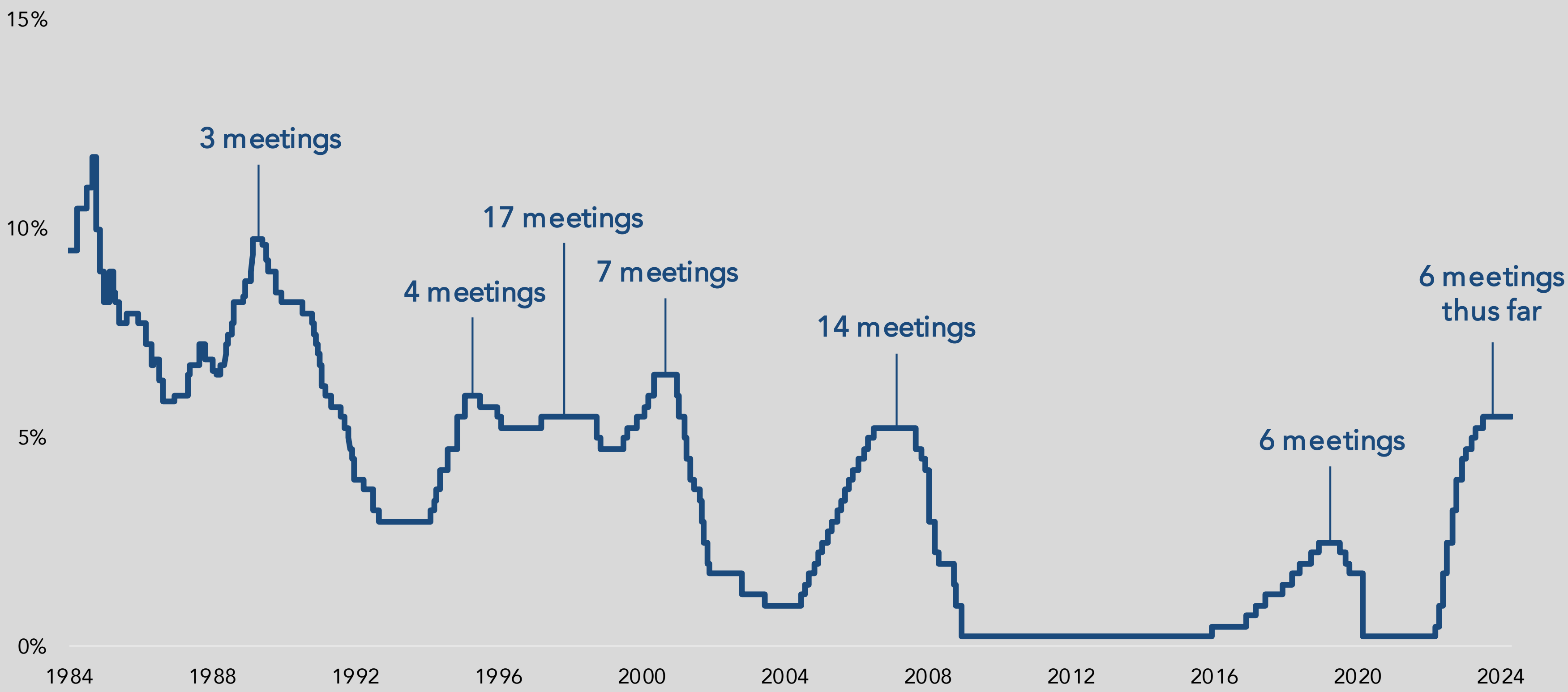


Source: (1) Bloomberg. Fed funds is upper bound. Core PCE is y/y. Data as of May 13, 2024.

Fed Policy Path Remains Uncertain

Despite real rates already in restrictive territory, the path for Fed policy easing, policy divergence and US rates remain highly uncertain in 2024 and beyond.

Fed funds and length of previous Fed rate pauses

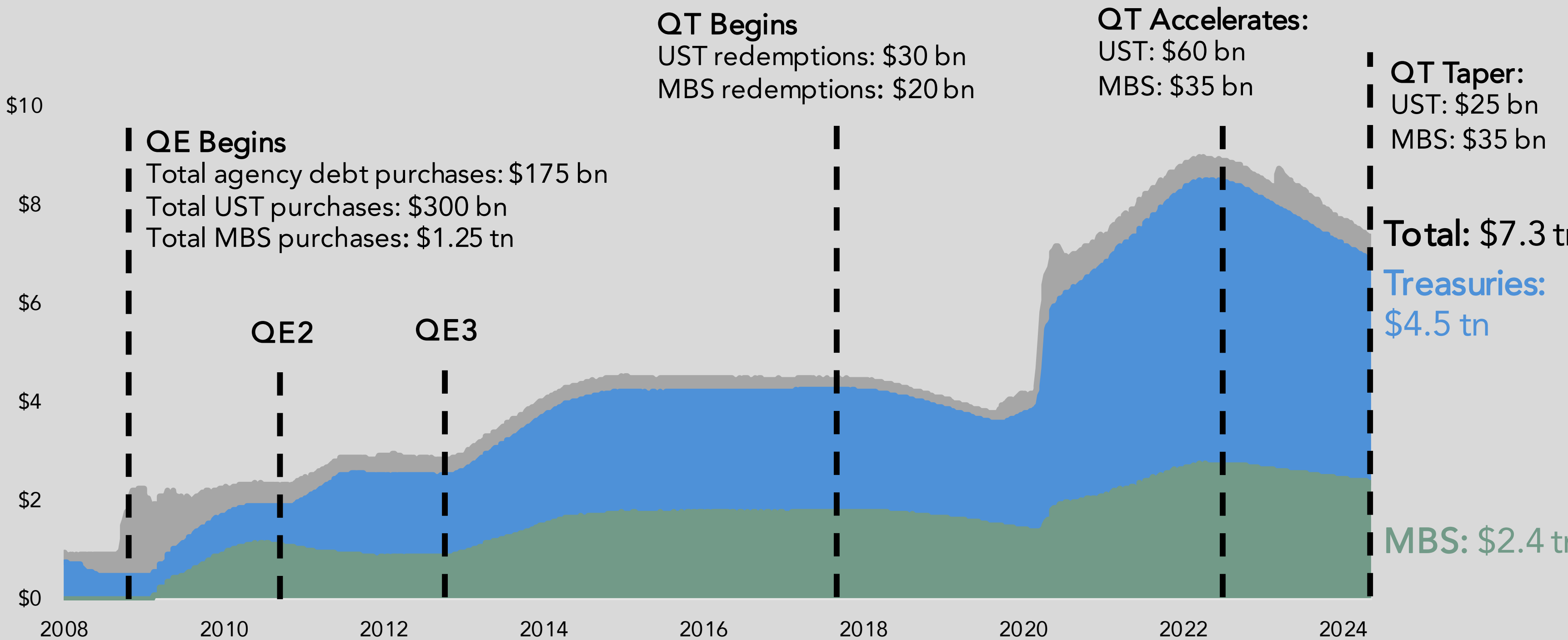


Source: (1) Bloomberg. Data as of May 6, 2024. Fed funds is upper bound.

From QE to QT to QT Taper

MUFG's Head of Macro Strategy, George Goncalves, estimates that the Fed's balance sheet reduction via quantitative tightening (QT) has effectively increased funding costs by 100 bps. In their May meeting, the Fed announced a much anticipated tapering of the QT program by outlining a plan to reduce the monthly redemption cap on Treasuries from $60 bn to $25 bn while maintaining the monthly redemption cap on agency debt and MBS at $35 bn and reinvest any principal payments in excess of this cap into Treasuries. The pivot effectively reduces the pace of balance sheet reduction from a maximum $95 bn per month to a maximum of $60 bn a month.

Fed balance sheet, USD tn

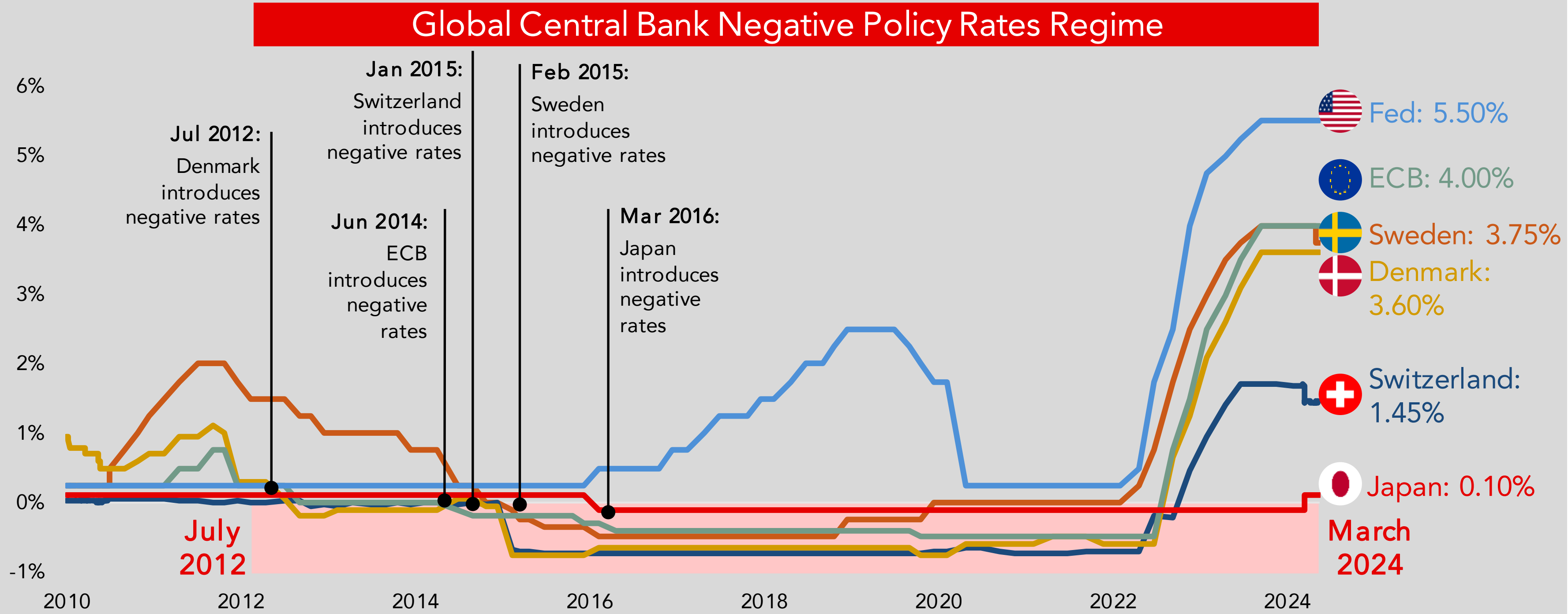


Source: (1) MUFG, "QT Taper Train Has Left the Station (cuts next)", "Walking a Tightrope: We're locking on macro divergences" (George Goncalves).

The End of Negative Interest Rate Policy (NIRP)

The grand experiment of negative interest rate policy (NIRP) began in 2012 when Denmark became the first central bank to go negative in July of that year. Sweden was the first to exit NIRP in December 2019, though kept policy rates at 0% (ZIRP) until April 2022. It took a full decade for other G10 central banks to abandon the NIRP policy regime, led by the ECB in July 2023, Denmark and Switzerland in September 2023, and finally Japan in March 2024. Notably, the historic BOJ policy shift was multi-faceted in: (i) raising their policy rate band to 0%-0.1%; (ii) ending yield curve control (YCC), and (iii) announcing an end to ETF & REIT purchases, a gradual reduction in corporate bond purchases and a continuation of JGB buying (with tapering intent in future).

Central bank policy rates

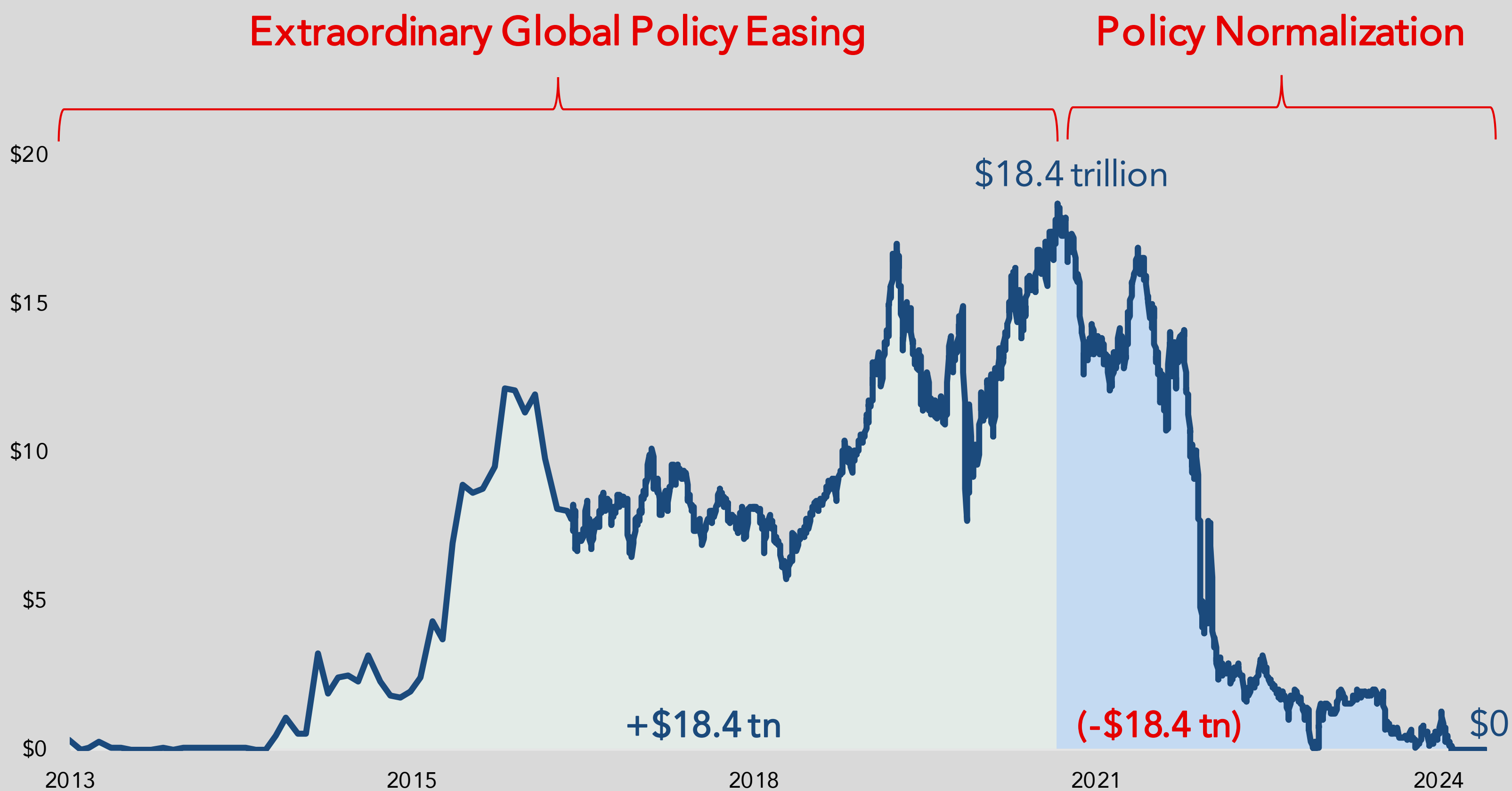


Source: (1) Bloomberg. Data as of May 22, 2024. US is Fed Funds upper bound. ECB is deposit facility. Denmark is interest rate on certificates of deposit. Japan is unsecured overnight call rate upper bound. Switzerland is the overnight repo rate. Sweden is the repo rate.

Global Negative Rate Experiment Over (For Now)

Global negative yielding debt peaked around $18 trillion during the peak US-China trade wars and COVID crisis period, but has since declined to zero as global central banks pivot to a new era of global policy normalization.

Global aggregate negative yielding debt, market value, USD tn

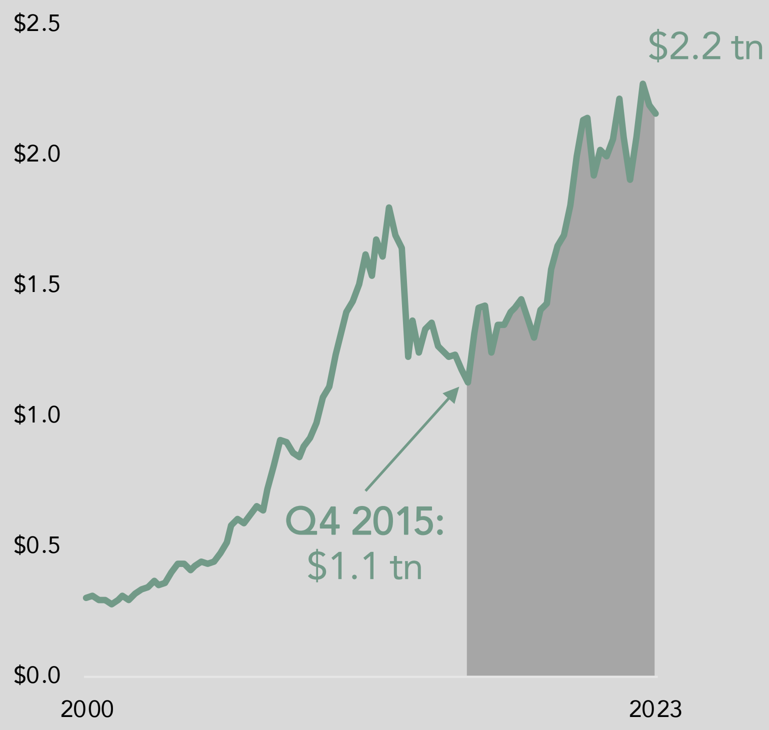


Source: (1) Bloomberg. Data as of May 22, 2024.

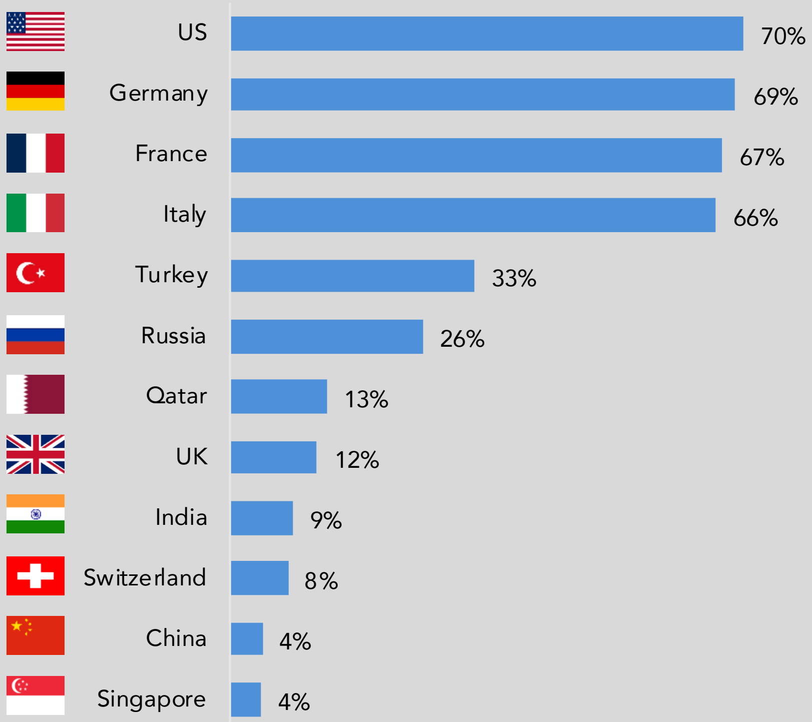
Global Central Bank Gold Holdings Rising

Since 2010, global central banks have purchased nearly 8,000 tons of gold to bring global CB holdings to over 36,700 tons worth over $2 trillion. EM central banks have been the largest net buyers over that time period as they attempt to diversify away from US dollar reserves. China's PBOC was the largest single buyer of gold in 2023, though with gold representing only 4% of total reserves, they still have room for further diversification.

Global central bank gold holdings, USD tn



Central bank gold holdings as a % of total reserves

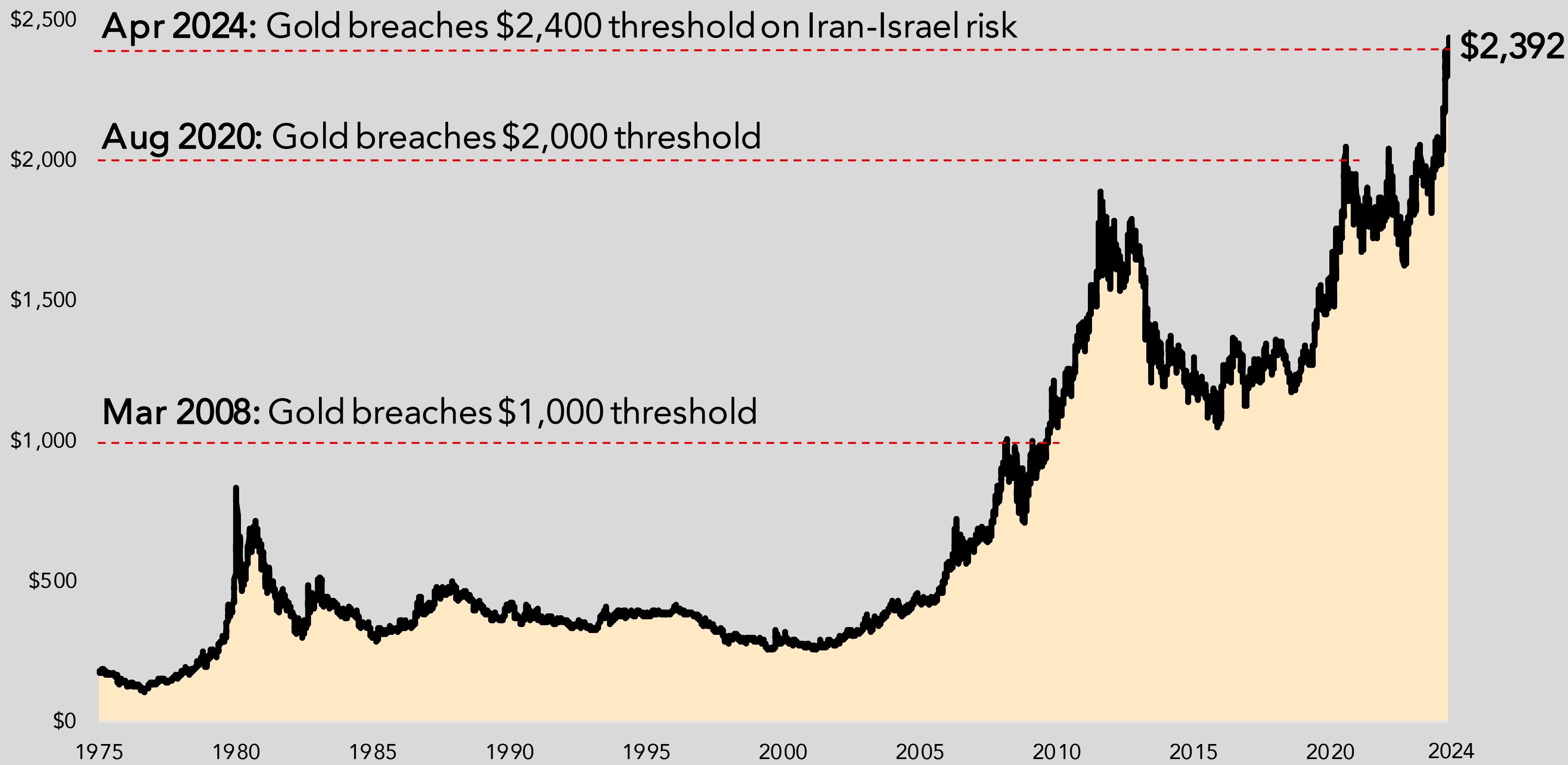


Source: (1-2) Source: Metals Focus, Refinitiv GFMS, World Gold Council. "Gold Demand Trends - Full Year and Q4 2023." *Metals Focus, Refinitiv GFMS, World Gold Council. "Gold Demand Trends - Full Year and Q4 2023." Oxford Economics "Closing our tactical long on gold, but we're still bullish".*

Global Demand Driving Gold to Record Highs

Gold has continued its sharp rise in 2024, breaching the $2,400 threshold for the first time on Friday, April 12th, the eve of Iran's direct missile response on Israel. While numerous factors have contributed to the sharp rise in gold prices (central bank purchases, China's consumer), there is nonetheless a sizeable geopolitical risk premium in gold's recent surge.

Gold price per ounce



Source: (1) Bloomberg. Data as of May 22, 2024.

Policy Easing Typically Precedes the Recession

Historically, policymakers rarely wait for recessions to arrive before cutting policy rates. The market is currently pricing the first full Fed rate cut in November 2024.

Federal Reserve Easing Cycles Since 1980

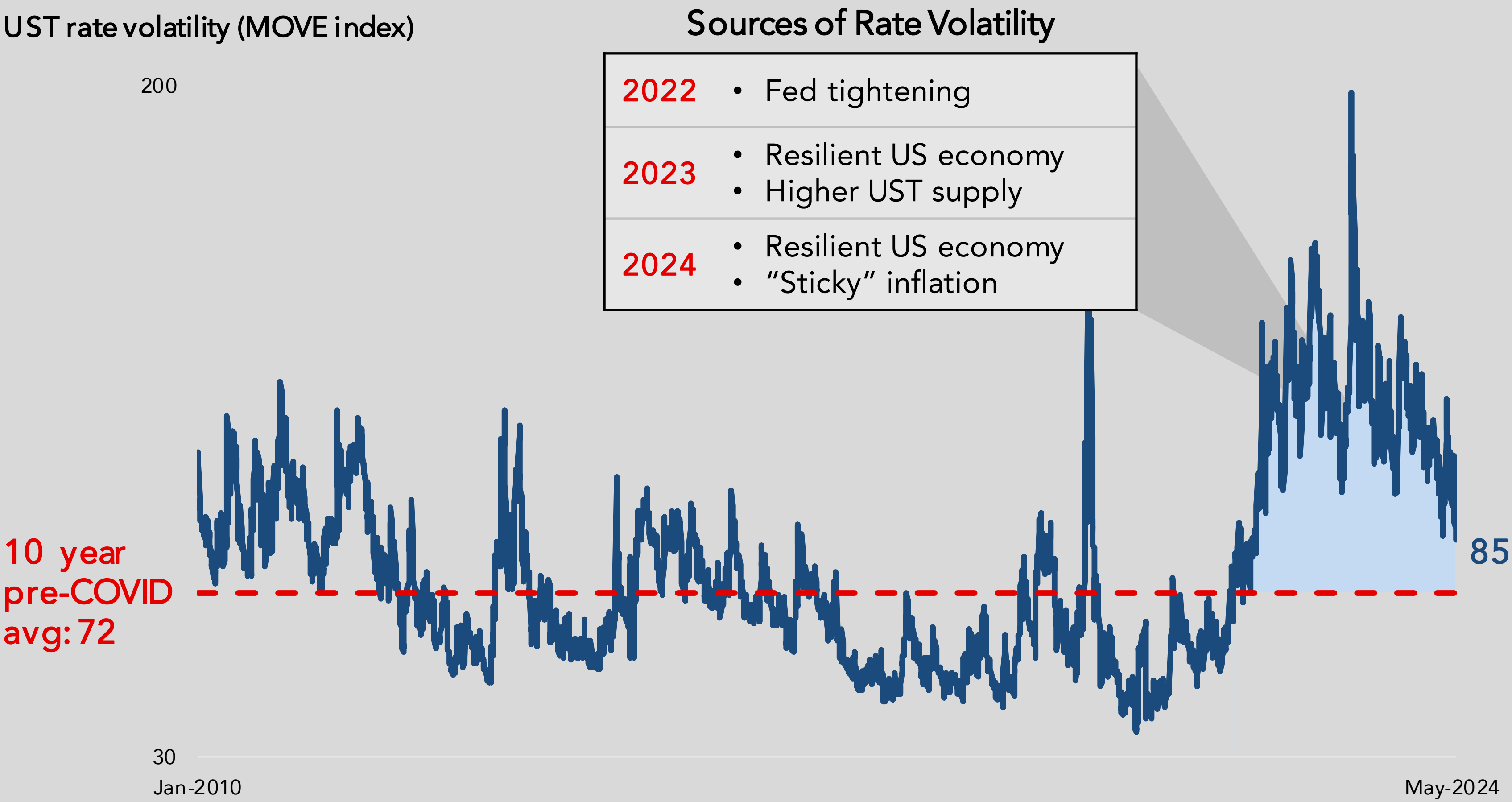
Date of Last Rate Hike	Total Rate Cuts in 12 months After Last Rate Hike	Total Rate Cuts Over Entire Easing Cycle	Time Between Last Rate Hike & First Rate Cut	Time Between Last Rate Hike & Start of Recession
May 1981	200 bps	550 bps	5 months	2 months
May 1984	119 bps	350 bps	6 months	**Soft Landing**
Feb 1989	150 bps	675 bps	3 months	17 months
Feb 1995	75 bps	75 bps	5 months	**Soft Landing**
Mar 1997	0 bps	75 bps	18 months	48 months
May 2000	250 bps	550 bps	8 months	10 months
Jun 2006	0 bps	500 bps	15 months	18 months
Dec 2018	75 bps	225 bps	7 months	14 months
Median	**97 bps**	**425 bps**	**7 months**	**18 months**

Source: (1) Bloomberg. Fred Economic Data St. Louis Fed. Note: Discount rate used before 1988. Fed Fund based on upper bound.

D. Market Inflection Points

New Era of Higher UST Rate Volatility

US rate volatility has been elevated for most of the Fed's tightening cycle. Today, a resilient US economy and "sticky" inflation are driving a repricing of market expectation for the Fed and creating higher volatility across the curve.

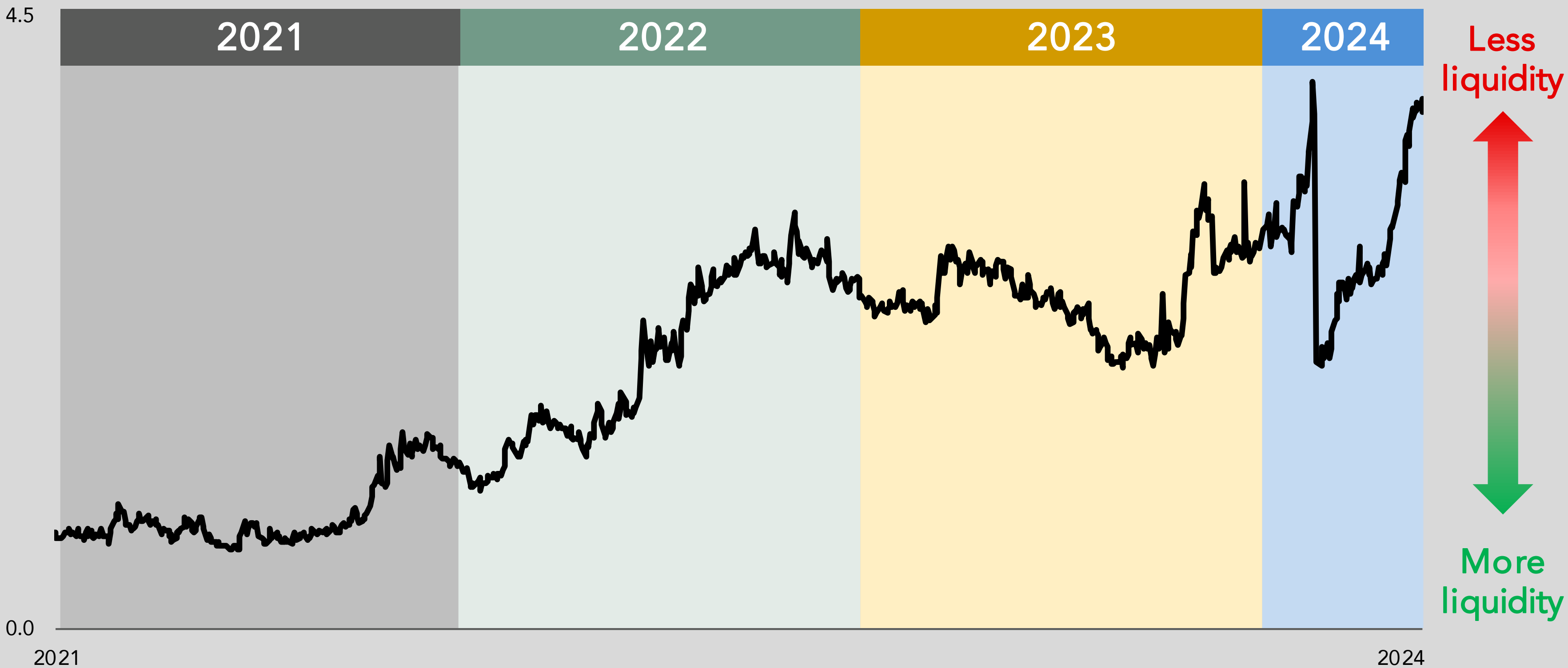


Source: (1) Bloomberg. Data as of May 22, 2024.

Low Liquidity Correlated With Risk & Term Premium

Historically, liquidity in the US Treasury market and risk / term premium tend to move together. Liquidity in the world's largest bond market has tightened sharply since 2022 as a result of: (i) banks carrying less inventory due to regulatory constraints; (ii) elevated rate volatility on policy tightening; (iii) Fed QT; and (iv) underperformance of the asset class as rates rise.

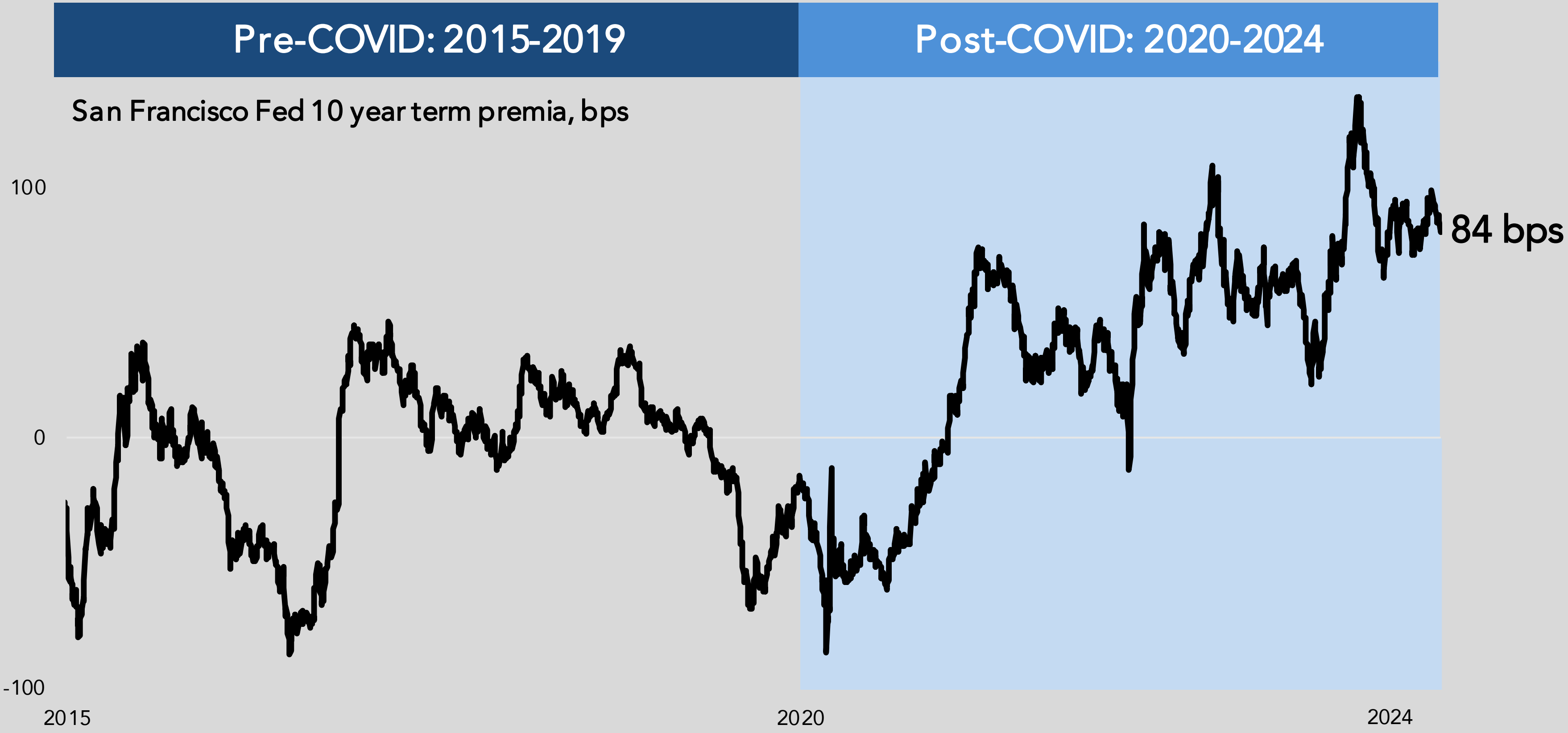
US government securities liquidity index



Source: (1) Bloomberg. Data as of May 22, 2024.

New Era of Higher Term Premia

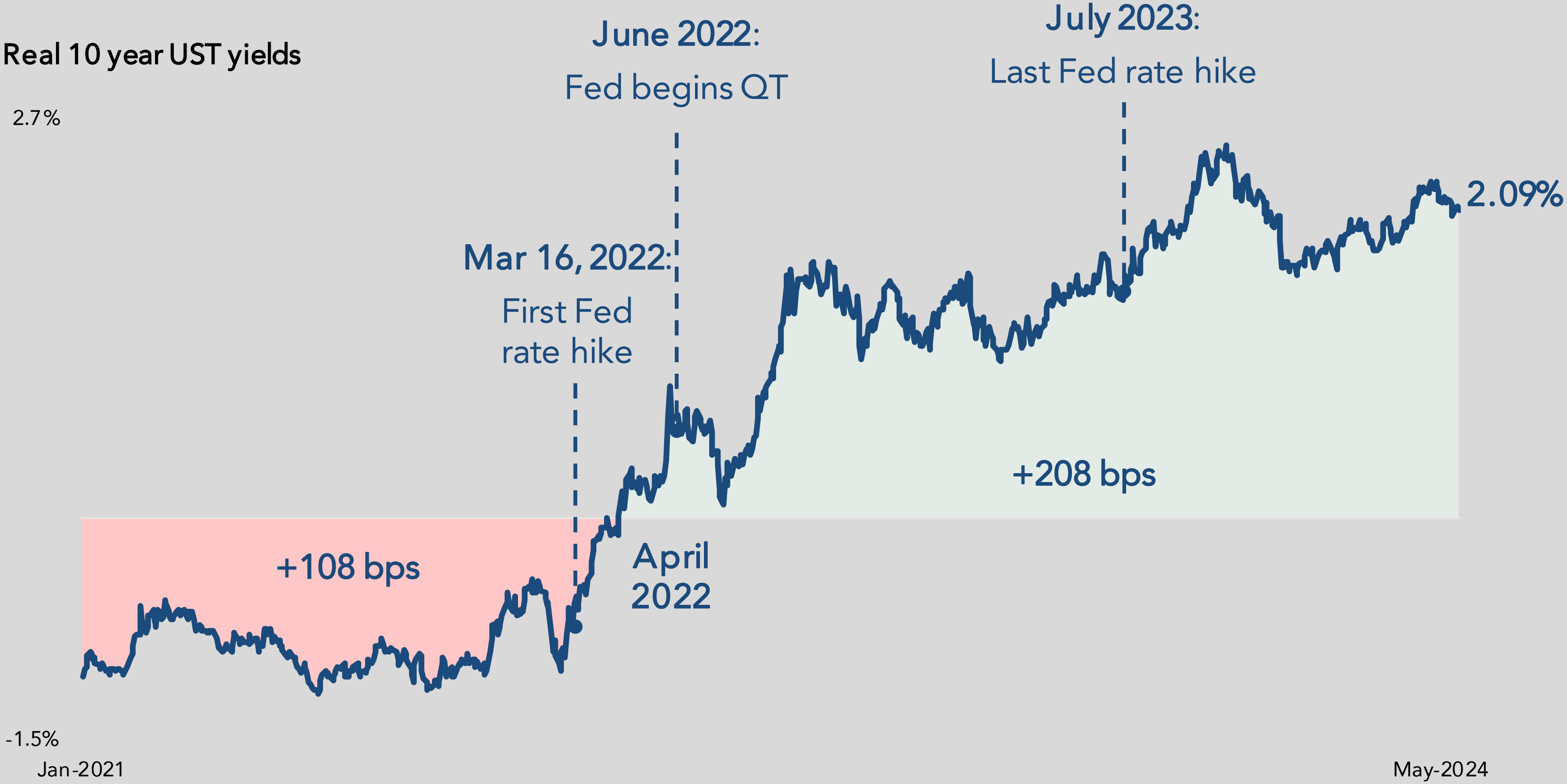
Post COVID, we have entered a new era of fiscal dominance, with elevated structural deficits likely to continue for the rest of the decade. This, in turn, will complicate the Fed's reaction function, contributing to higher rate volatility and elevated term premia. According to Oxford Economics, term premia, as measured by the Federal Reserve Bank of San Francisco's index, is now set to trade in a higher 75-100 bps range in the post-pandemic era, up from the 25-50 bps range in the prior "secular stagnation" period.



Source: (1) Oxford Economics. Bloomberg. Data as of May 22, 2024. Term premia is San Francisco Fed 10 year Treasury yield zero coupon.

Real Rates Elevated Even After The Pause

Since the Fed began its accelerated "double tightening" (raising rates, reducing balance sheet) in March 2022, and as the economy has shown resilience with inflation declining, US "real" rates have moved more firmly positive. With "real" rates elevated during a "higher for longer" Fed pause, assessing the impact of "sufficiently restrictive" becomes more challenging.

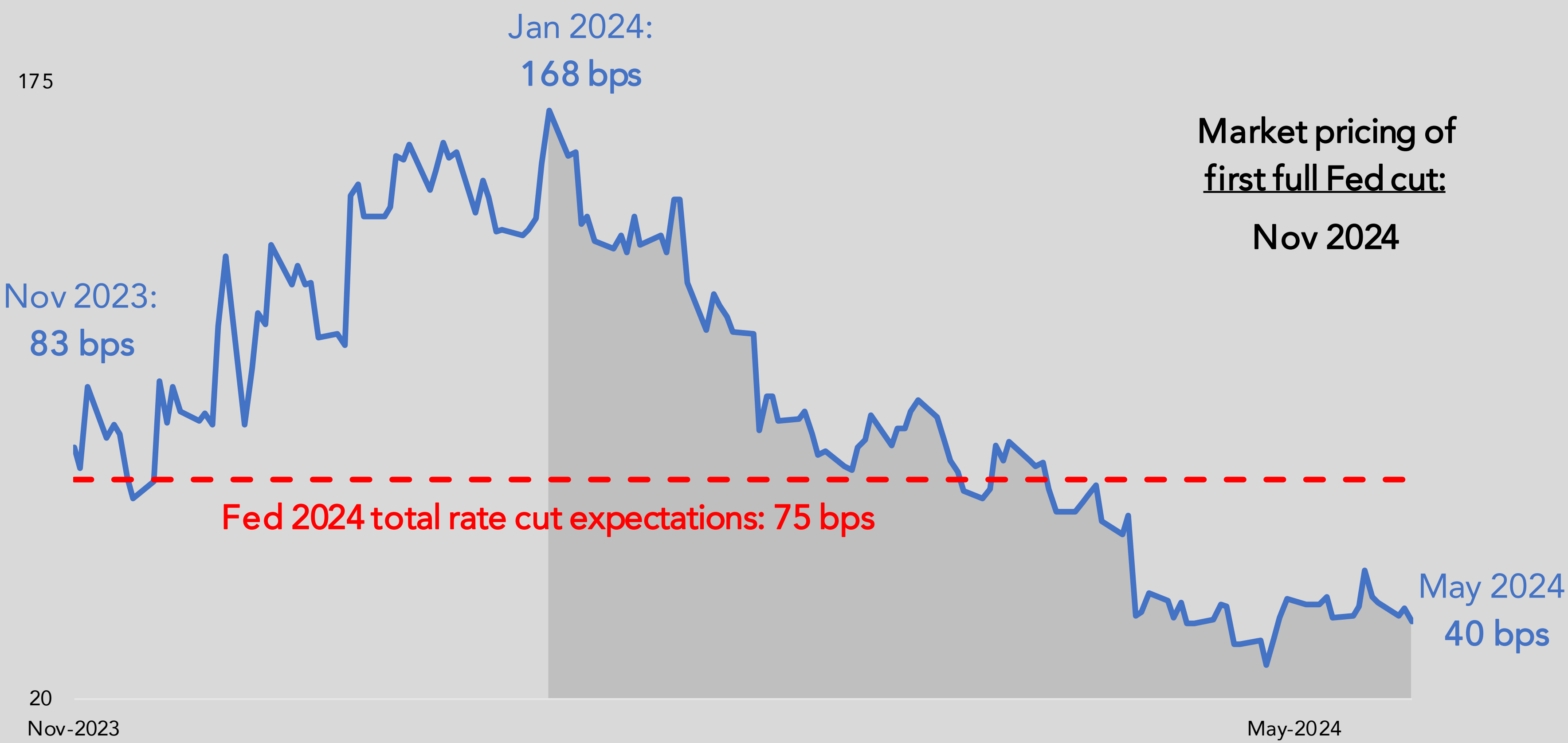


Source: (1) Bloomberg. Data as of May 22, 2024.

Market More Hawkish Than The Fed

In early January, market implied rate cut expectations for 2024 were more than double the Fed's forecast of 75 bps. Following strong US economic data and multiple "hotter-than-expected" inflation reports, market expectations have become more hawkish, pricing in less than 50 bps of rate cuts in 2024, with the first full Fed rate cut not priced until Q4, after the US election.

Market implied total 2024 Fed rate cut expectations, bps

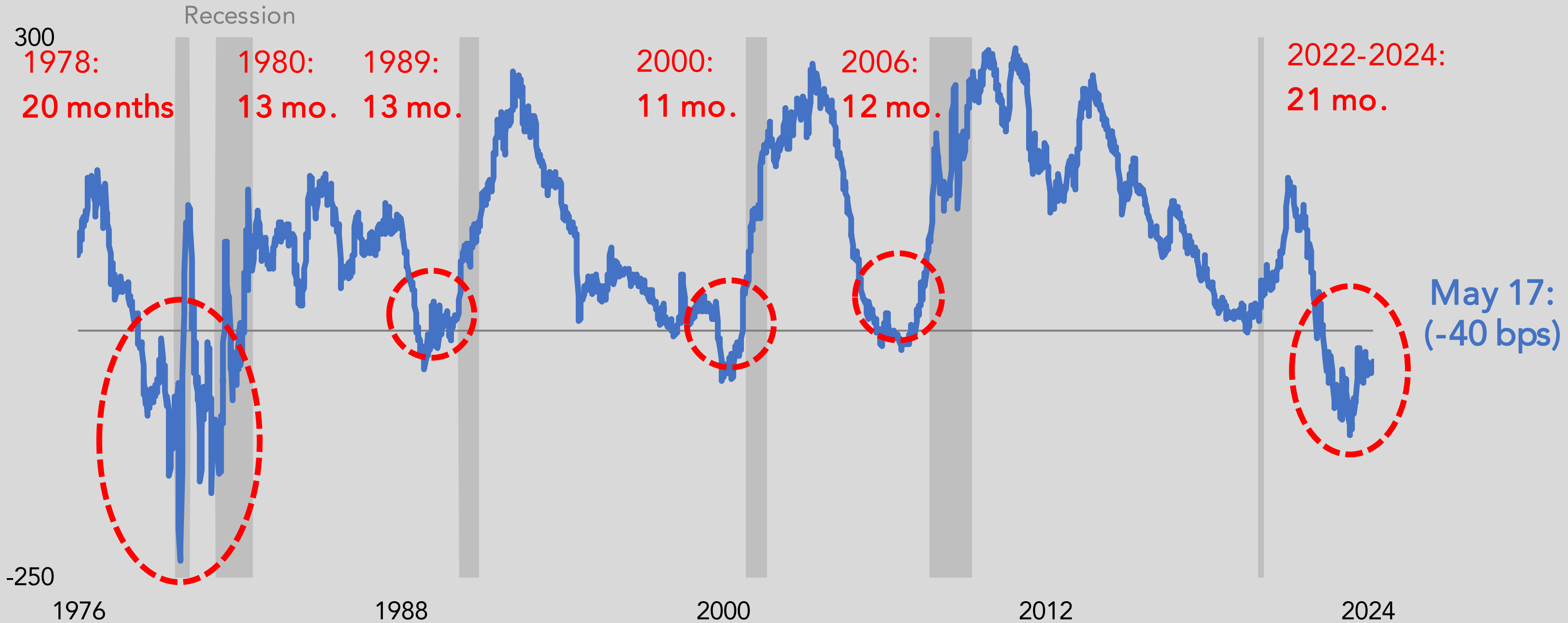


Source: (1) Bloomberg. Data as of May 22, 2024.

Longest Curve Inversion in 50 Years

Solid US economic and inflation data have extended the period of US yield curve inversion to the longest in 50 years, thereby rendering this historically reliable predictor of US recession timing less accurate in the current economic cycle. The recent rise in energy prices has also contributed to the increase in inflation expectations as well as the duration of curve inversion. While gradual and continued dis-inversion of the yield curve is the most likely path from here, whether or not the curve breaks free from inversion in late 2024 or early 2025 will ultimately depend on the timing and pace of Fed policy easing.

Incidents of 2s10s UST yield curve inversion since 1976

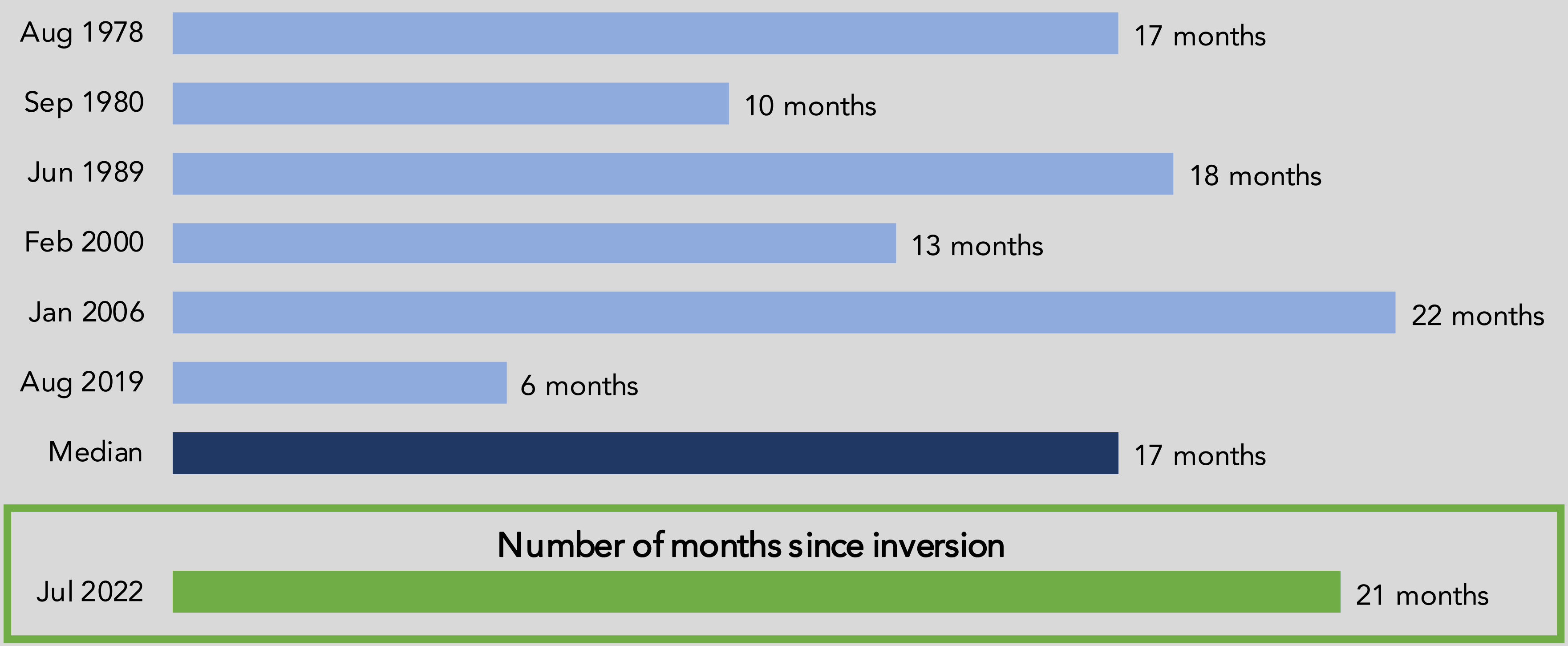


Source: (1) Bloomberg. Data as of May 22, 2024.

Less Reliable Recession Signal In Current Cycle

Historically, inversion of the UST yield curve has been among the more accurate signals, with reasonably few false positives, of US recession timing. On average, US recessions have followed approximately 12-18 months after initial inversion. Due to a range of largely unanticipated factors - less rate sensitive US economy, post COVID imbalances (i.e., excess stimulus and savings, tight labor markets) and range-bound energy prices - the current inversion period has well exceeded historic timelines for US recession timing following the moment of initial yield curve inversion.

Number of months between yield curve inversion and start of recession

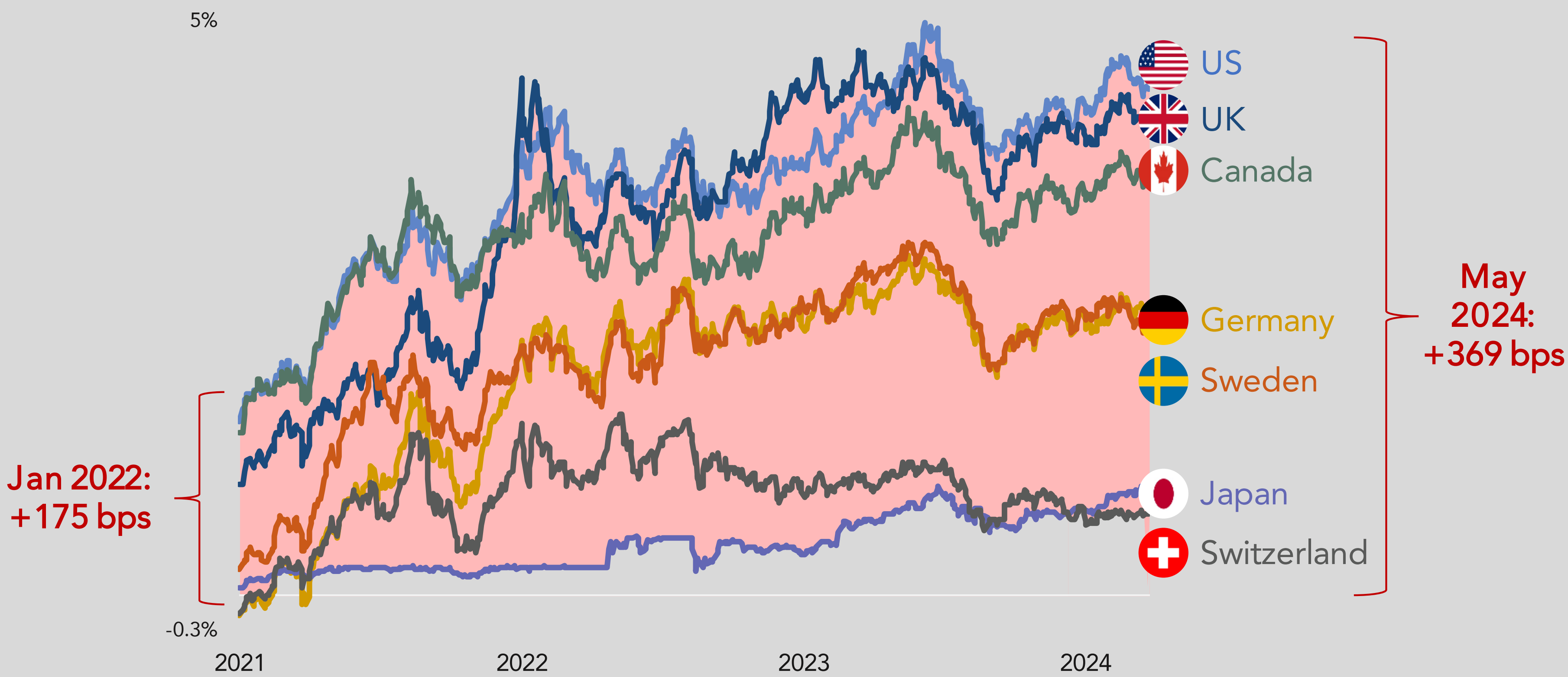


Source: (1) Bloomberg. Data as of May 1, 2024.

Highest US Yield Differential - USD Index Correlation Since 1988

Resilient US economic data has driven a persistent repricing of Fed easing expectations in 2024, and a related widening in rate differentials, that has underpinned more US Dollar strength than anticipated earlier in the year. In fact, MUFG's Head of Research, Derek Halpenny, notes that the correlation between US 10 year yield spreads and USD Index currencies (Euro, Yen, Sterling, CAD, Swedish Krona and Swiss Franc) is the strongest in the history of available data going back to 1988 (having hit a new record of 0.73 in May).

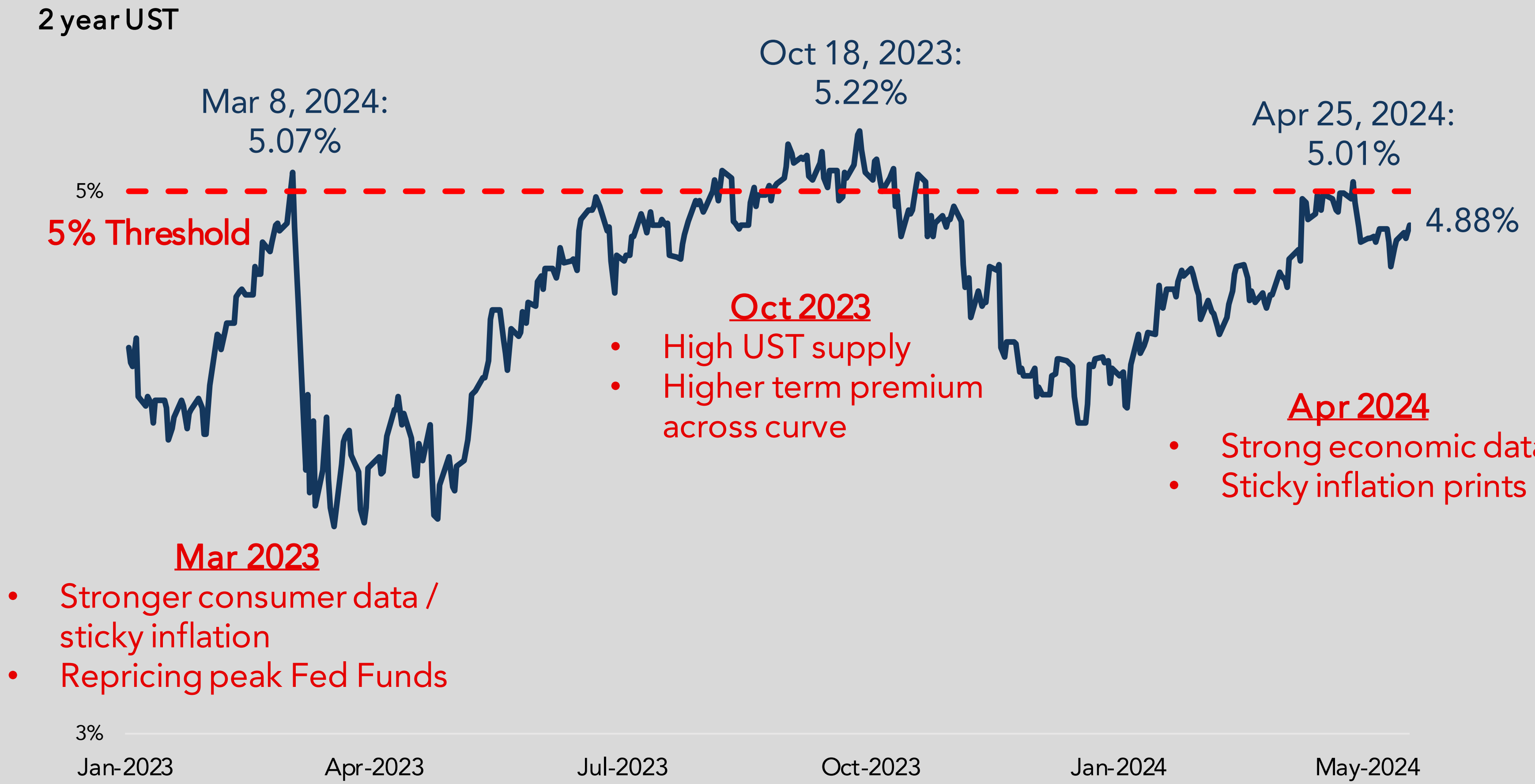
Global 10 year yields



Source: (1) MUFG, Commodities Weekly (Derek Halpenny). Bloomberg. Data as of May 22, 2024.

Higher Bond Yields Pose Challenges for Risk Assets

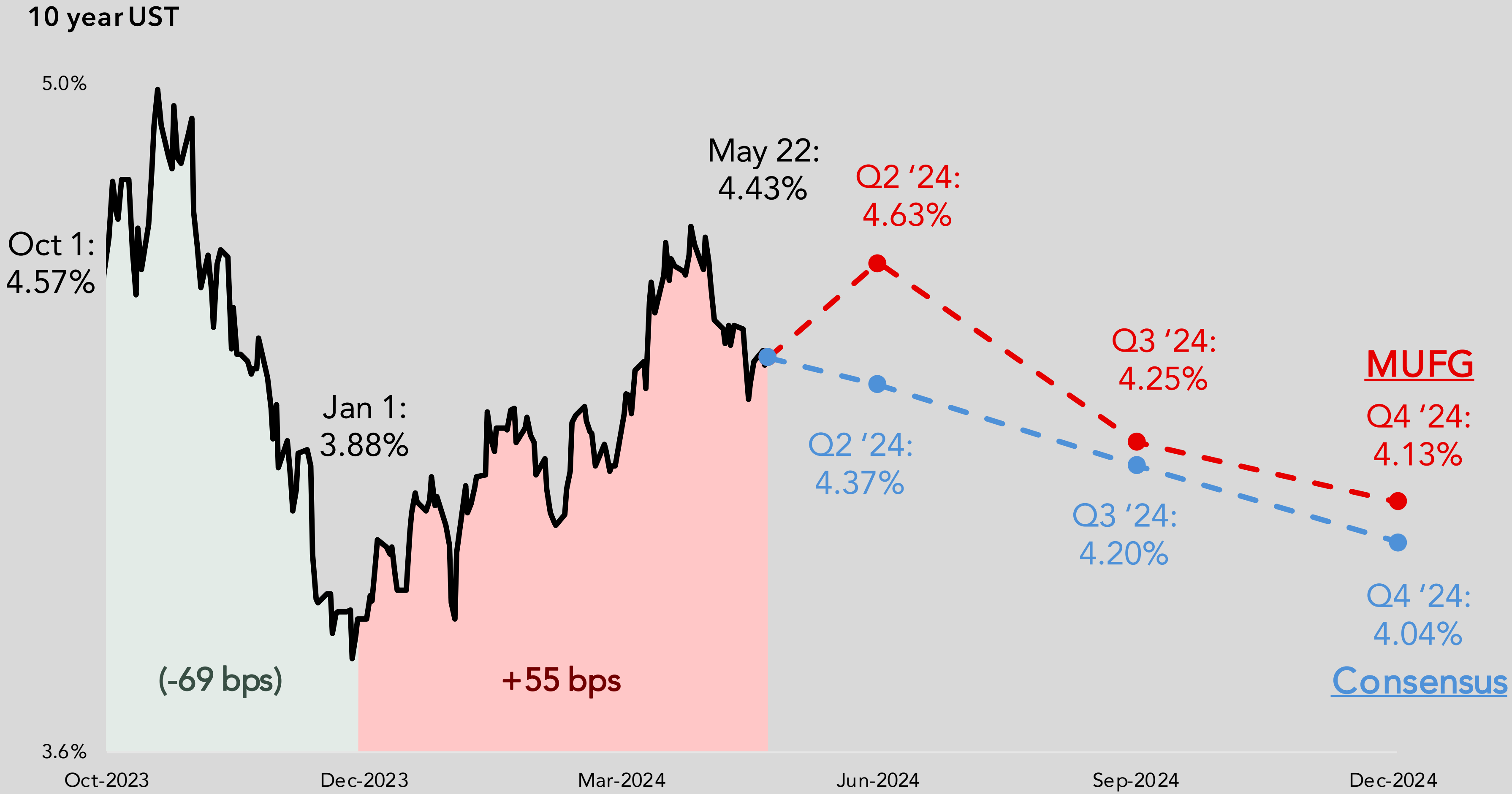
2 Yr UST yields jumped back above 5% on April 25 for the first time in six months. Rising term premiums, strong US economic data and delayed market expectations on Fed rates cuts (pushed back to November) have pushed yields markedly higher over the last few months. Risk assets, in turn, come under increased pressure (i.e., equities, HY, EMFX) when rates remain elevated.



Source: (1) Bloomberg. Data as of May 22, 2024.

Cyclically Bullish UST Yields into Year-End

MUFG's US Rates Strategist, George Goncalves is forecasting 10 year UST yields to resume their Q4 2023 rally by year-end as the Fed is forced to ease policy rates from currently restrictive levels.



Source: (1) Bloomberg. Data as of May 22, 2024.

MUFG US Rates Forecasts

	Spot (May 22)	Q2 2024		Q3 2024		Q4 2024		Q1 2025	
		MUFG	Consensus	MUFG	Consensus	MUFG	Consensus	MUFG	Consensus
Fed Funds	5.50%	5.50%	5.50%	5.25%	5.25%	4.50%	4.95%	4.00%	4.60%
2 yr UST	4.87%	4.75%	4.68%	4.38%	4.36%	4.13%	4.06%	4.00%	3.87%
5 yr UST	4.47%	4.63%	4.40%	4.25%	4.17%	4.13%	3.97%	4.00%	3.87%
10 yr UST	4.43%	**4.63%**	**4.37%**	**4.25%**	**4.20%**	**4.13%**	**4.04%**	**4.00%**	**3.98%**
30 yr UST	4.54%	4.75%	4.55%	4.38%	4.40%	4.25%	4.27%	4.13%	4.21%

Source: (1) MUFG Global Macro Research (George Goncalves). Bloomberg. Data as of May 22, 2024. Fed funds is upper bound.

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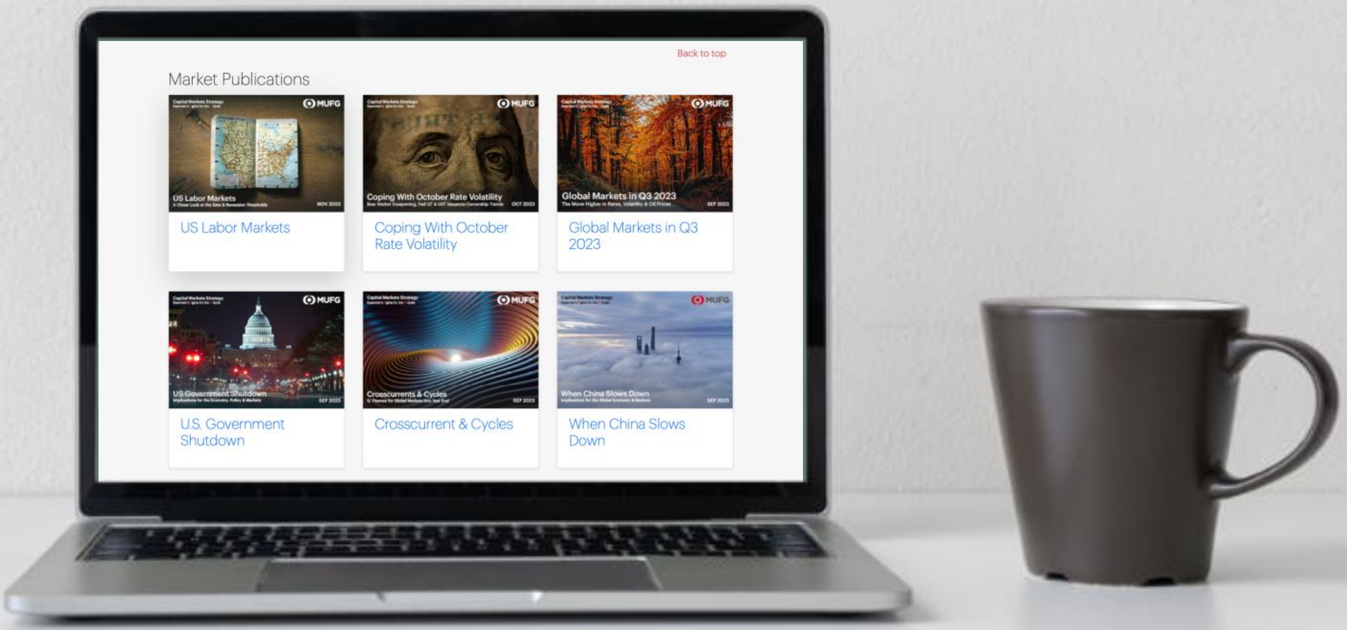

About the Authors

Tom Joyce

Managing Director
Capital Markets Strategist
New York, NY

Tom.Joyce@mufgsecurities.com
(212) 405-7472

Role

Tom Joyce is a Managing Director and Capital Markets Strategist within MUFG's global capital markets and investment banking business. Based in New York, Tom heads a team that creates customized analytical content for multi-national S&P 500 companies. His team provides in depth analysis on the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

Experience

Tom has nearly 30 years of Investment Banking experience in New York, London, Hong Kong, and San Francisco. Over the last 15 years, Tom created and built the Capital Markets Strategy role, advising corporate C-Suite executives (Boards, CEOs, CFOs, and Treasurers) on the pervasive macro forces driving markets. Tom also presents at dozens of corporate events each year including Board meetings, CEO ExCo sessions, CFO and Treasury off-sites, corporate leadership events and conferences.

Education

Tom's educational background includes a year of study at Oxford University from 1991 - 1992, a Bachelor of Arts in Political Science from Holy Cross College in 1993, and a MBA from Kellogg Business School, Northwestern University in 2000.

Personal

Tom resides in New Canaan, CT with his wife and four sons, where he serves on the Board of Trustees of the New Canaan Library as well as the Holy Cross College President's Council.

Hailey Orr

Managing Director
Capital Markets Strategist
New York, NY

Hailey.Orr@mufgsecurities.com
(212) 405-7429

Role

Hailey Orr is a Managing Director in MUFG's Capital Markets Strategy group within the global capital markets and investment banking business. The team provides market based content for corporate clients to assist in strategic decision making. Focus areas include the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

Experience

Hailey has a decade of Wall Street experience, including three years as a Consumer Sector Specialist in Equity Sales and seven years as a Capital Markets Strategist. Hailey is also a member of MUFG's Inclusion & Diversity Council and has devoted years to participating in and developing Wall Street recruiting programs.

Education

Hailey graduated with honors from the University of Michigan's Ross School of Business with a BBA and a minor in International Studies.

Personal

In March 2020, Crain's New York Business Magazine named Hailey one of the "Rising Stars in Banking and Finance".

About the Authors

Stephanie Kendal

Vice President
Capital Markets Strategist
New York, NY

Stephanie.Kendal@mufgsecurities.com
(212) 405-7443

Role

Stephanie Kendal is a Vice President in MUFG's Capital Markets Strategy group within the global capital markets and investment banking business. The team provides market based content for corporate clients to assist in strategic decision making. Focus areas include the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

Experience

Stephanie has spent over six years as a Capital Markets Strategist. She is an active member of the University of Michigan recruiting team and is focused on the diversity recruiting effort at MUFG. Stephanie is also a part of MUFG's DEI, Culture & Philanthropy (DCP) Council.

Education

Stephanie graduated with honors from the University of Michigan's Ross School of Business with a BBA .

Personal

Stephanie is actively involved in NYC's iMentor program, mentoring high school students with their journey to college graduation. She also volunteers at Experience Camps, a free summer camp program for grieving children.

Angela Sun

Analyst
Capital Markets Strategist
New York, NY

Angela.Sun@mufgsecurities.com
(212) 405-6952

Role

Angela Sun is an Analyst in MUFG's Capital Markets Strategy group within the global capital markets and investment banking business. The team provides market based content for corporate clients to assist in strategic decision making. Focus areas include the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

Experience

Angela previously interned at MUFG working in Capital Markets within the Equity Capital Markets and Leveraged Finance divisions. She is also an active member of the Carnegie Mellon University recruiting team.

Education

Angela graduated with honors from Carnegie Mellon University's Tepper School of Business with a BS in Business Administration with an additional major in Statistics and a minor in Media Design. She was a member of Alpha Kappa Psi business fraternity and the Undergraduate Entrepreneurship Association.

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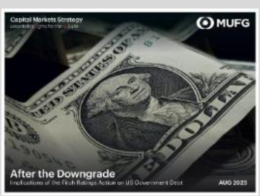

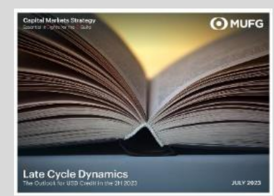

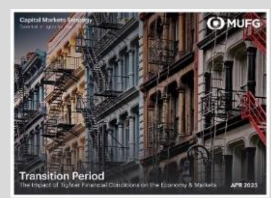

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