MARKET OUTLOOK

A New Bull’s Eye

Second Quarter 2024

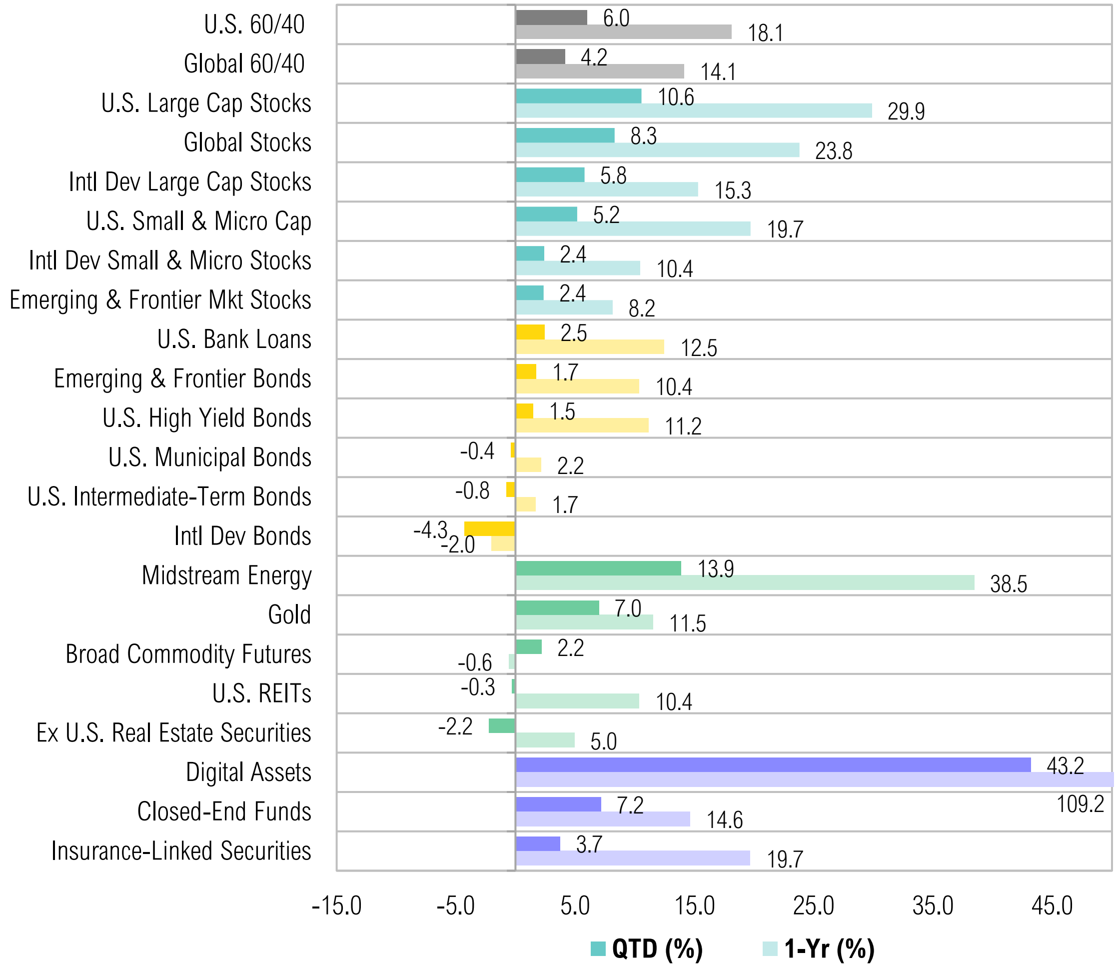
> **In spite of the unsettling landscape, including last year’s regional bank turmoil, the U.S. economy continues to be resilient, with consumers still spending, and the markets currently expect a soft landing. It is important to note that the economy is being fueled by large amounts of government deficit spending and past stimulus.**

Jamie Dimon, *JPMorgan CEO*

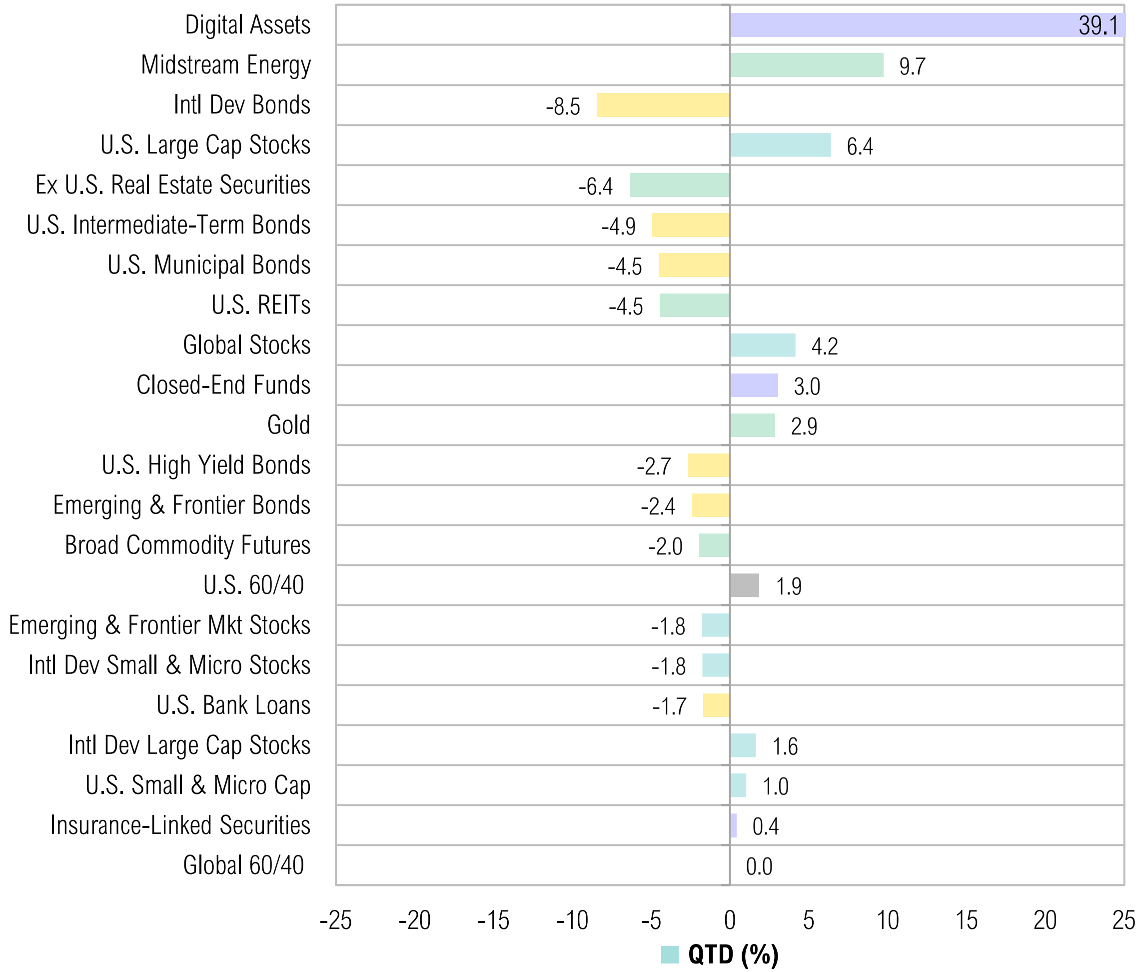
Cartoon: A New Bull's Eye

Q1 saw robust returns across most risky assets, with digital assets and midstream energy faring best; rate-sensitive areas of the market remained under pressure

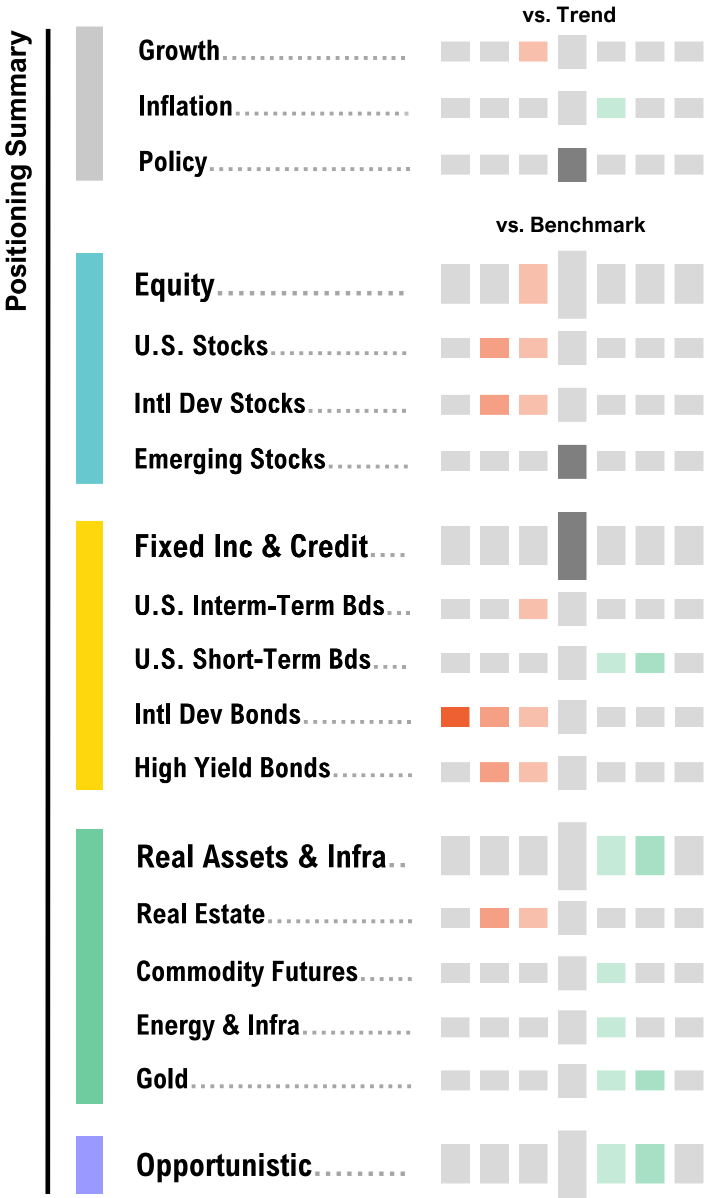
Total Returns, %



Relative Total Returns vs. Global 60/40, %



Source: Bloomberg. Returns for periods greater than 1 year are annualized.



Asset Class Themes

- U.S. remains a positive outlier amidst slow real developed world growth, underpinned by high debt loads, high deficits, and poor demographics
- U.S. consumer spending becoming much more discerning amidst high cost of credit and depleted COVID-era savings
- Stop-start, contradictory fiscal/ mon-pol creates wide-ranging possible outcomes; strong policy incentive to prevent any meaningful volatility in back half of 2024

- Stay patient & careful; don't underestimate risks from higher cost of capital
- Tilt to quality & cash flows, but maintain exposures to high-quality growth managers
- Few fat pitches for tactical region or market cap allocations, but profitable small cap and high-quality growth still look fine and may even start to look attractive if this sell-off intensifies

- Higher short-term rates ('paid to wait') reduce the risk of wait-and-see; keep credit risk at minimum levels and duration relatively low (~half benchmark)
- Uncompensated risks in most public credit sectors due to historically low spreads; private credit still poised to outperform, but avoid legacy portfolios
- Higher-for-longer increases the risks of a CRE-related credit event.
- Watch 10-year yields (>5%) & credit spreads (>400bps) for signs of more significant issues in economy.

- Policy (and war) hedges should be maintained; watch crude oil (and gold) as an indicator of potential escalation in the Middle East
- Emerging opportunities in private real estate, but avoid legacy portfolios
- Gold/bitcoin will continue to compete for incremental safe-haven flows as rate-cutting cycle begins

- Volatility presents opportunities and holding cash creates optionality; consider tactical multi-asset strategies & long/short equity

Portfolio Themes

1

Negative feedback loops from pro-growth fiscal policy have increased interest rates (the cost of capital)

2

Higher rates will continue to hurt risky assets with negative cash flows (& reward those with positive cash flows)

3

Policy & geopolitical backdrop suggests right-tail hedges are as important as left-tail ones

4

Opportunity set is shaping up to be one of the best in many years, but patience is key

Diversification crucial in a year where investors will need to *balance* a very wide range of potential outcomes

	1/1/2022	1/1/2023	1/18/2024	Today*
GLOBAL GROWTH				
US GDP Growth (%, Y/Y)	5.4%	0.7%	2.9%	3.1%
Eurozone Real GDP (%, Y/Y)	5.2%	1.9%	0.0%	0.1%
Japan Real GDP (%, Y/Y)	1.3%	0.6%	1.6%	1.2%
China Real GDP (%, Y/Y)	8.5%	3.0%	5.2%	5.3%
POLICY				
Inflation (CPI, % Y/Y)	7.20%	6.40%	3.20%	3.50%
Fed Funds Rate (upper) (%)	0.25%	4.50%	5.50%	5.50%
Real Fed Funds Rate (%)	-6.95%	-1.90%	2.30%	2.00%
Reverse Repo ($Bn)	$1,904	$2,554	$590	$440
Treasury Issuance ($Bn, NTM)[1]	$1,215	$2,369	$2,467	$2,467
Net Treasury Supply ($Bn, NTM)[2]	$2,017	$1,115	$2,597	$2,747
CONSUMER HEALTH				
Average Credit Card Rate	14.51%	19.07%	21.47%	21.59%
% of Consumers Stressed[3]	31%	40%	47%	45%
Estimated Excess Savings ($Bn)[4]	$2,000	$800	$100	-$100
Gasoline Price ($/gallon)	$3.29	$3.22	$3.09	$3.66
KEY MARKET PRICES/RATES				
S&P 500 Price	$4,766	$3,840	$4,756	$5,022
Equity Sentiment	58%	24%	67%	67%
2-Year Treasury Yield	0.73%	4.43%	4.34%	4.92%
10-Year Treasury Yield	1.51%	3.88%	4.13%	4.57%
High Yield Bond Yield	4.34%	8.87%	7.74%	8.28%
S&P 500 Earnings Per Share	$208	$197	$214	$215
S&P 500 P/E (Fwd)	21.4	16.8	19.6	19.9
Gold Price	$1,829	$1,824	$2,020	$2,380
Uranium Price	$42	$48	$106	$89
WTI Crude Oil	$75.21	$80.26	$74.13	$82.32
Bitcoin	$47,314	$16,615	$41,432	$61,476

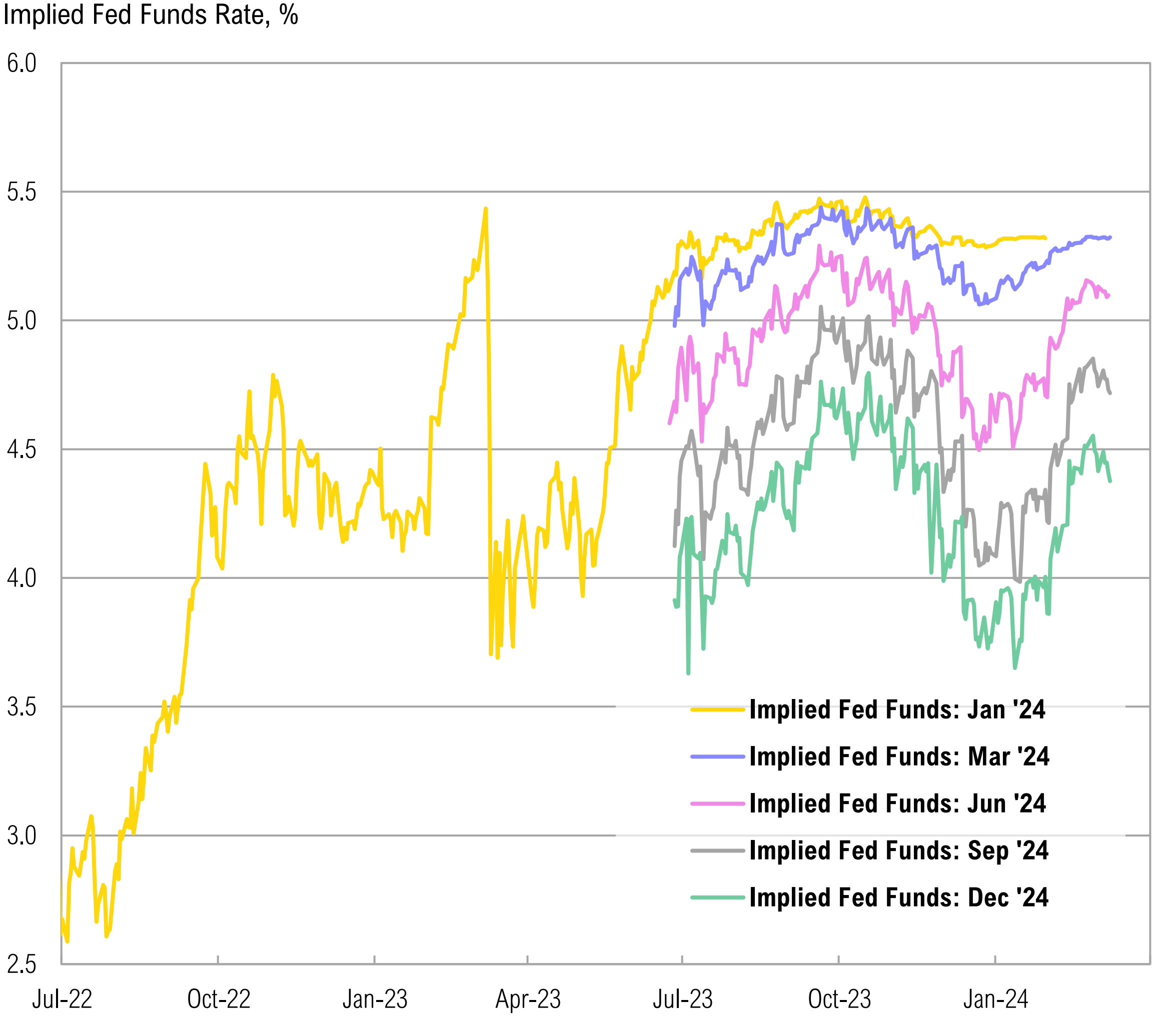
- **Inflation rates have decreased dramatically from peak but are proving stickier than expected, creating major uncertainty around monetary policy**
- **Rates and yields are higher, especially in real terms, creating issues for consumers and businesses that need capital**
- **Liquidity is worsening as rates stay high, but this depends on Fed policy, Treasury issuance, reverse repo drain and how Treasury manages its cash**
- **Consumers are in worse shape (less savings, higher incremental debt service, and pressure from accumulated inflation), with continued wage gains a small offset**
- **Equity valuations are still high but are off peak levels; generally, lower inflation and lower rates support higher valuations and vice versa**
- **Equity sentiment largely reflected a soft-landing/no landing as of 3/31, but has weakened in recent weeks (a contrarian positive)**

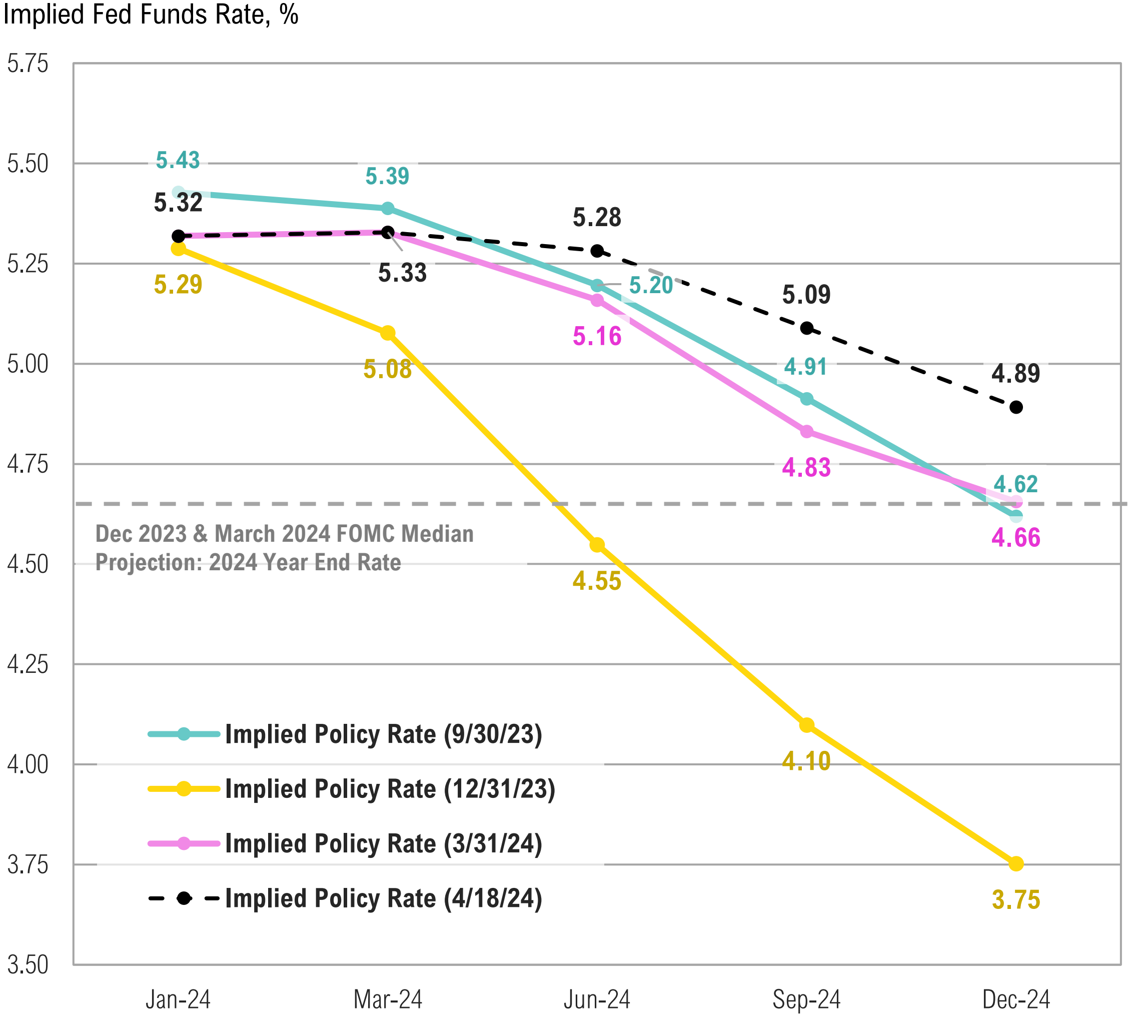
[1] Treasury, SIFMA; [2] Net supply incorporates change in Fed balance sheet and RRP; [3] U.S. Census Bureau's Household Pulse Survey % of respondents expressing difficulty paying expenses. [4] Excess savings calculated by SpringTide, corroborated by SF Fed (https://www.frbsf.org/research-and-insights/data-and-indicators/pandemic-era-excess-savings).
Source: Bloomberg, Various.

> **“We’ve said we would not wait for inflation to get down to 2% because, if you wait for that, monetary policy works with long and variable lags. So, we’ve said for some years that we would start restoring the Federal funds rate to a more normal, almost neutral level. We’re far from neutral now. And, we do plan, assuming the economy moves along the lines we expect, to start the process of dialing back restrictions.**

Jerome Powell, *Federal Reserve Chairman (Semiannual Monetary Report to the Congress on March 7, 2024)*

Markets and Fed expectations diverge again: while the Fed may still expect three cuts this year (with a Dec rate of 4.6%), markets now expect at most two cuts (~4.9% in Dec)

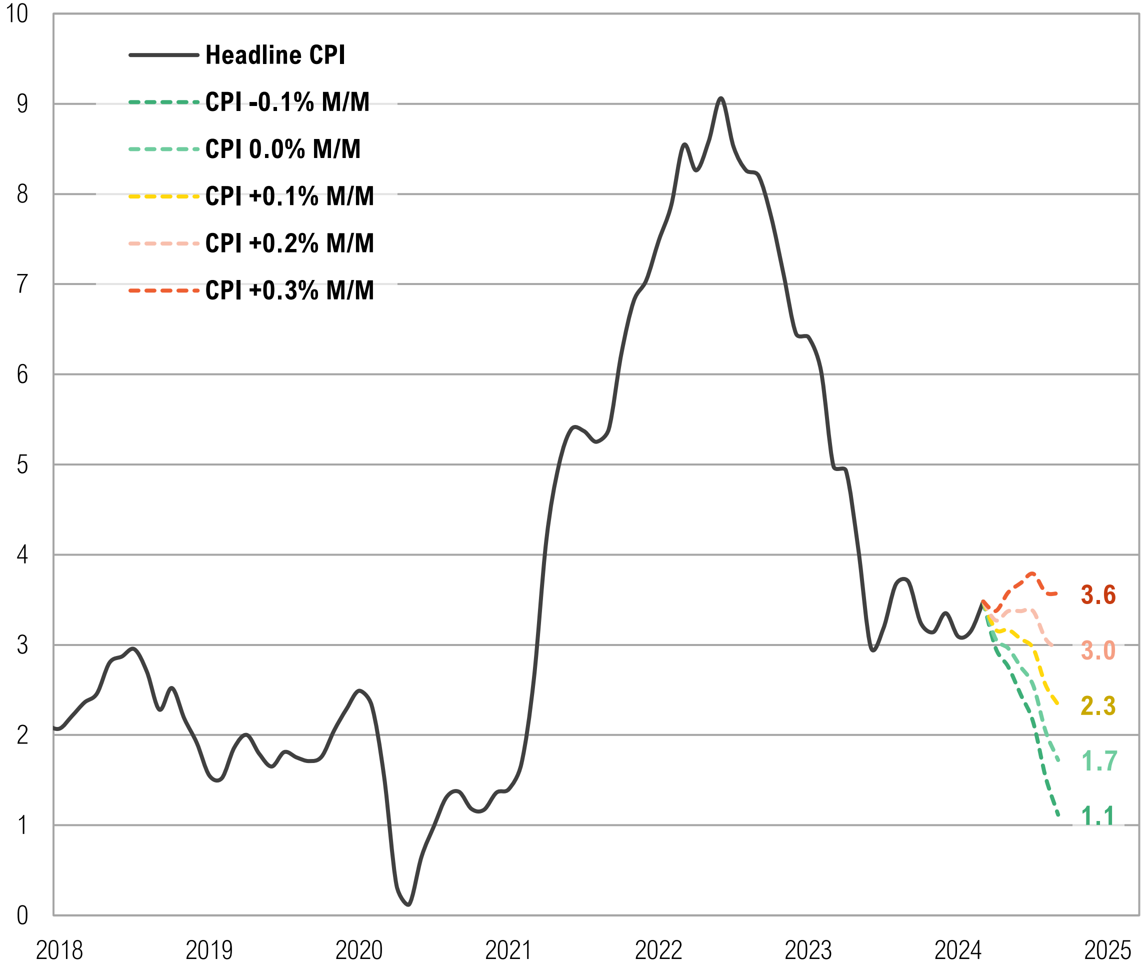




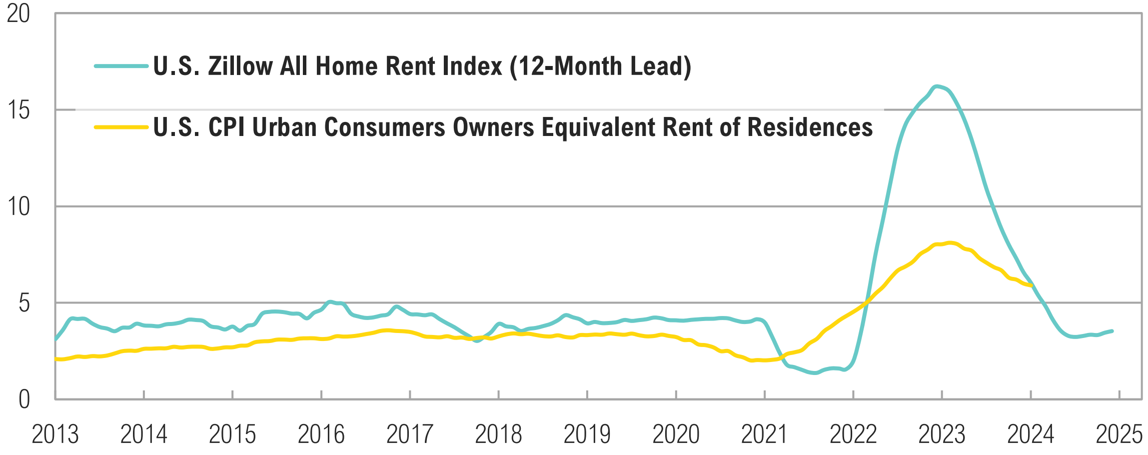
Source: Bloomberg

The consensus view that inflation returns to the Fed's 2% target by 2H24 is still possible; however, it would require consistent monthly prints <0.2%, which has only occurred twice in the past 12 months

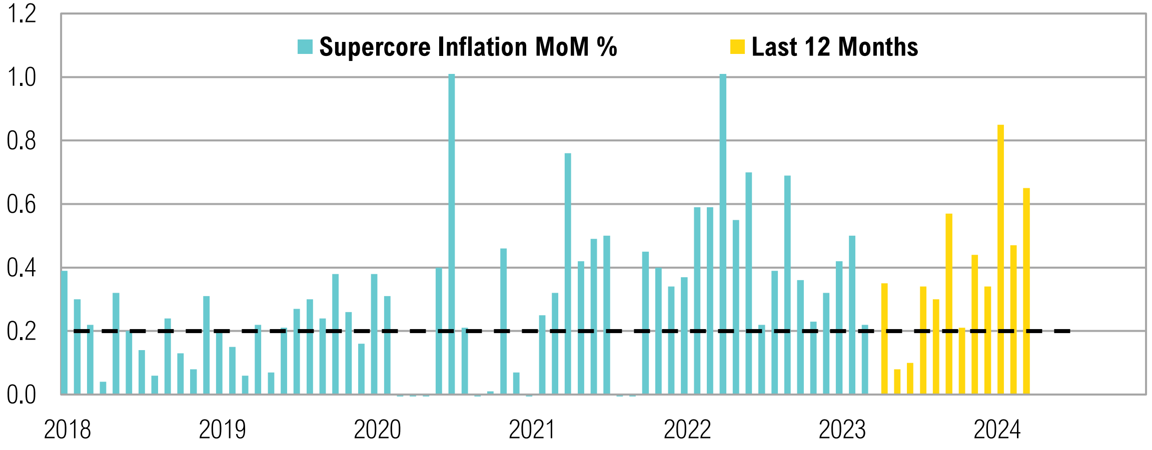
Projected Headline CPI, Y/Y %



CPI Owners Equivalent of Rent Component vs Zillow Rent Index (12-Month Lead), Y/Y %



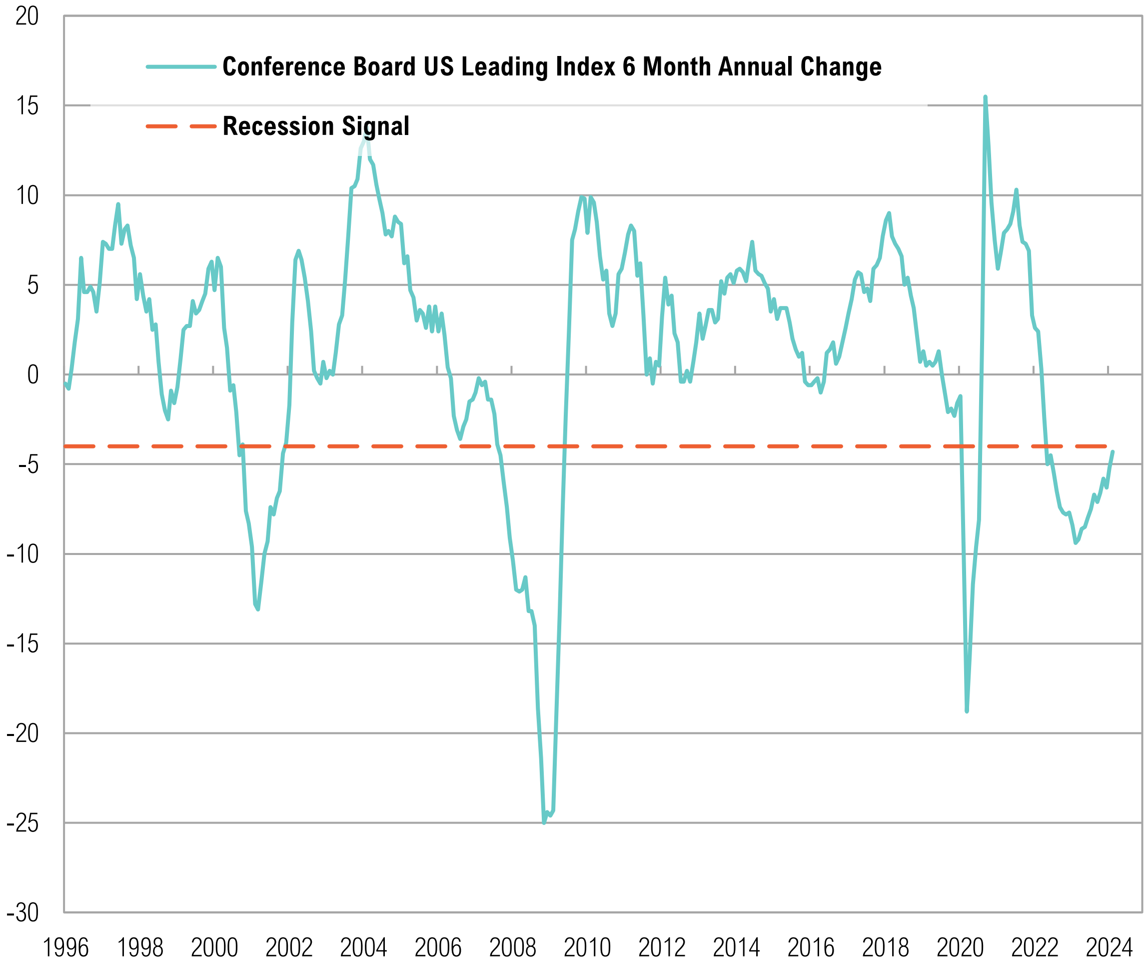
U.S. Core Services ex Housing CPI, M/M %



Source: Bloomberg

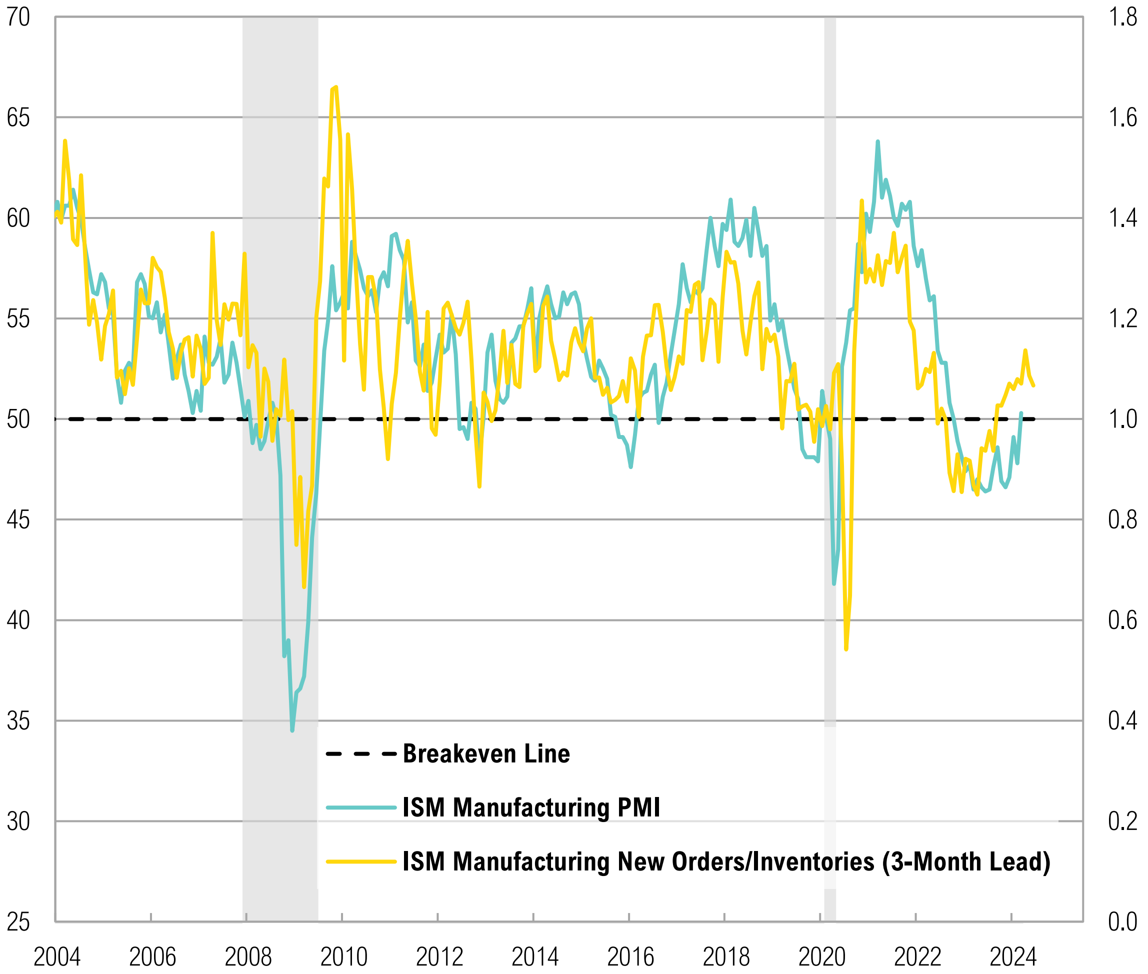
Stronger economic data: while still negative, the Conference Board's LEI is starting to recover; ISM Manufacturing PMI showed sector activity growth in March for the first time in 17 months

Conference Board U.S. Leading Economic Indicator, 6-Month Growth Rate (Annualized), %



ISM Manufacturing PMI

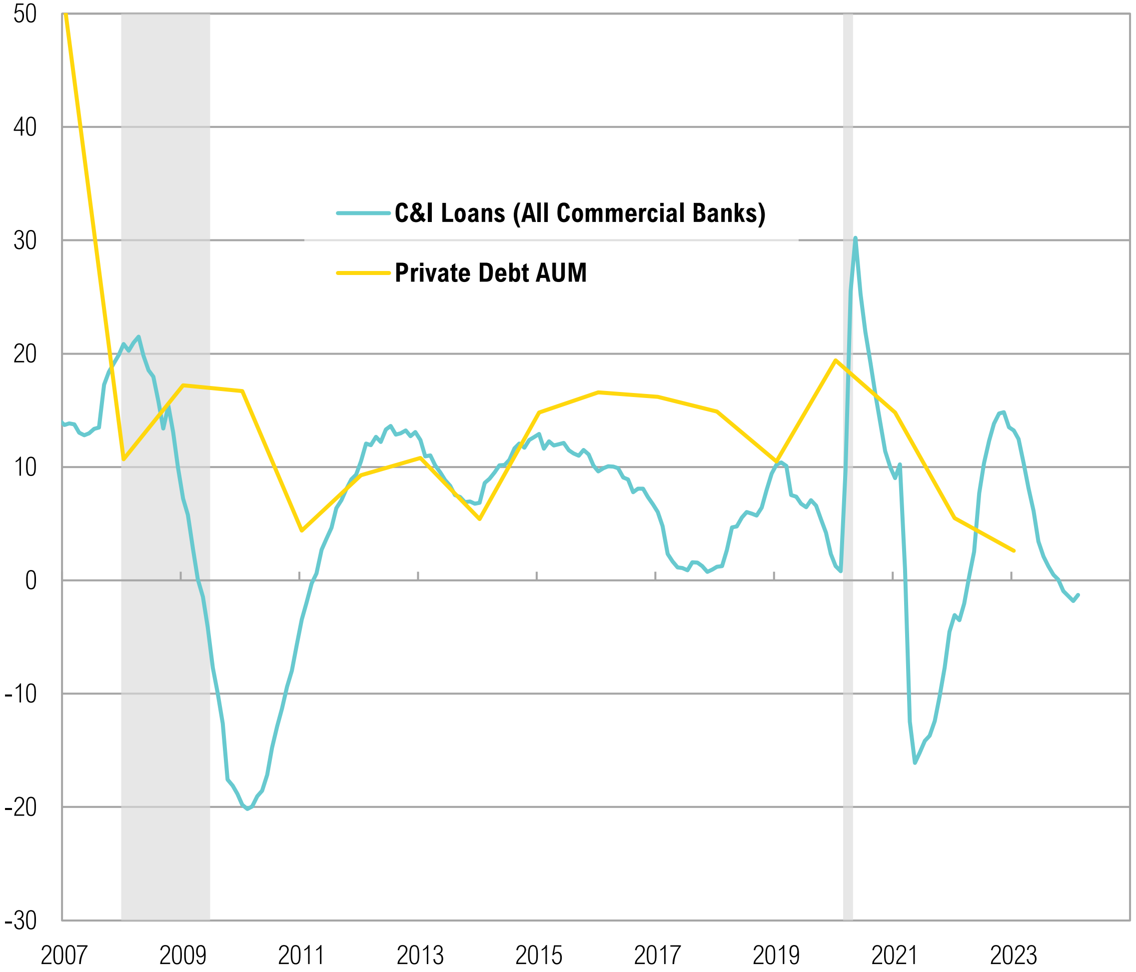
ISM Manufacturing PMI New Orders/Inventories, 3-Month Lead



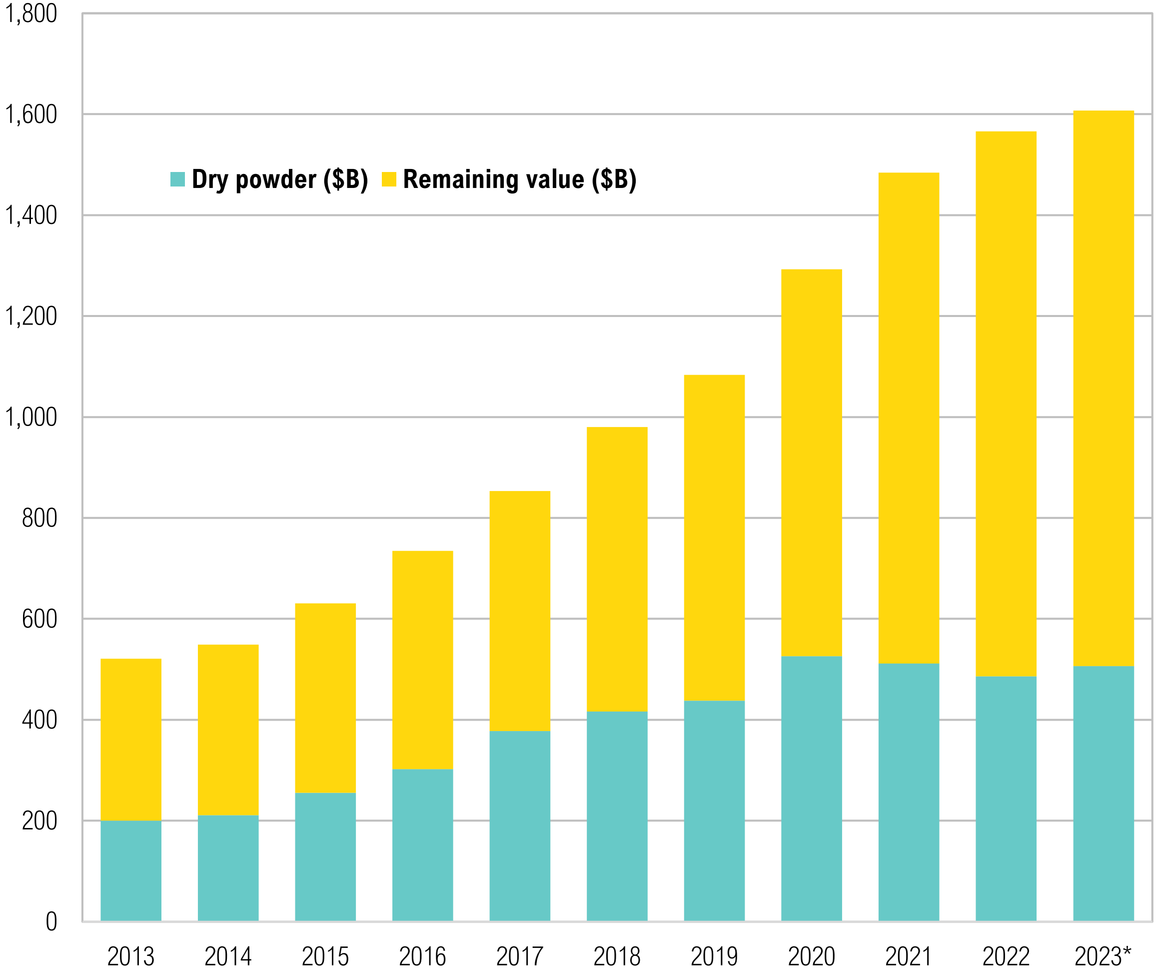
Source: Bloomberg, Conference Board.

Private credit is filling the commercial bank C&I lending void

Commercial & Industrial Loans, All Commercial Banks, Y/Y % Change



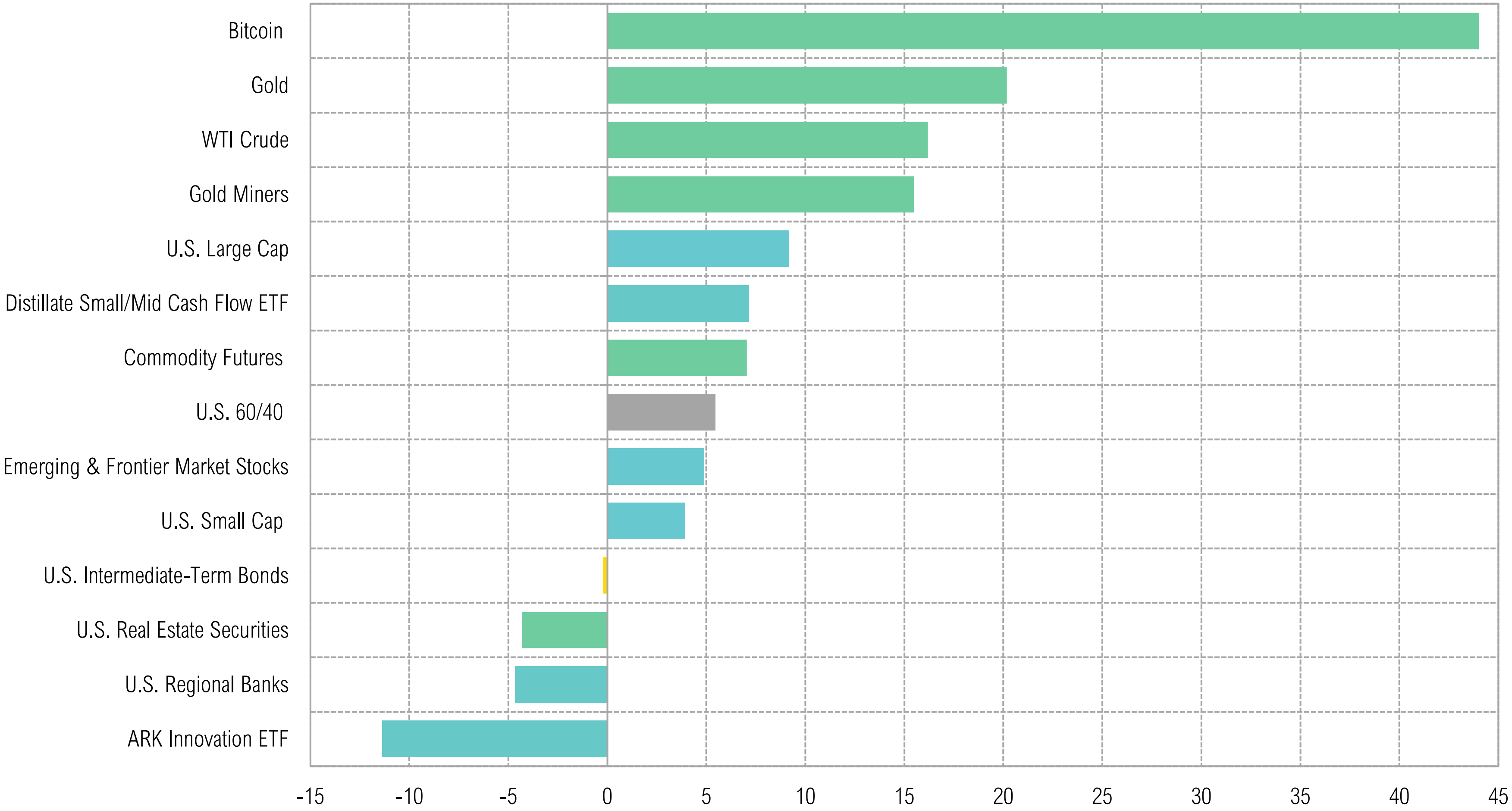
Private Debt AUM, $Bn



Source: Bloomberg, Pitchbook. Private Debt AUM as of 6/30/2023.

There has been a notable divergence in performance since the Fed ‘pivot’ in December as rate-sensitive areas of the market lag riskier assets

Returns, 12/12/2023 – 4/17/2024, %

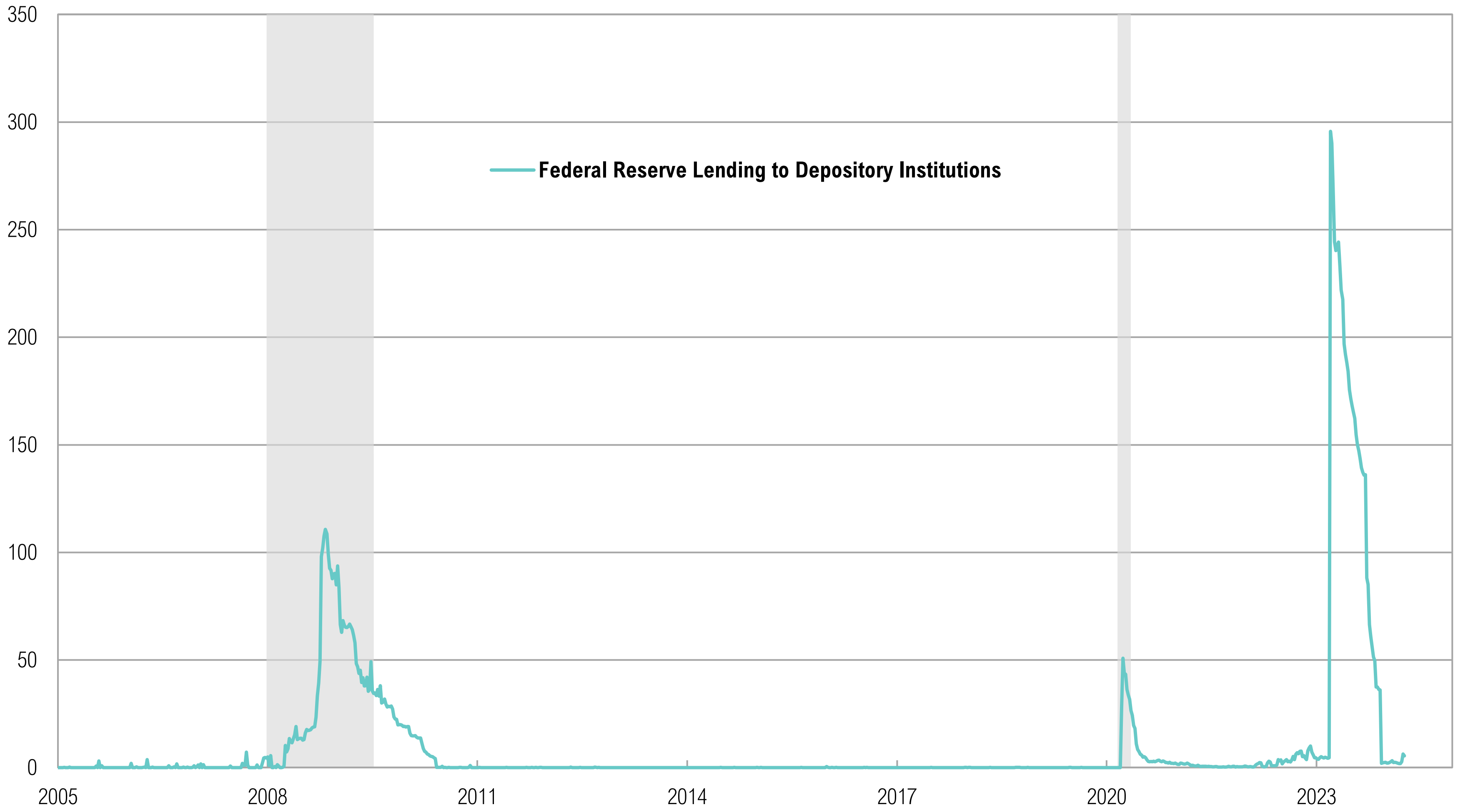


Asset	Return
Bitcoin	44.0
Gold	20.2
WTI Crude	16.2
Gold Miners	15.5
U.S. Large Cap	9.2
Distillate Small/Mid Cash Flow ETF	7.2
Commodity Futures	7.0
U.S. 60/40	5.5
Emerging & Frontier Market Stocks	4.9
U.S. Small Cap	3.9
U.S. Intermediate-Term Bonds	-0.2
U.S. Real Estate Securities	-4.3
U.S. Regional Banks	-4.7
ARK Innovation ETF	-11.4

Source: Bloomberg

Regulators are preparing a rule to push all banks to use the Fed’s discount window

Federal Reserve Primary Credit Lending + Other Credit Extensions, $Bn

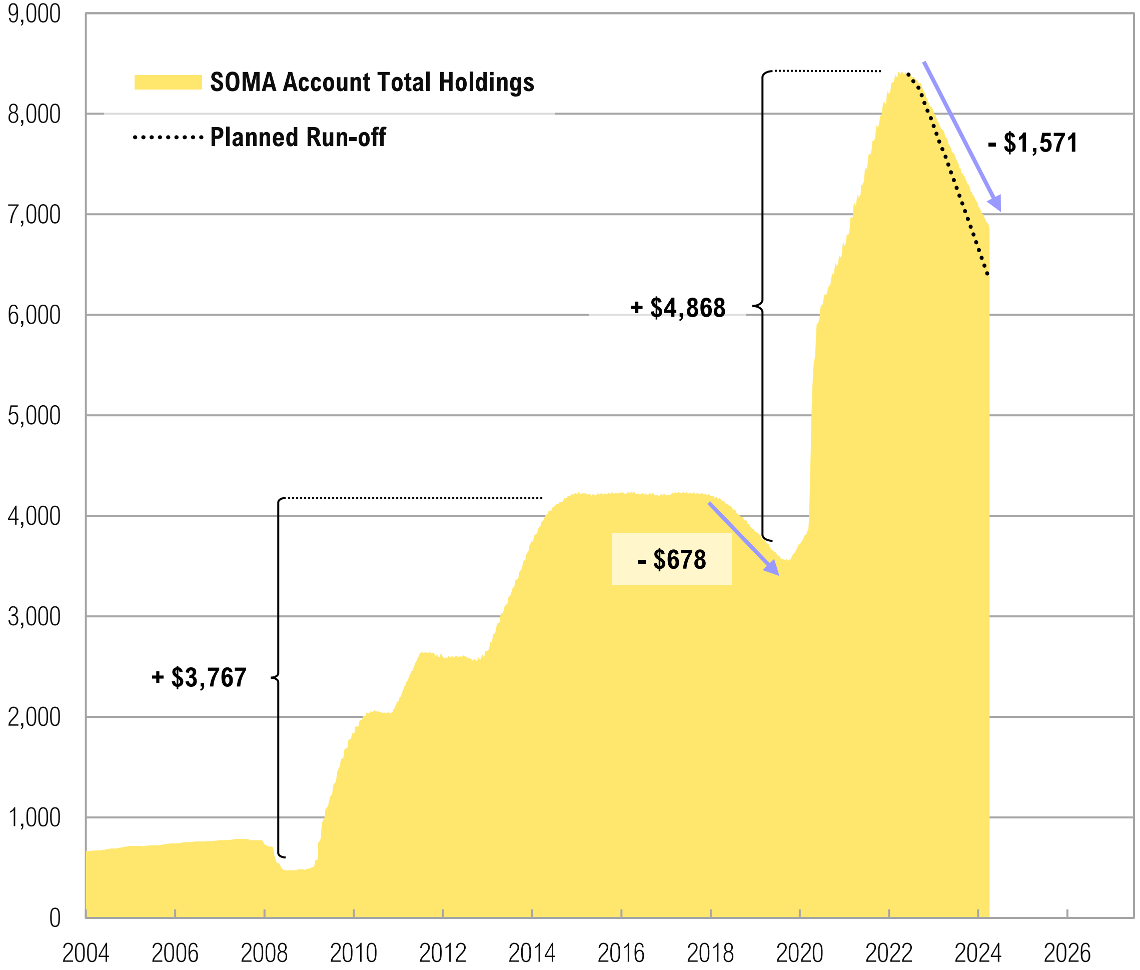


Source: Bloomberg

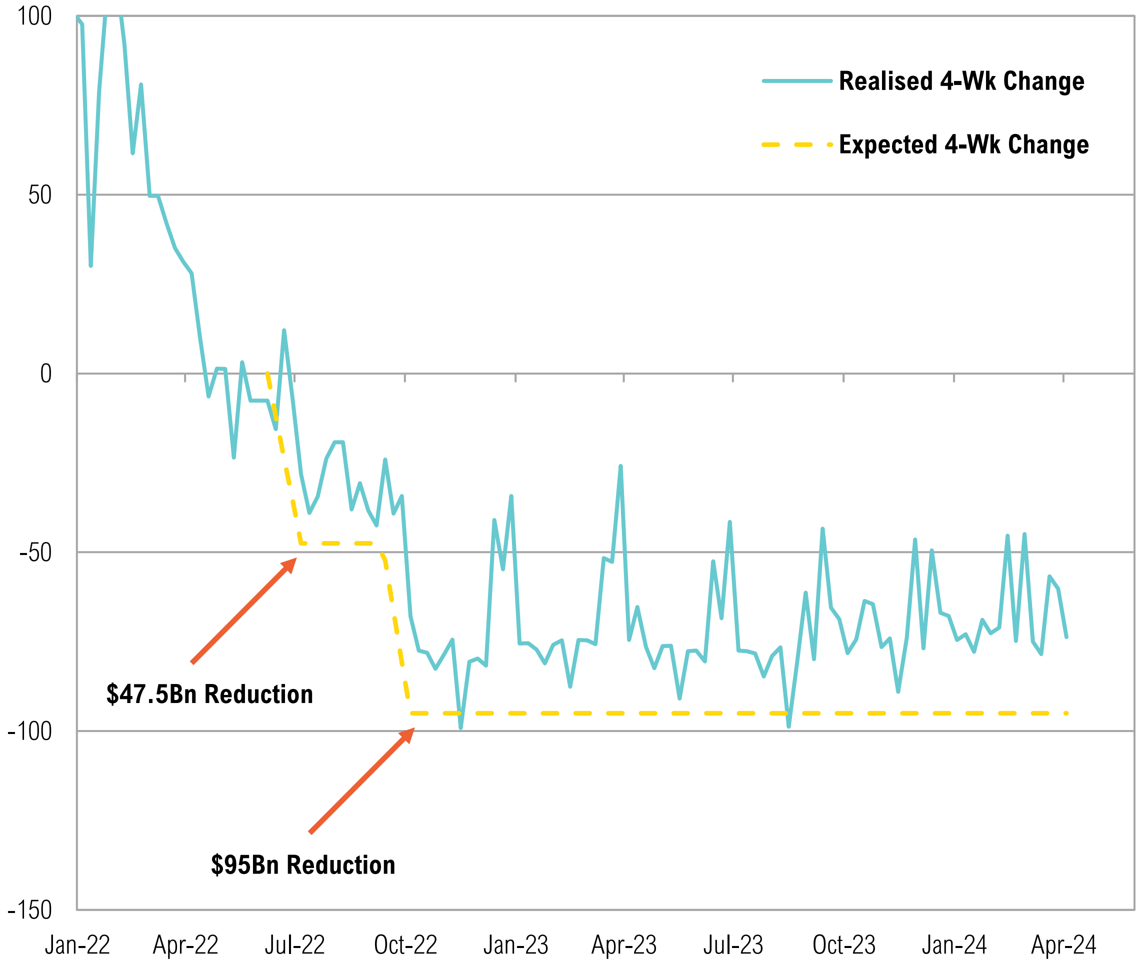
- **U.S. regulators are preparing to introduce a plan that will require banks to tap the Fed’s discount window at least once a year**
- **The plan aims to reduce the stigma around usage of the program and ensure lenders are prepared in case of emergency**
- **Michael Hsu, the acting comptroller of the Office of the Comptroller of the Currency, said that they “want to make sure that banks have enough resources to meet any kind of outflows within five days—especially those related to uninsured deposits”**
- **The proposal could be released within the next two months**

With few details given, Powell confirmed at the March FOMC meeting that the Fed will slow the pace of QT “fairly soon” despite lagging its planned runoff by ~$400 billion and only reducing the balance sheet by a third of what was added during COVID

Total SOMA Holdings, $Bn



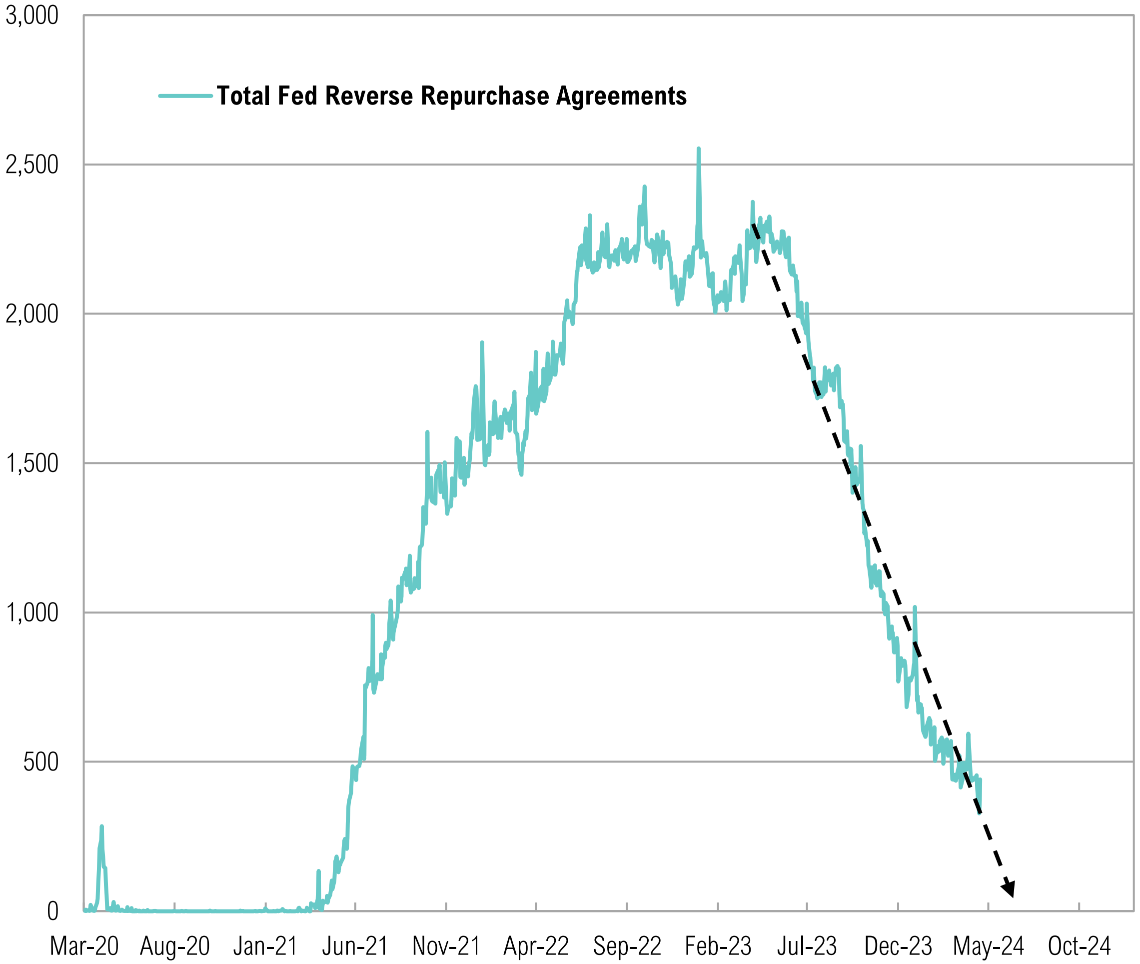
SOMA Account 4-Week Change, $Bn



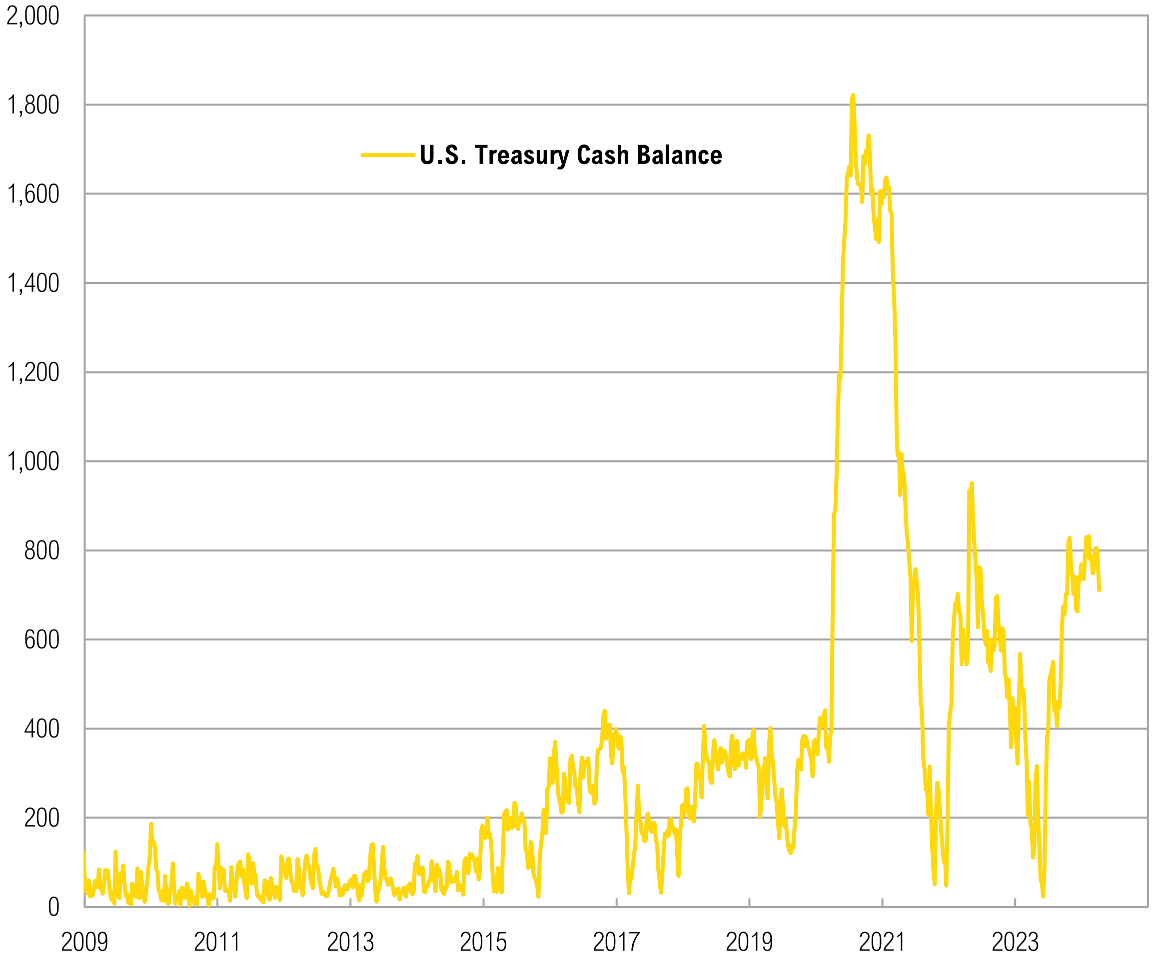
Source: Bloomberg

The Fed's reverse repo facility (which has dampened the effects of QT) may run out by mid-year; Treasury cash balance is currently at $710bn but may be worked down depending on policy

Overnight Reverse Repo Agreements, $Bn

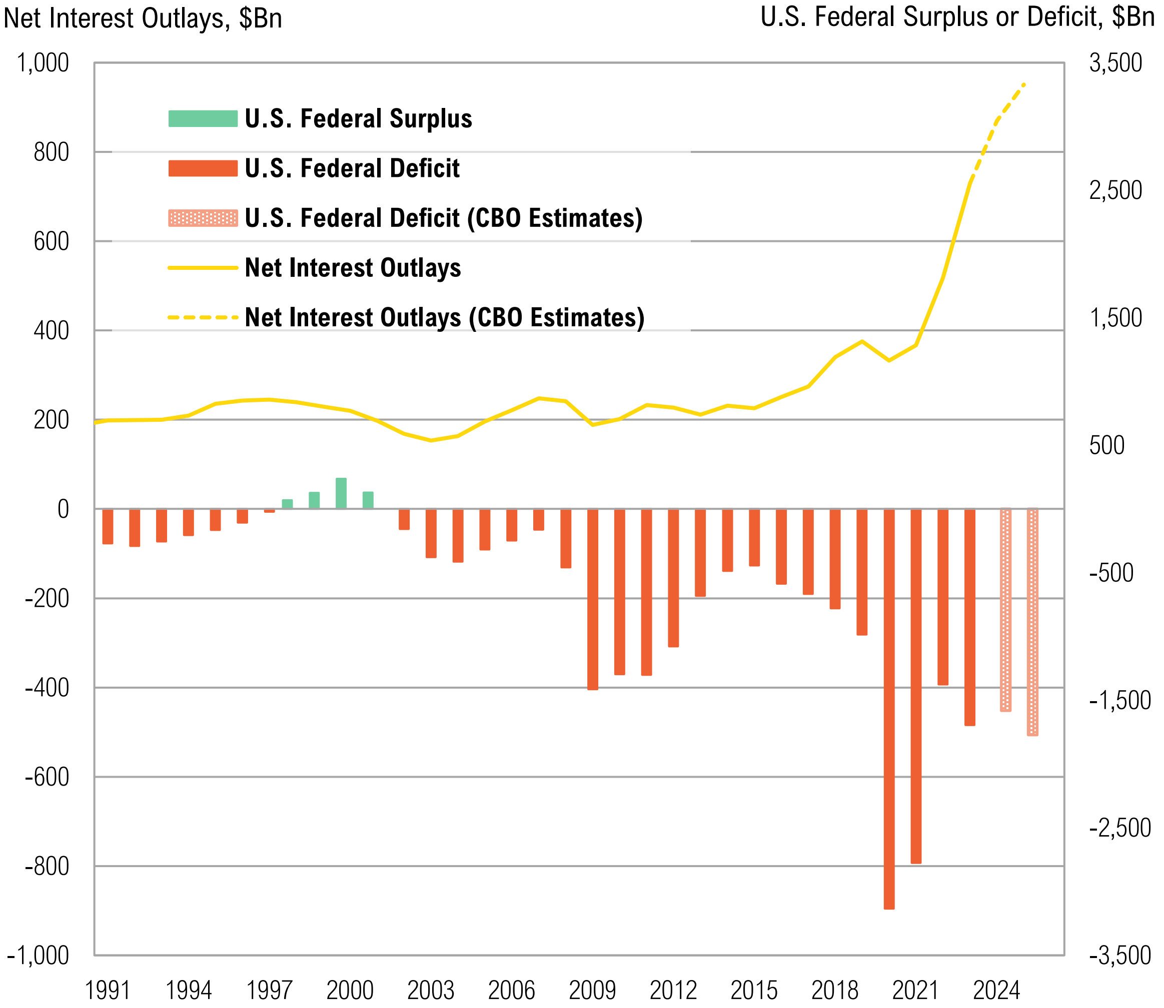


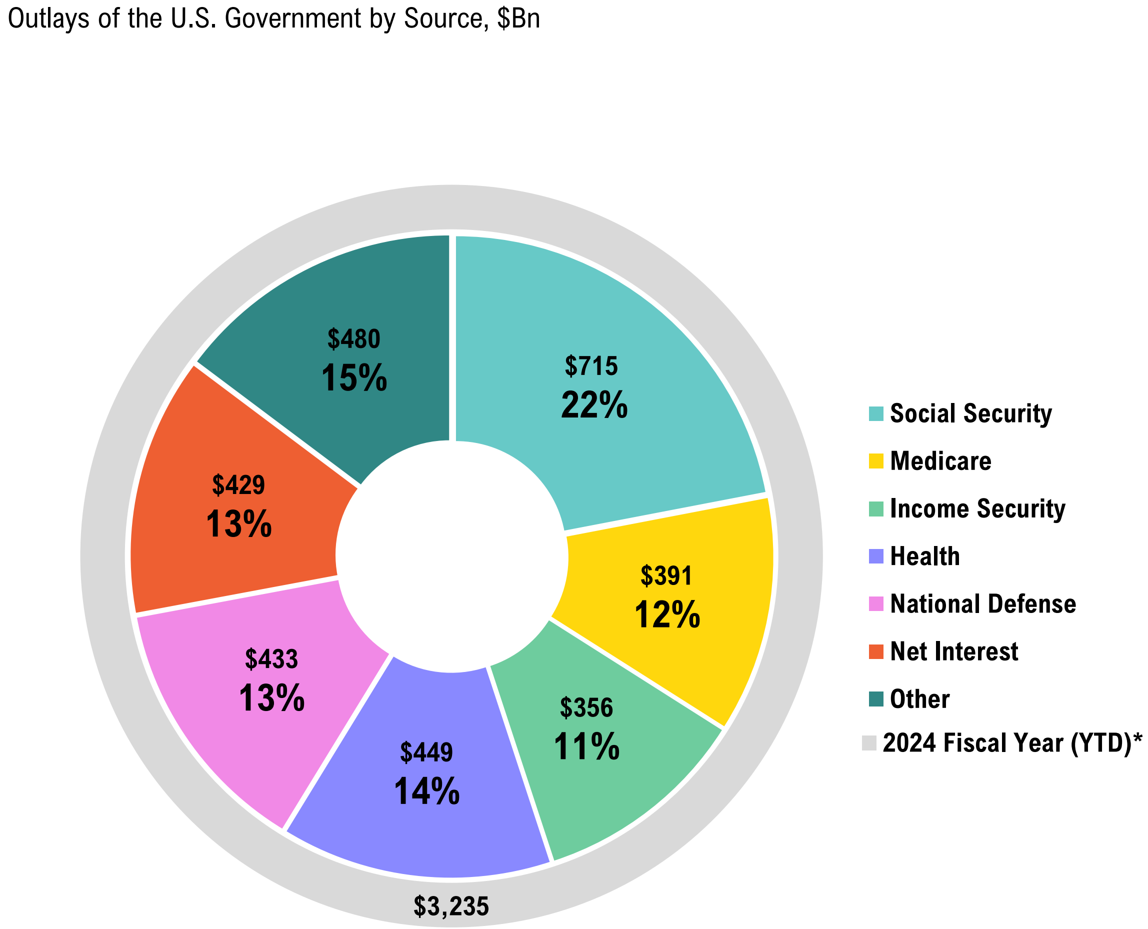
U.S. Treasury Cash Balance, $Bn



Source: Bloomberg. As of 4/17/2024.

A fiscal trainwreck: government spending continues unchecked (more on this later)

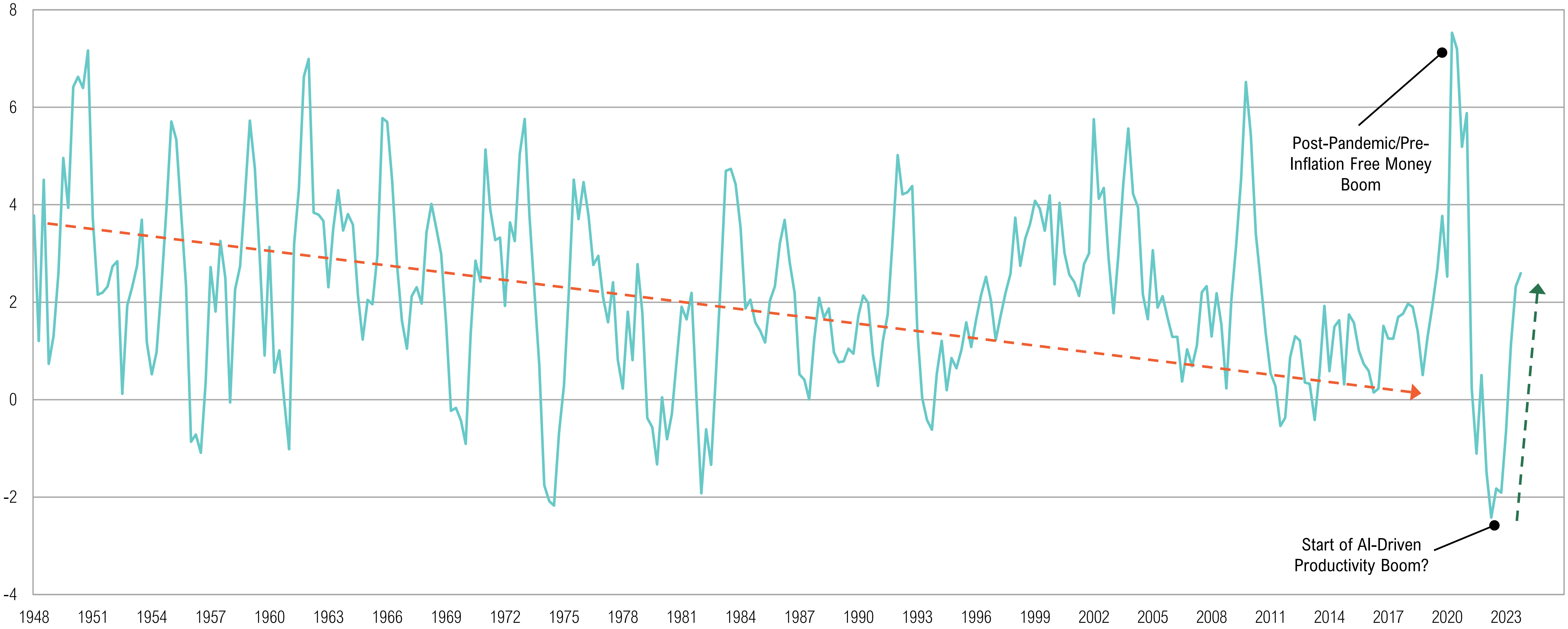




Source: Bloomberg, Congressional Budget Office, U.S. Department of Treasury. *Fiscal year 2024 started on 10/1/2023.

This is what the AI boom (or mania) is truly about in our view: can generative AI lead to a much-needed U.S. productivity boom?

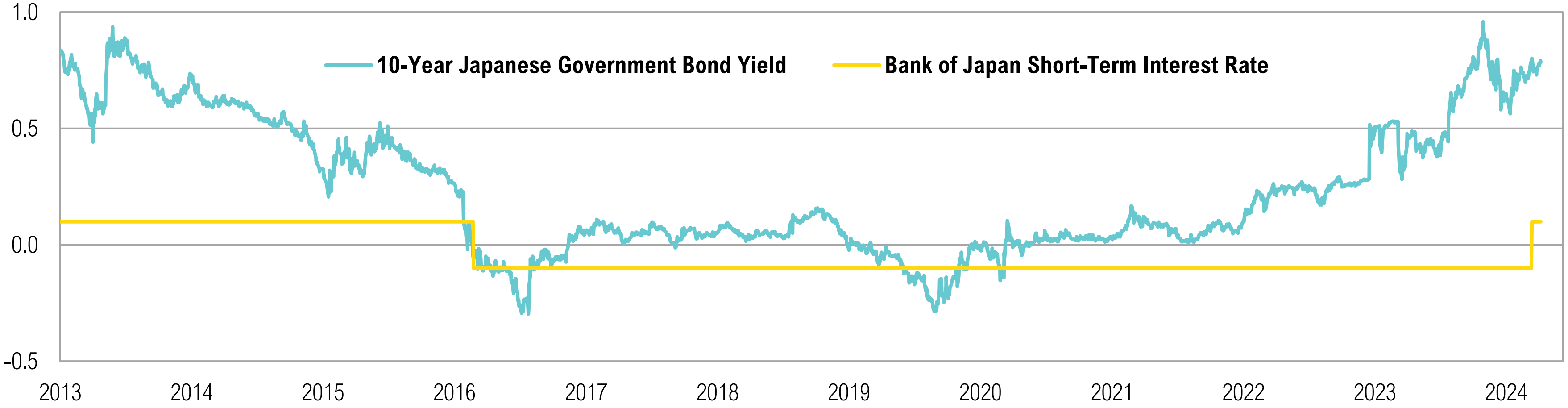
Nonfarm U.S. Labor Productivity (Output per Hour), Y/Y % Change



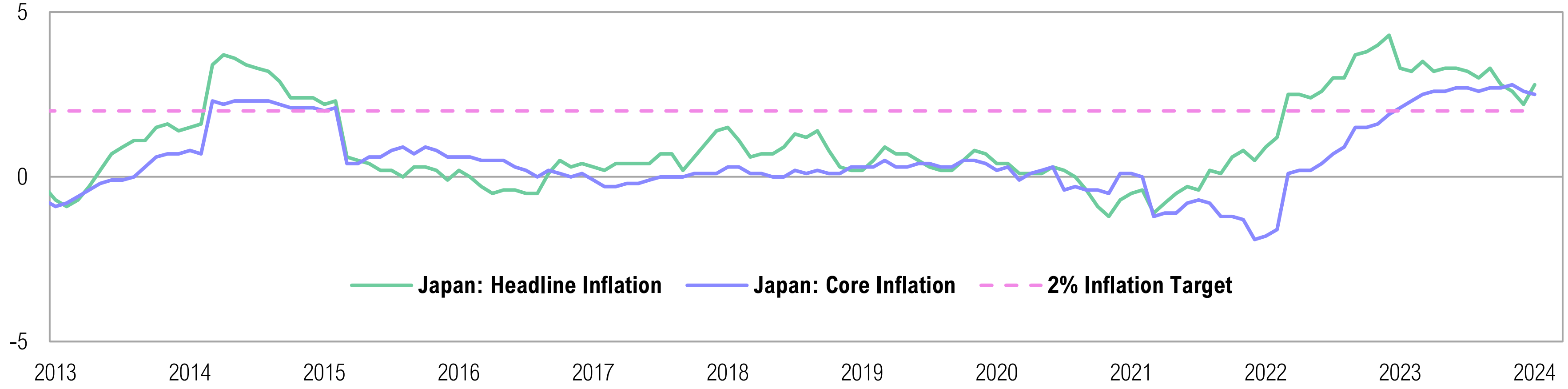
Source: FRED

End of an era: The Bank of Japan has ended the world's most aggressive monetary easing policy, hiking interest rates for the first time since 2007

10-Year JGB Yield vs BoJ Short-Term Interest Rate, %



Japan CPI, Y/Y %



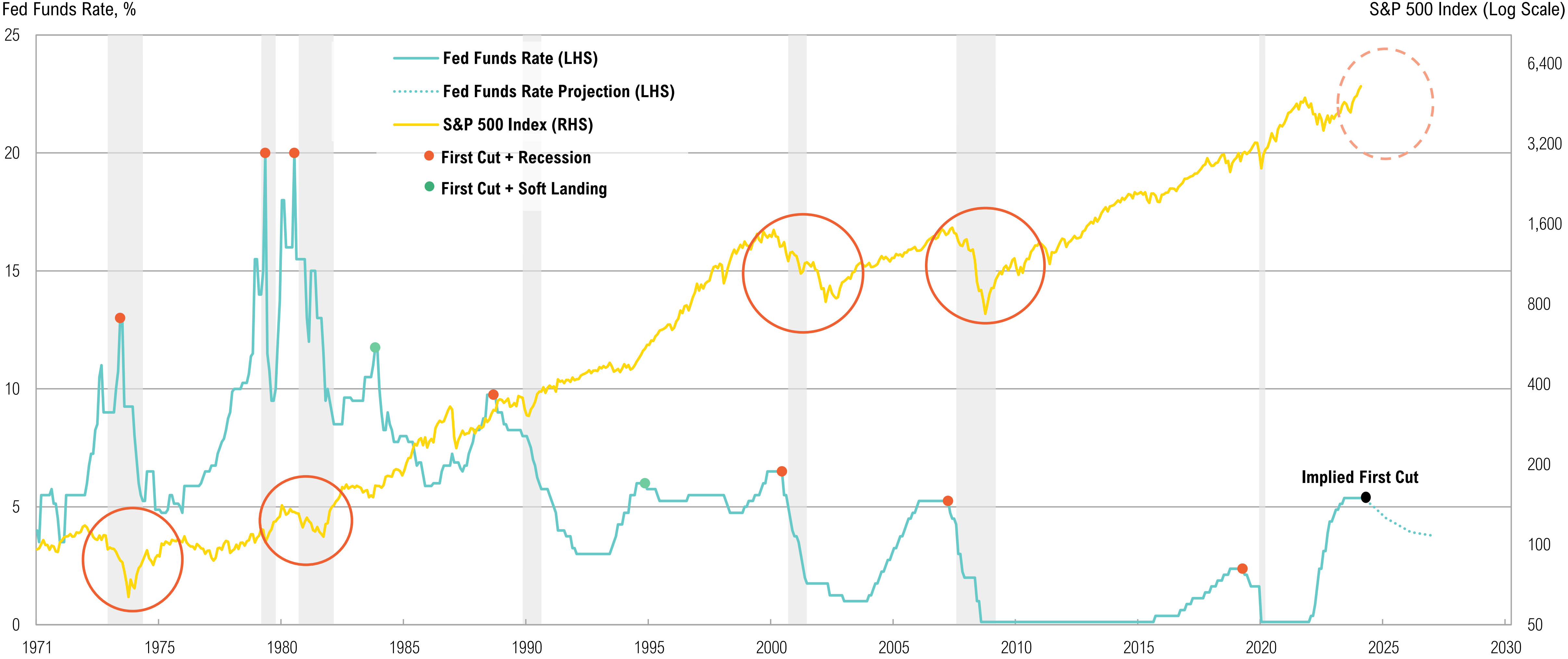
- **On March 19, the Bank of Japan raised short-term interest rates from -0.1% to 0-0.1%, ending one of the most aggressive monetary easing exercises in the world**
- **Japan's negative interest rate regime had been in place since February 2016**
- **The BoJ also ended its yield curve control policy for Japanese sovereign bonds**
- **The Bank conveyed a dovish tilt by noting that financial conditions will "remain accommodative" for the time being**

Source: Bloomberg, Reuters, WSJ.

> The situation worldwide is getting more and more difficult. But still, the U.S. market keeps climbing to new highs…the U.S., in spite of it being in some sense, a deteriorating situation politically, financially, and even culturally is still relatively the strongest place in the world to bring your money. So that's what people are doing, and that's what we see in our rising account numbers. People from all over the world want to have their money in the U.S. So they invest in the U.S.

Thomas Peterffy, *Interactive Brokers Group Chairman*

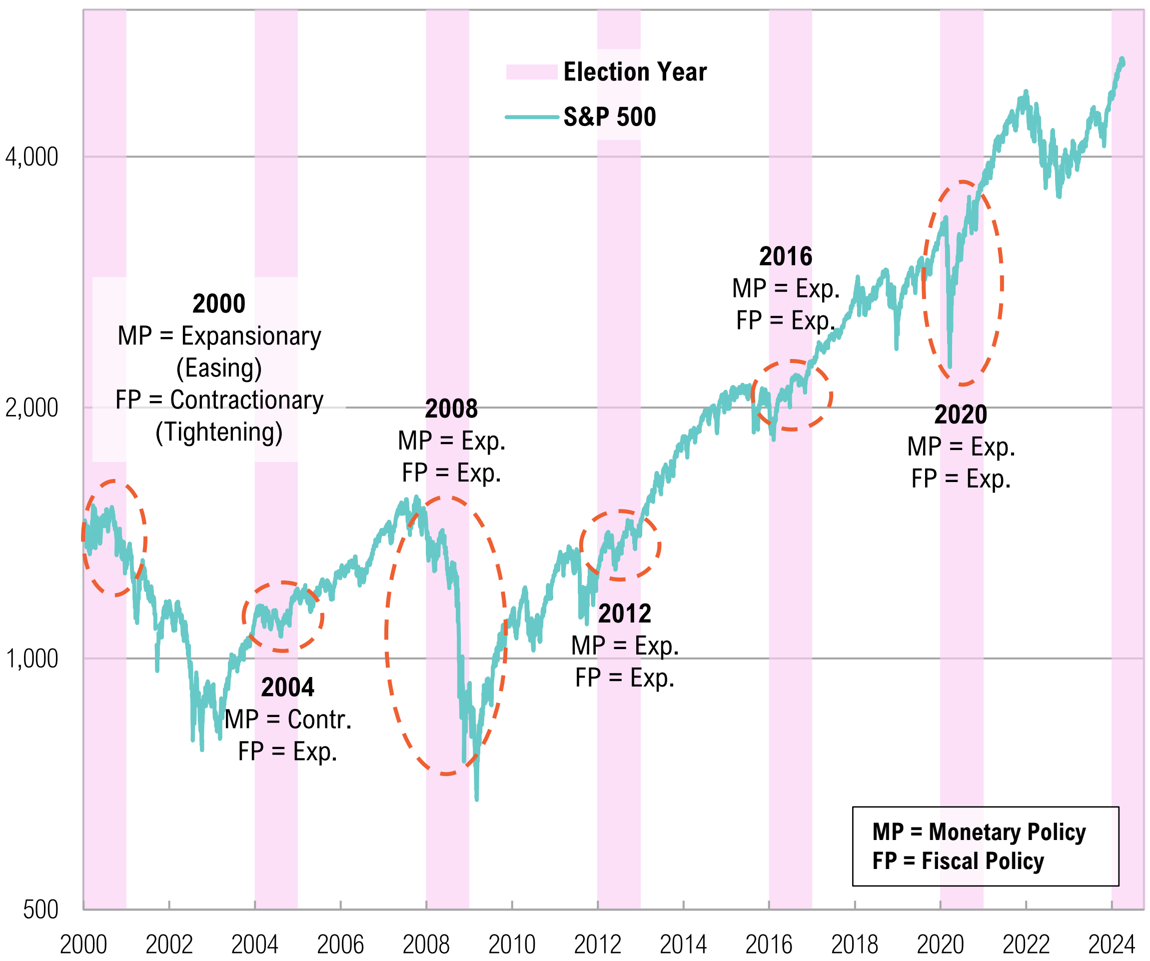
‘Soft landings’ are rare: while a rate cut seems to be on the horizon, history shows that the Fed cutting rates doesn’t stop the pain from prior hikes and their ‘long and variable’ lags



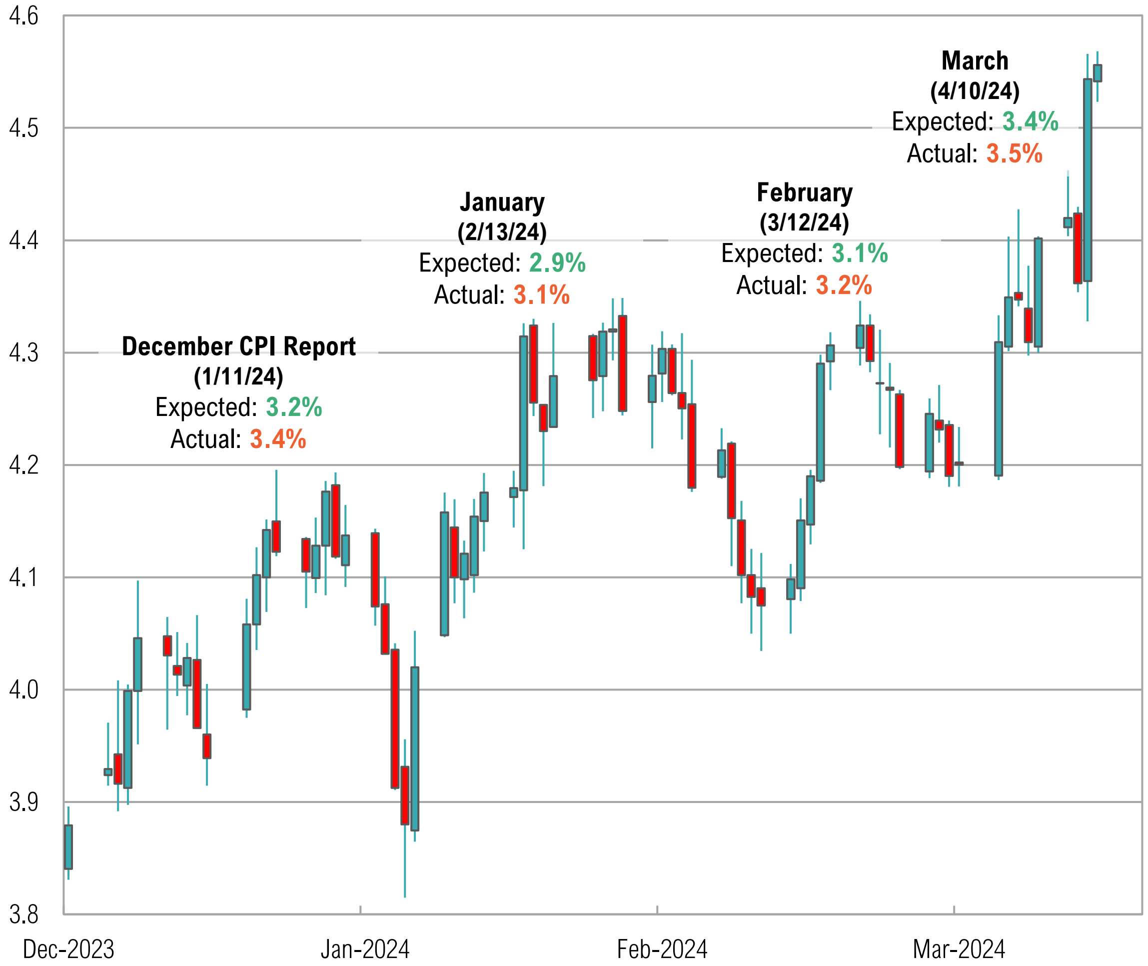
Source: Bloomberg

Politically driven policy decisions might be a temporary tailwind for stocks, but if the bond market rejects them there will be broader repercussions

S&P 500 Index (Log Scale)

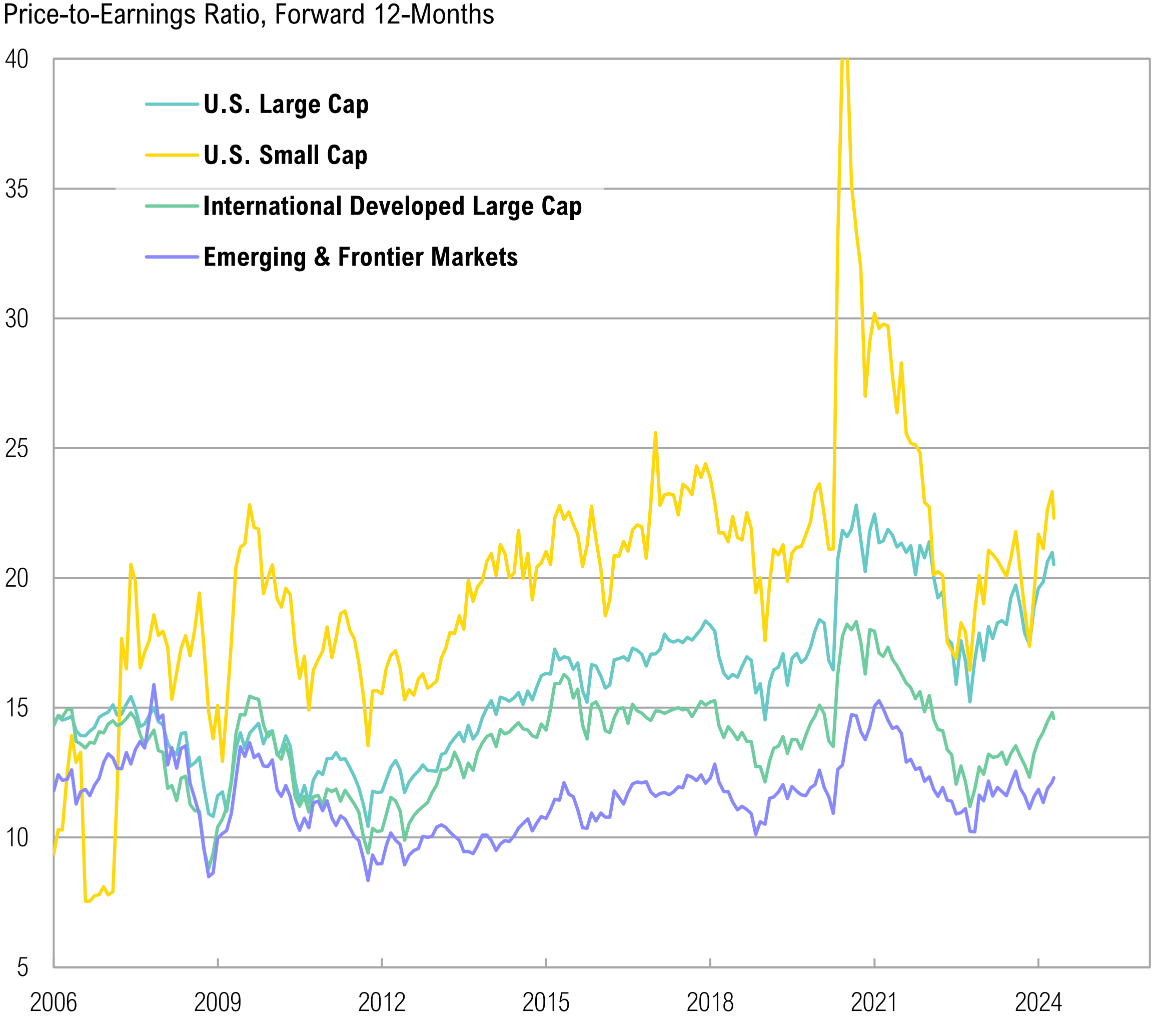


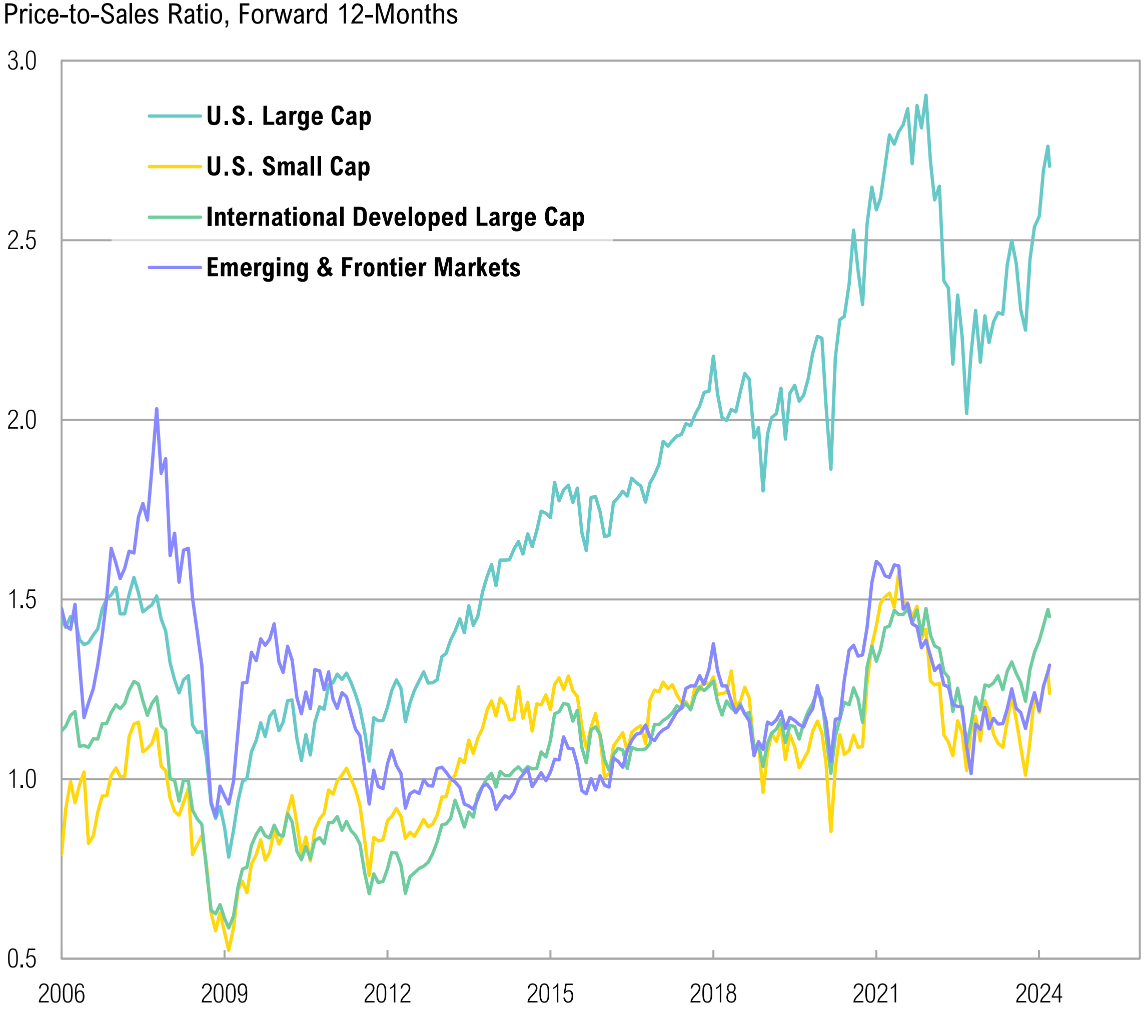
U.S. 10-Year Yield, %



Source: Bloomberg. CPI numbers refer to U.S. Y/Y headline CPI.

Emerging market stocks remain relatively cheap vs. developed markets

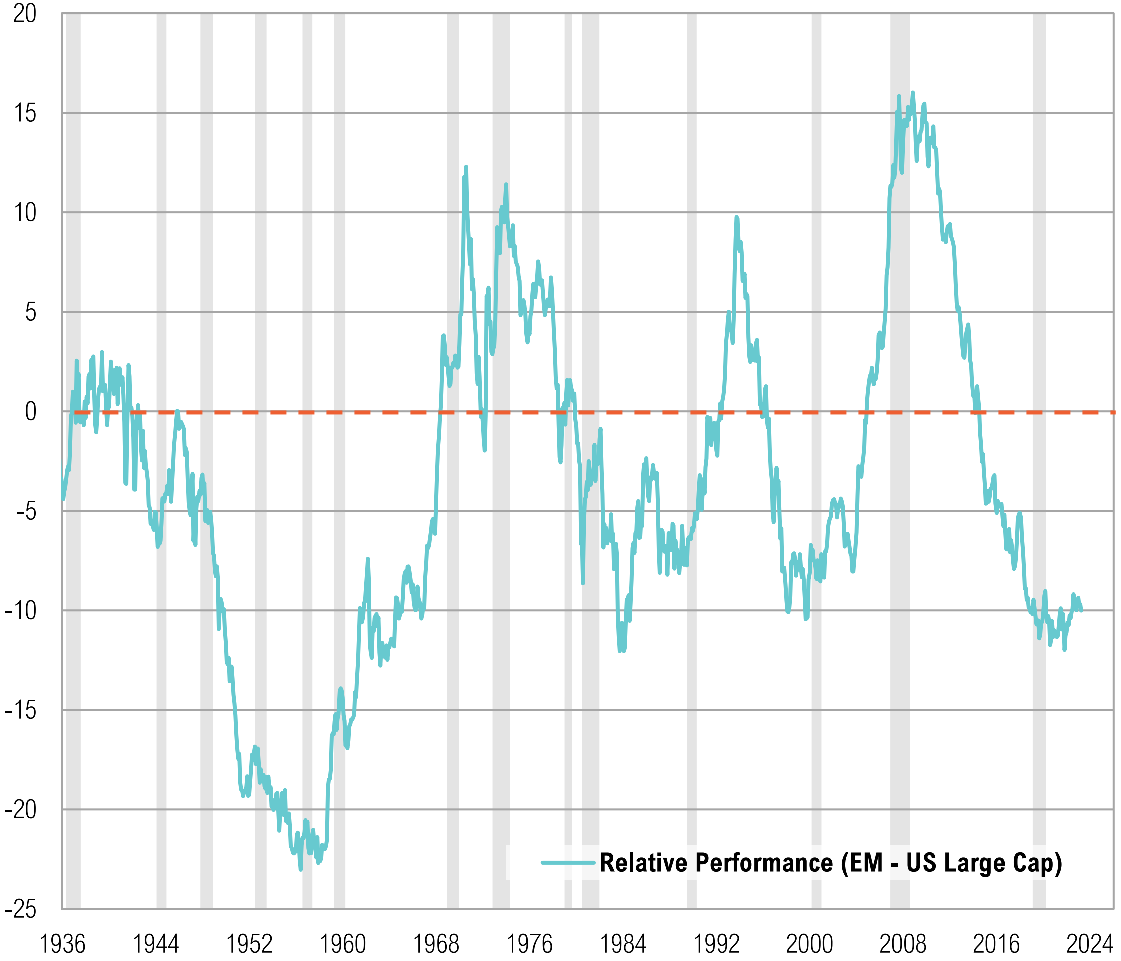




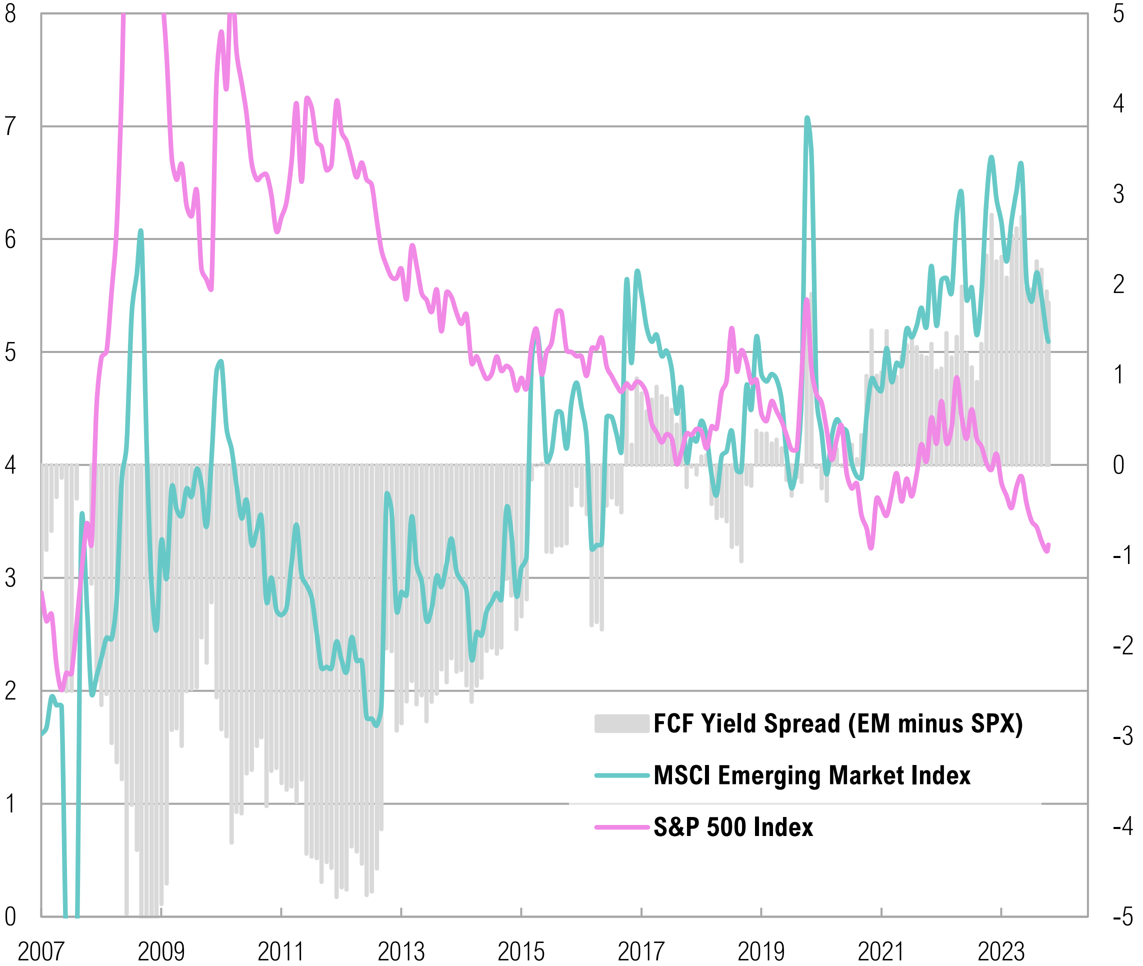
Source: Bloomberg. As of 4/11/2024.

The current 10-year performance divergence between EM and U.S. large cap is among the widest in history; free cash flow yield of EM is near the widest margin in 15 years (~2% higher than large cap)

Rolling 10-Year Relative Returns, %



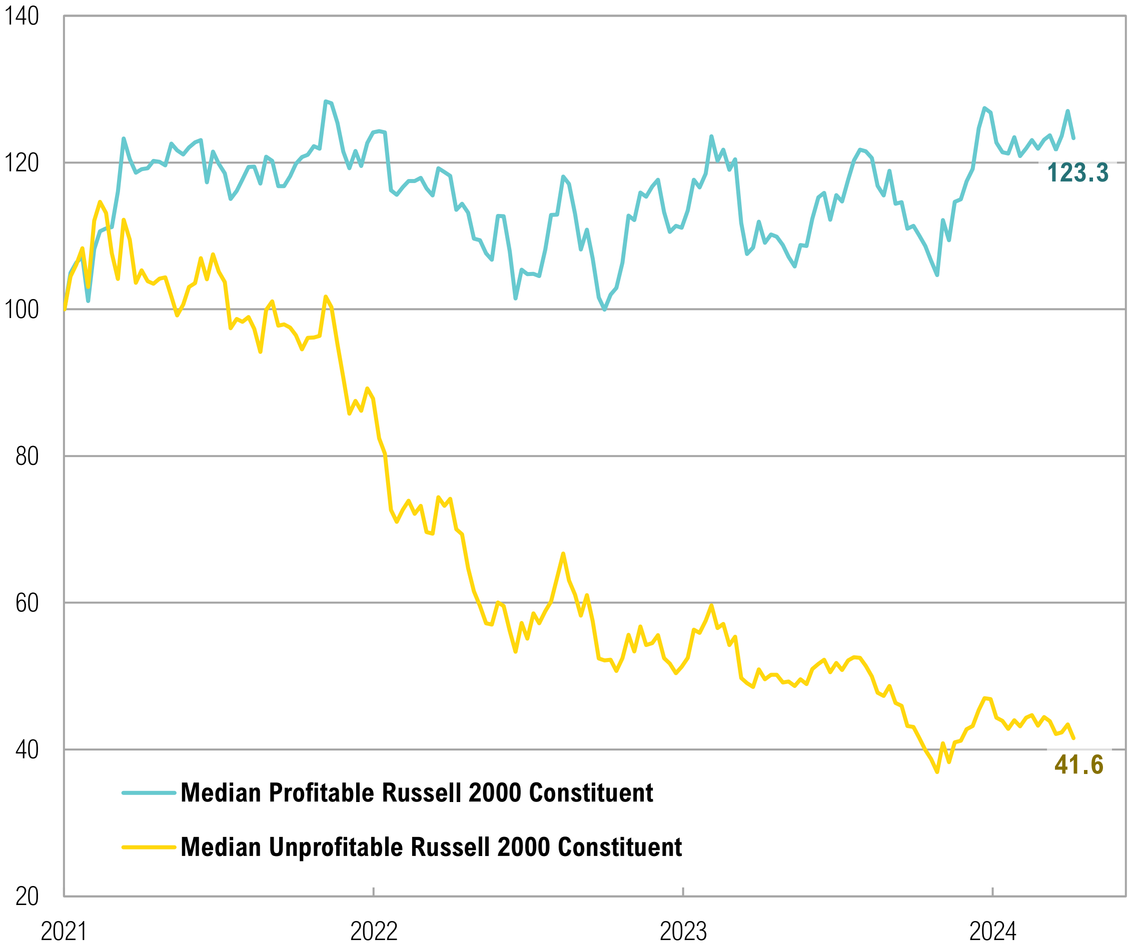
Free Cash Flow Yield, % Spread, %



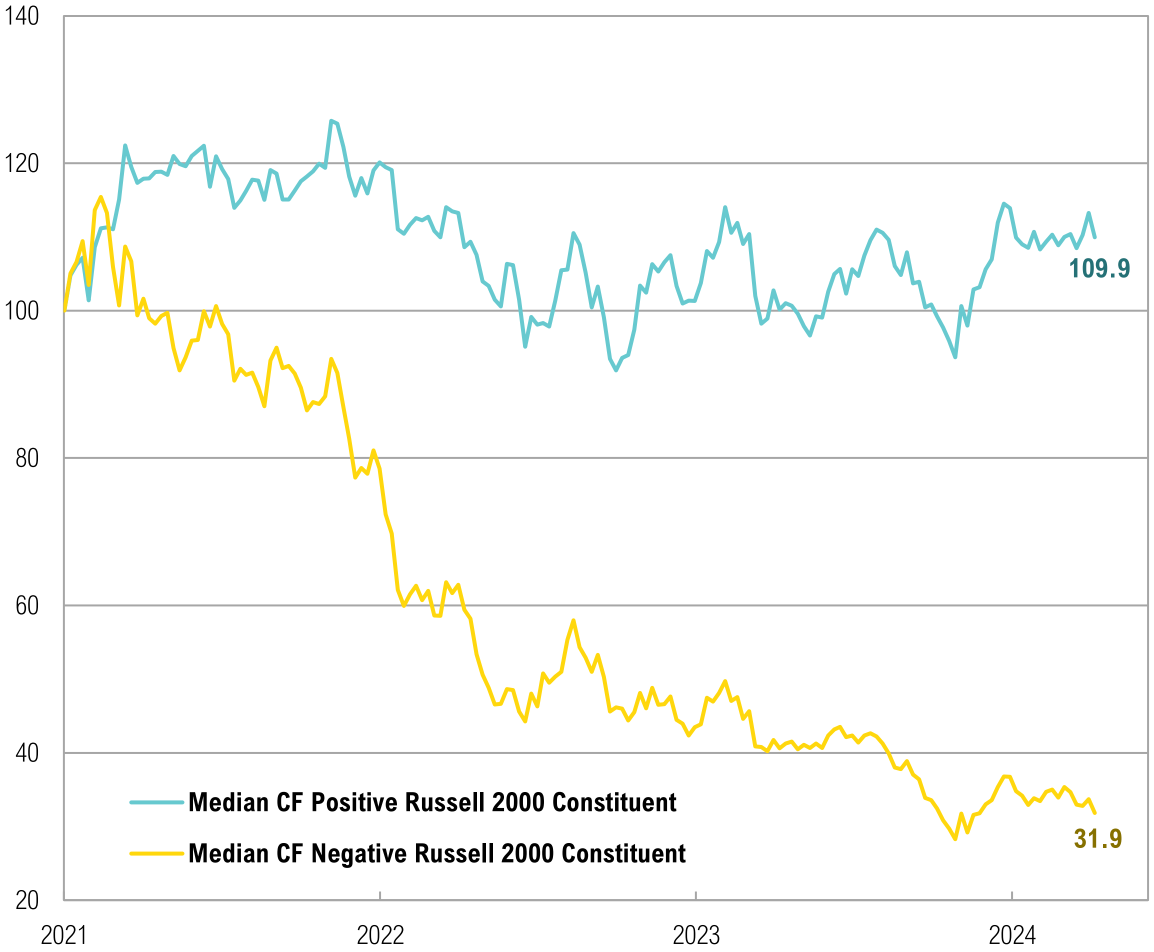
Source: Bloomberg

Unprofitable small cap companies have been impacted much more by rising rates than their profitable counterparts

Growth of 100, Profitable vs. Unprofitable



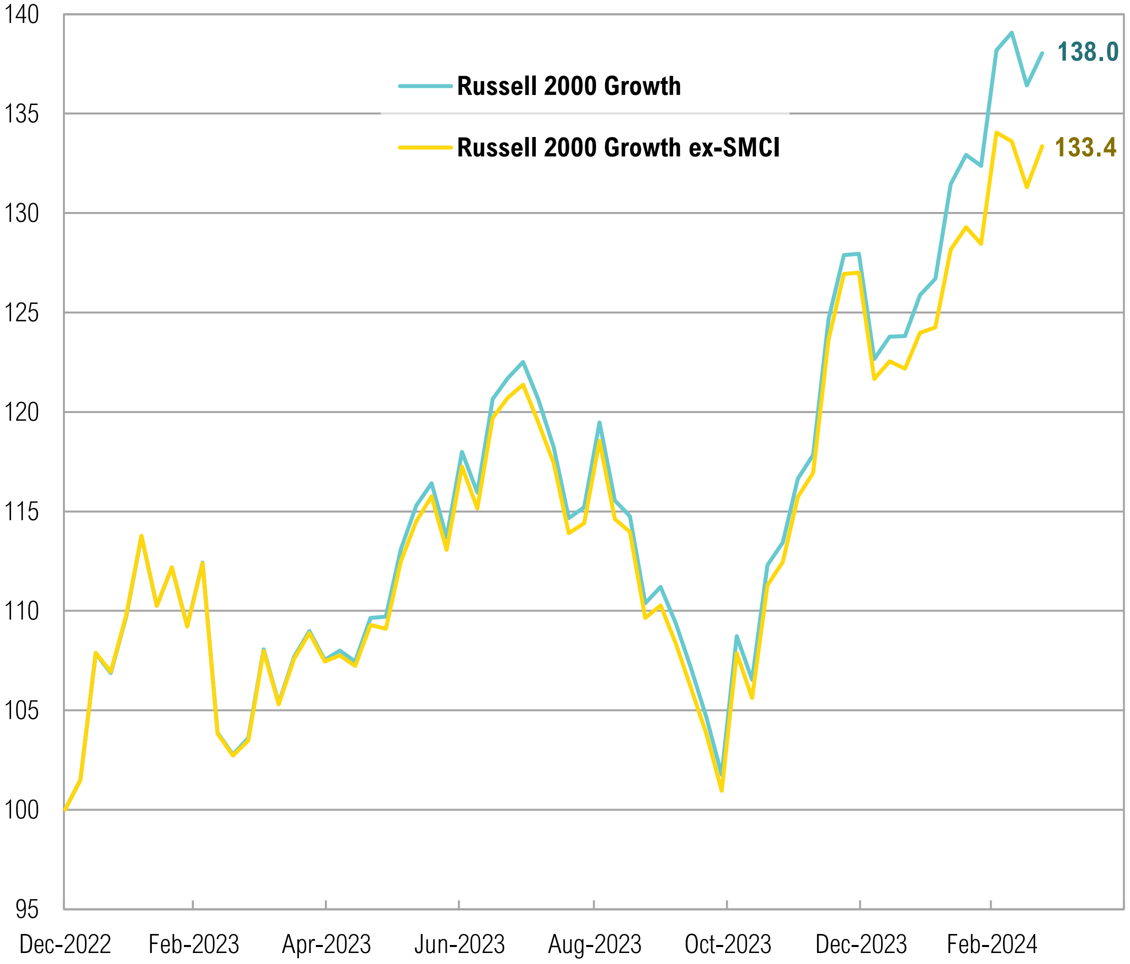
Growth of 100, Cash Flow Positive vs. Cash Flow Negative



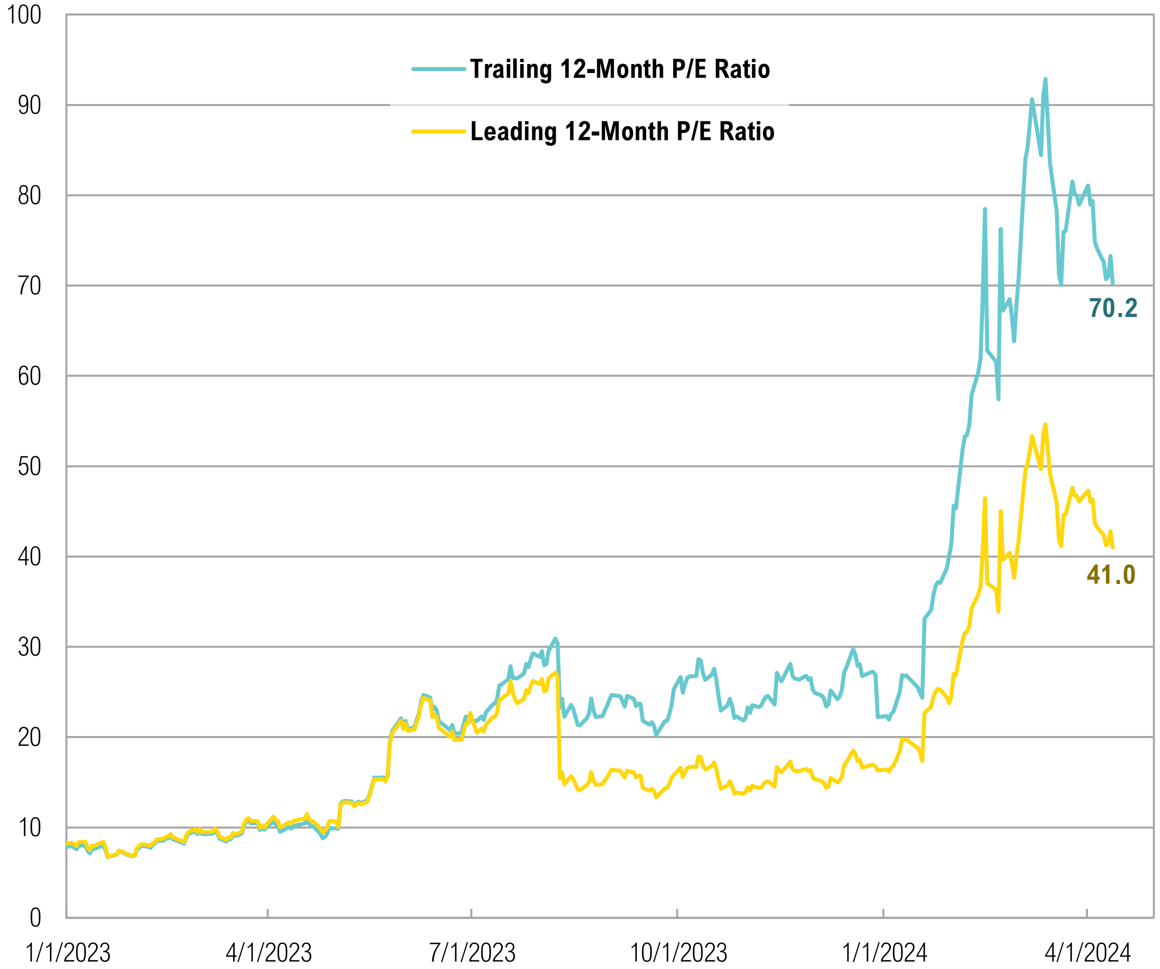
Source: Bloomberg. Based on current Russell 2000 constituents. Profitability is based on whether the most recent reported net income was positive of negative. Cash flow is based on most recent reported cash flow per share. Returns are determined based on the median return of all companies that meet the defined criteria.

Super Micro Computer has been the superstar of the small cap space, and has accounted for a significant amount of the entire Russell 2000's growth

Growth of 100



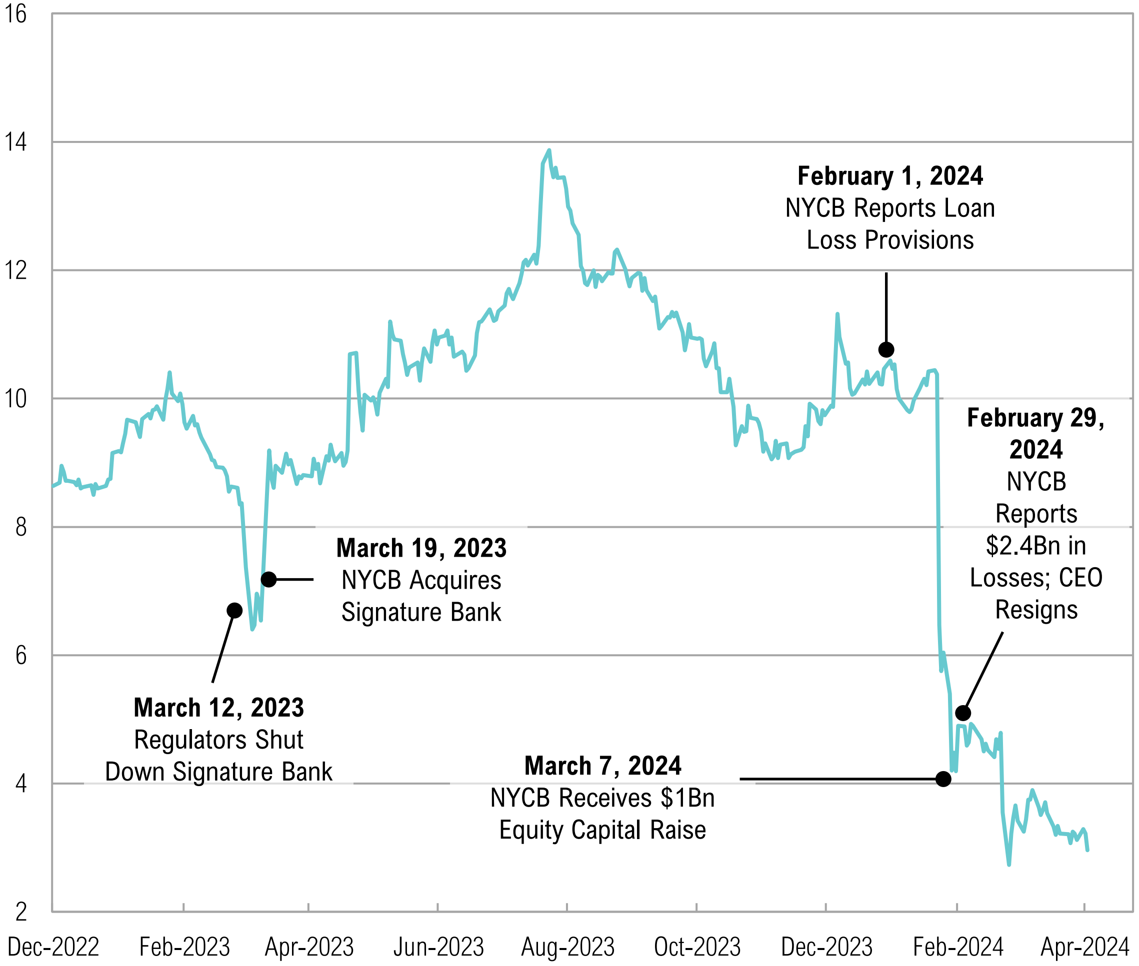
Super Micro Computer, Price to Earnings Ratio



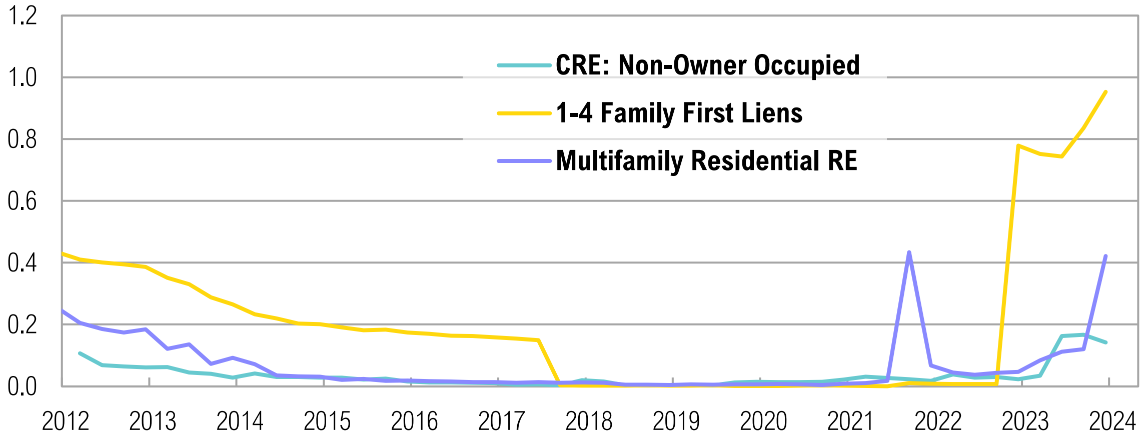
Source: Bloomberg. Russell 2000 Growth ex-SMCI weights have been rescaled.

New York Community Bank (Flagstar Bank) acquired the failed Signature Bank in March 2023; it is down ~70% YTD on reports of a bad loan portfolio

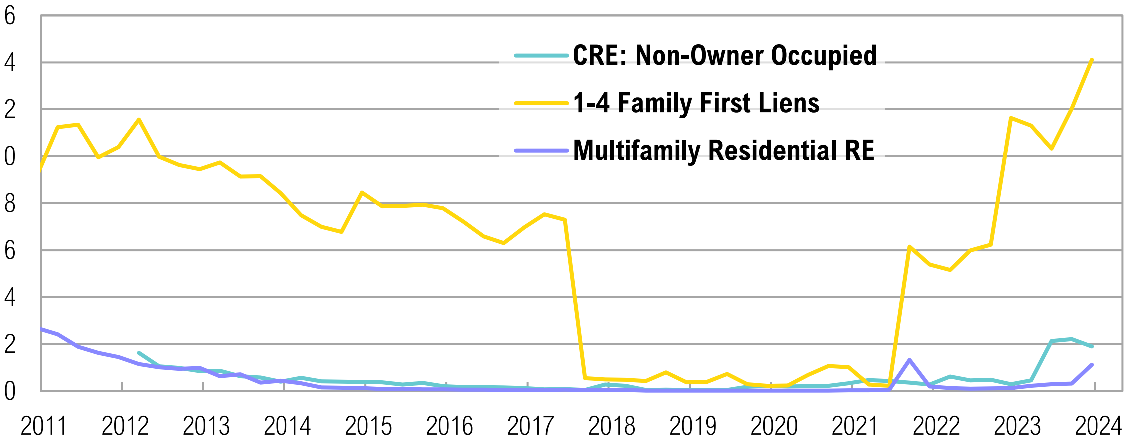
New York Community Bank Share Price, $



Flagstar Bank Loan Delinquencies by Type, $Bn

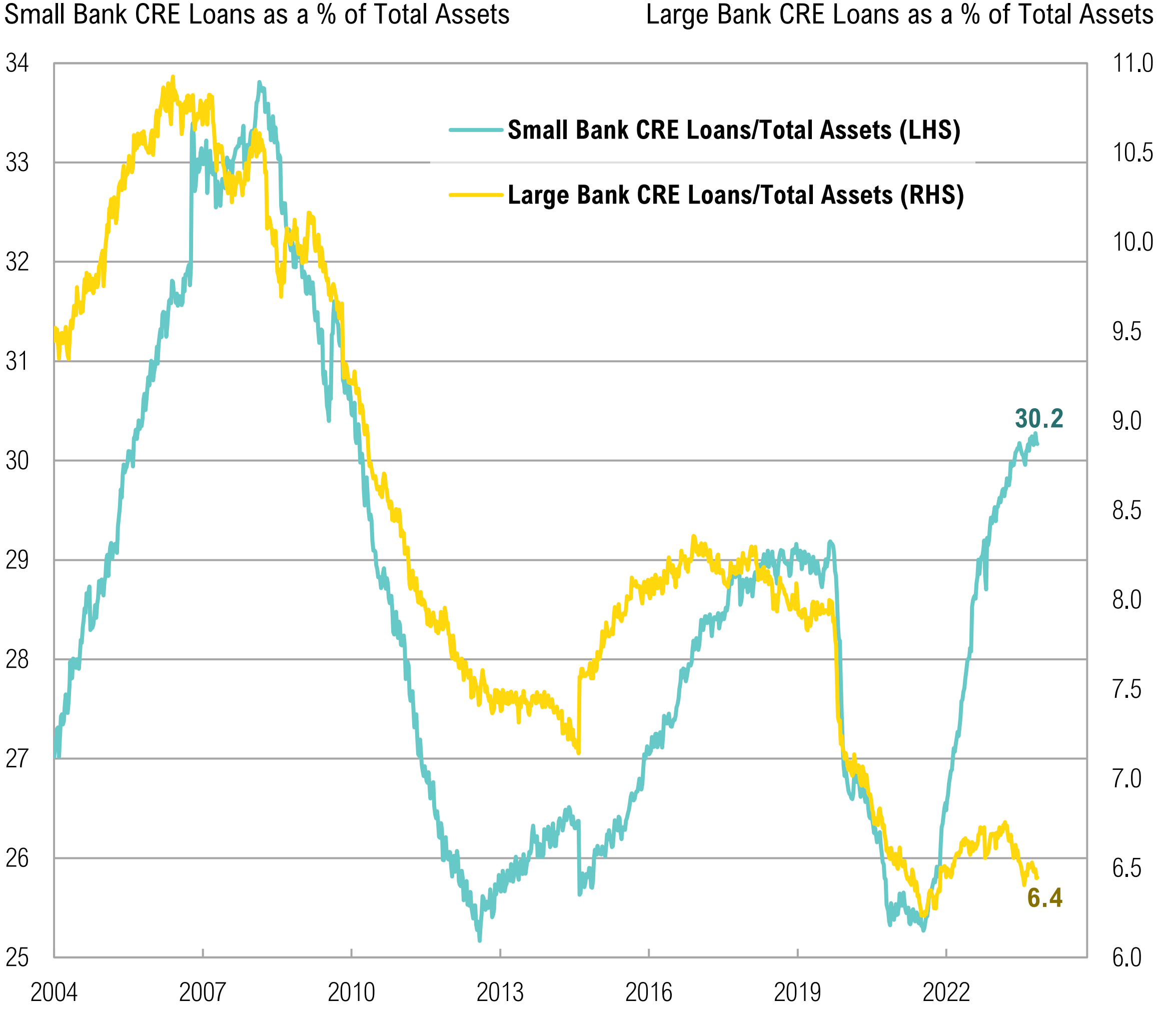


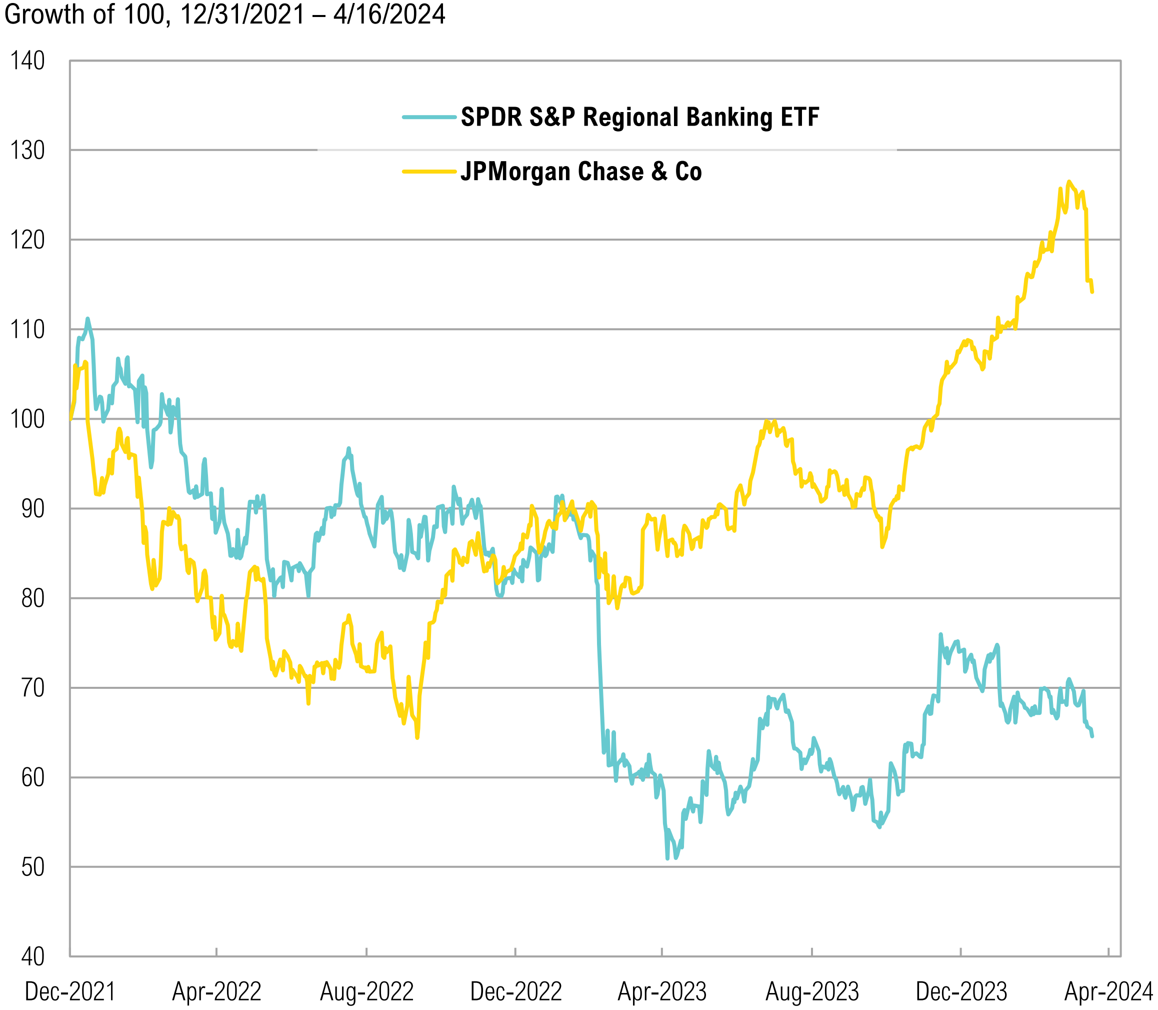
Flagstar Bank Loan Delinquencies by Type, %



Source: Bloomberg, BankRegData.

CRE loans account for 30% of small bank assets and only ~6% of big bank assets; big bank performance since Jan 2022 emphasizes their strength as regional banks remain under scrutiny

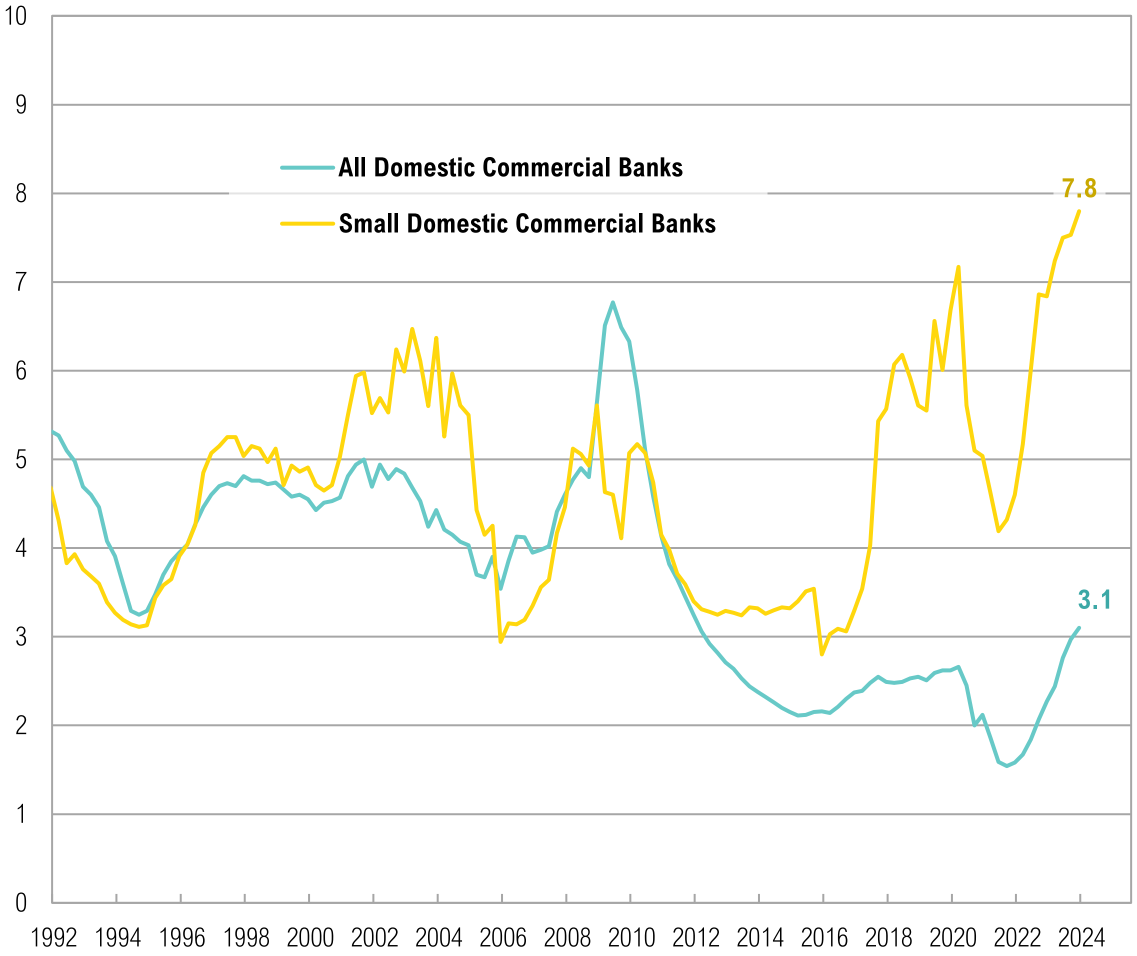




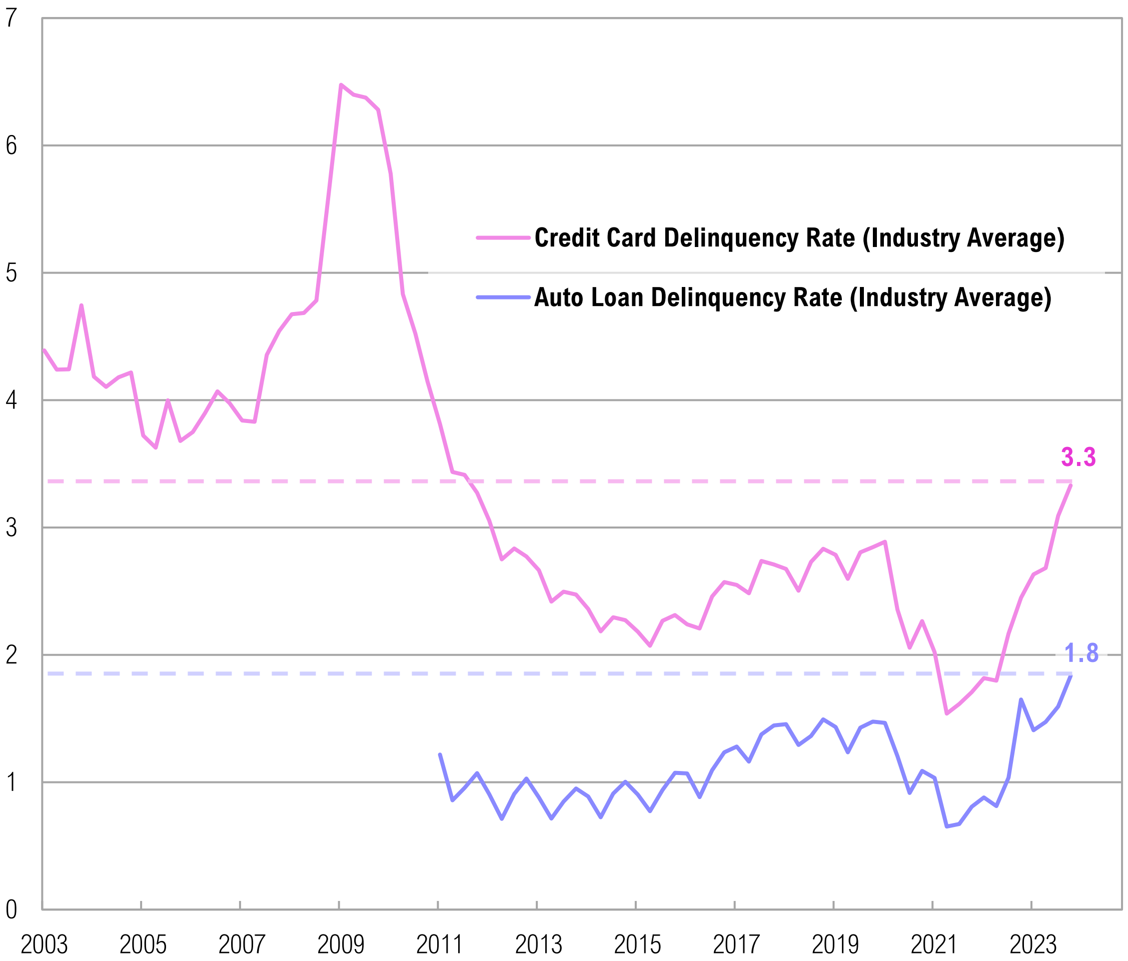
Source: Bloomberg, FRB.

Small bank credit card delinquencies are more than 2x large bank delinquencies; overall, credit card and auto delinquencies are increasing at a rapid pace

Credit Card Loan Delinquency Rates, %



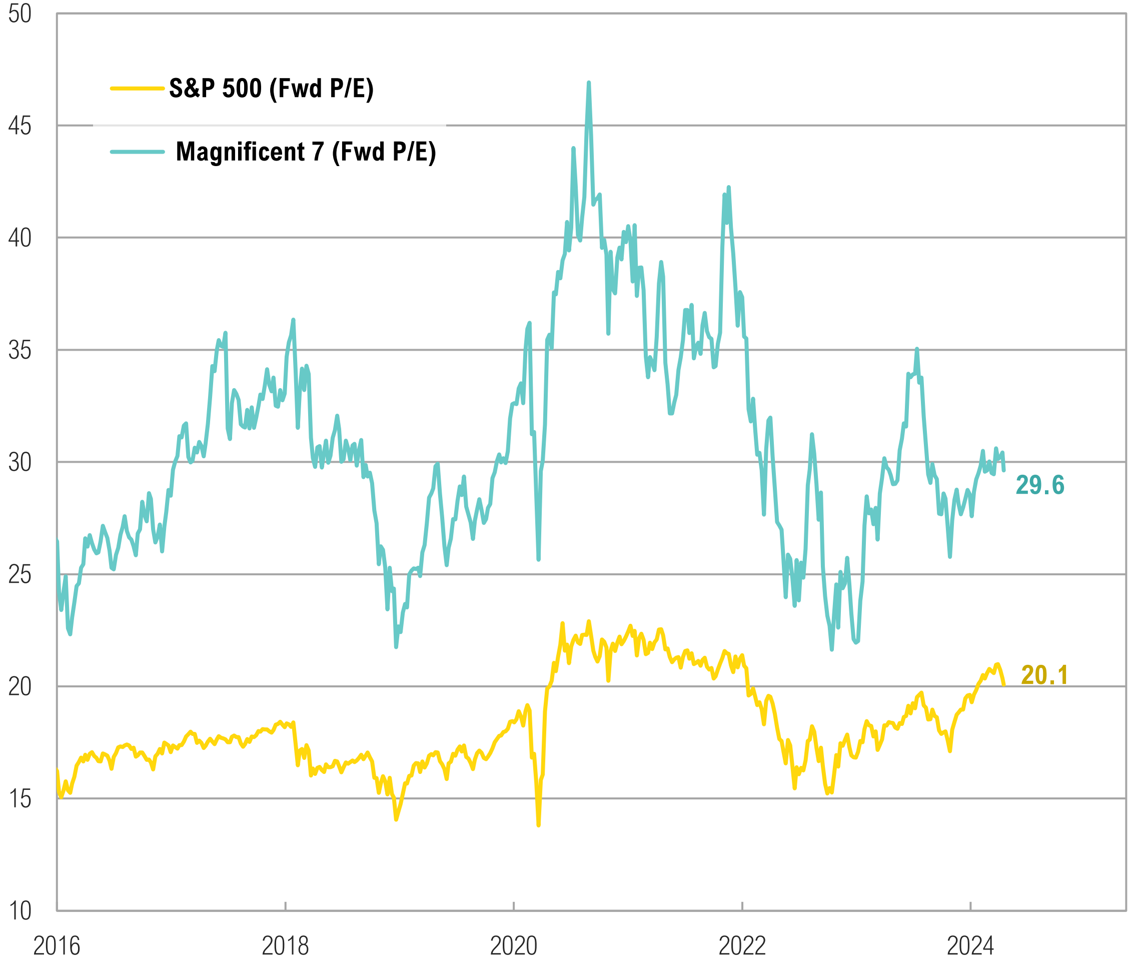
Delinquency Rates, %



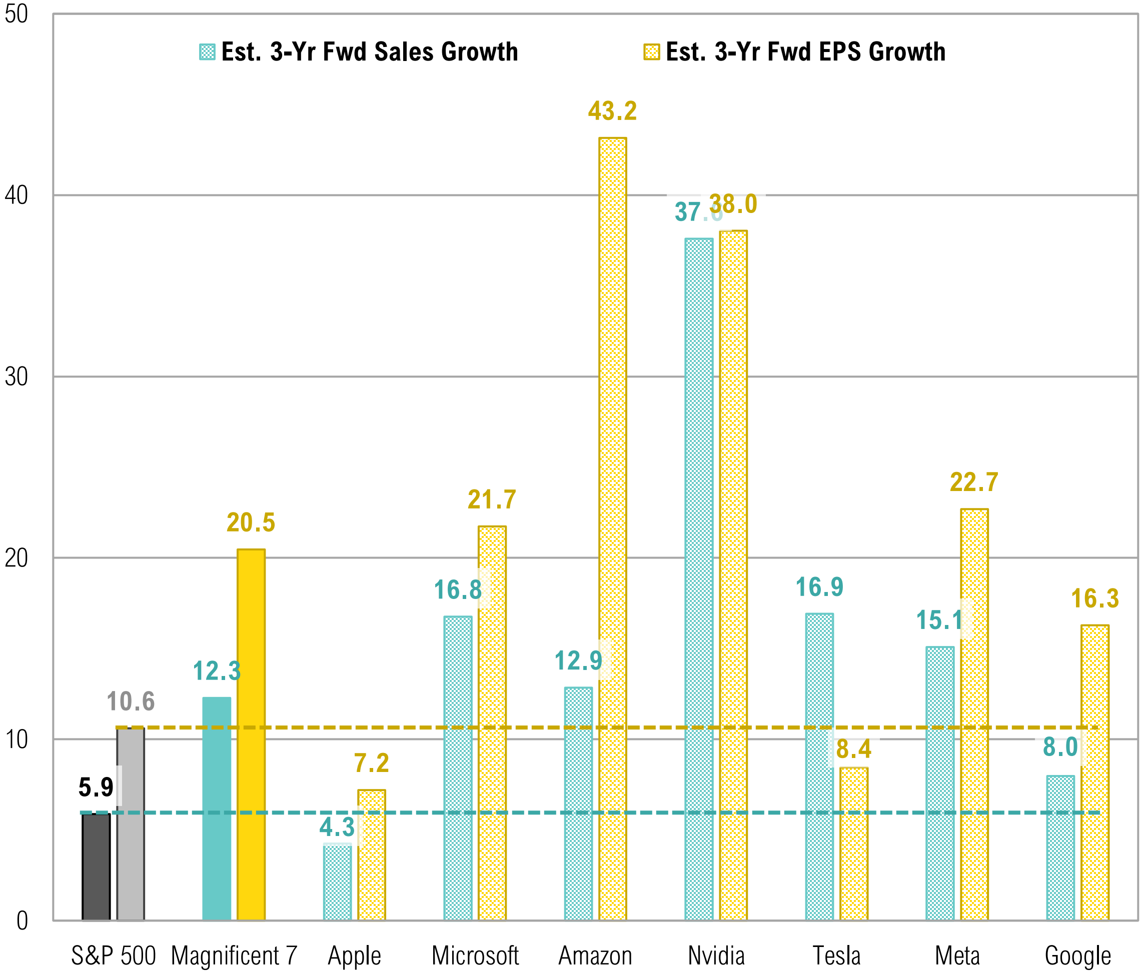
Source: BankRegData. As of 12/31/2023.

Mag 7 forward valuations have dropped substantially from peak levels, but remain elevated vs the broader market; Apple is currently trading at 26x earnings, despite single-digit growth expectations

12-Month Forward Price-to-Earnings Ratio*



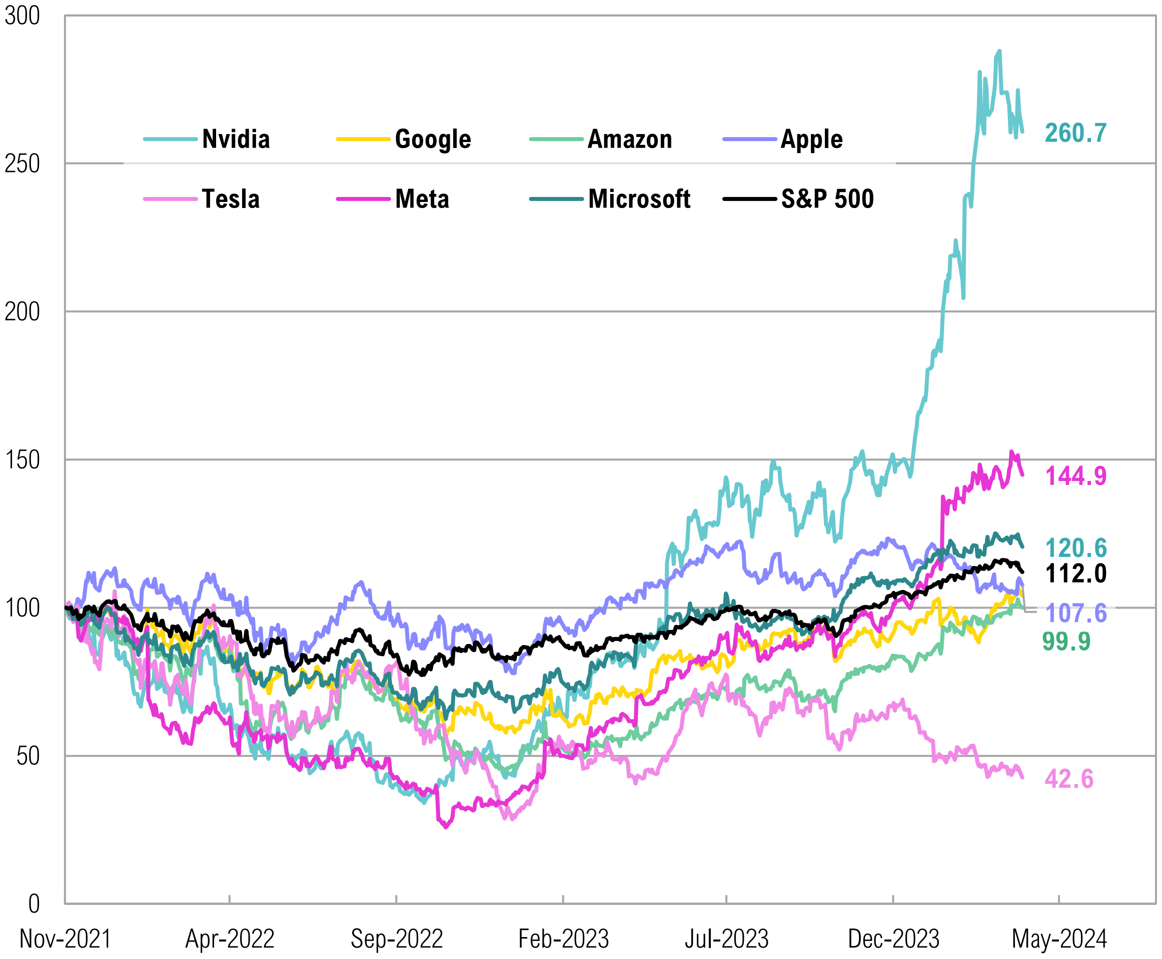
Consensus Annualized 3-Year Forward Growth Expectations, %



Source: Bloomberg. *The price to earnings ratio for the Magnificent 7 assumes an equal weighting of Apple, Nvidia, Microsoft, Meta, Amazon, Tesla and Alphabet.

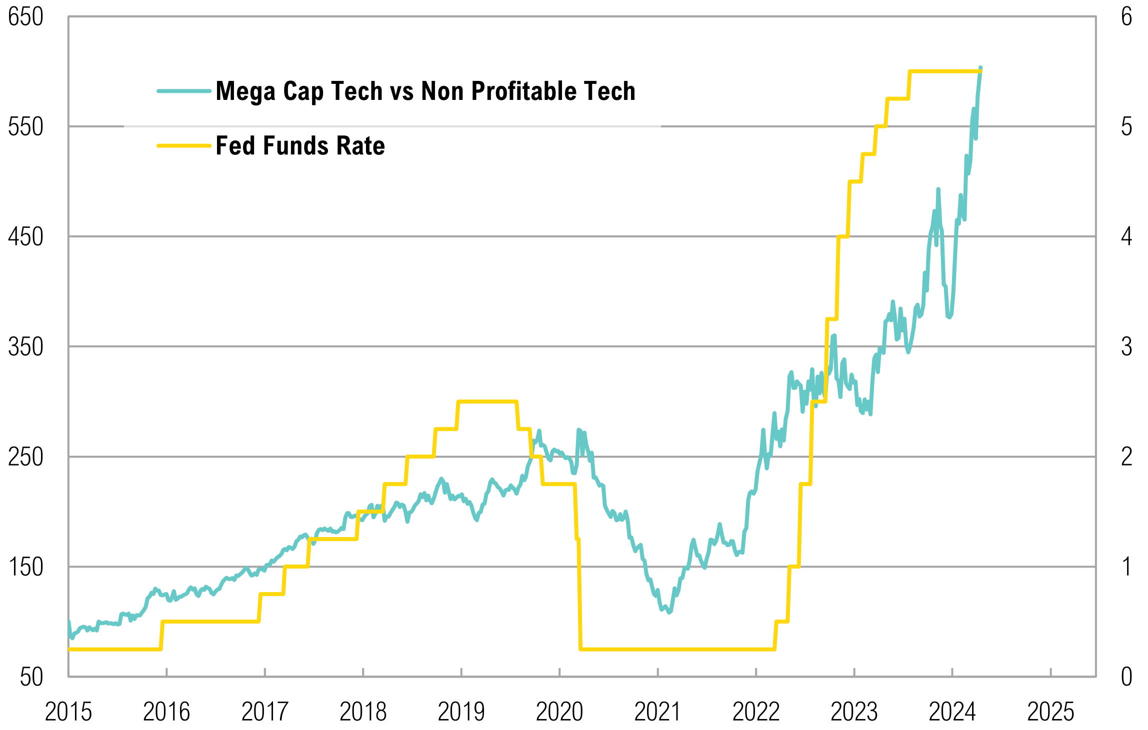
Mag 7 no more? There is a notable performance divergence between the 2023 market leaders; historically, mega cap tech has outperformed unprofitable peers in a higher rate environment

Growth of 100, 11/19/2021 – 4/15/2024



GS Mega Cap Tech vs Non-Profitable Tech Index

Effective Fed Funds Rate, %

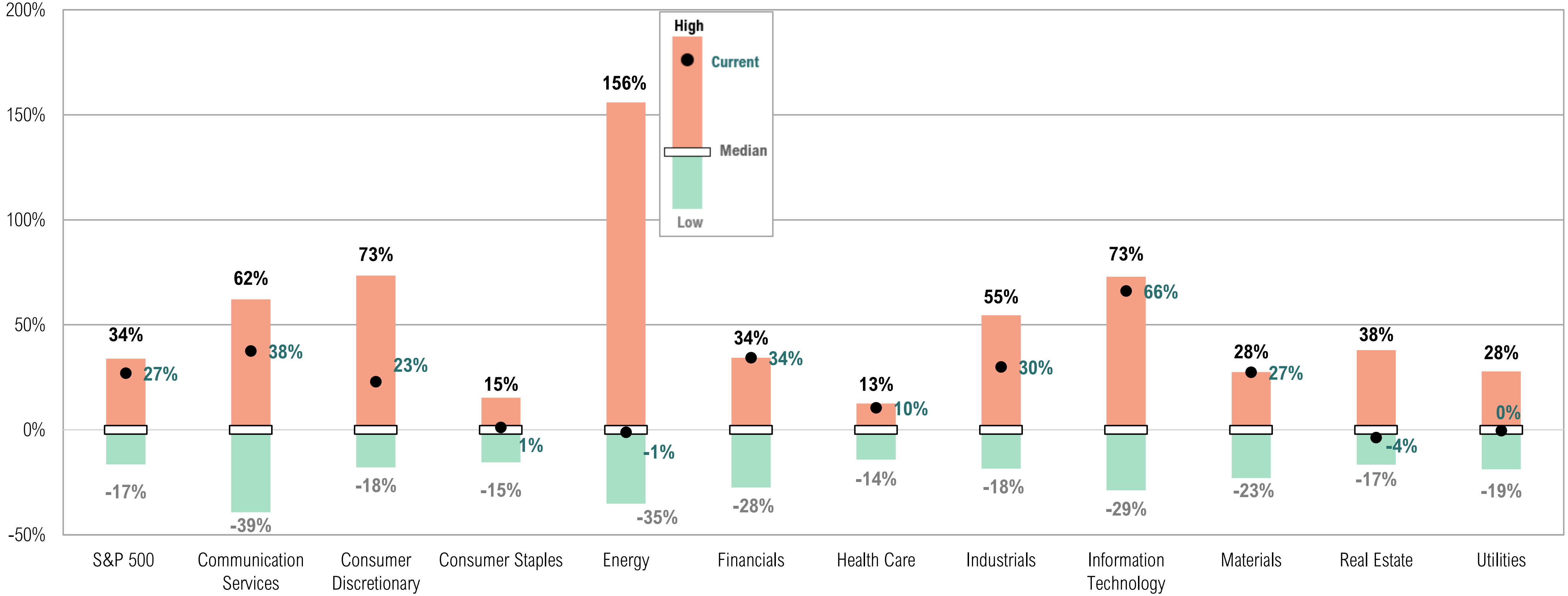


	Market Wt. (%)	Cash as % of Market Cap	Net Debt to Equity	RoE (%)	Net Margin (%)
Magnificent 7	29.7%	4.3%	-0.3	44.0%	25.0%
Tech Bubble	19.0%	2.4%	0.0	28.0%	16.0%

Source: Bloomberg. Magnificent 7 aggregate companies comprise of Apple. Microsoft, Alphabet, Amazon, Nvidia, Telsa, Meta and Tech Bubble aggregate companies comprise Microsoft, Cisco, Intel, Oracle, IBM, Lucent, Nortel Networks.

Tech, financials, and health care are trading at or near 10-year extremes

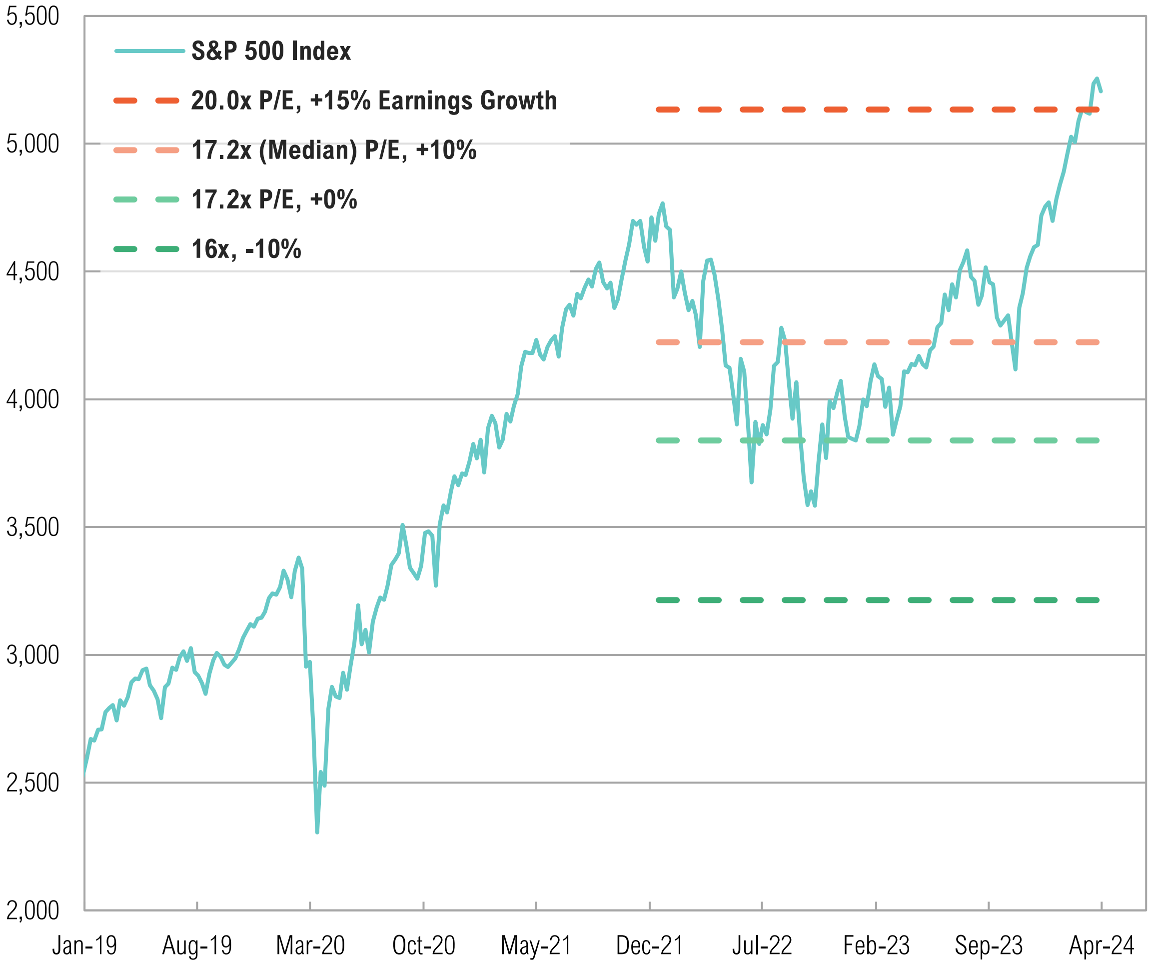
Current Composition Valuation Premium/Discount vs. 10-Year Median*



Source: Bloomberg, Morningstar, SpringTide. *The composite valuation equal weights four valuation metrics (Fwd P/E, Fwd P/CF, TTM P/S and TTM EV/EBITDA) relative to each respective sectors' 10-year medium valuation. The Financials composite replaces EV/EBITDA with TTM P/B.

Markets are currently pricing in 12.5% EPS growth over the next 12 months, implying a 20.7x P/E vs LT average of 17.2x

S&P 500 Index



Implied Return Matrix, 1 Year

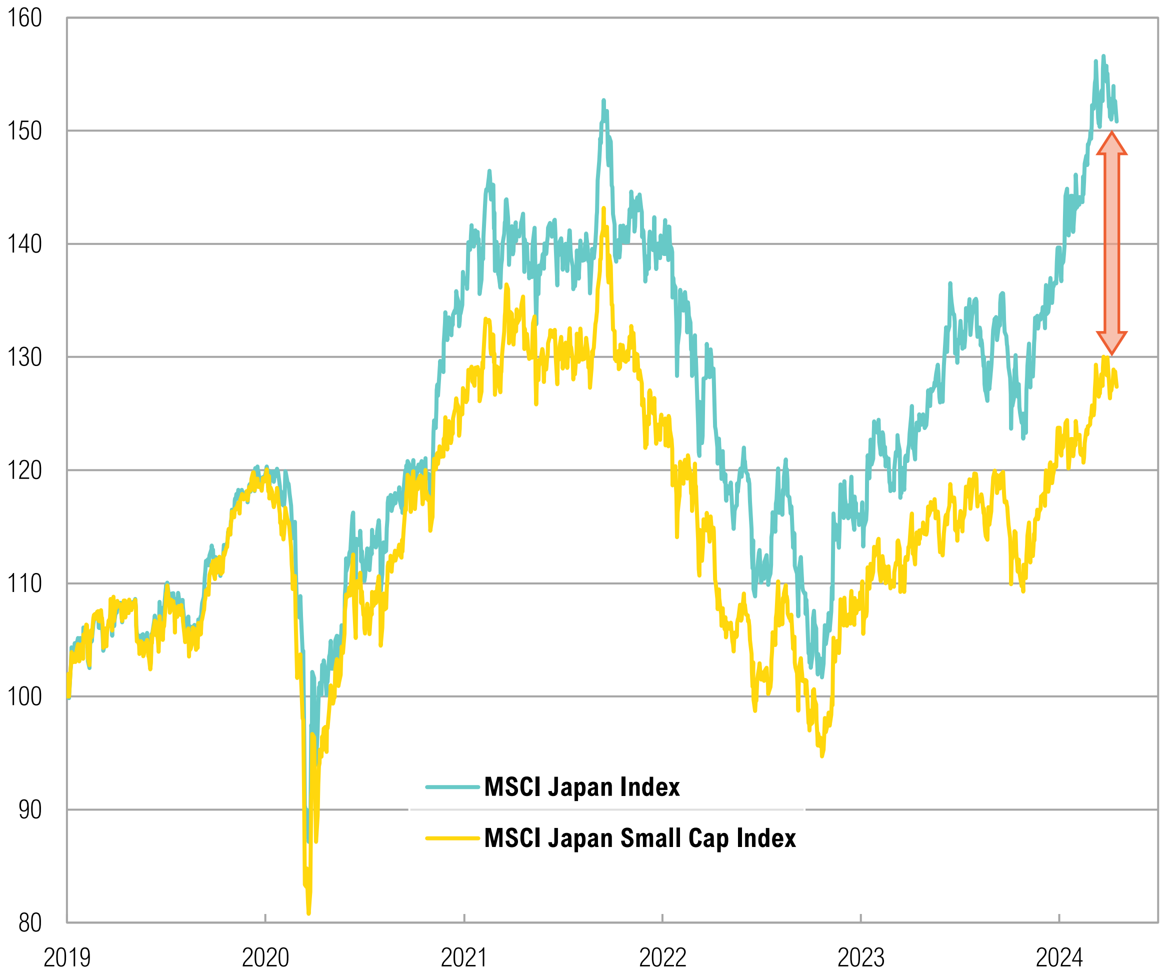
Earnings growth

12-Month Forward P/E Multiple	-25%	-20%	-15%	-10%	-5%	0%	5%	10%	15%	20%	25%
26.0	4352	4642	4932	5223	5513	5803	6093	6383	6673	6963	7254
25.0	4185	4464	4743	5022	5301	5580	5859	6138	6417	6696	6975
24.0	4017	4285	4553	4821	5089	5356	5624	5892	6160	6428	6696
23.0	3850	4107	4363	4620	4877	5133	5390	5647	5903	6160	6417
22.0	3683	3928	4174	4419	4665	4910	5156	5401	5647	5892	6138
21.0	3515	3750	3984	4218	4453	4687	4921	5156	5390	5624	5859
20.0	3348	3571	3794	4017	4241	4464	4687	4910	5133	5356	5580
19.0	3180	3392	3604	3816	4028	4241	4453	4665	4877	5089	5301
18.0	3013	3214	3415	3616	3816	4017	4218	4419	4620	4821	5022
17.0	2846	3035	3225	3415	3604	3794	3984	4174	4363	4553	4743
16.0	2678	2857	3035	3214	3392	3571	3750	3928	4107	4285	4464
15.0	2511	2678	2846	3013	3180	3348	3515	3683	3850	4017	4185
14.0	2343	2500	2656	2812	2968	3125	3281	3437	3593	3750	3906
13.0	2176	2321	2466	2611	2756	2901	3046	3192	3337	3482	3627
12.0	2009	2143	2276	2410	2544	2678	2812	2946	3080	3214	3348
11.0	1841	1964	2087	2210	2332	2455	2578	2701	2823	2946	3069
10.0	1674	1785	1897	2009	2120	2232	2343	2455	2567	2678	2790

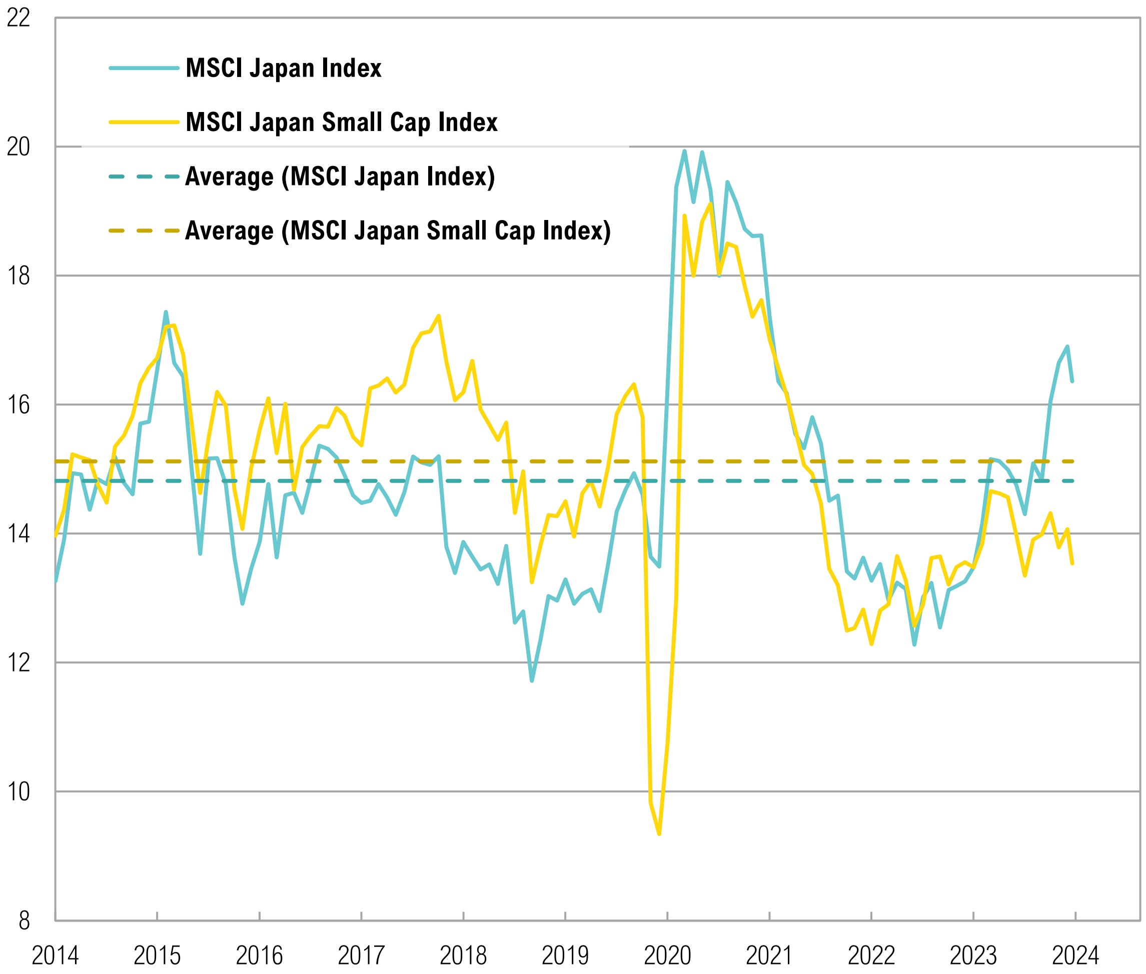
Source: SpringTide, Bloomberg. The implied return matrix includes dividends.

Japanese small cap stocks remain attractive; small cap PEs are well below 10-year averages—there have been recent incentives from the Tokyo Stock Exchange for small caps to improve valuations or risk being delisted

Growth of 100



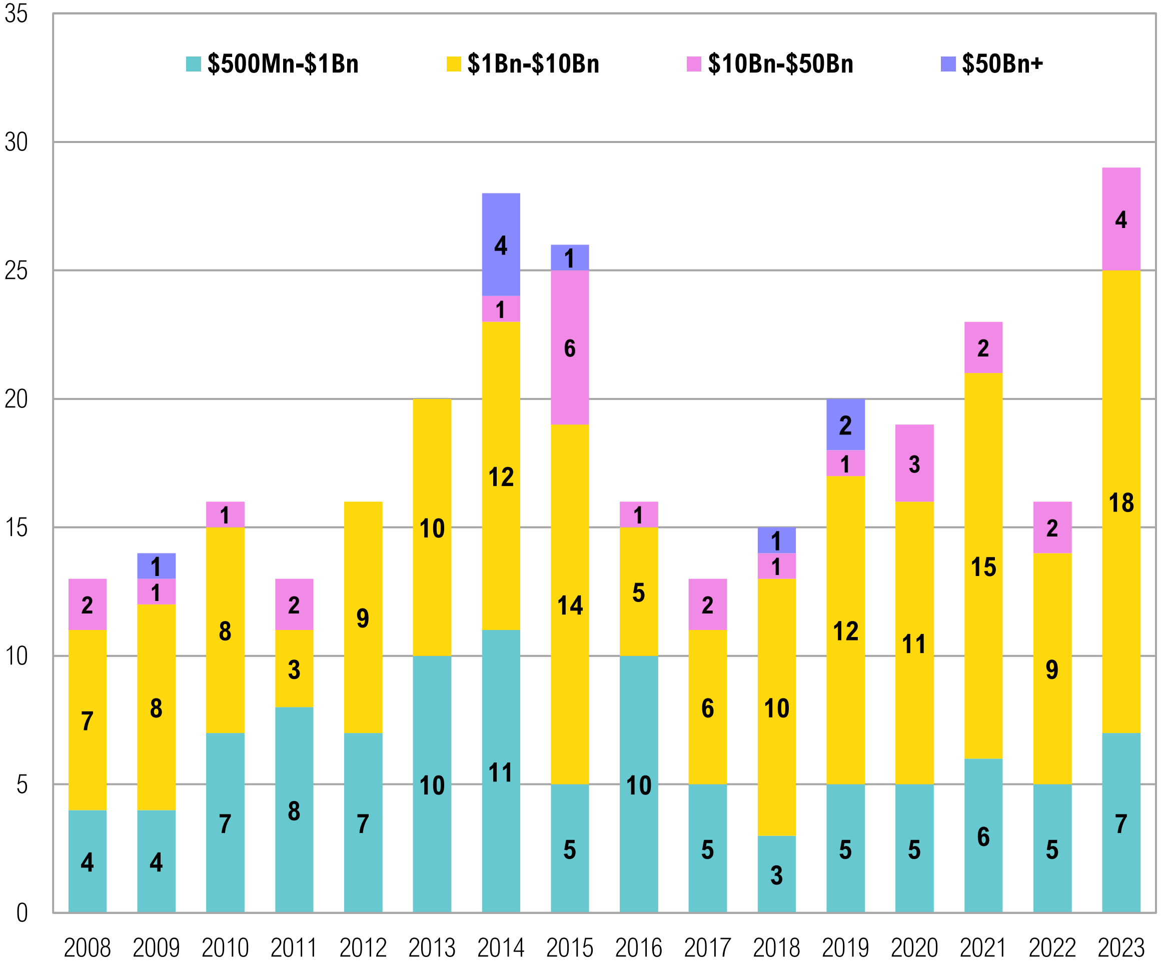
12-Month Forward Price-to-Earnings Ratio



Source: Reuters, OECD.

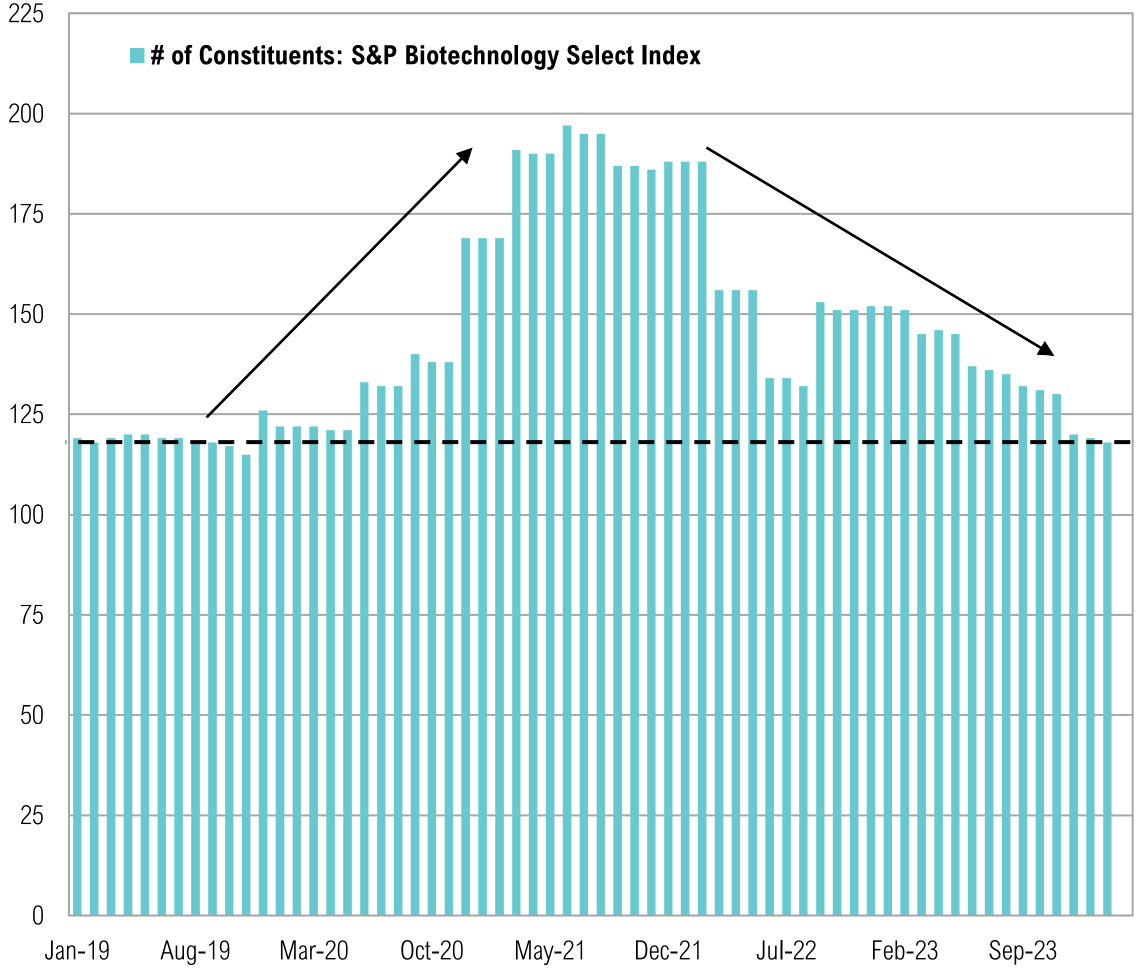
Biopharma acquisitions of $1bn or more hit an all-time high in 2023; consolidation in biotech via M&A provides opportunity for active managers

Global Biopharma M&A Transaction Count by Deal Size



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
$500Mn-$1Bn	4	4	7	8	7	10	11	5	10	5	3	5	5	6	5	7
$1Bn-$10Bn	7	8	8	3	9	10	12	14	5	6	10	12	11	15	9	18
$10Bn-$50Bn	2	1	1	2			1	6	1	2	1	1	3	2	2	4
$50Bn+		1					4	1			1	2				

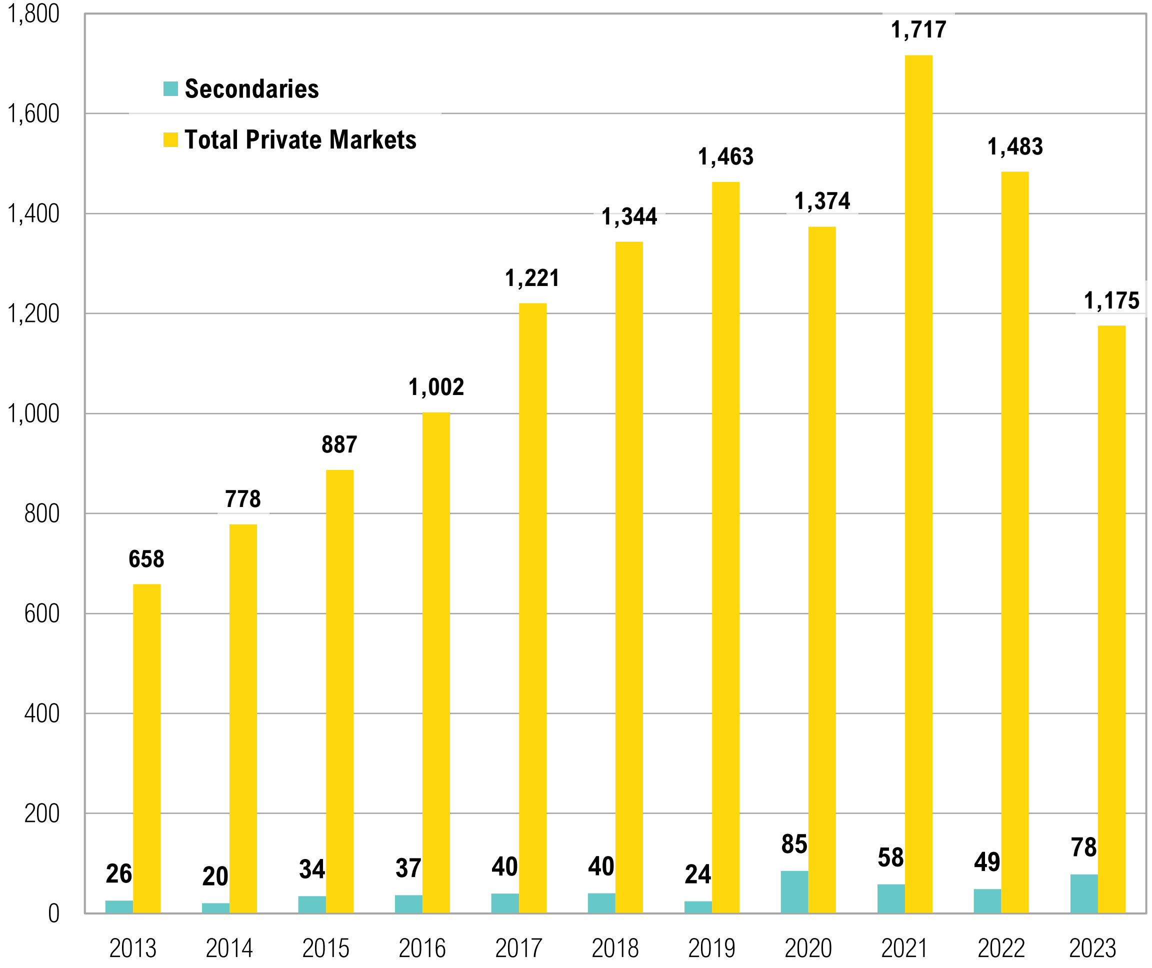
# of Index Constituents



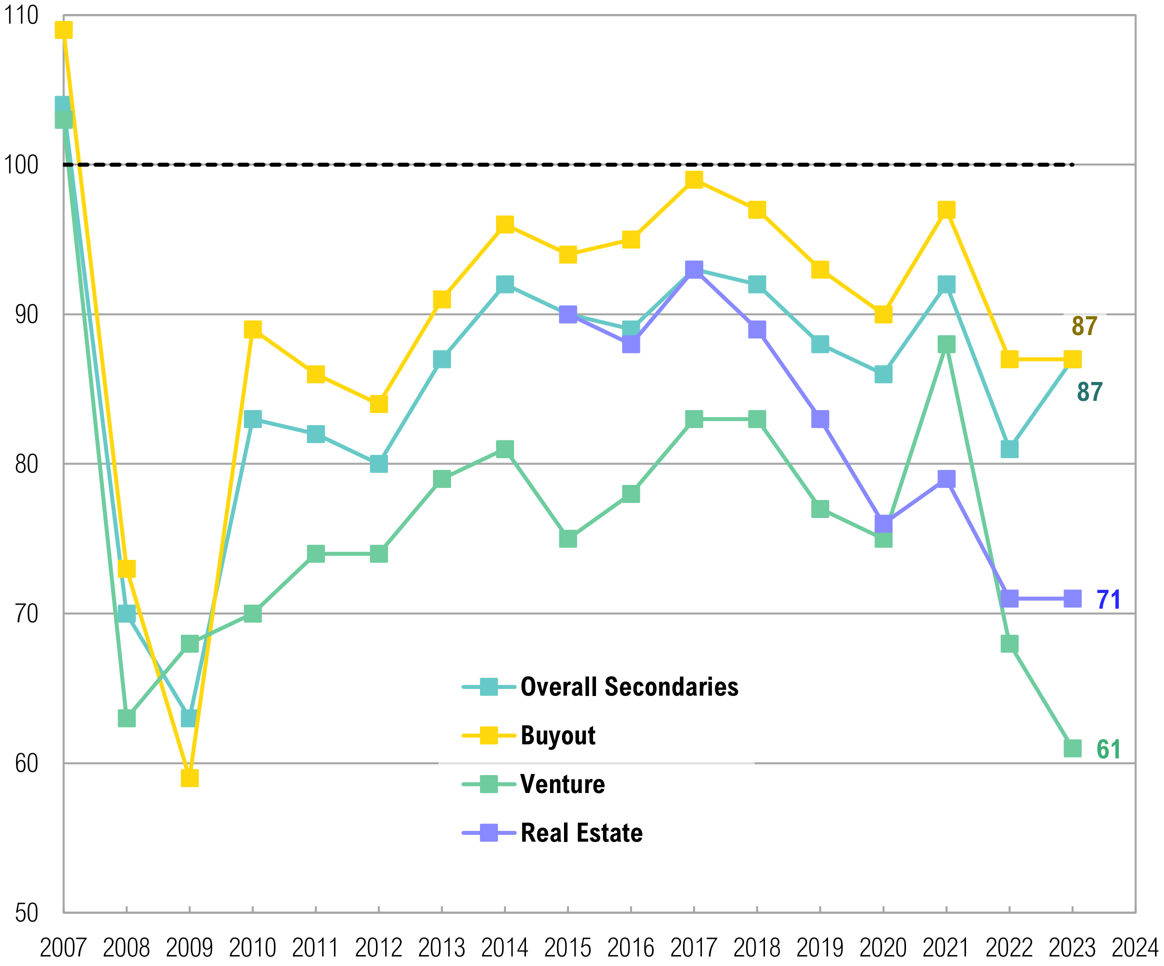
Source: Bloomberg, Eventide, Stifel, Biopharmaceutical Sector Outlook for 2024.

While secondaries fundraising has been robust in 2023, it still represents just 4% of all private market fundraising over the last 7 years

Fundraising Activity, $Bn



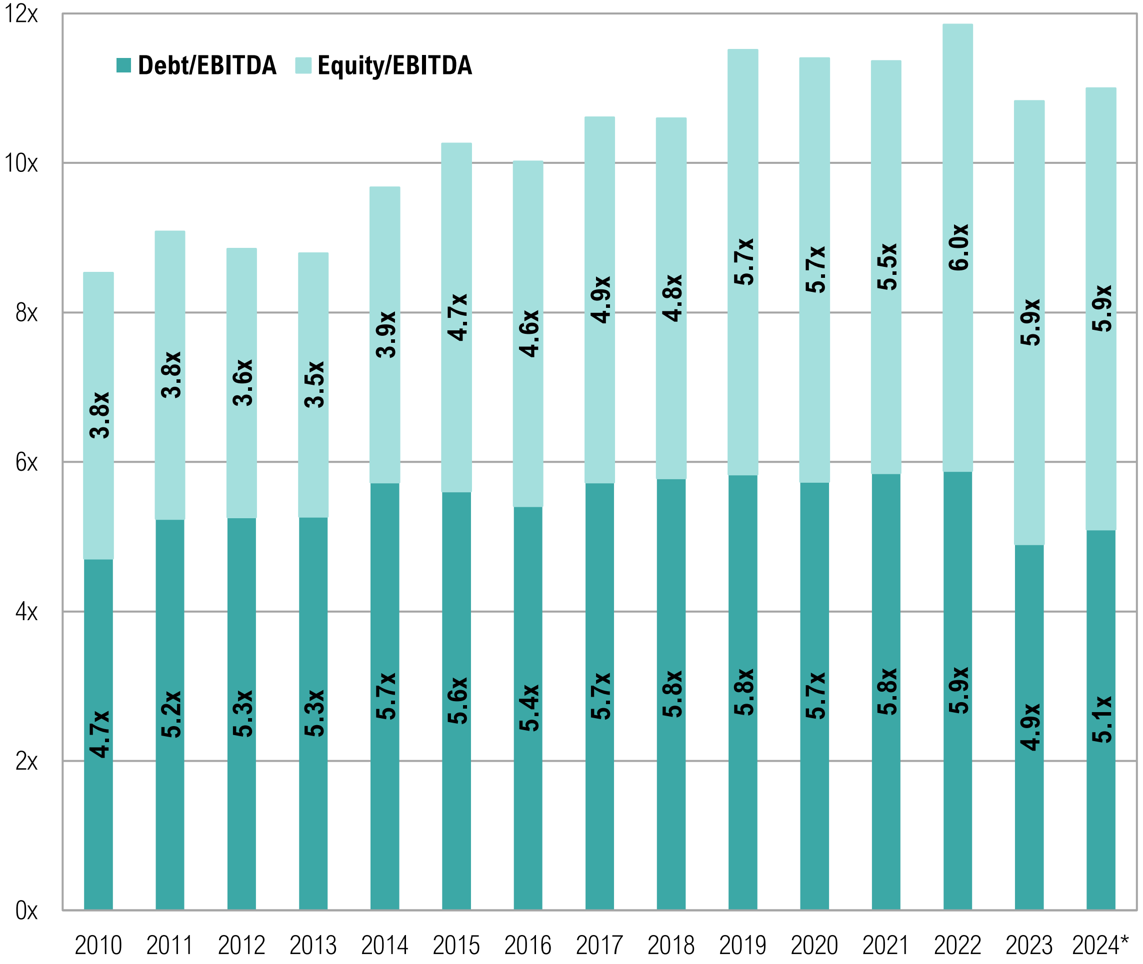
Secondary Pricing as a % of NAV



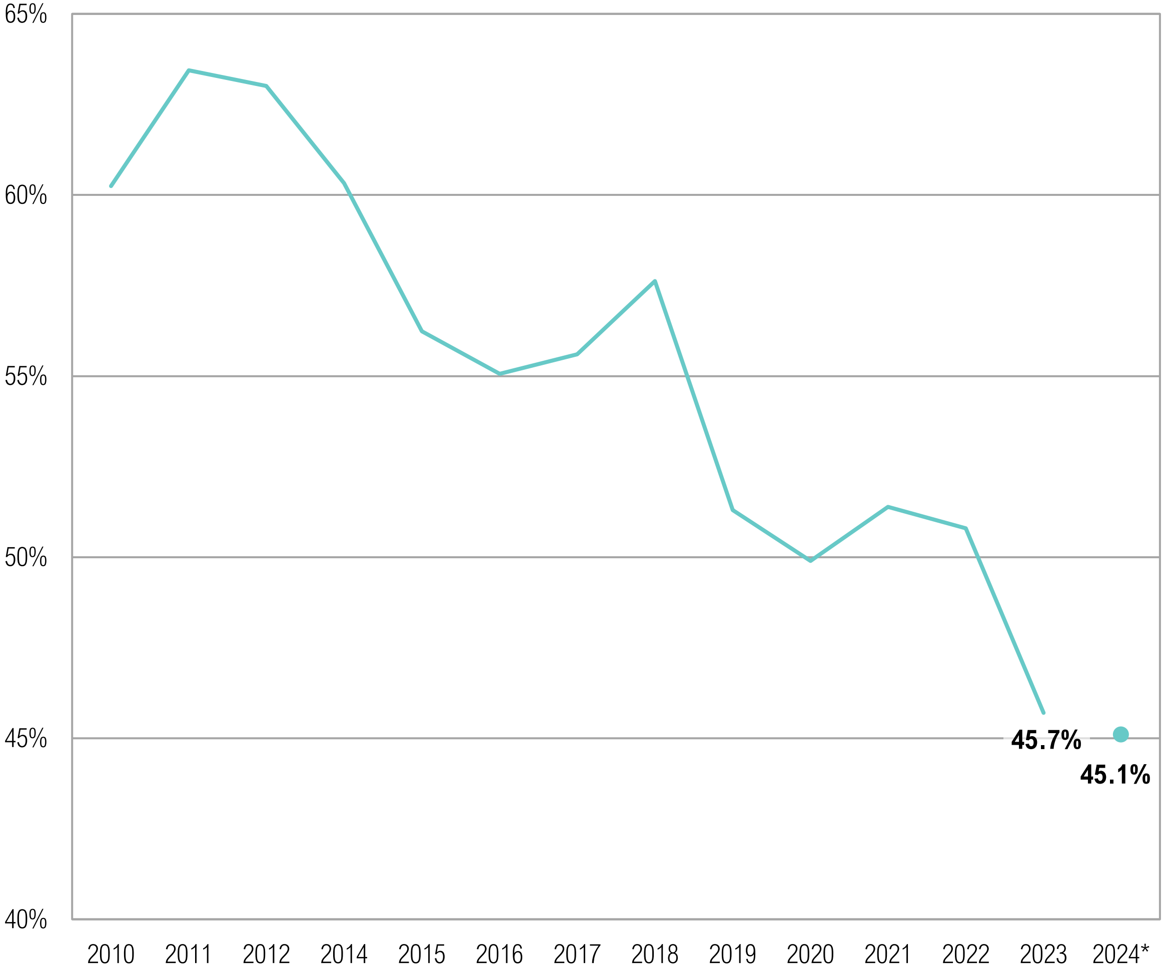
Source: Pitchbook, StepStone, Tap. Fundraising data as of 12/31/2023; Secondary pricing data as of 12/31/2023.

Private equity firms continue to increase the proportion of equity funding in deals, maintaining elevated valuations despite higher interest rates

U.S. Median PE Buyout Multiples



Debt/EV Ratio on U.S. Buyout Deals



Source: Pitchbook. As of 3/31/2024.

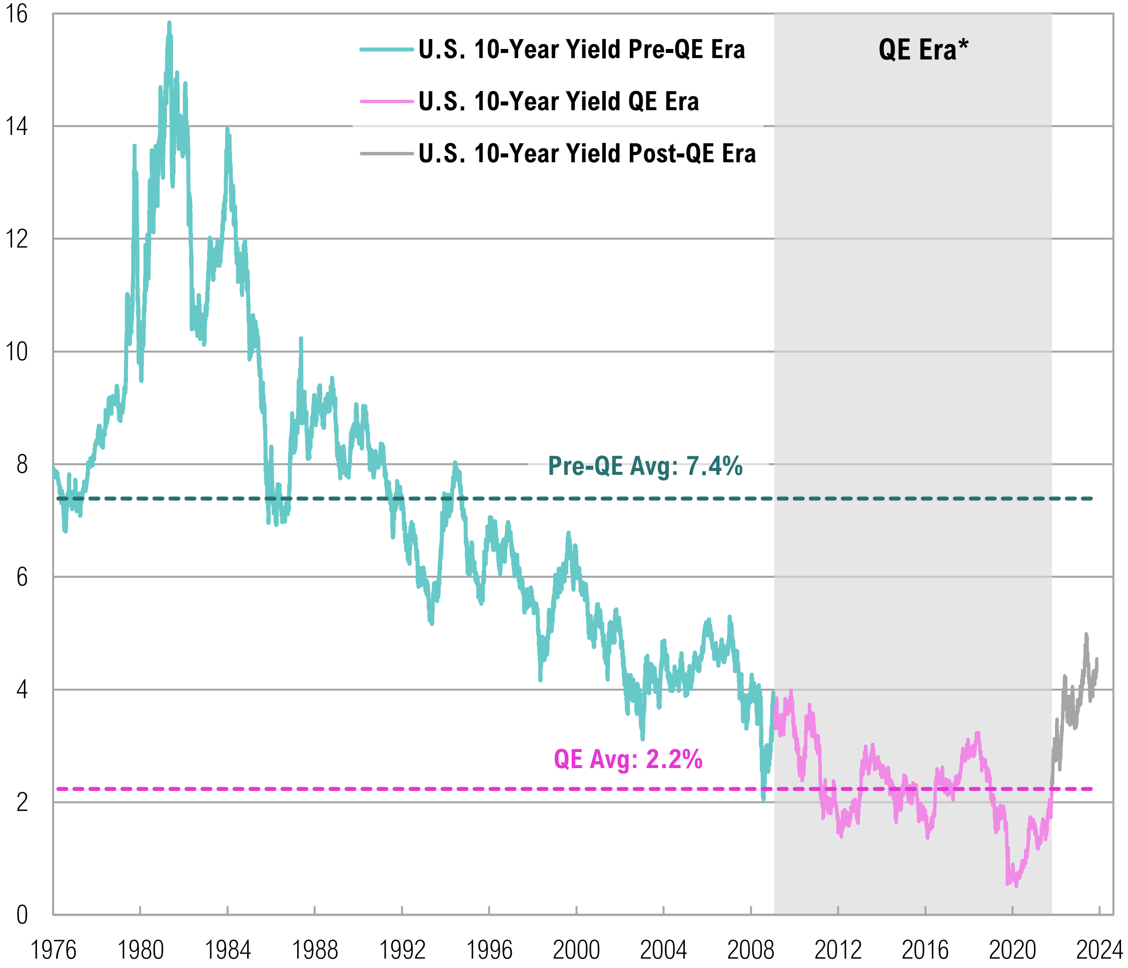
“

Washington does not have a revenue problem, it has a spending problem.

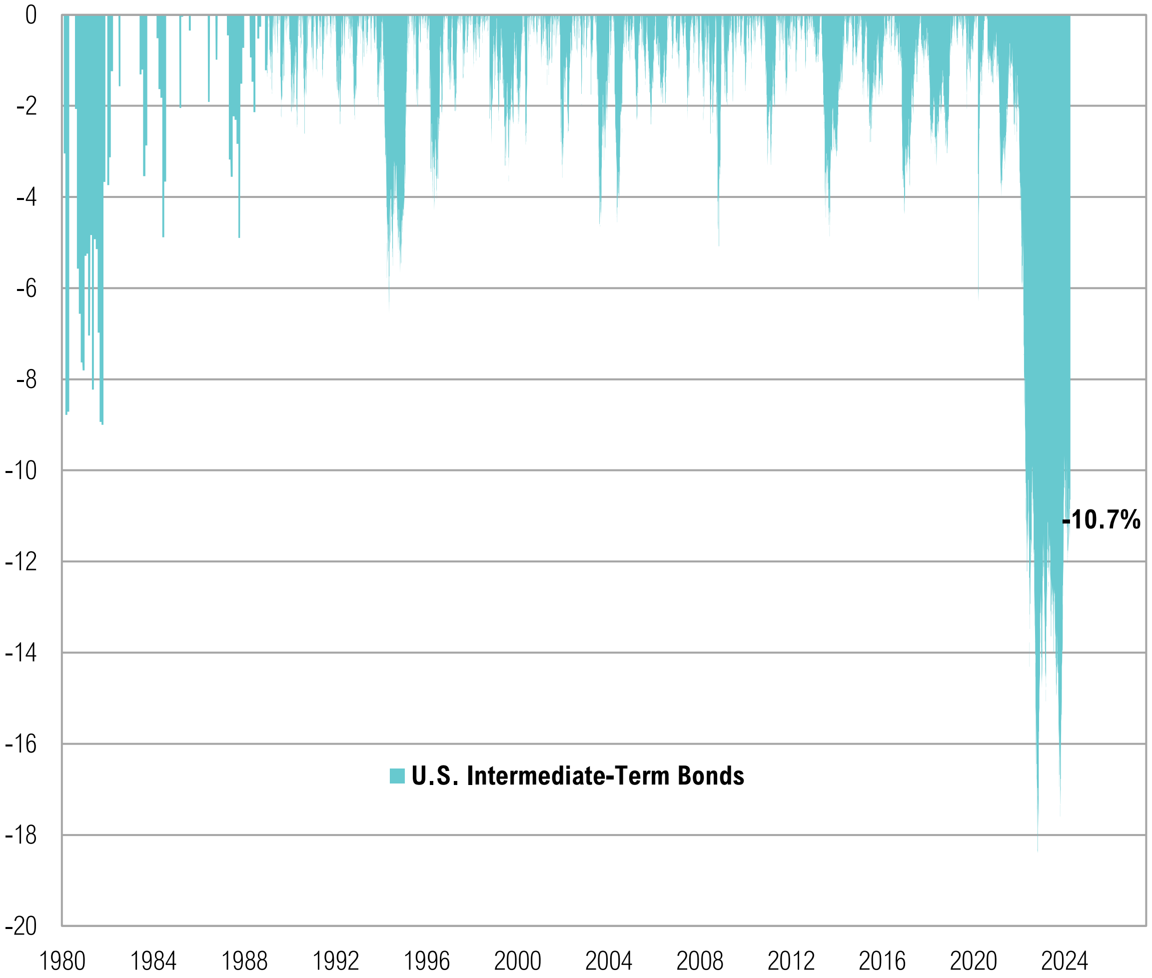
Unknown

We are in the biggest bond bear market of all time

10-Year Treasury Yield, %

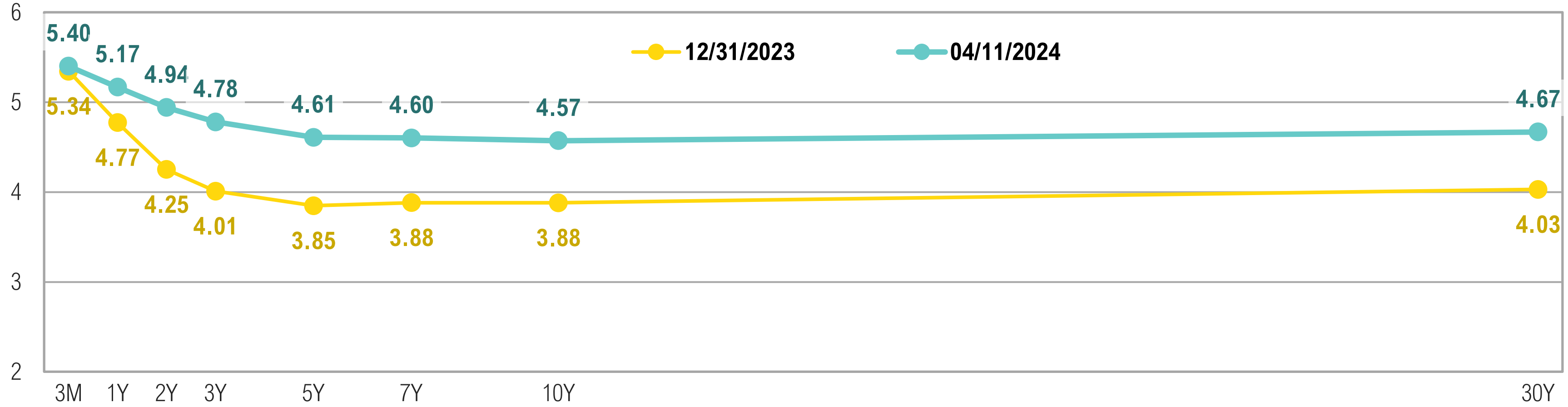


Drawdown, Total Return %

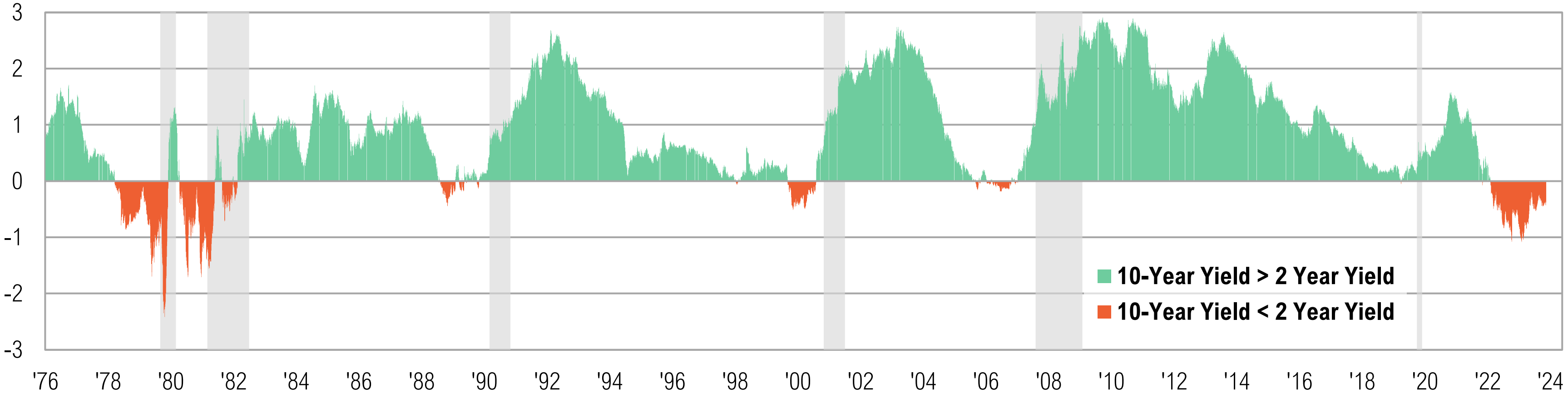


Source: Bloomberg. *QE Era defined as per Bianco Research from 6/30/2009 – 3/16/2022.

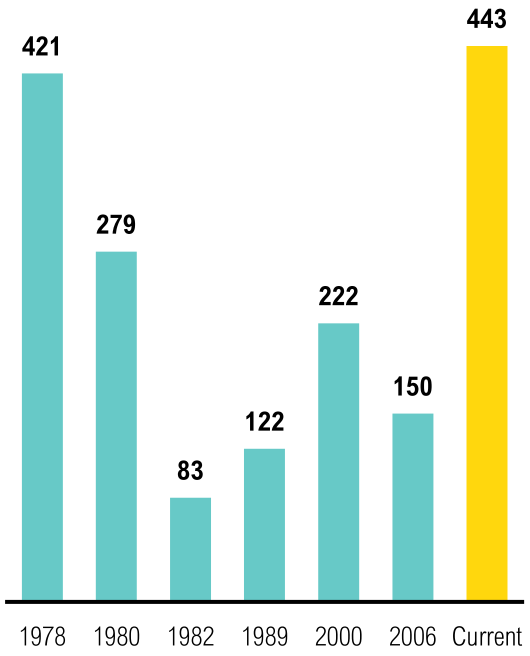
Longer dated yields moved considerably higher over the first quarter; the yield curve has been inverted for more than 443 consecutive trading days—a record



U.S. Treasury Yield Curve, %



U.S. 10-Year Treasury Yield – U.S. 2-Year Treasury Yield, %

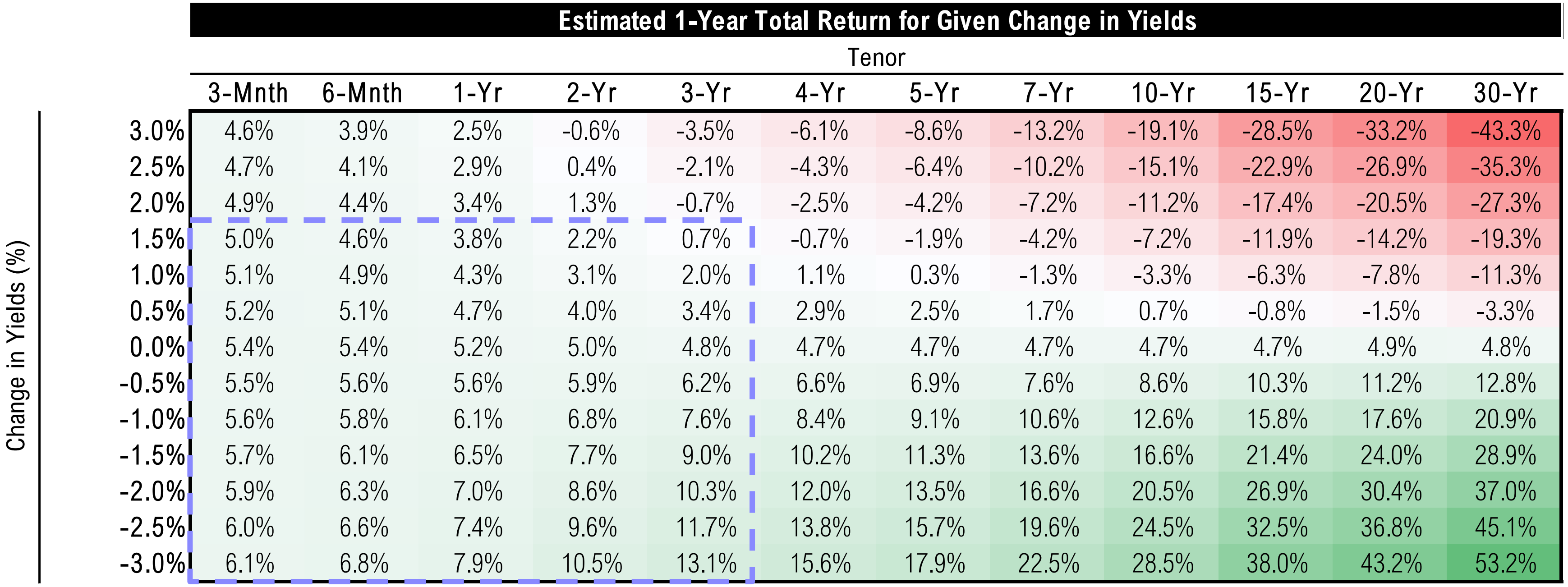


Yield Curve Inversion

(Consecutive # Trading Days)

Source: Bloomberg. As of 4/11/2024.

The 2–3-year part of yield curve has an attractive risk-reward profile—yields could rise 1.5% in the next year and total returns would still be positive



Estimated 1-Year Total Return for Given Change in Yields

	Tenor											
Change in Yields (%)	3-Mnth	6-Mnth	1-Yr	2-Yr	3-Yr	4-Yr	5-Yr	7-Yr	10-Yr	15-Yr	20-Yr	30-Yr
3.0%	4.6%	3.9%	2.5%	-0.6%	-3.5%	-6.1%	-8.6%	-13.2%	-19.1%	-28.5%	-33.2%	-43.3%
2.5%	4.7%	4.1%	2.9%	0.4%	-2.1%	-4.3%	-6.4%	-10.2%	-15.1%	-22.9%	-26.9%	-35.3%
2.0%	4.9%	4.4%	3.4%	1.3%	-0.7%	-2.5%	-4.2%	-7.2%	-11.2%	-17.4%	-20.5%	-27.3%
1.5%	5.0%	4.6%	3.8%	2.2%	0.7%	-0.7%	-1.9%	-4.2%	-7.2%	-11.9%	-14.2%	-19.3%
1.0%	5.1%	4.9%	4.3%	3.1%	2.0%	1.1%	0.3%	-1.3%	-3.3%	-6.3%	-7.8%	-11.3%
0.5%	5.2%	5.1%	4.7%	4.0%	3.4%	2.9%	2.5%	1.7%	0.7%	-0.8%	-1.5%	-3.3%
0.0%	5.4%	5.4%	5.2%	5.0%	4.8%	4.7%	4.7%	4.7%	4.7%	4.7%	4.9%	4.8%
-0.5%	5.5%	5.6%	5.6%	5.9%	6.2%	6.6%	6.9%	7.6%	8.6%	10.3%	11.2%	12.8%
-1.0%	5.6%	5.8%	6.1%	6.8%	7.6%	8.4%	9.1%	10.6%	12.6%	15.8%	17.6%	20.9%
-1.5%	5.7%	6.1%	6.5%	7.7%	9.0%	10.2%	11.3%	13.6%	16.6%	21.4%	24.0%	28.9%
-2.0%	5.9%	6.3%	7.0%	8.6%	10.3%	12.0%	13.5%	16.6%	20.5%	26.9%	30.4%	37.0%
-2.5%	6.0%	6.6%	7.4%	9.6%	11.7%	13.8%	15.7%	19.6%	24.5%	32.5%	36.8%	45.1%
-3.0%	6.1%	6.8%	7.9%	10.5%	13.1%	15.6%	17.9%	22.5%	28.5%	38.0%	43.2%	53.2%

Duration (Yrs)	0.2	0.5	0.9	1.8	2.8	3.6	4.4	5.9	7.9	11.1	12.7	16.1
Yield YTM	5.4	5.4	5.2	5.0	4.8	4.7	4.7	4.7	4.7	4.7	4.9	4.8
Convexity	*0.0*	*0.0*	*0.0*	*0.0*	*0.1*	*0.2*	*0.2*	*0.4*	*0.7*	*1.5*	*2.2*	*3.8*

Yield Increase Insulation by Tenor:

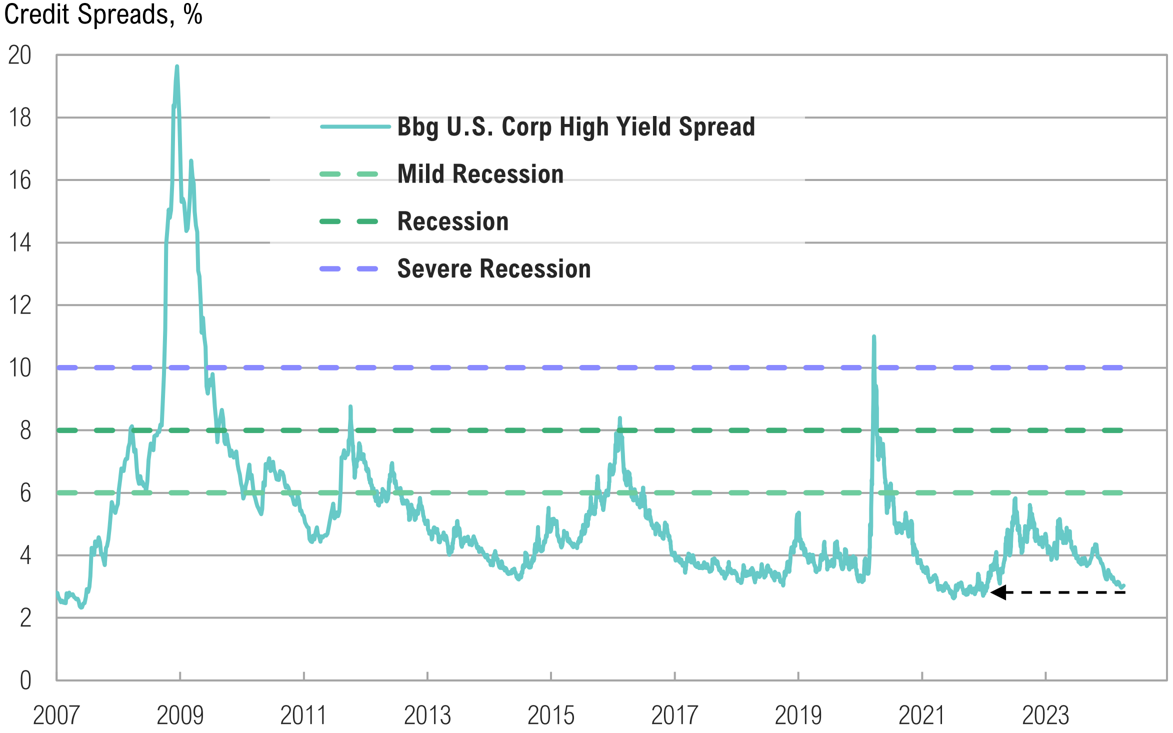
- **2-Year: +2.5% (rise in yields)**
- **3-Year: +1.5%**
- **4-Year: +1.0%**
- **5-Year: +1.0%**

Total Returns by Tenor (for a 1% decline in yields):

- **15-Year: +15.8%**
- **20-Year: +17.6%**
- **30-Year: +20.9%**

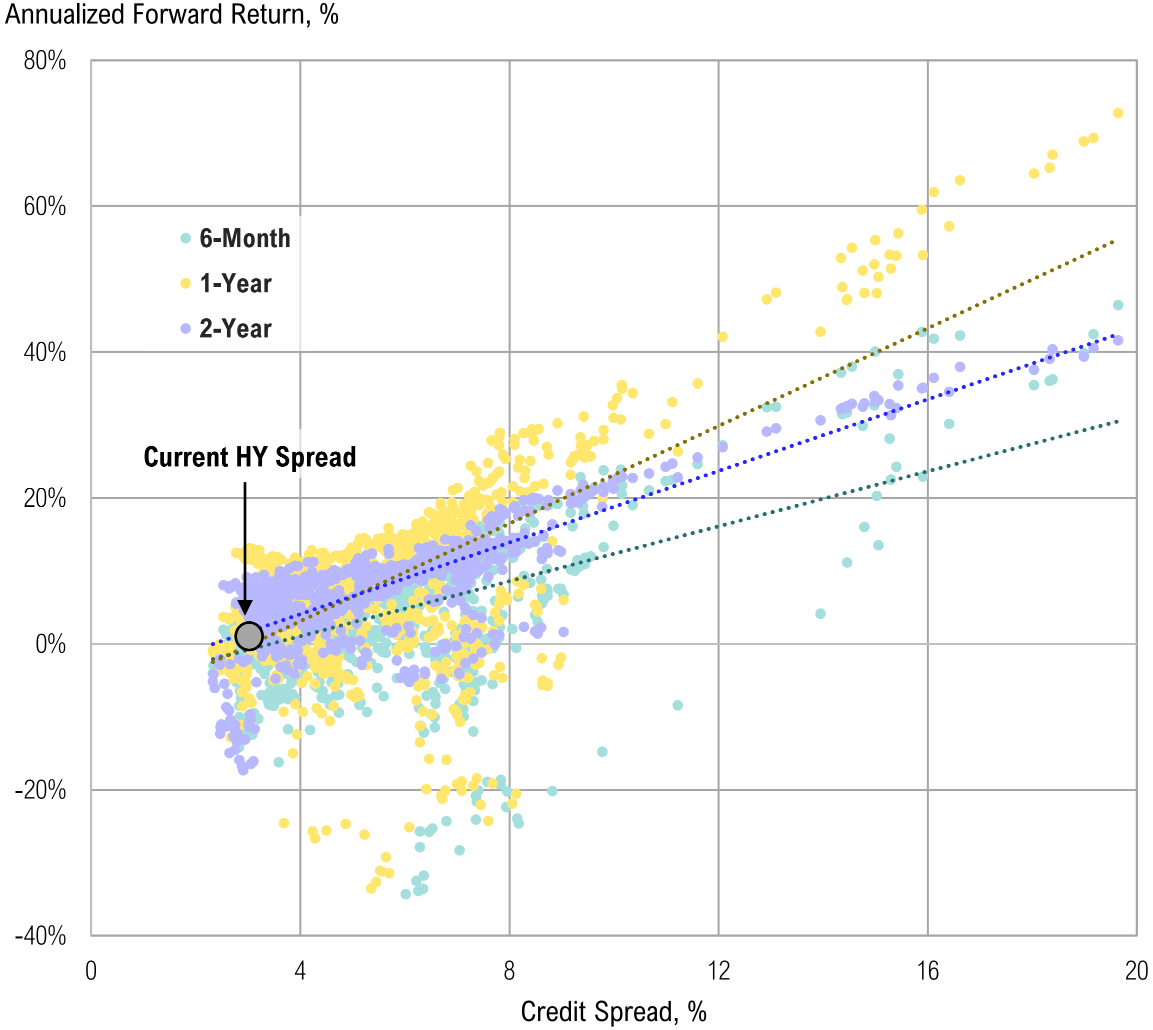
Source: Bloomberg. As of 4/16/2024.

Current credit spreads (at 3.3%) are in line with pre-COVID lows and nearing 2021 levels, which continues to suggest possible 'soft landing'; spreads below 4% have historically resulted in below-average forward returns



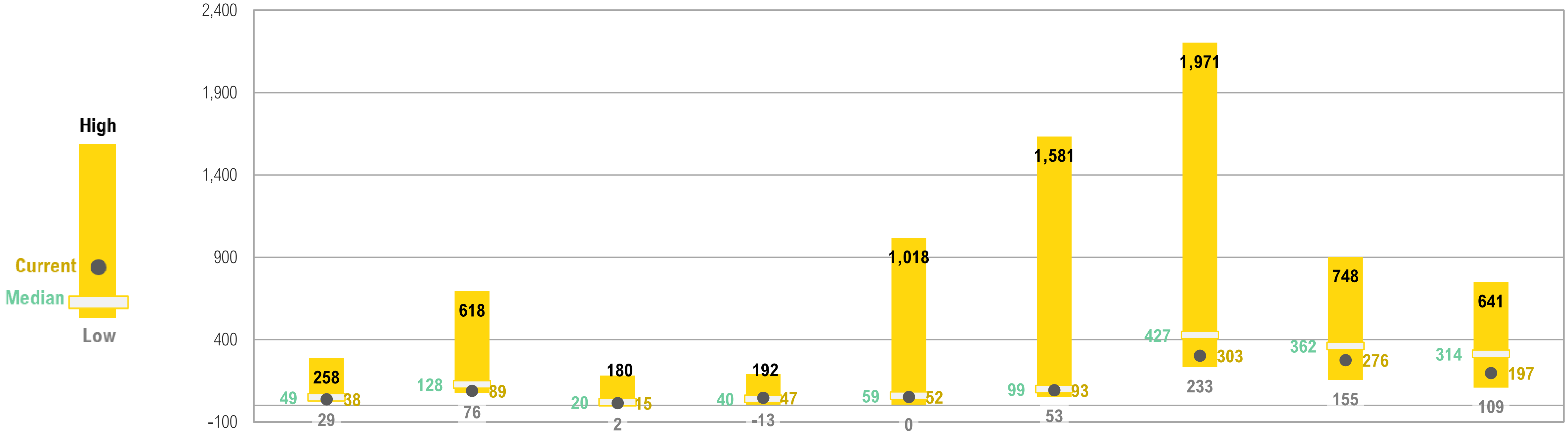
		Average Forward Return			
Spread Buckets	**3M**	**6M**	**1Y**	**2Y**	**3Y**
≤4	0.7%	1.9%	4.8%	3.0%	3.9%
4 < Spread ≤ 6	1.6%	3.2%	5.6%	6.5%	6.3%
6 < Spread ≤ 8	1.4%	2.2%	7.7%	9.8%	10.2%
>8	7.4%	16.4%	30.2%	22.1%	17.1%
All Spreads	**1.7%**	**3.7%**	**8.1%**	**7.7%**	**7.9%**

Source: SpringTide, Bloomberg. Forward return analysis from 2/4/1994 through 12/31/2023.



Credit spreads are near or below median across most sectors; high-yield bond spreads at current levels suggest that the economy may achieve a ‘soft landing’

Current Credit Spread vs. Long-Term High/Low Range

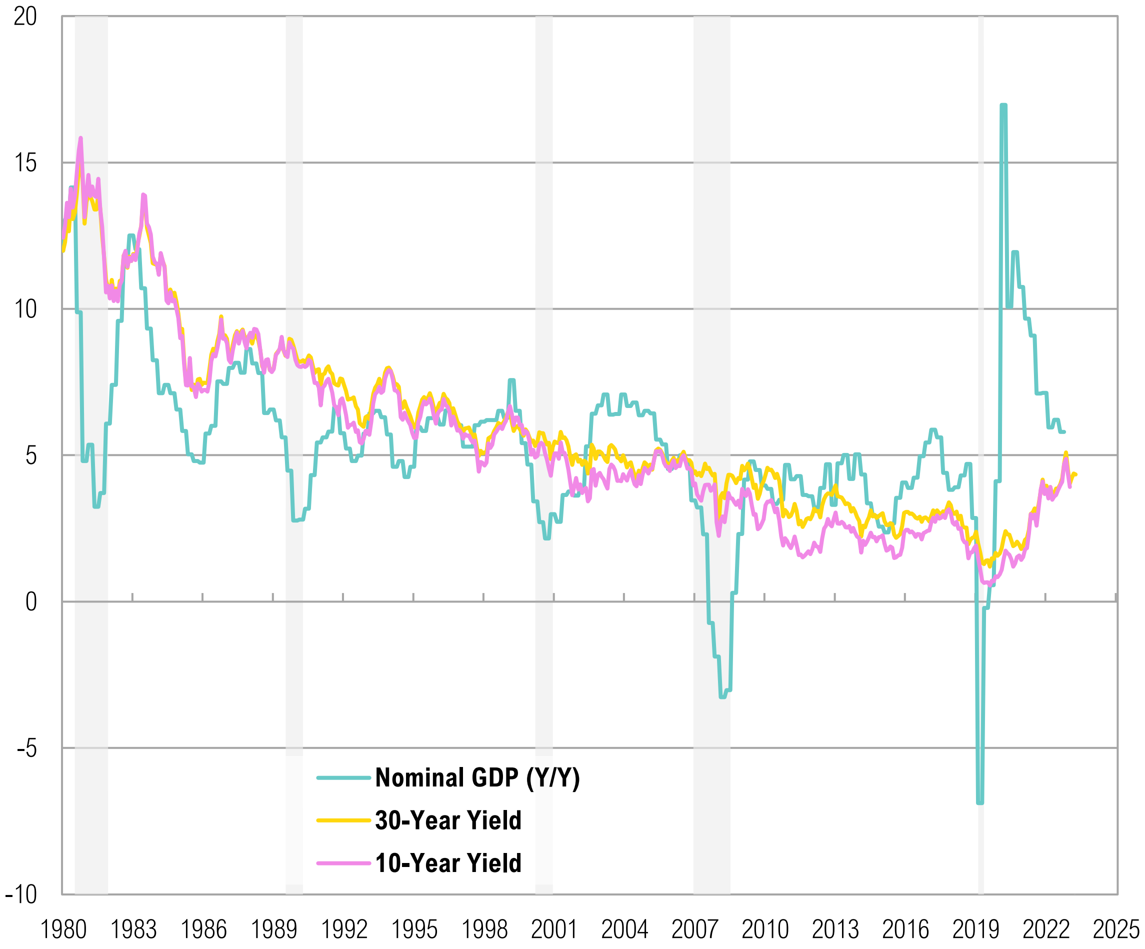


	Aggregate	Corporate	Agency	MBS	ABS	CMBS	High Yield	Emerging Markets	High Yield Muni Spread*
Max Spread Date	12/3/2008	12/3/2008	11/20/2008	12/3/2008	1/6/2009	11/21/2008	12/16/2008	11/28/2008	1/12/2009
Min Spread Date	4/14/2021	3/8/2005	4/19/2021	7/27/2010	10/1/2009	12/8/2004	5/22/2007	5/31/2007	6/11/2007
Spread on 12/31/23	42	99	17	47	68	126	323	319	235
Spread on 12/31/22	51	130	26	51	76	120	469	374	228
Spread on 12/31/21	36	92	8	31	38	68	283	330	200
Spread on 12/31/20	42	96	10	39	33	81	360	323	275

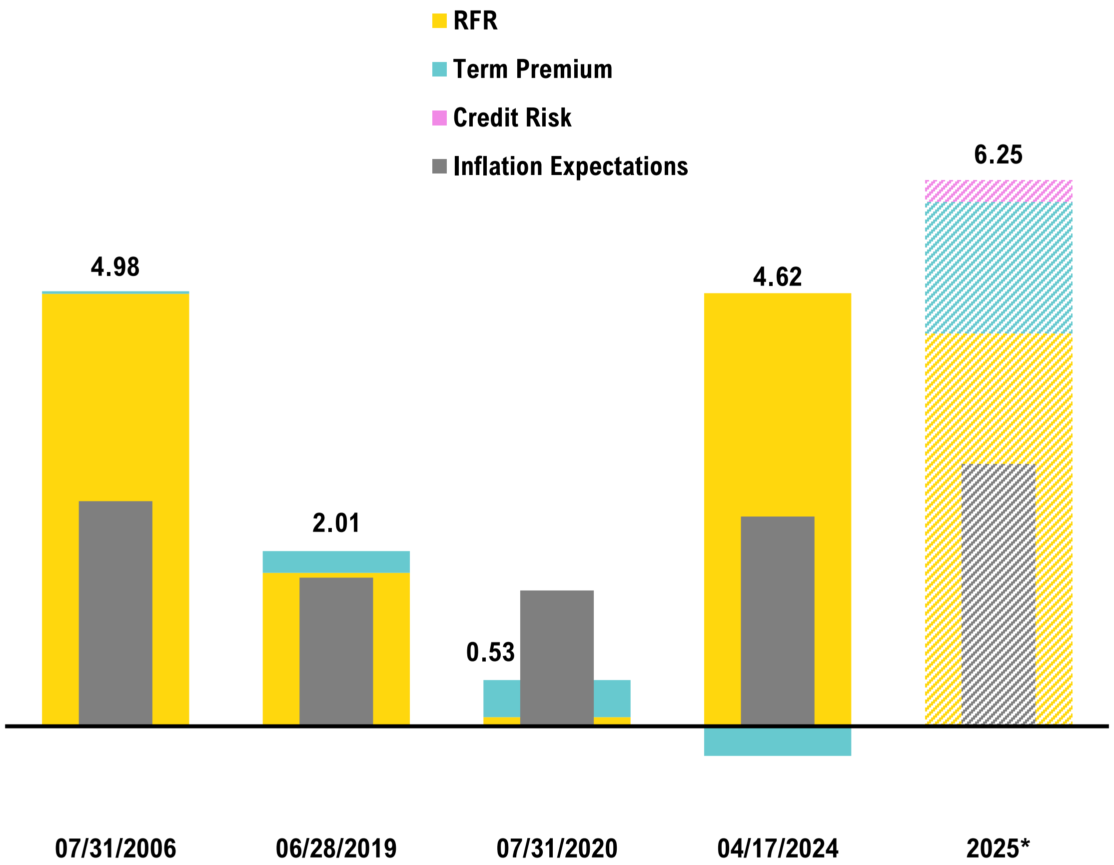
Source: Bloomberg. High Yield Muni Spread data is relative to Bloomberg Municipal Bond Index. Yield spread data is from 2004 – current.

The fiscal balancing act: Historically, long-term yields tend to follow GDP; but what will happen in 2024 depends largely on policy

Nominal GDP (Y/Y) & Yields, %



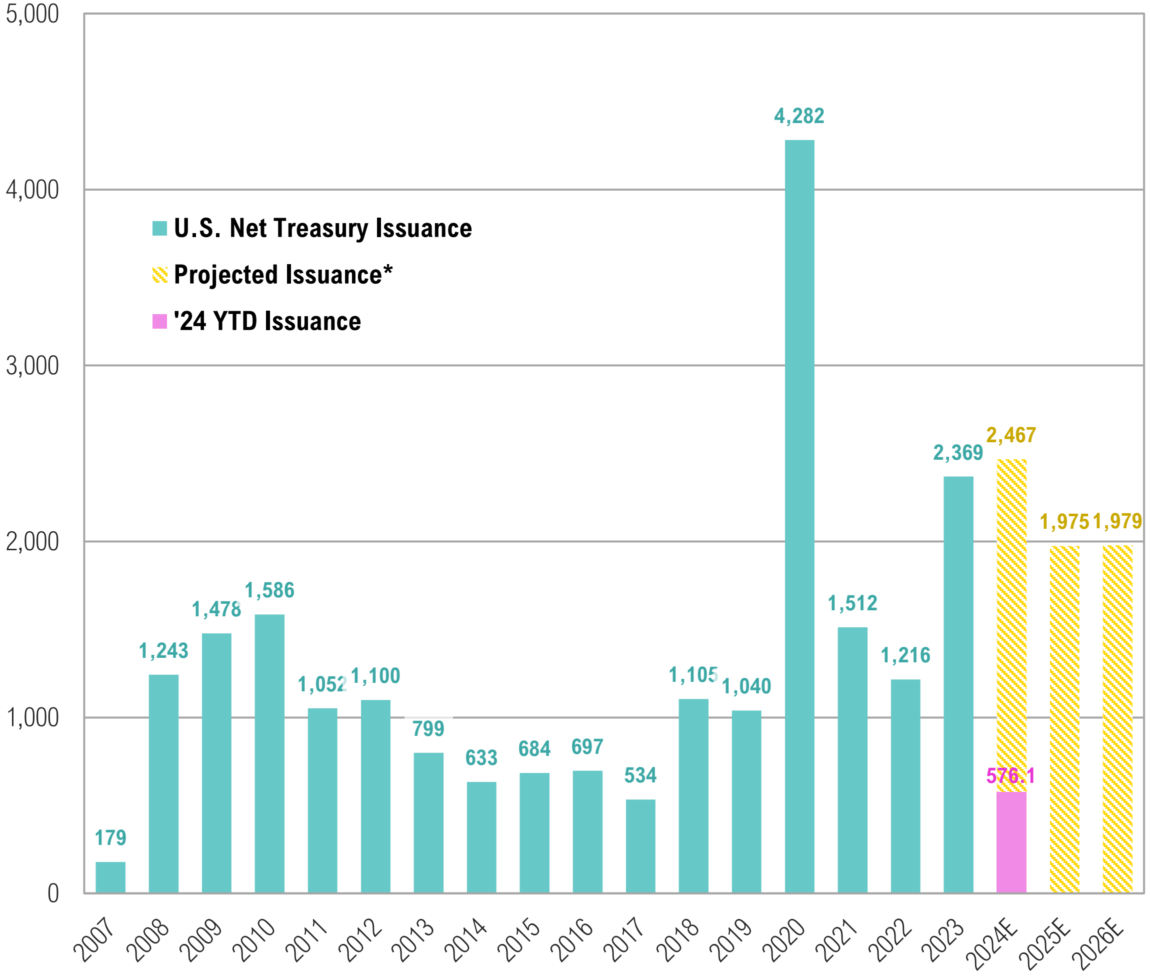
10-Year Yield Building Blocks, %



Source: Bloomberg, SpringTide calculations. RFR = risk free rate, proxied by 2-year Treasury yield; Term Premium = 2s10s Treasury spread; Credit Risk = hypothetical; Inflation Expectations = 10-year TIPS breakeven.
*2025 10-year yield breakdown is hypothetical. Assumptions are: RFR = 4.5%; Term Premium = 1.5% and Credit Risk = 0.25%.

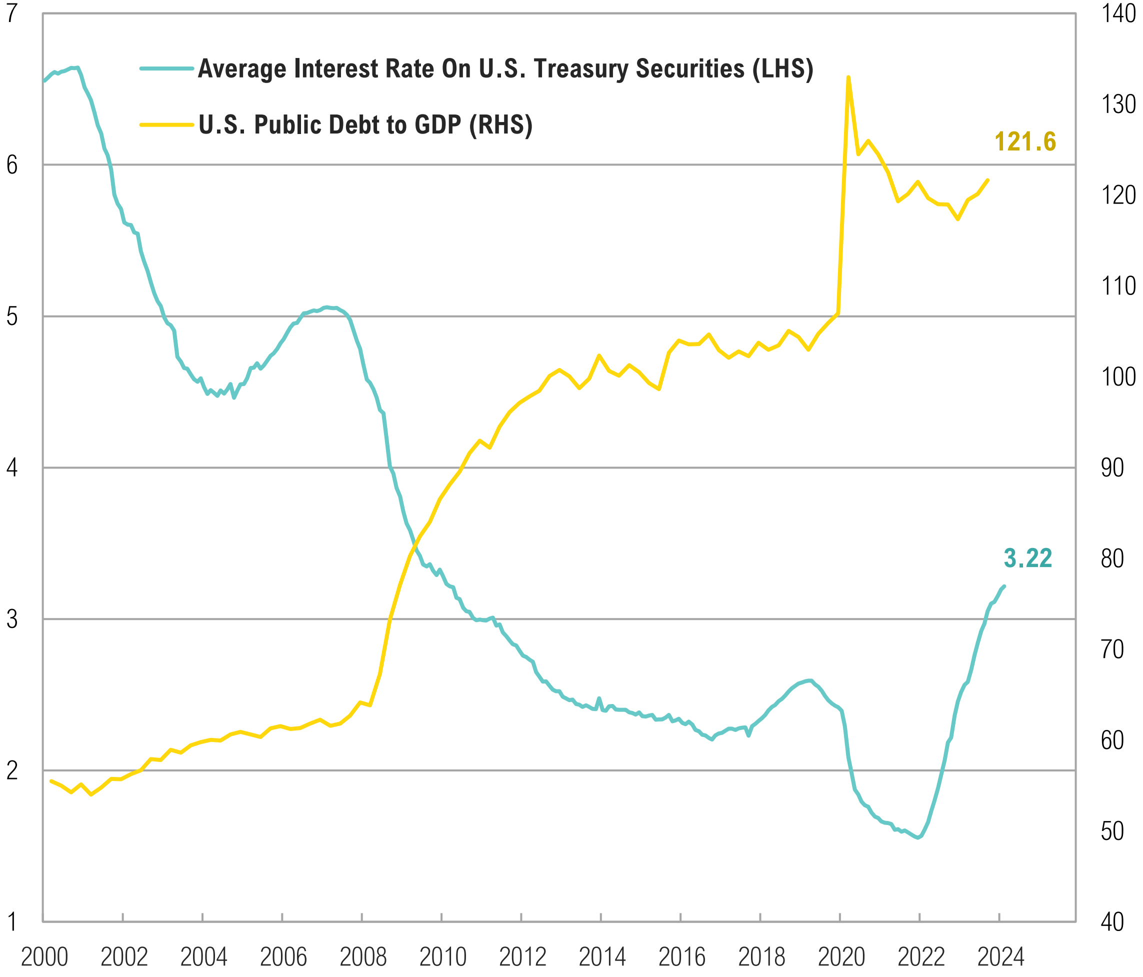
2023 Treasury issuance was the highest after 2020, with a further $6Tn of issuance expected over the next three years; the average cost of U.S. government debt continues to climb, now >3.2%

Quarterly U.S. Net Issuance, $Bn



Average U.S. Treasury Interest Rate, %

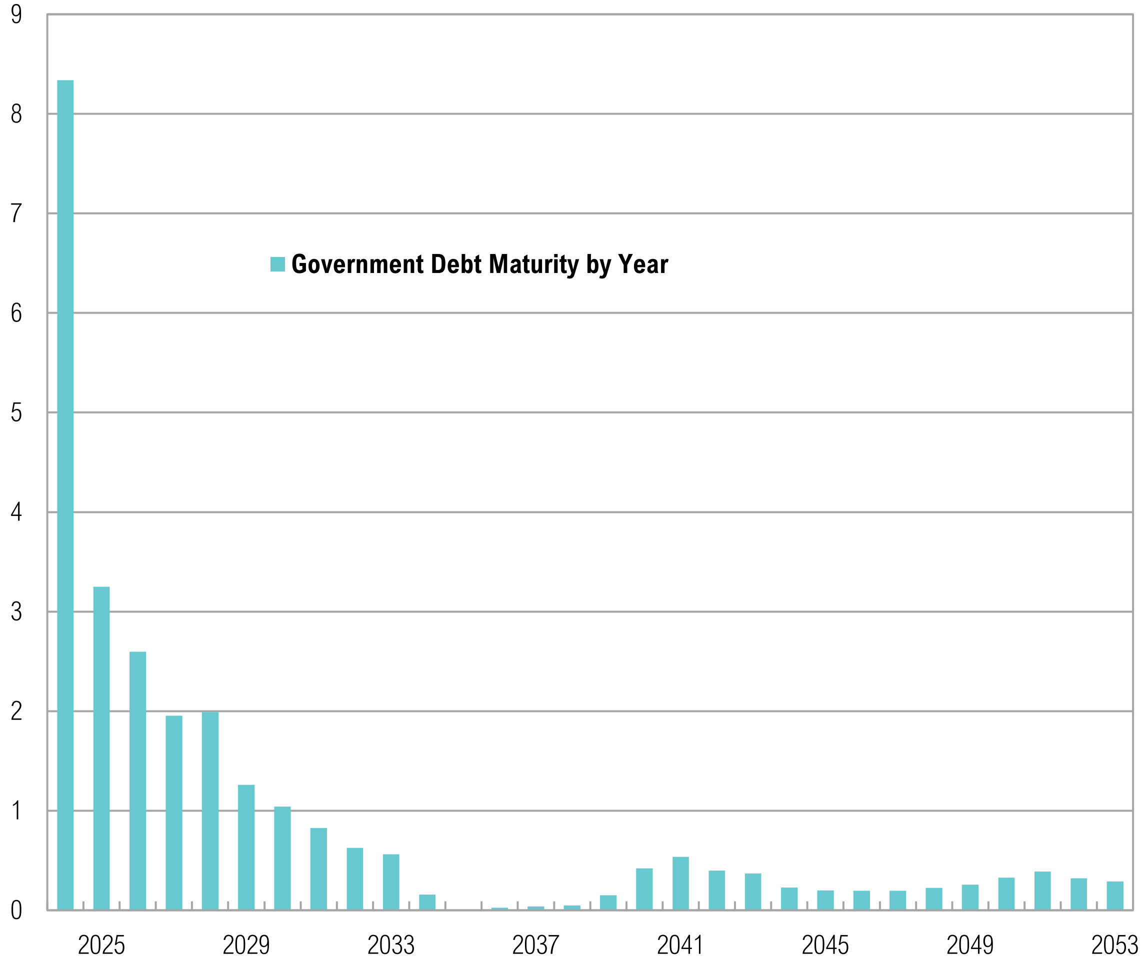
U.S. Public Debt to GDP, %



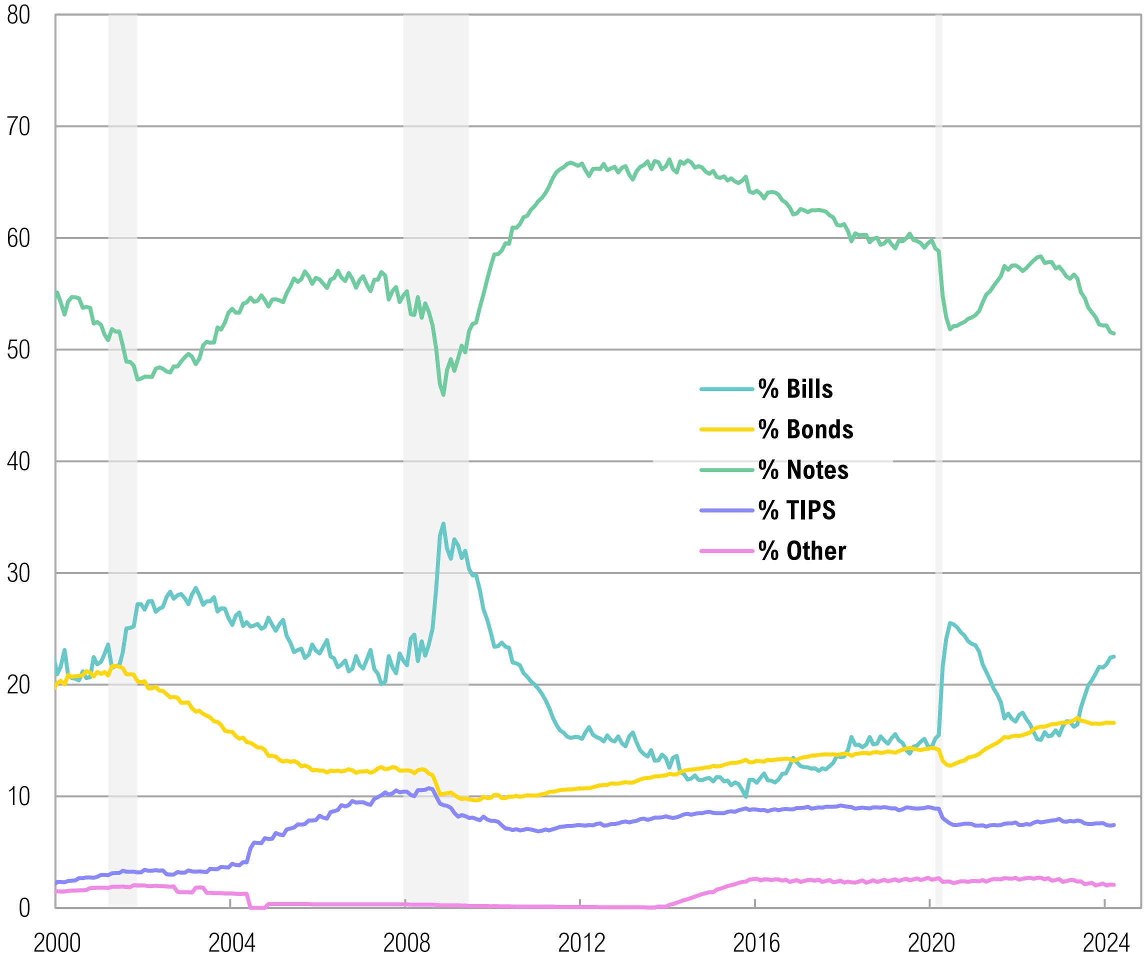
Source: Bloomberg, U.S. Treasury.

Over $8Tn in government debt matures in 2024, and will be rolled at much higher rates; bill issuance, now comprising over 22% of total debt, continues to rise yet *eventually* (possibly once reverse repo is depleted?), Treasury will need to extend durations

Government Debt Maturity by Year, $Tn



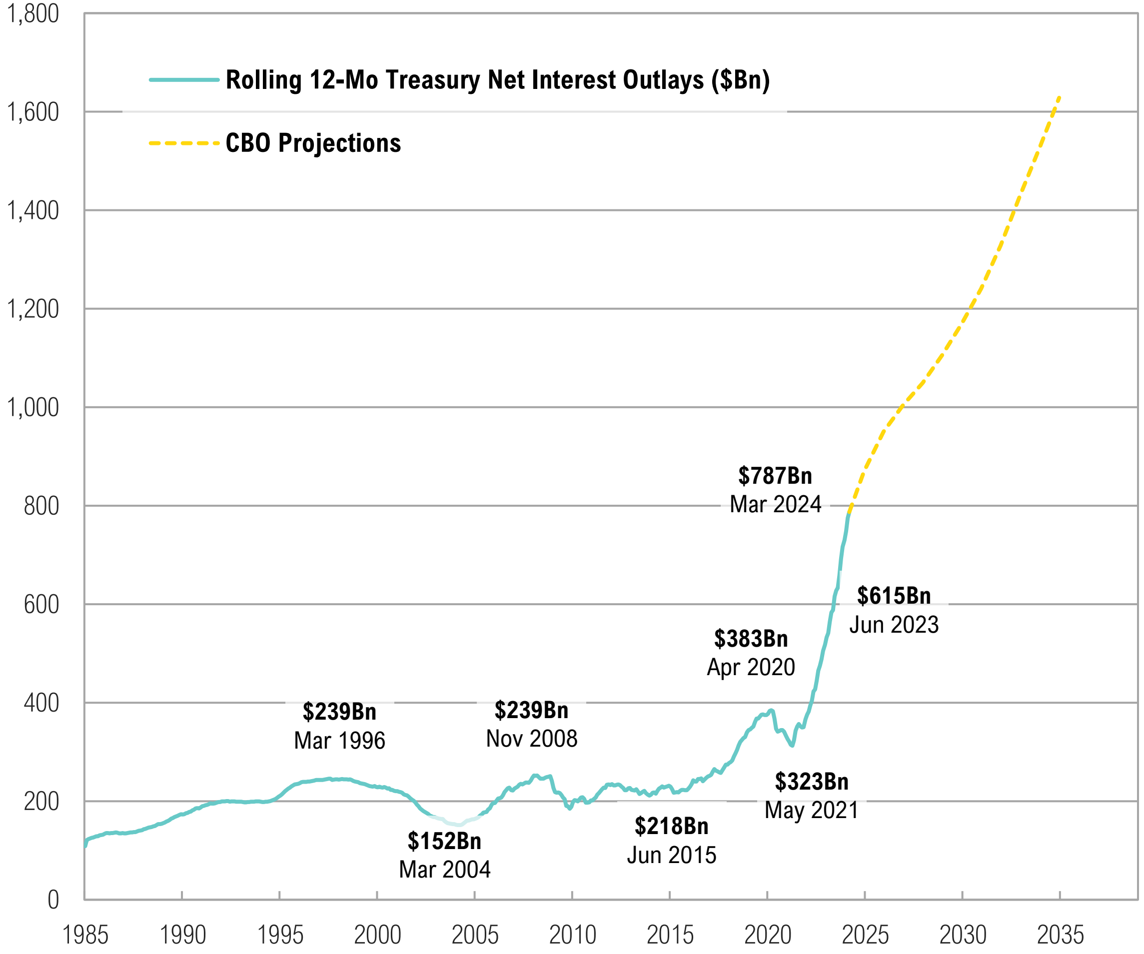
Debt Distribution, % of Total U.S. Marketable Debt Outstanding



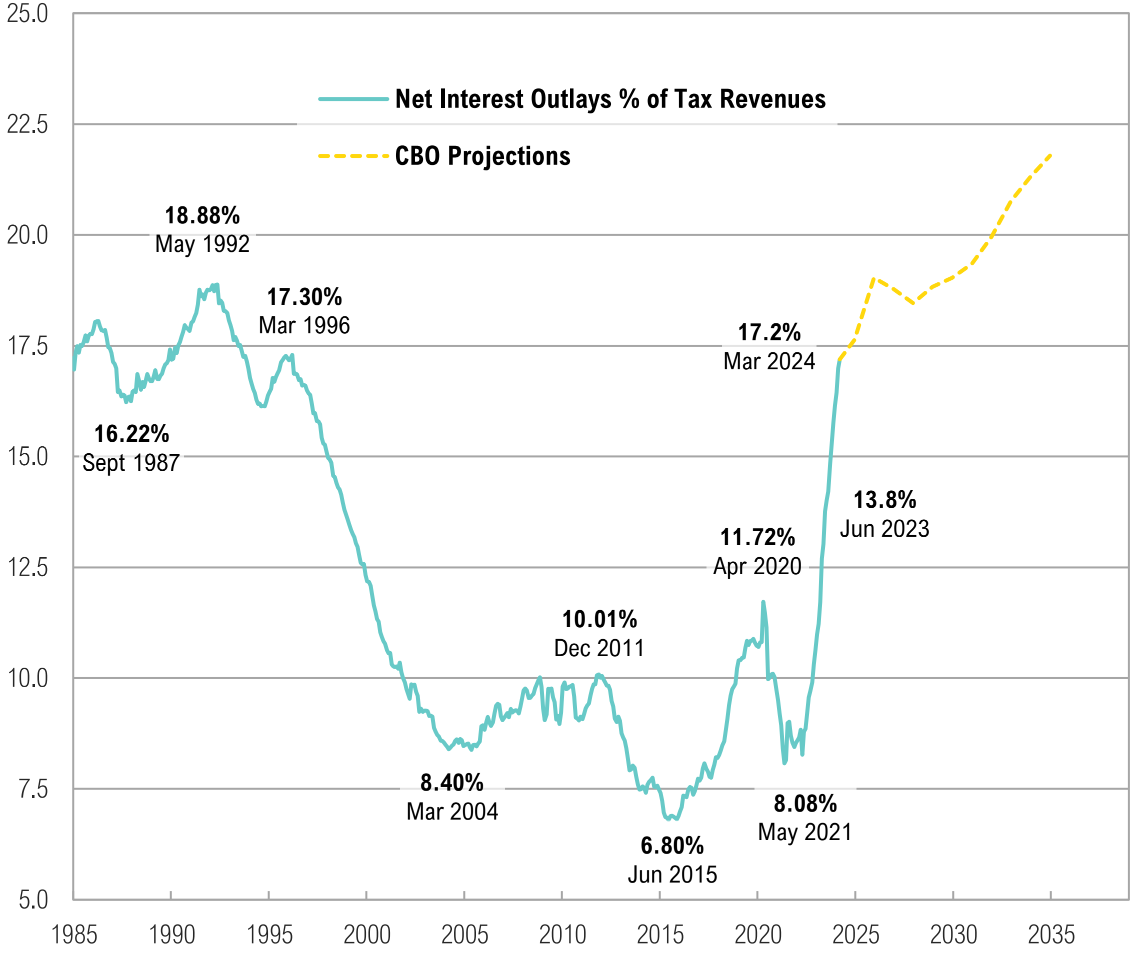
Source: Bloomberg

12-month Treasury net interest outlays rose over 28% to $787bn over the past year; tax receipts aren't keeping pace, with 17% of taxes going only to net interest payments

12-Mo Rolling Treasury Net Interest Outlays, $Bn

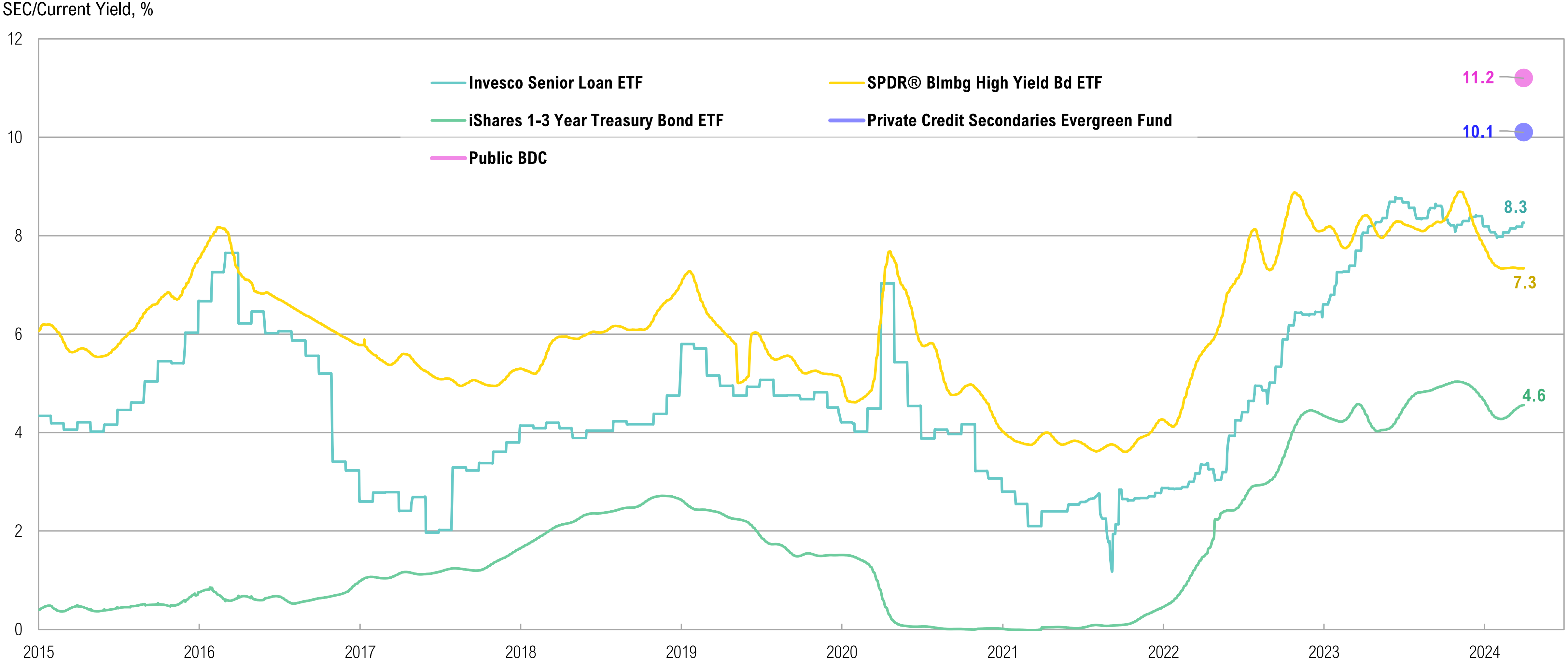


Net Interest Outlays as a % of Total Tax Receipts



Source: U.S. Treasury, CBO. As of 3/31/2024.

With high yield spreads near 20-year tights, there are more attractive investment opportunities in private credit



Source: Bloomberg, Pitchbook.

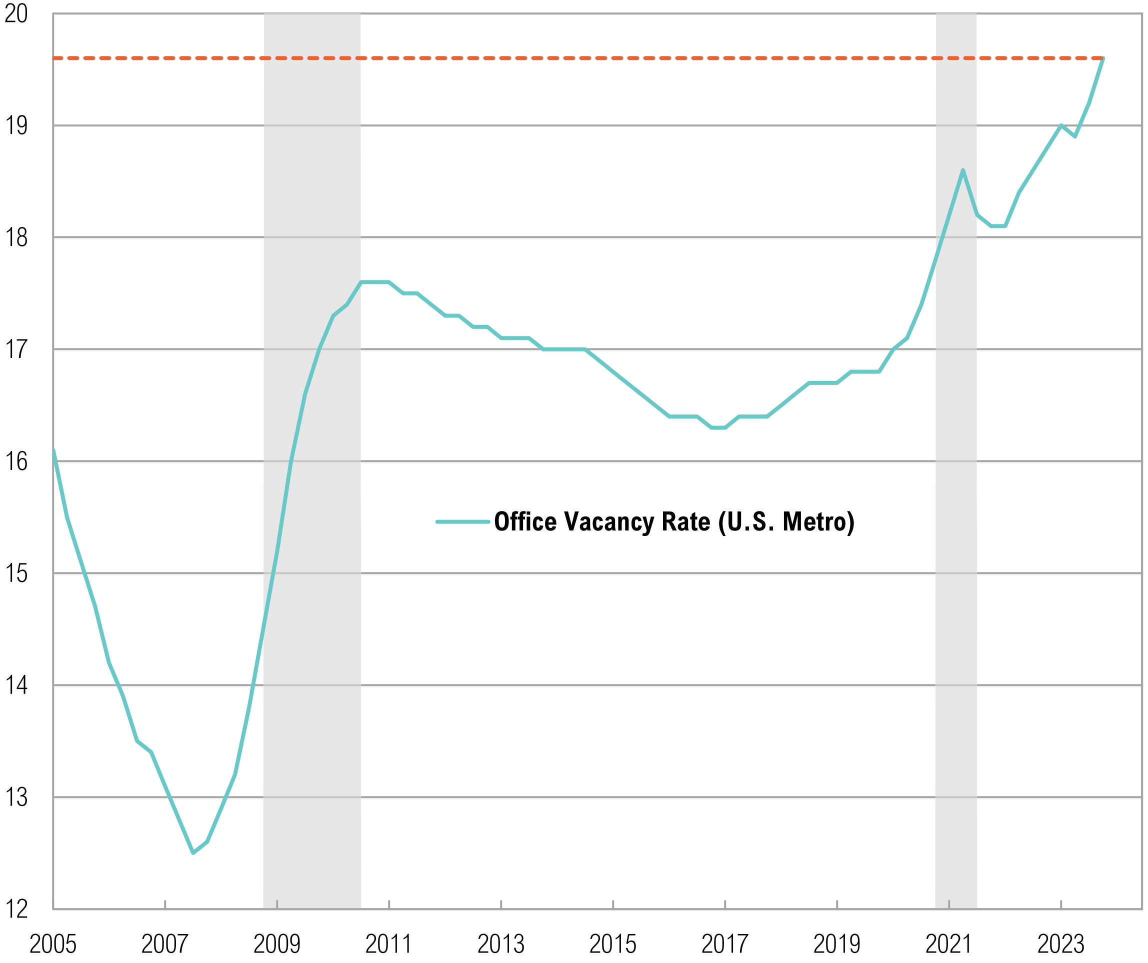
“

> Nuclear produces more energy for the same amount of installed capacity than any other energy technology. It operates more than 90% of the time. It's also there 24 hours a day in the heat or the cold, day or night, no matter the weather… Nuclear [also] has the lowest life cycle emissions of any technology.

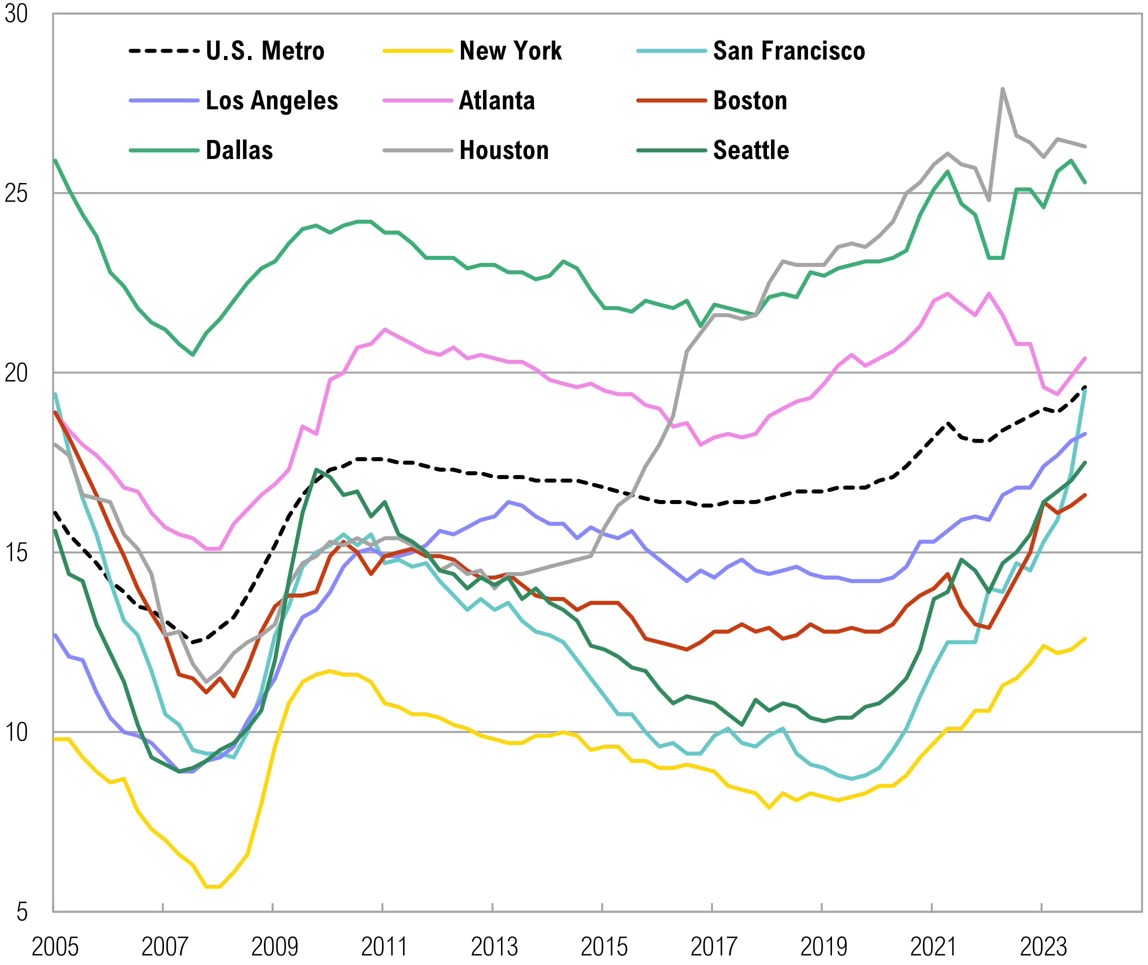
Joseph Dominguez, *Constellation Energy CEO*

Office vacancy rates have continued to move higher since 2017 and are well above GFC levels

U.S. Metro Office Real Estate Vacancy Rate, %

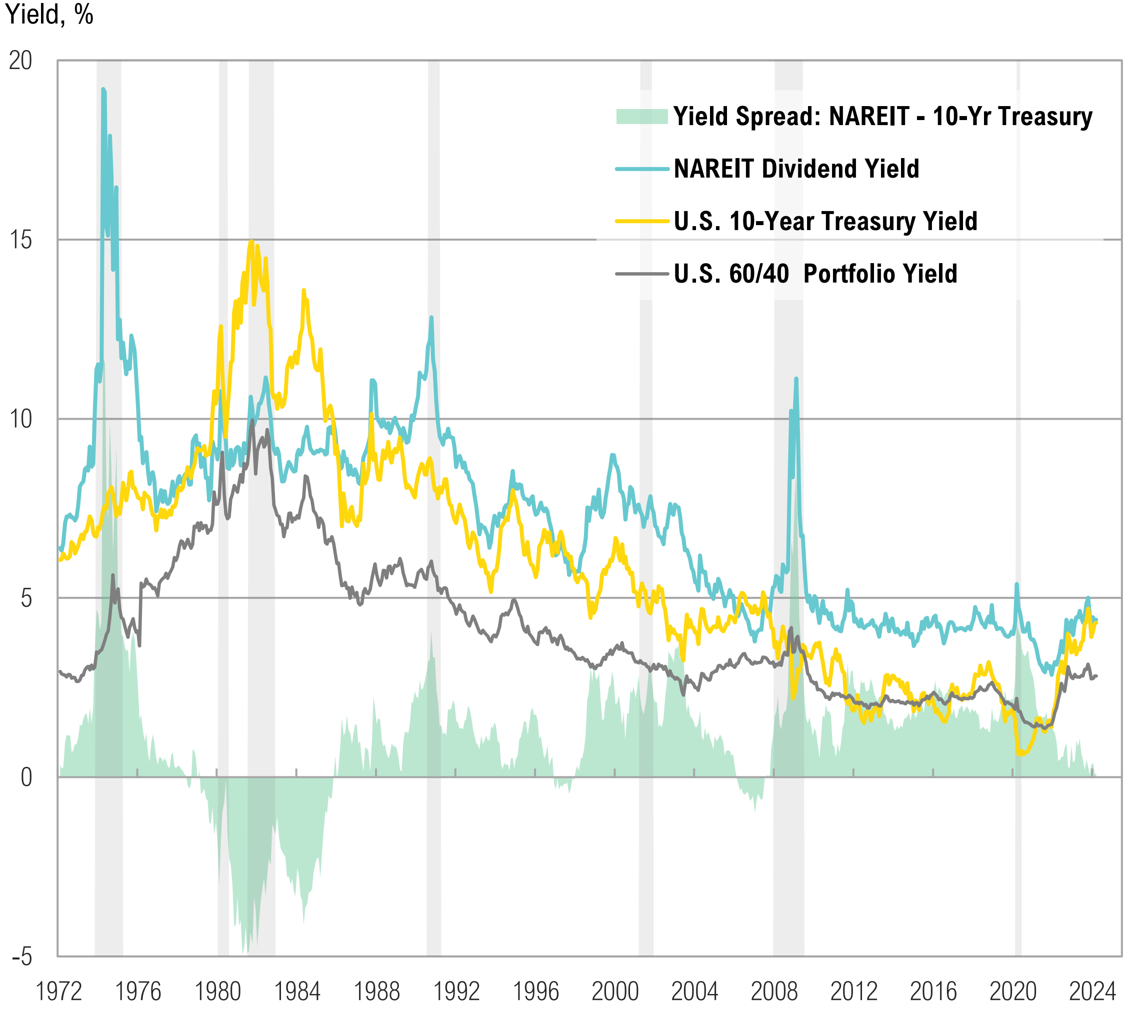


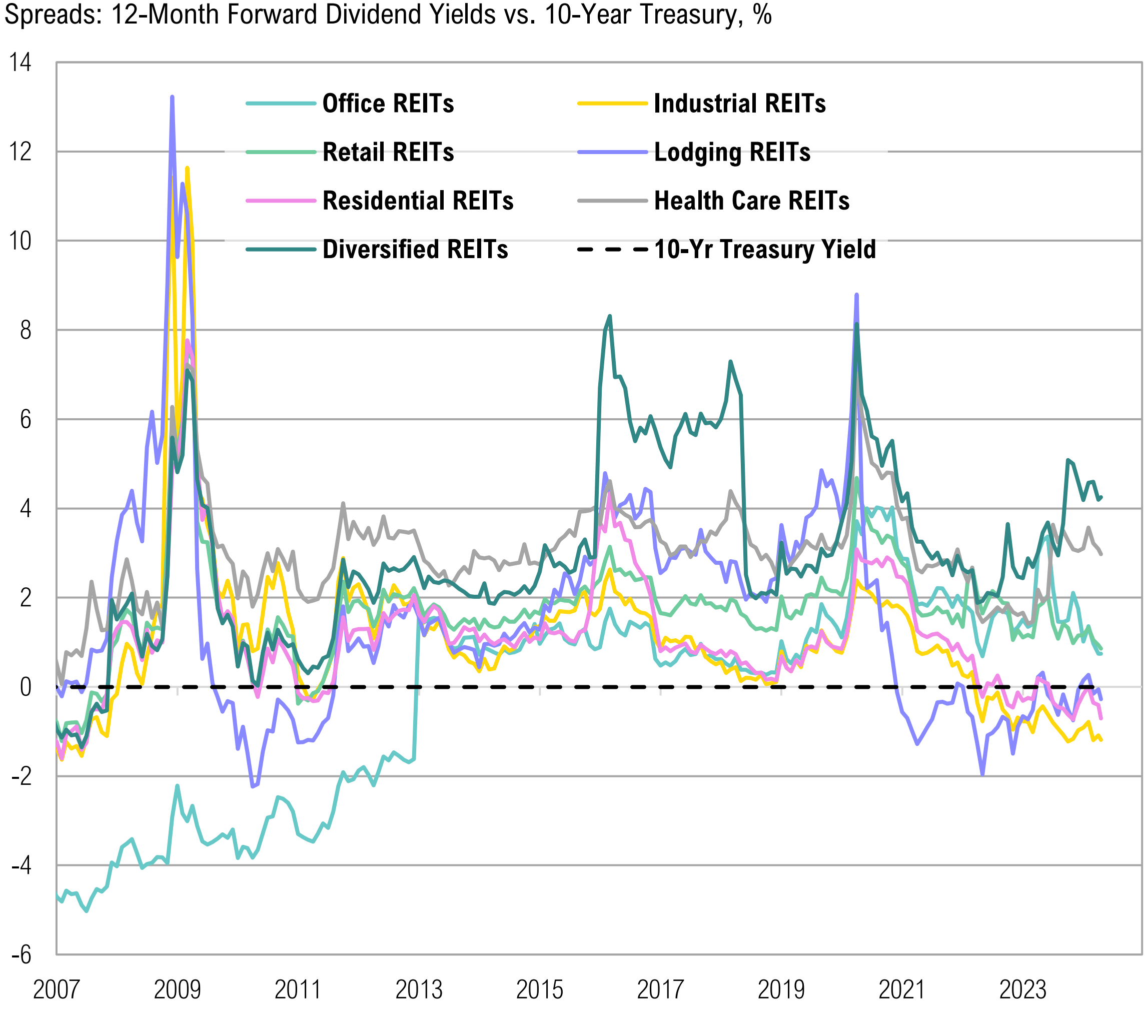
U.S. Office Real Estate Vacancy Rates by City, %



Source: Bloomberg. As of 12/31/2023.

U.S. REITs have lost ground since their rebound in Q4, declining 7.0% YTD as higher yields weigh on the asset class; despite the sell-off, REITs still look wholly unattractive on a relative yield basis

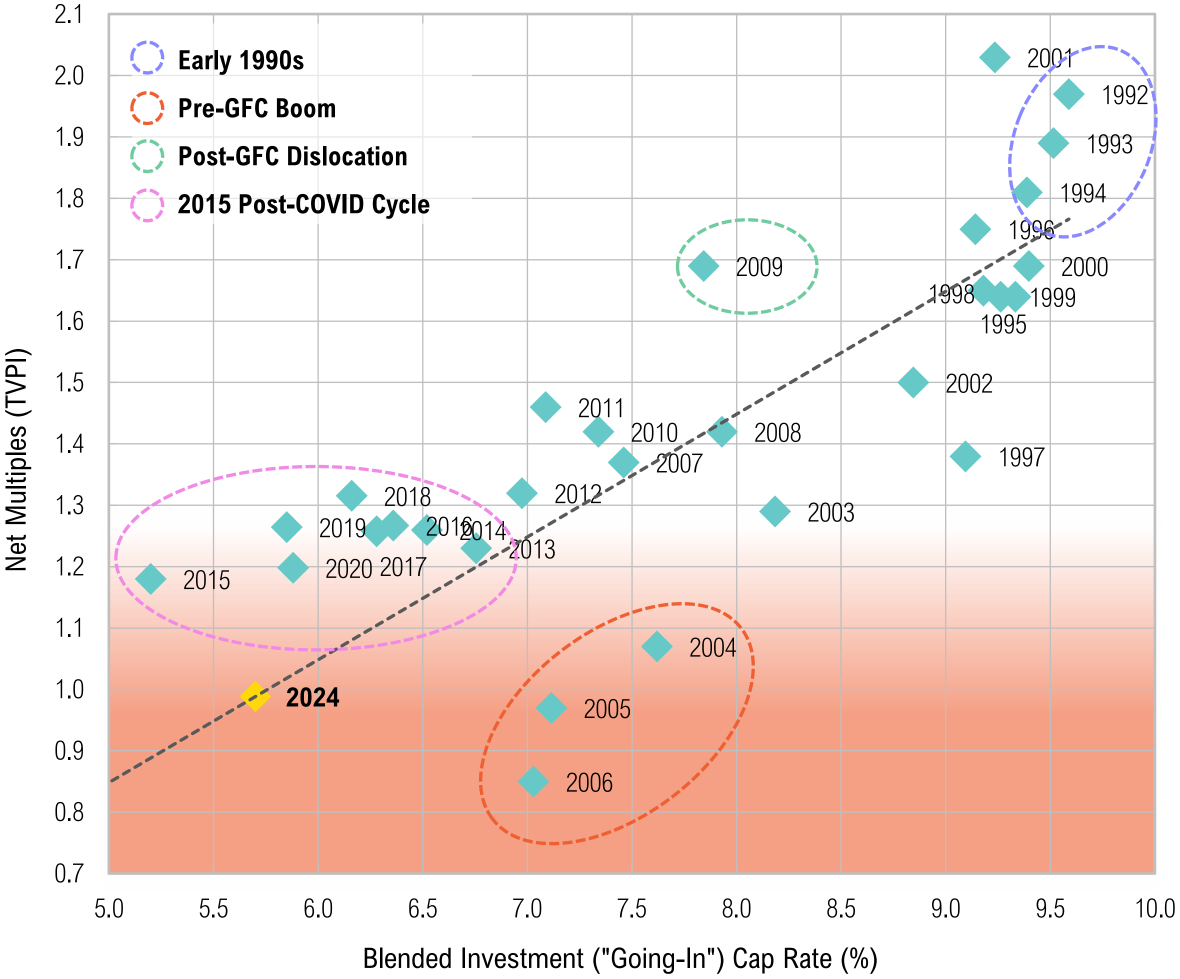




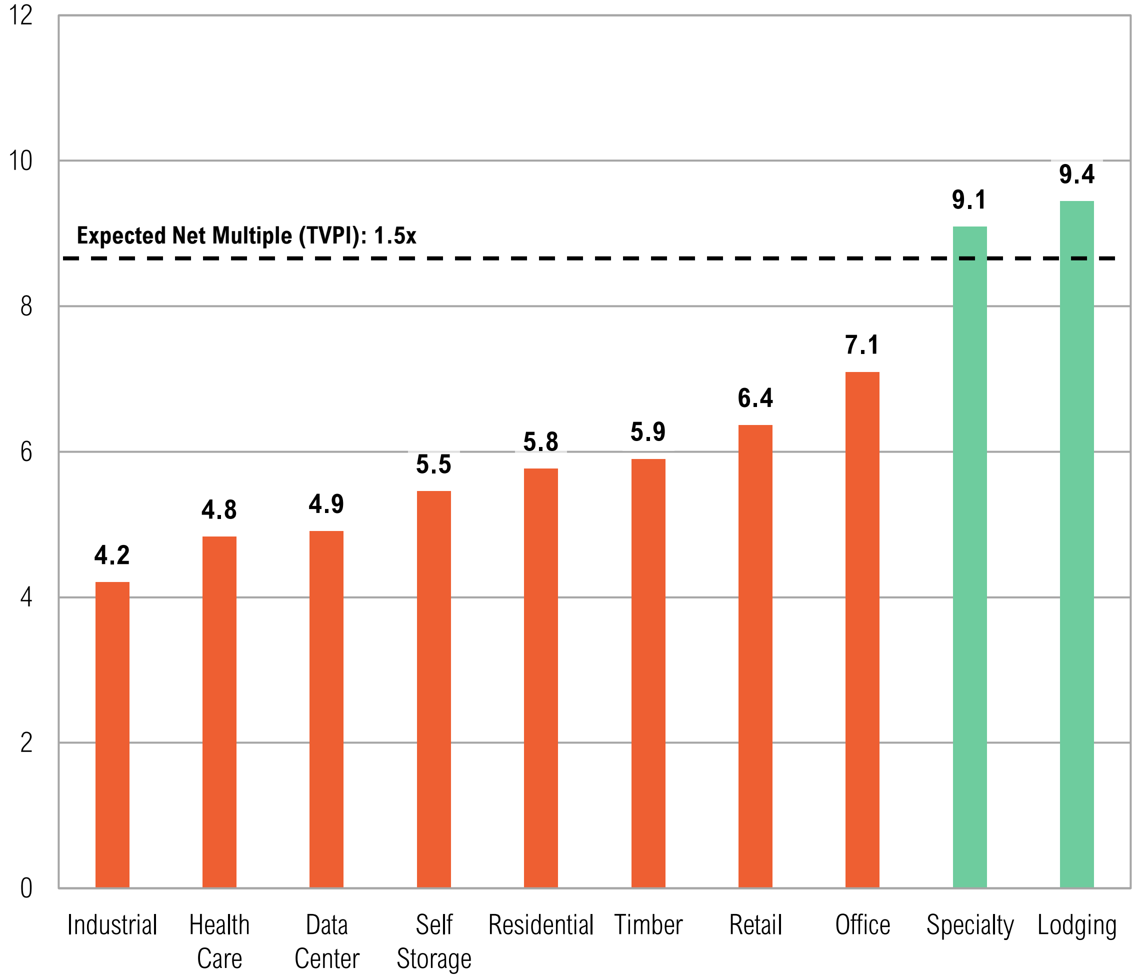
Source: Bloomberg, NAREIT.

Implied cap rates are not attractive after the Q4 REIT rally, but the opportunity set is improving from a valuation perspective

Going-In Cap Rates vs. Net Multiples



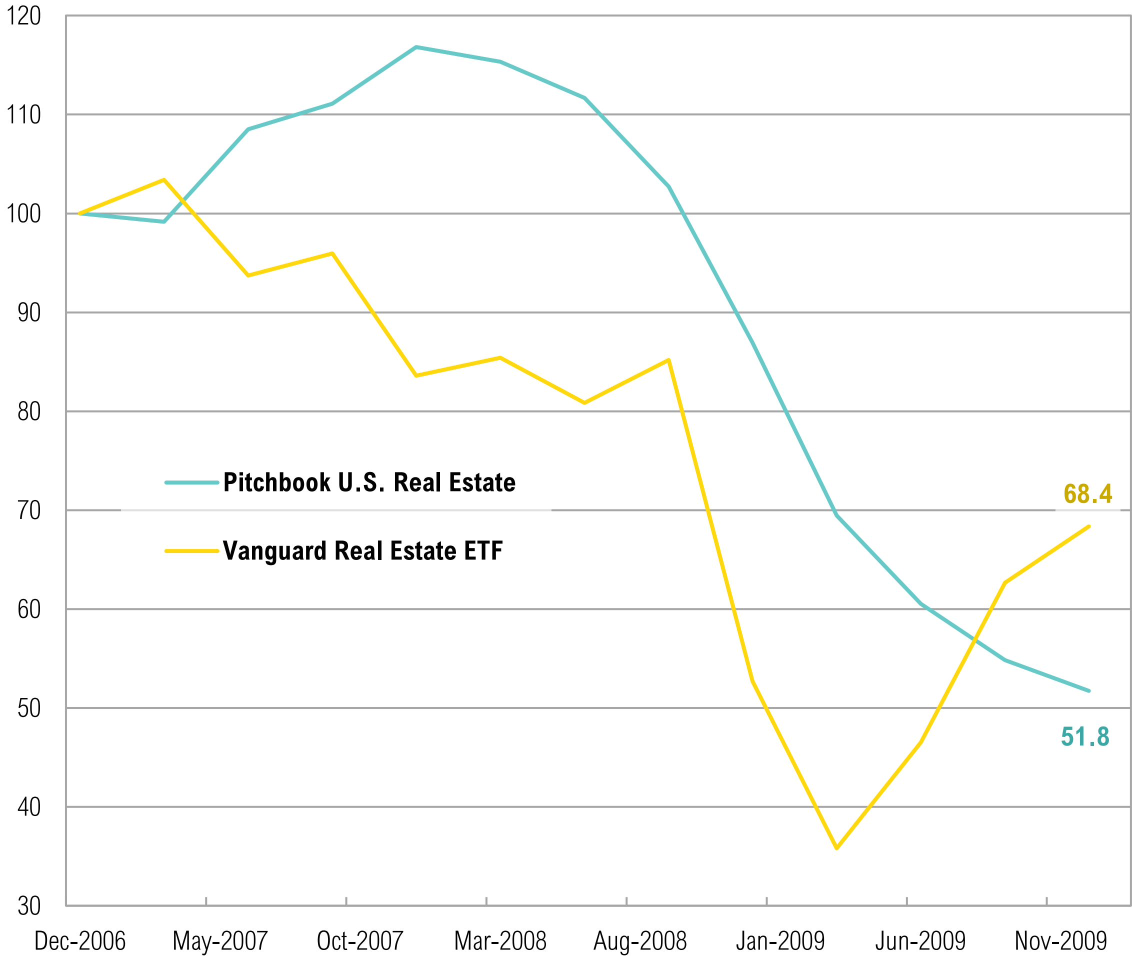
Implied Cap Rate, %



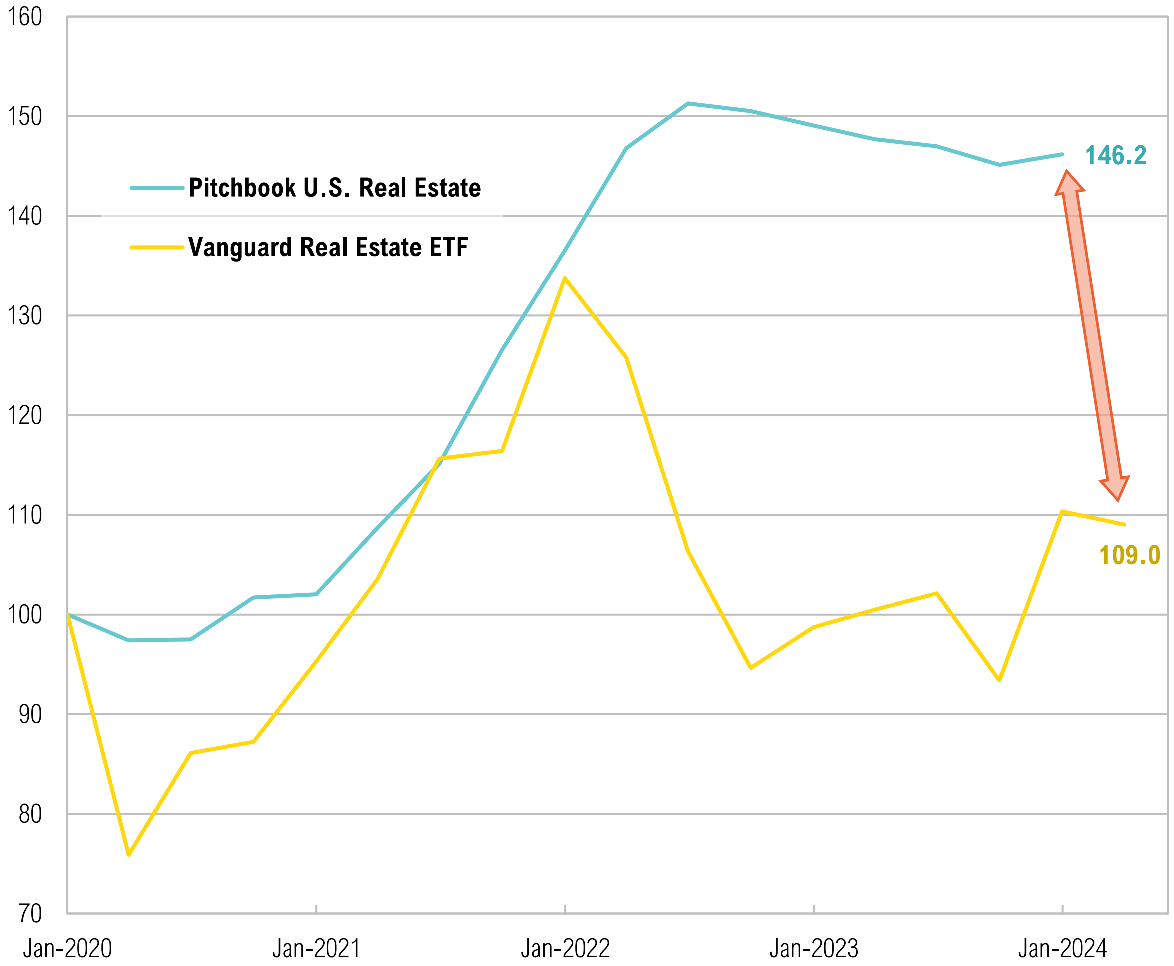
Source: Bloomberg, CBRE, Pitchbook. Returns as of most recent daily close. Returns for periods longer than 1 year are annualized. Cap rate estimate as of 12/31/2023.

Private real estate funds have not sufficiently marked down properties

Growth of 100, GFC



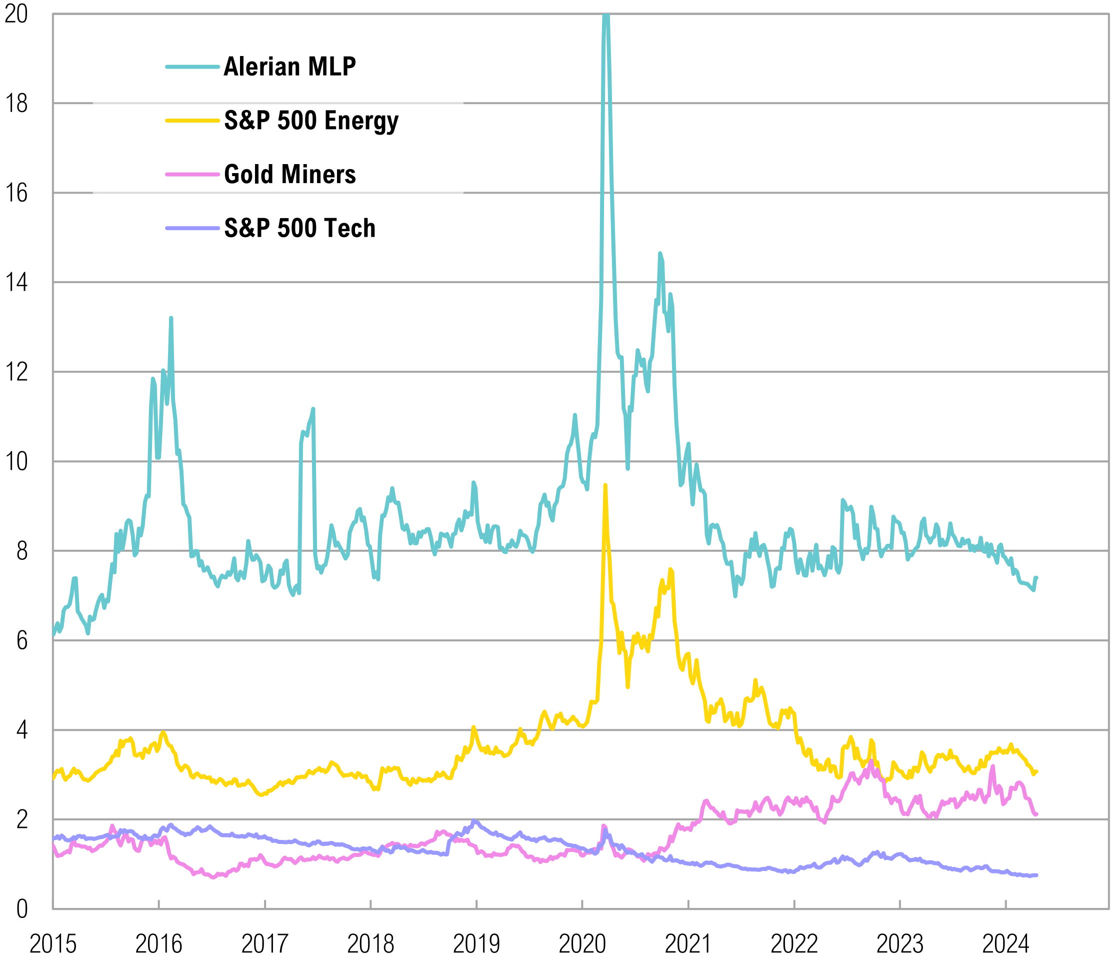
Growth of 100, Current



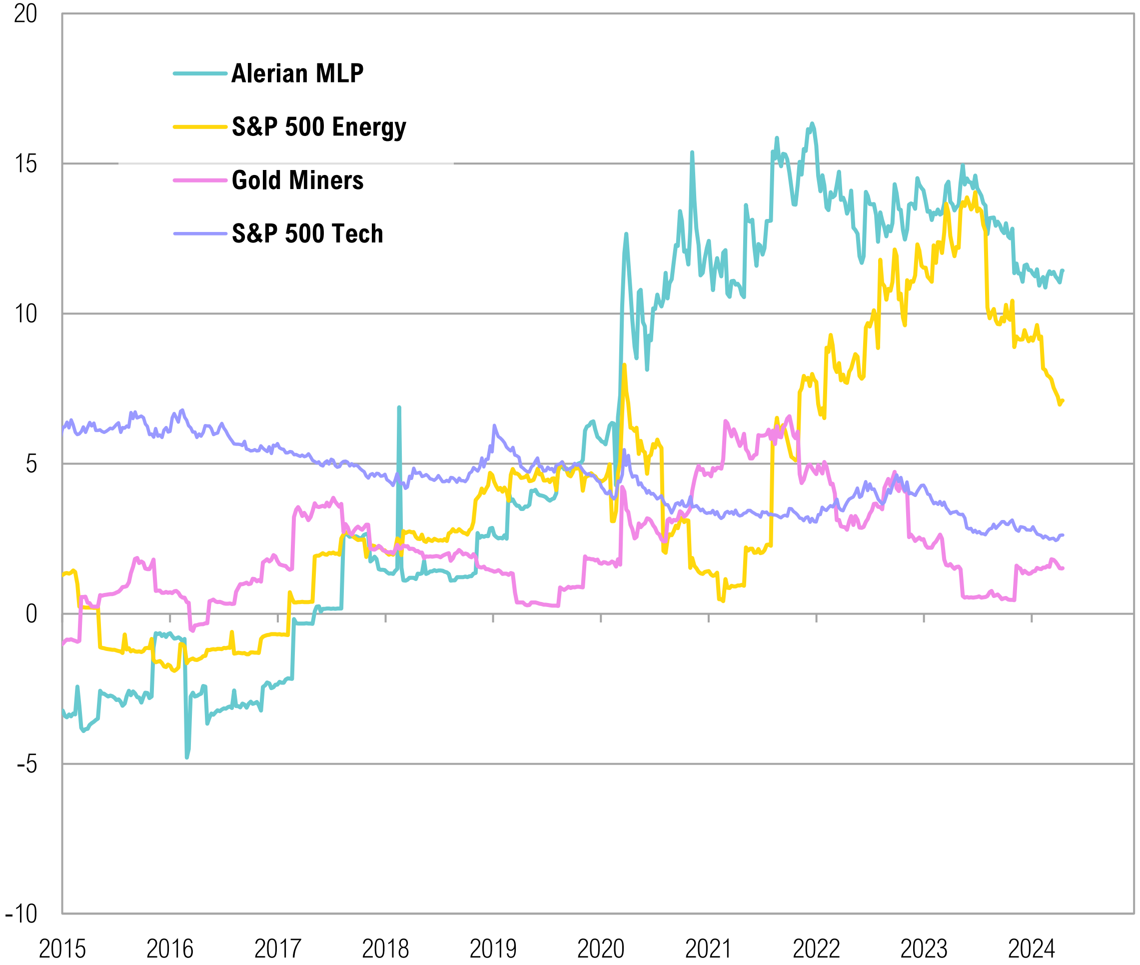
Source: Pitchbook, Bloomberg. U.S. Private Real Estate returns as of 12/31/2023.

Midstream distribution yields trended lower as the sector broke out to upside but have stabilized around a *relatively* attractive 7.4%; trailing free cash flow yields of the energy sector have declined

12-Month Forward Dividend Yield, %



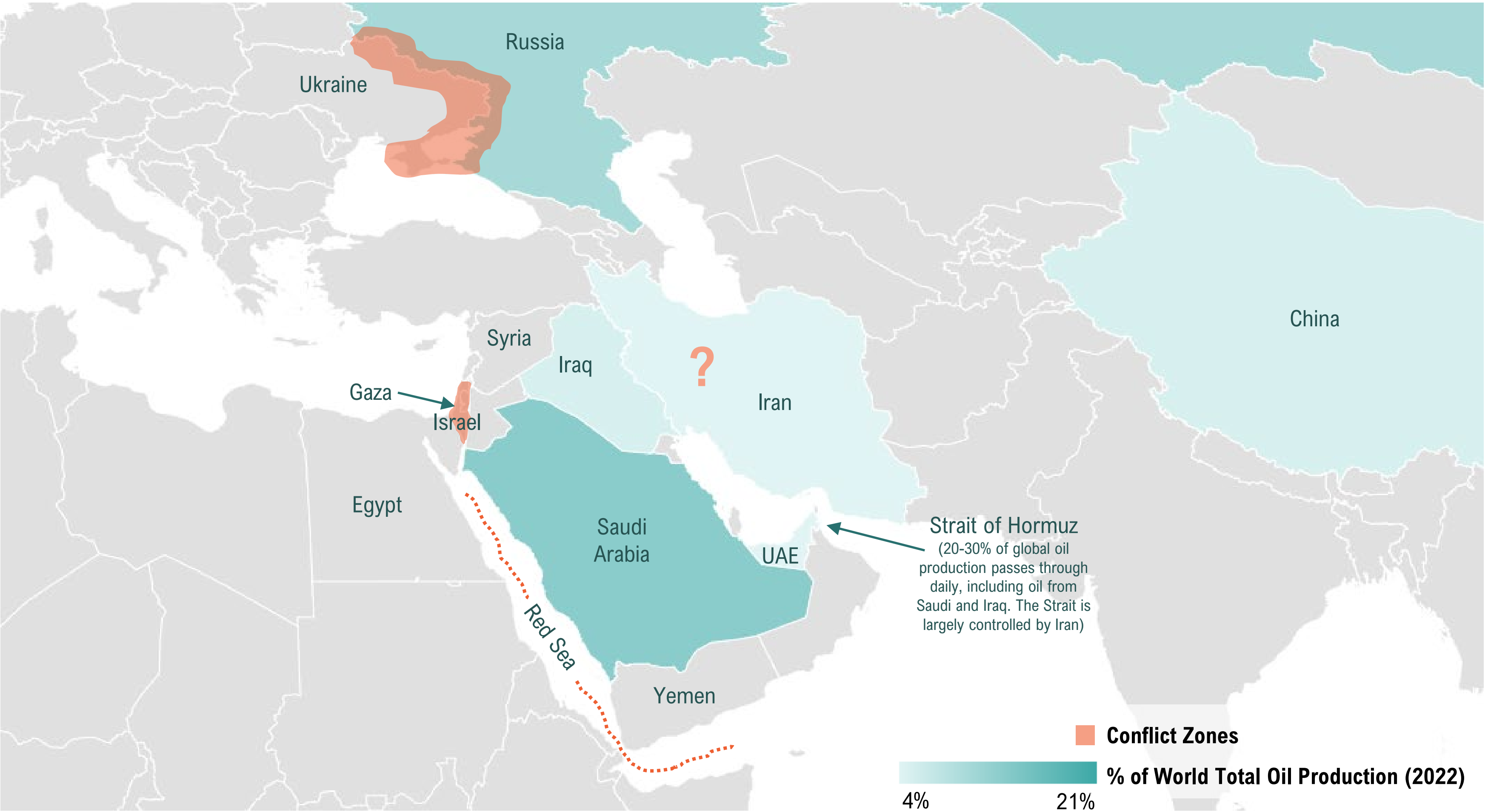
Trailing 12-Month FCF Yield, %



Source: Bloomberg

Heightened geopolitical risk from key global oil producers could increase volatility in the oil market if conflict escalates or spreads further in the Middle East

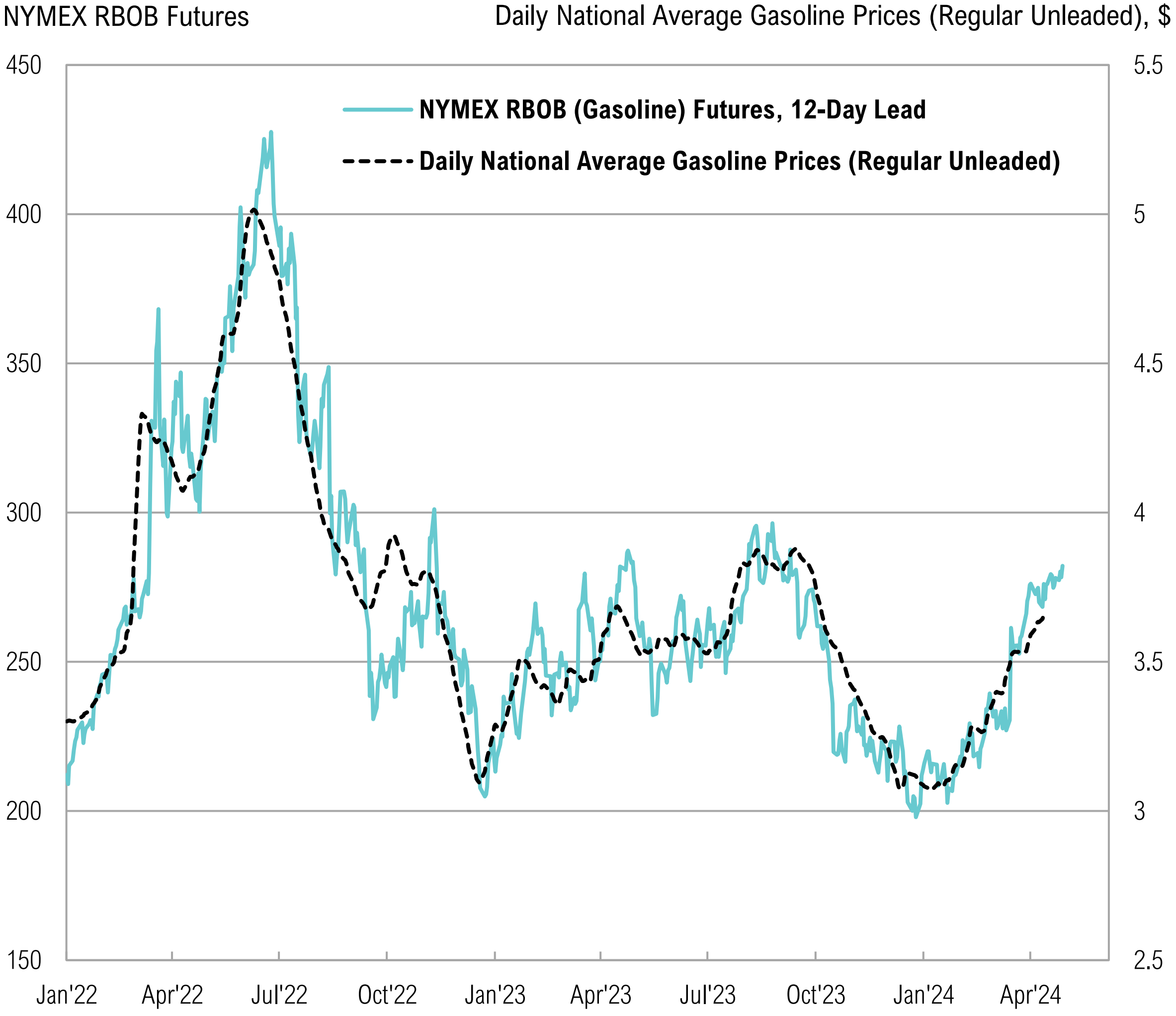
Top Global Oil Producers by % of Oil Produced

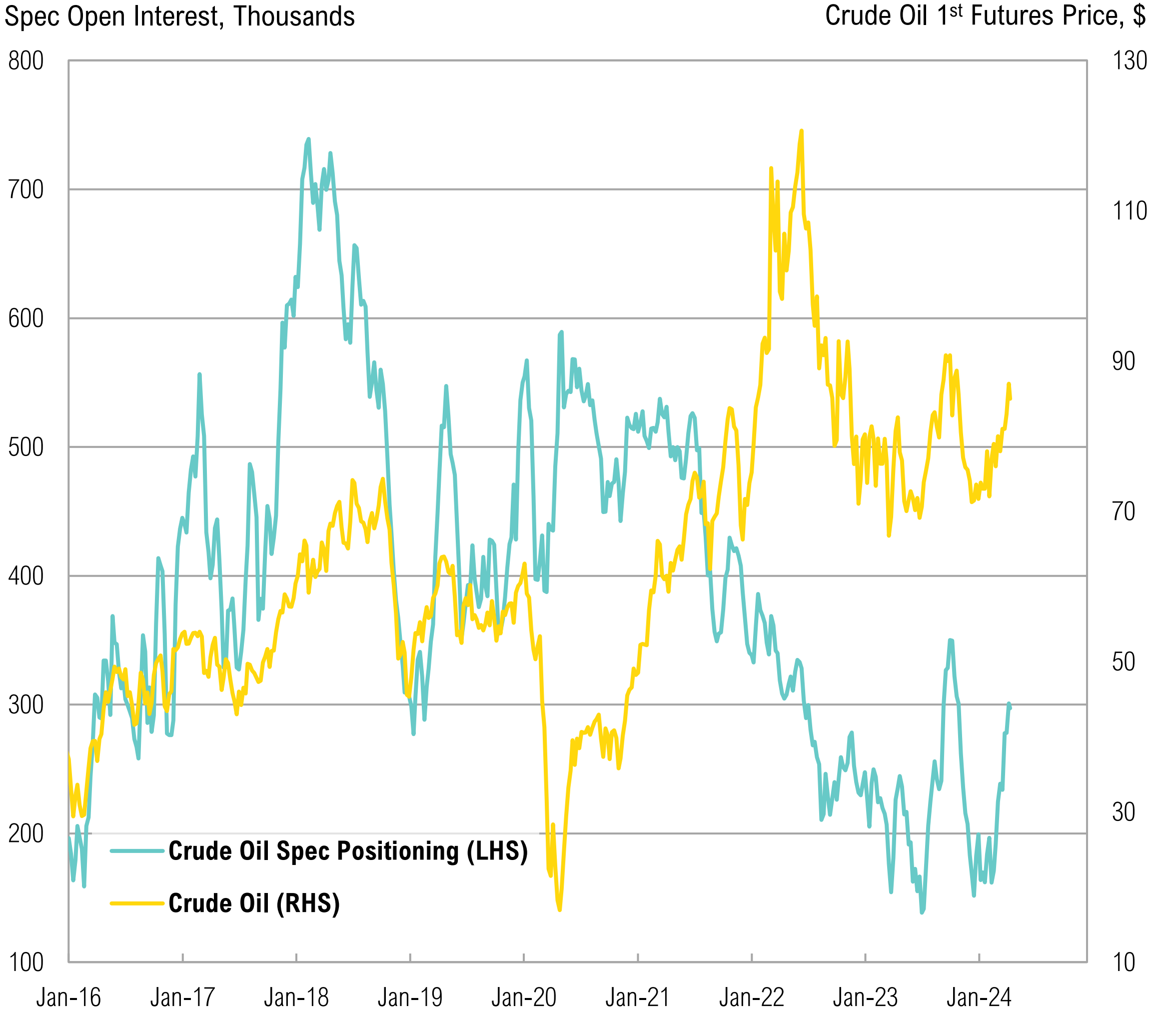


- Heightened geopolitical risks, particularly from major global oil producers like Russia, and potentially Iran if it becomes more involved in the Israel-Hamas conflict, could amplify volatility in the oil market.
- In early April, Israel killed 12 people, including two Iranian military commanders in a strike on Tehran's consulate in Damascus. Iran attacked Israel on Saturday, April 13, in retaliation. On April 18, Israel responded to Iran's attack.
- Further intervention by Iran could lead to supply disruptions and subsequent upward pressure on oil prices.
- On April 2, Ukraine bombed a key Russian oil refinery that was responsible for 3% of Russia's oil production.

Source: EIA, Bloomberg, Wall Street Journal, Reuters. Oil production includes crude oil, all other petroleum liquids, and biofuels.

Gas prices have increased by 20% YTD, climbing from $3.06 in January to $3.64; despite being off lows, crude spec positioning indicates further room to run

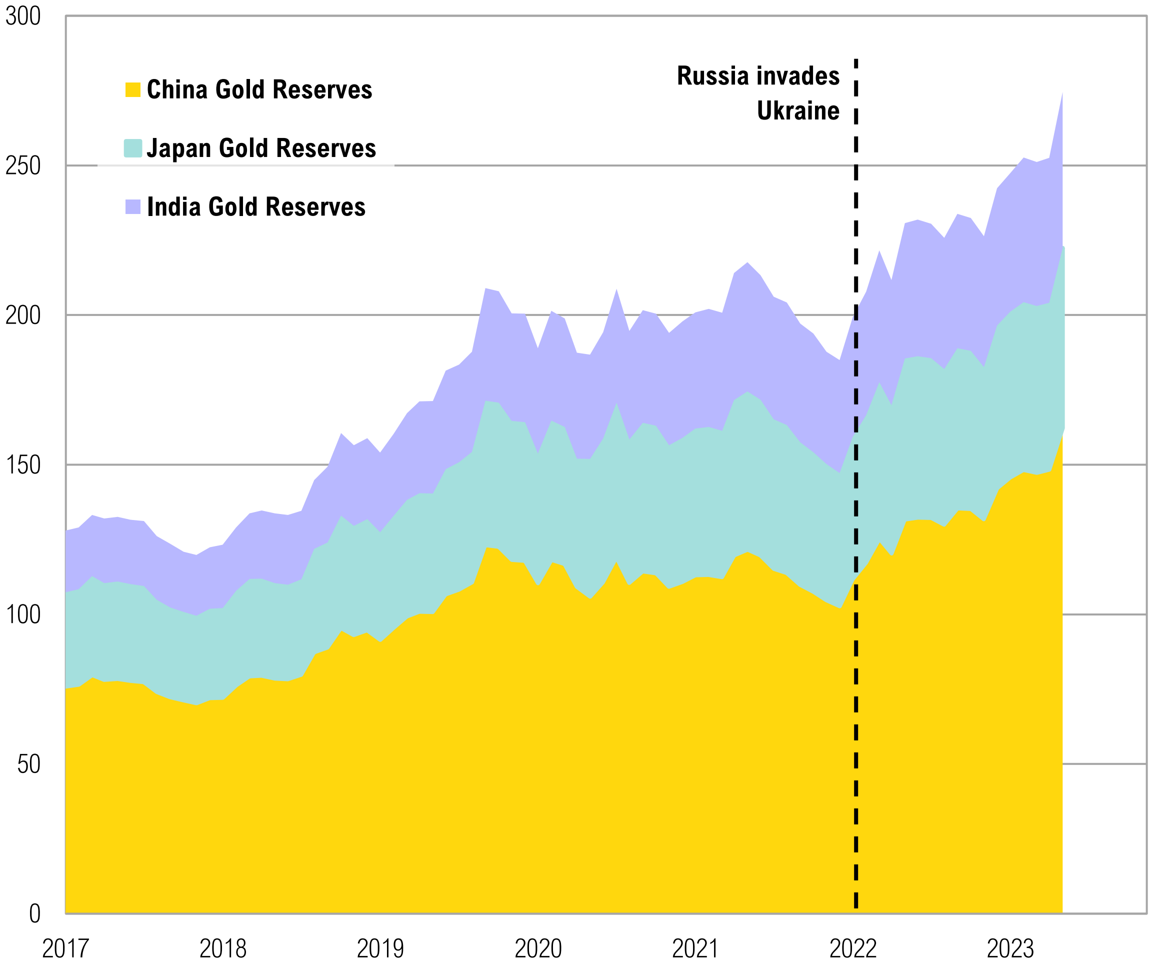




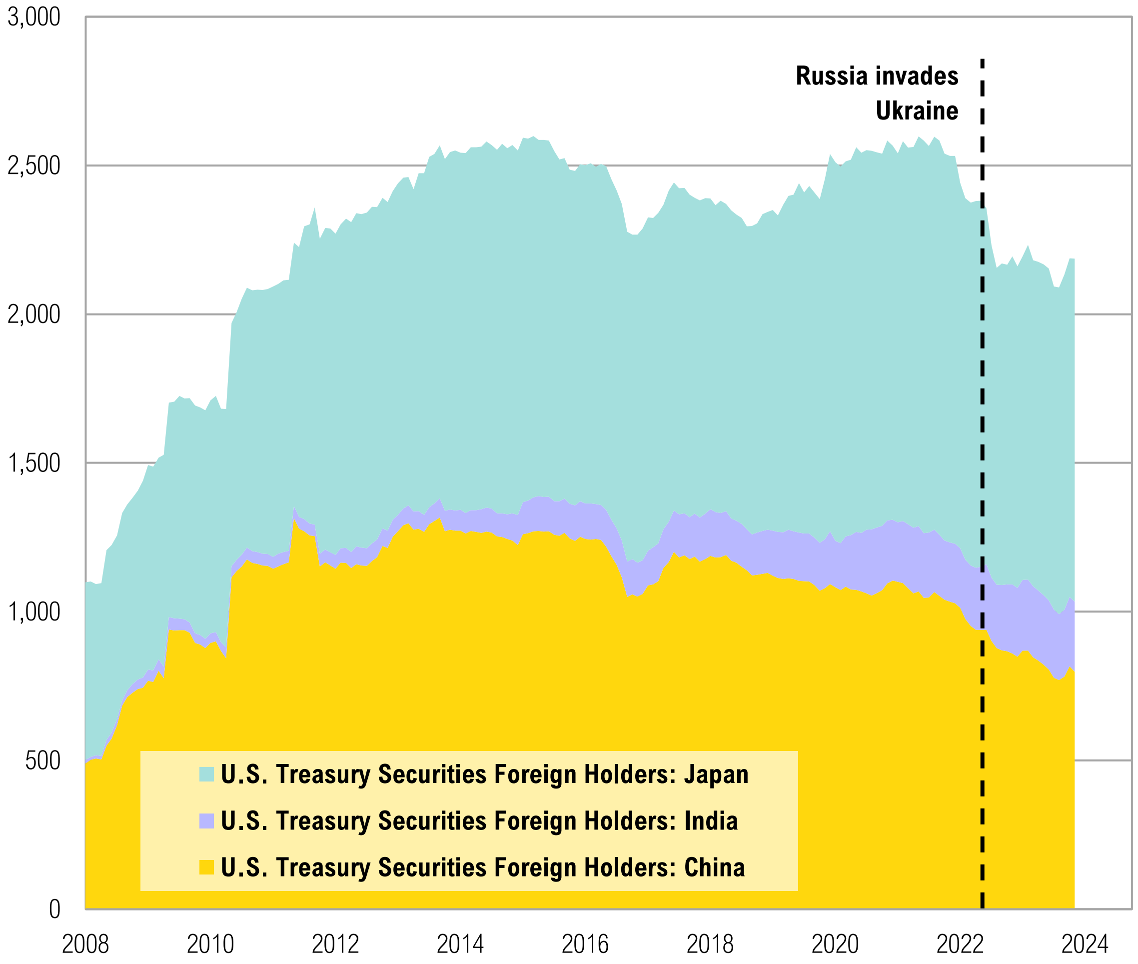
Source: Bloomberg

Over the past two years, central banks have been increasing gold reserves (at the expense of U.S. Treasury security holdings) as geopolitical uncertainty has risen

Central Bank Gold Reserves, $Bn



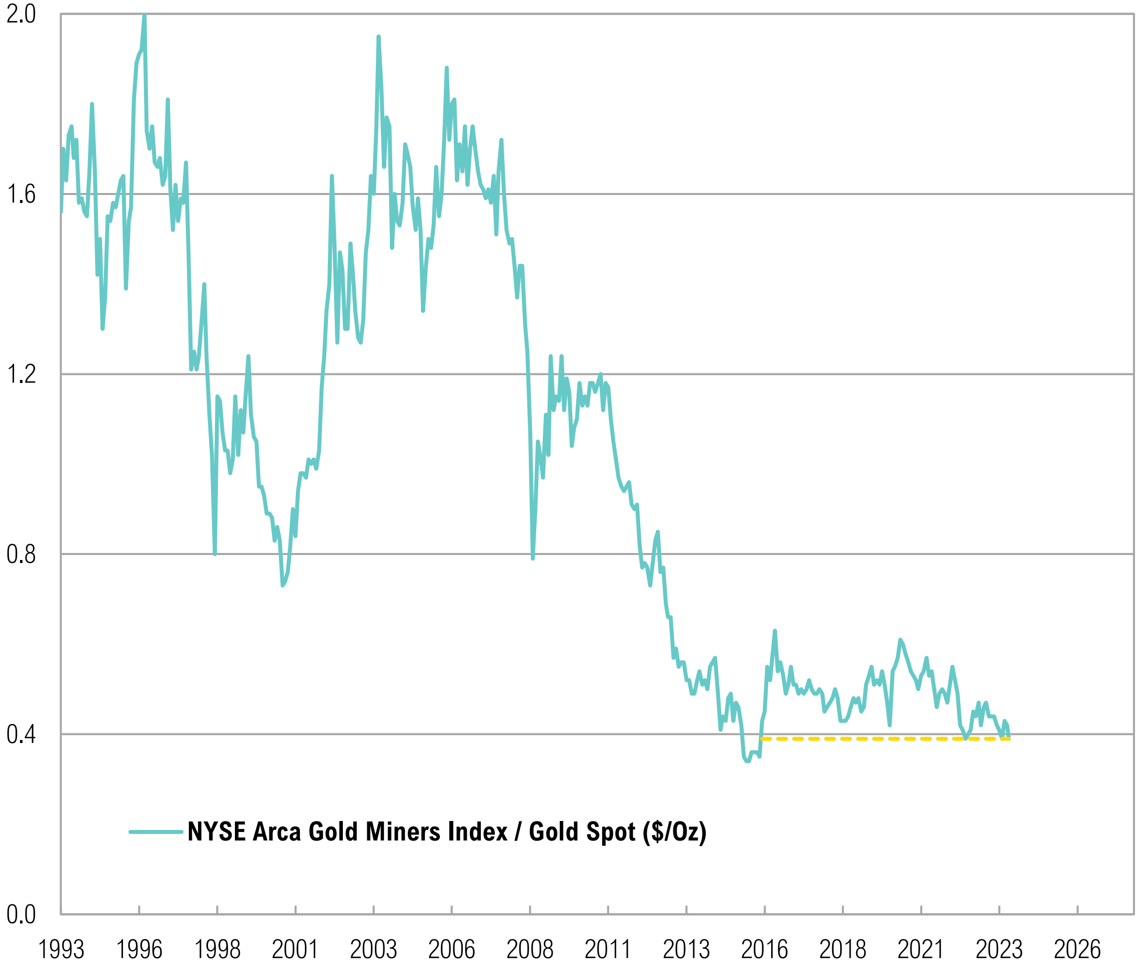
Foreign Holders of U.S. Treasury Securities, $Bn



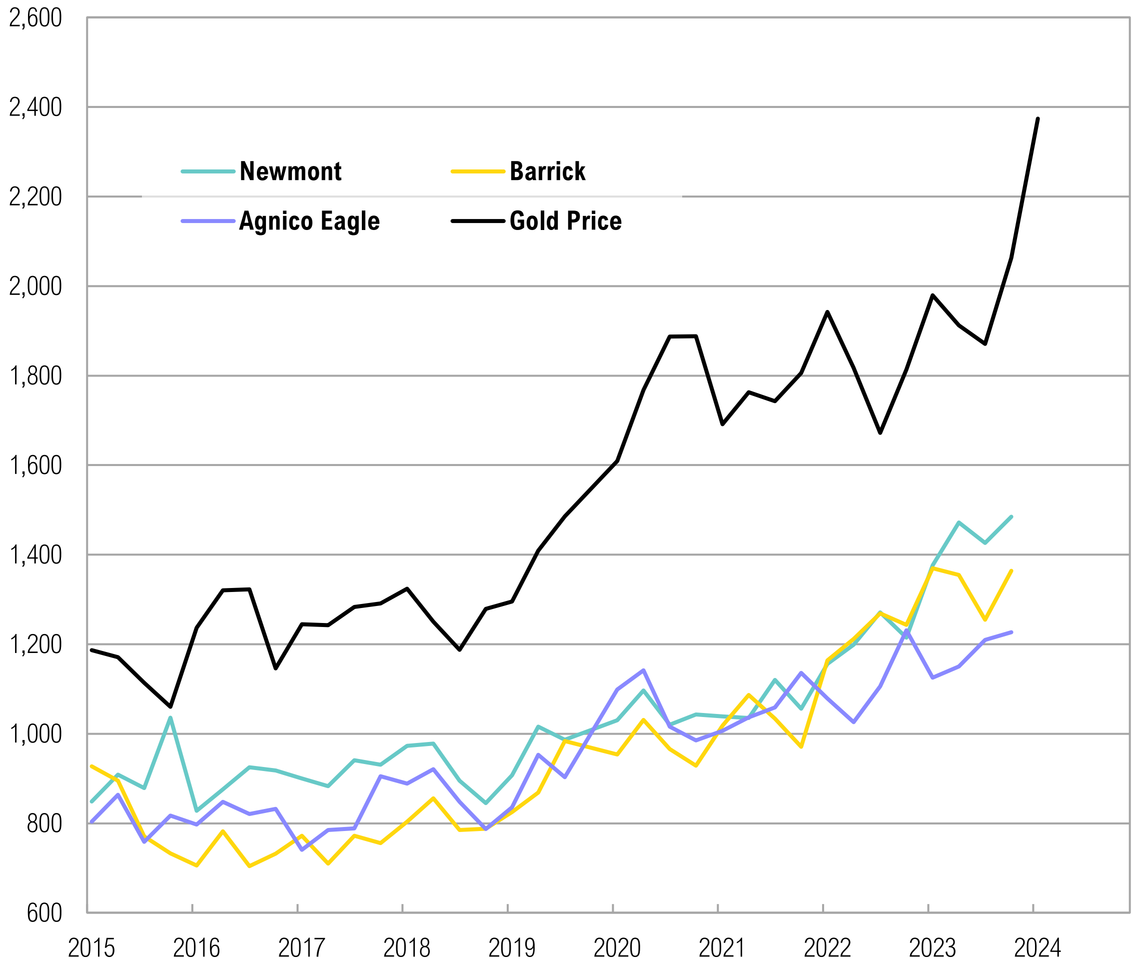
Source: Bloomberg

On the surface, gold miners look attractive vs. physical, but miners have been plagued by rising costs, country-specific issues, and labor challenges, among other things

Gold Miners Index/ Gold Spot Price



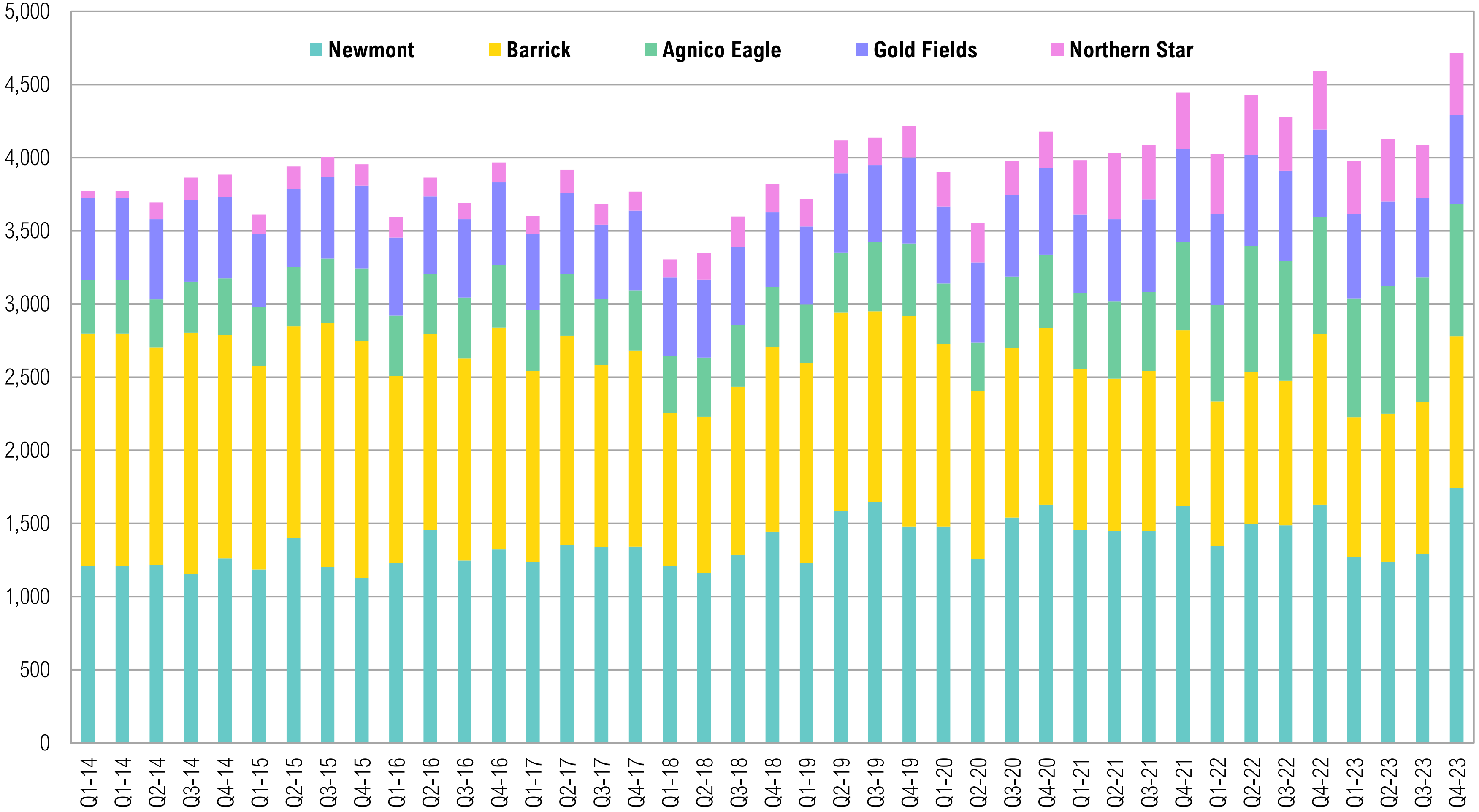
All In Sustaining Costs, $/Oz



Source: Bloomberg, World Gold Council. RHS as of 12/31/2023.

There was a notable reacceleration in gold mining production in Q4 2023, resulting in the strongest quarter in a decade for the top 5 gold miners

Top 5 Miners' Physical Gold Mined per Quarter, Per Thousand Oz

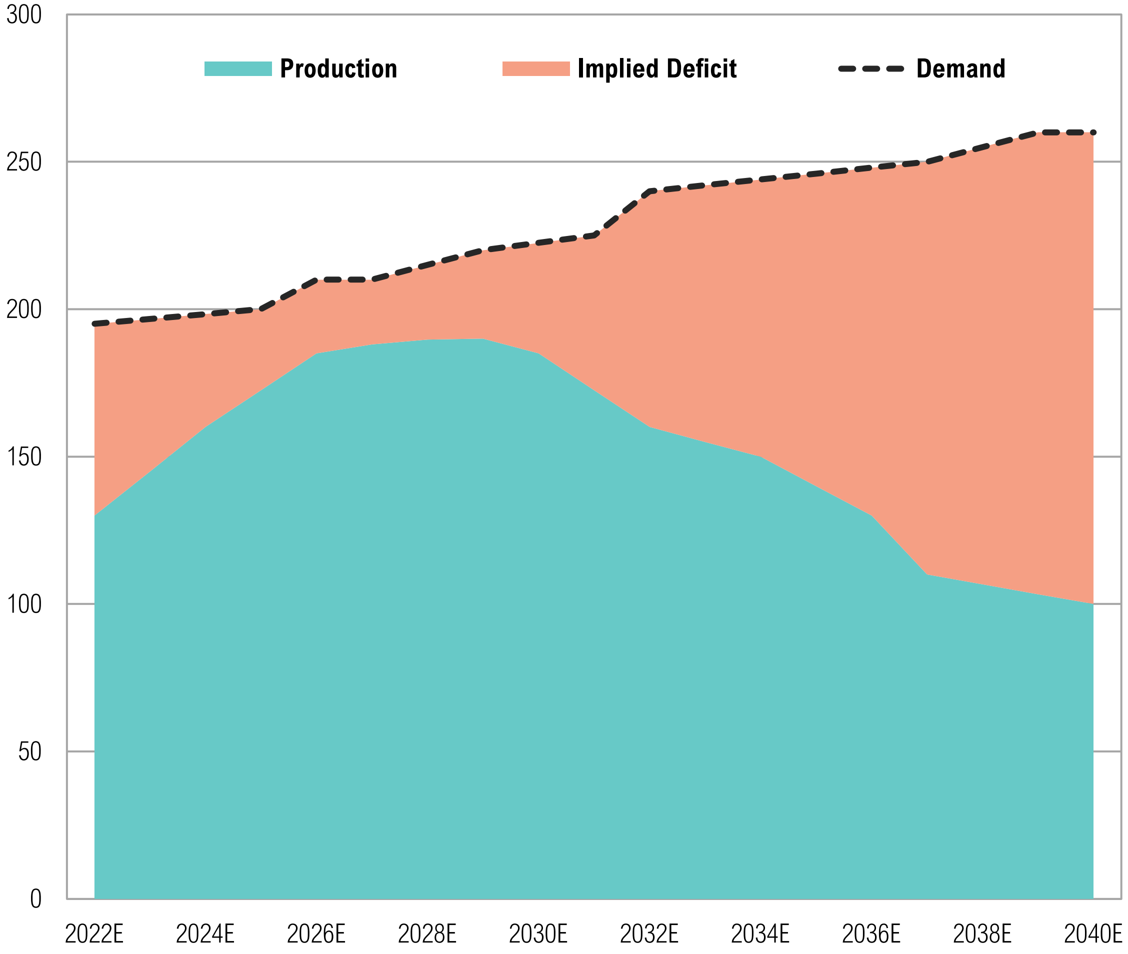


- **Newmont's strong Q4 mining capacity was driven by production of additional mines acquired and higher production overall. Newmont also resolved its labor issues in Mexico.**
- **Agnico Eagle reported record quarterly gold production in Q4, driven by stronger production across all Canadian mines.**
- **Gold Fields reported improvements in labor availability across mine sites.**
- **Barrick Gold's mining production in Q4 was the highest quarter for 2023, driven by strong performance from North American mines.**
- **Northern Star reported strong production in Australian and Alaskan mines in Q4.**

Source: Bloomberg, Newmont, Barrick Gold, Mining Weekly, Agnico Eagle, Gold Fields. As of 12/31/2023.

Uranium production remains in a structural supply deficit; despite seeing a supply response from restarted idled mines, there needs to be meaningful investments in new projects to clear deficit (but this has yet to materialize)

Estimated Uranium Supply & Demand, Million Pounds of U_3O_8*



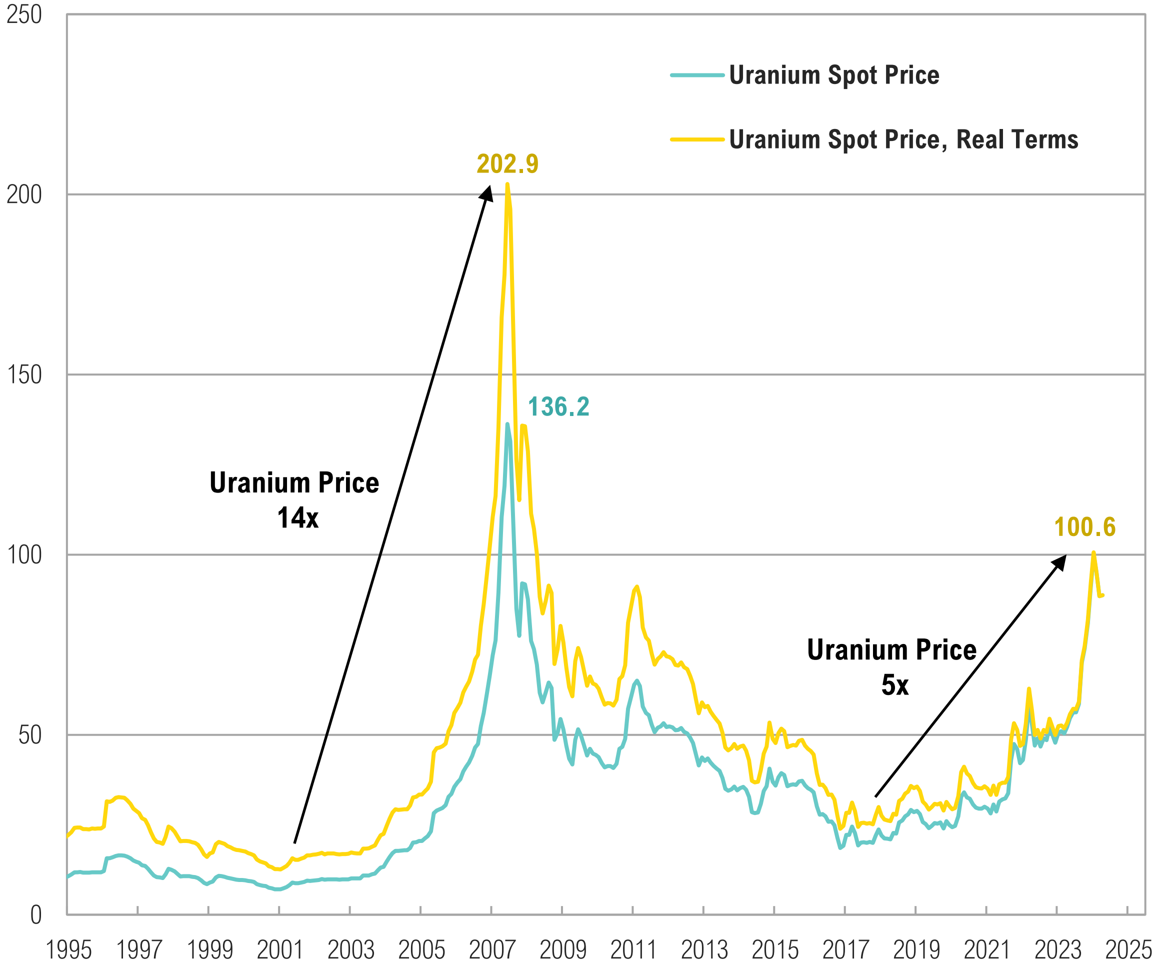
Uranium Mining Projects, Production Capacity in Million Pounds of U_3O_8*

Project	Owner	2022	2023	2024	2025	2026	2027
Restarted Idled Capacity		**1.1**	**13.6**	**24.4**	**42.2**	**49.4**	**57.2**
McArthur River	Cameco	1.1	13.5	18	18.2	18.4	18.2
Rabbit Lake	Cameco						3.6
Cameco U.S.	Cameco					1	1.4
Multiple	Kazatomprom			1.7	12.9	15.6	18.6
Langer Heinrich	Paladin Energy			2.5	3.5	4.5	5.5
Lost Creek	Ur-Energy		0.1	0.7	1	1	1
Shirley Basin	Ur-Energy					1	1
Honeymoon	Boss Energy			0.8	1.6	2.5	2.5
Christensen Ranch	Uranium Energy			0.3	1	1	1
Rosita	Encore Energy			0.3	0.8	0.8	0.8
Alta Mesa	Encore Energy			0.1	1	1	1
McClean Lake	Denison Mines				0.8	0.6	0.6
Nichols Ranch	Energy Fuels				0.3	0.6	0.6
Whirlwind	Energy Fuels					0.3	0.3
Pinyon Plain	Energy Fuels				0.5	0.5	0.5
La Sal & Pandora	Energy Fuels				0.6	0.6	0.6
New Mines Under Development					**0.3**	**2.5**	**4.9**
Dasa	Global Atomic				0.3	2.5	4.9

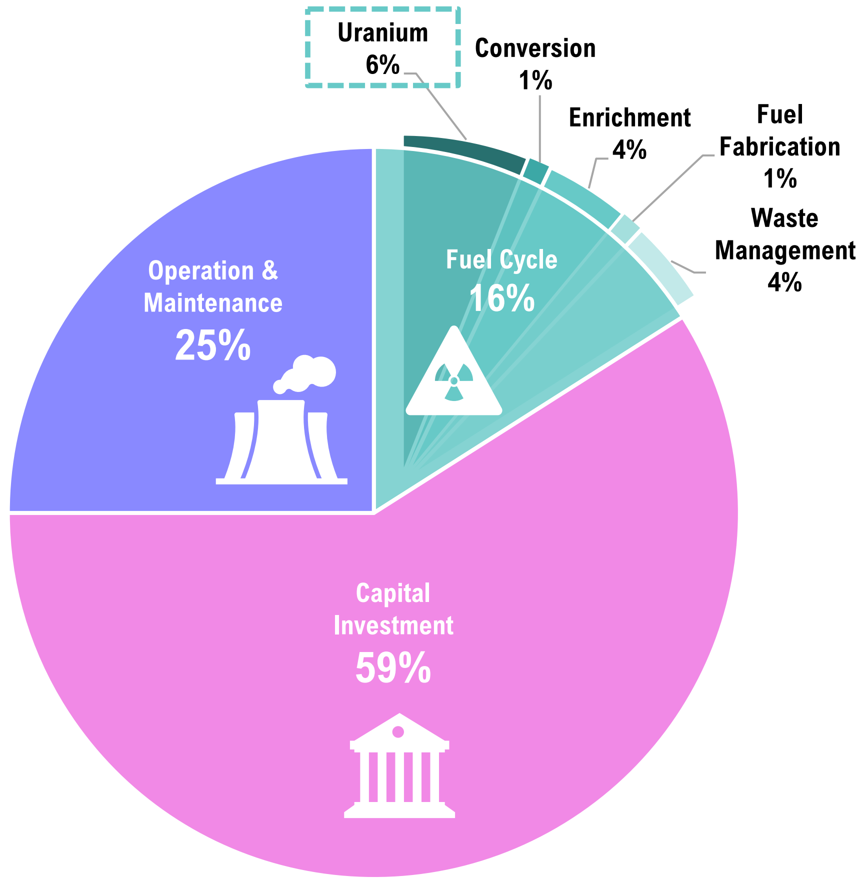
Source: Bloomberg, U.S. Department of Energy, Sprott. *World Nuclear Association estimate, as Q2 2023.

Uranium stocks hit new highs following a spike in prices due to supply shortfalls from the world's largest producer; effects on demand should be minor, as uranium prices contribute little to total nuclear costs

Uranium Spot Price, $/lbs



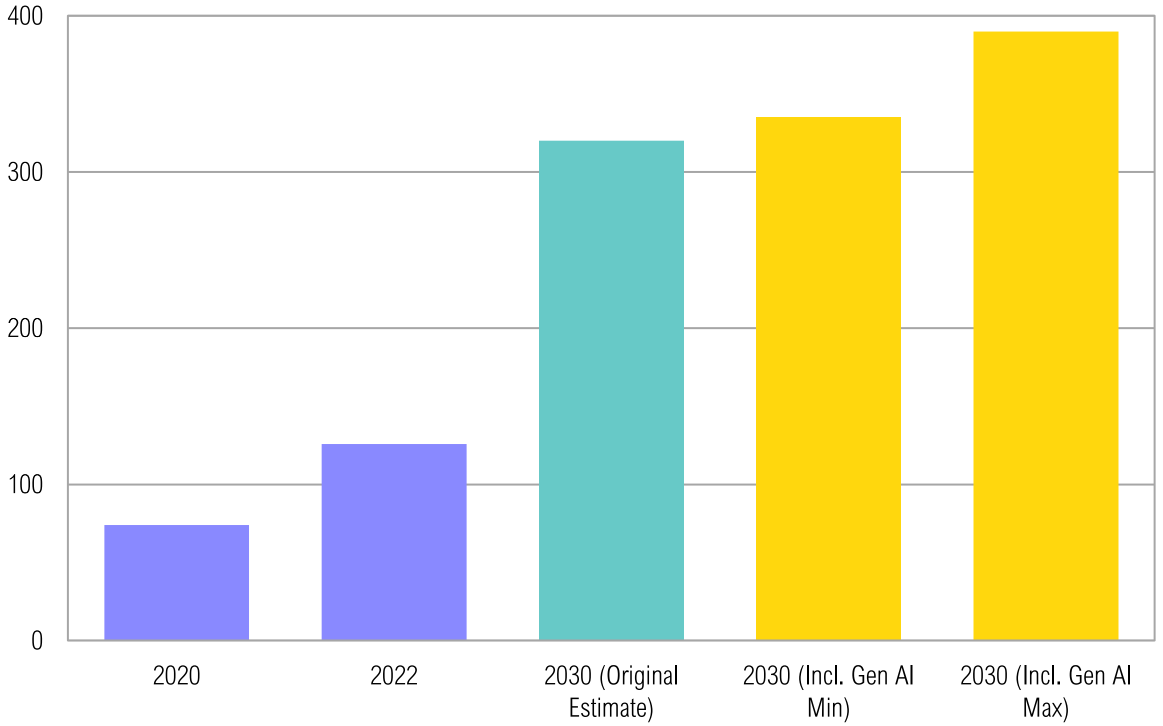
Estimated Nuclear Electricity Generation Cost Breakdown*



Source: Bloomberg, *Estimate as per IEA/NEA 2010 projections, and assumes a discount rate of 5%. Real uranium prices reflect spot prices adjusted for 2024 dollars.

AI and data center growth will likely drive power demand as tech companies such as Amazon and OpenAI look to nuclear power to fulfil needs

U.S. Data Centre Electricity Demand, TWhs



U.S. Data Center Electricity Demand, % of Total U.S. Electricity Demand

The AI industry is pushing a nuclear power revival – partly to fuel itself

A nuclear startup backed by OpenAI chief Sam Altman wants to power data centers and homes alike. It's racing against surging demand while working to satisfy regulators.

Energy | Sustainable Markets | Regulatory Oversight | Governance | Grid & Infrastructure

US electric utilities brace for surge in power demand from data centers

By **Laila Kearney**, **Seher Dareen** and **Deep Kaushik Vakil**

April 10, 2024 5:28 PM GMT+2 · Updated 5 days ago

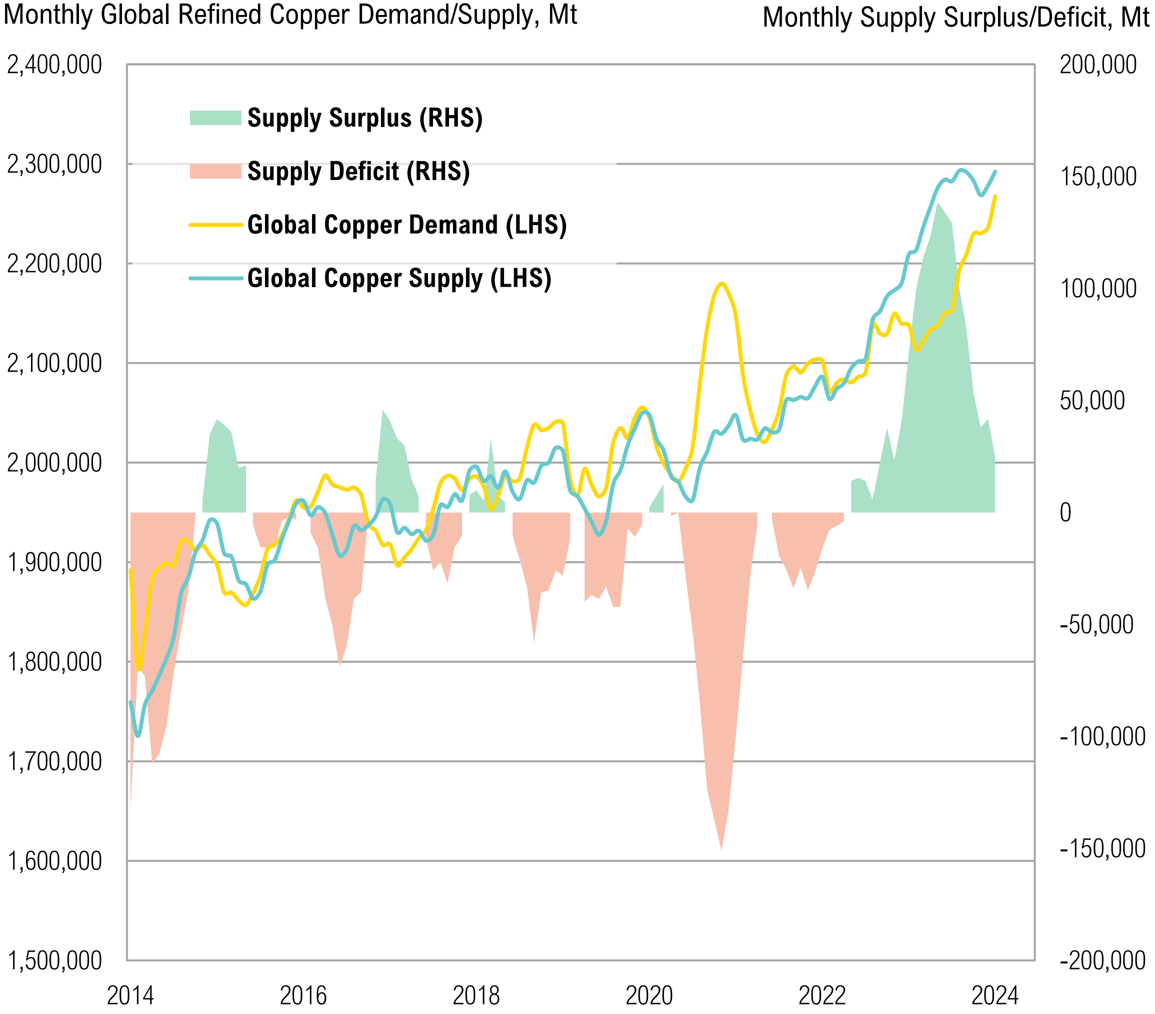
INDUSTRY

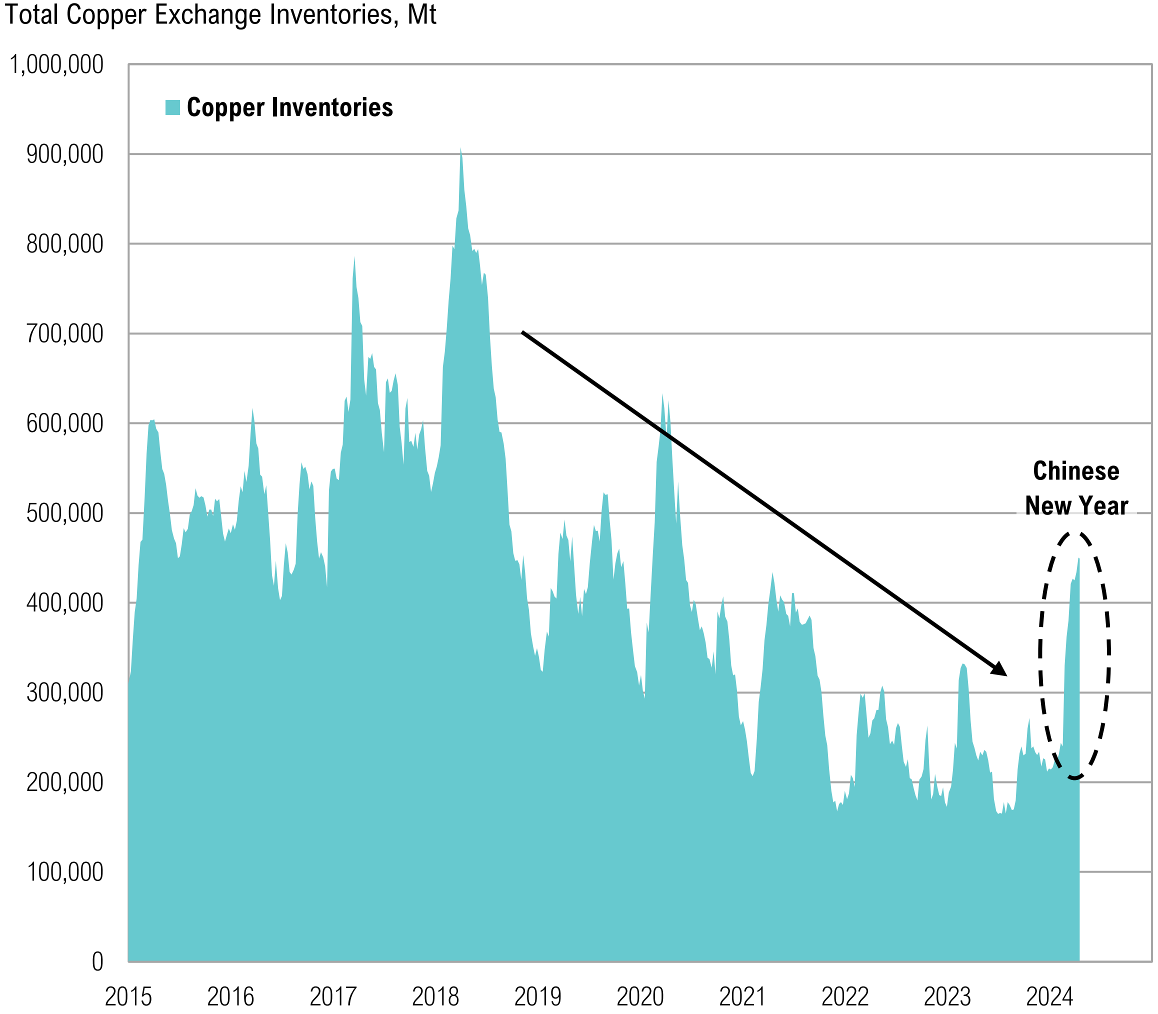
Amazon buys nuclear-powered data center from Talen

Thu, Mar 7, 2024, 3:01PM | Nuclear News

Source: NBC News, Reuters, Sprott, American Nuclear Society.

Long lead times for mines historically lead to demand/supply timing mismatches, accentuating price dynamics; despite current seasonal spike (due to Chinese New Year), copper inventories are trending lower

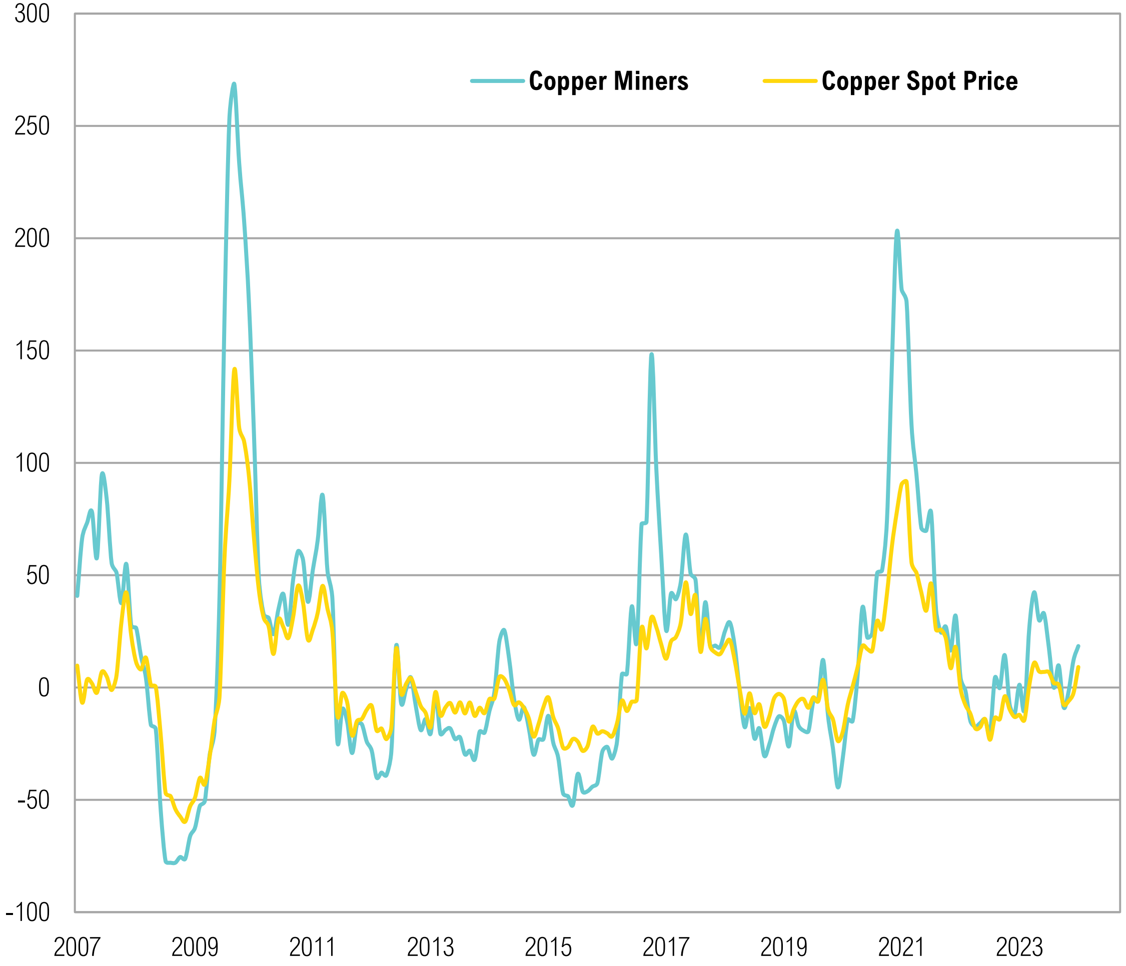




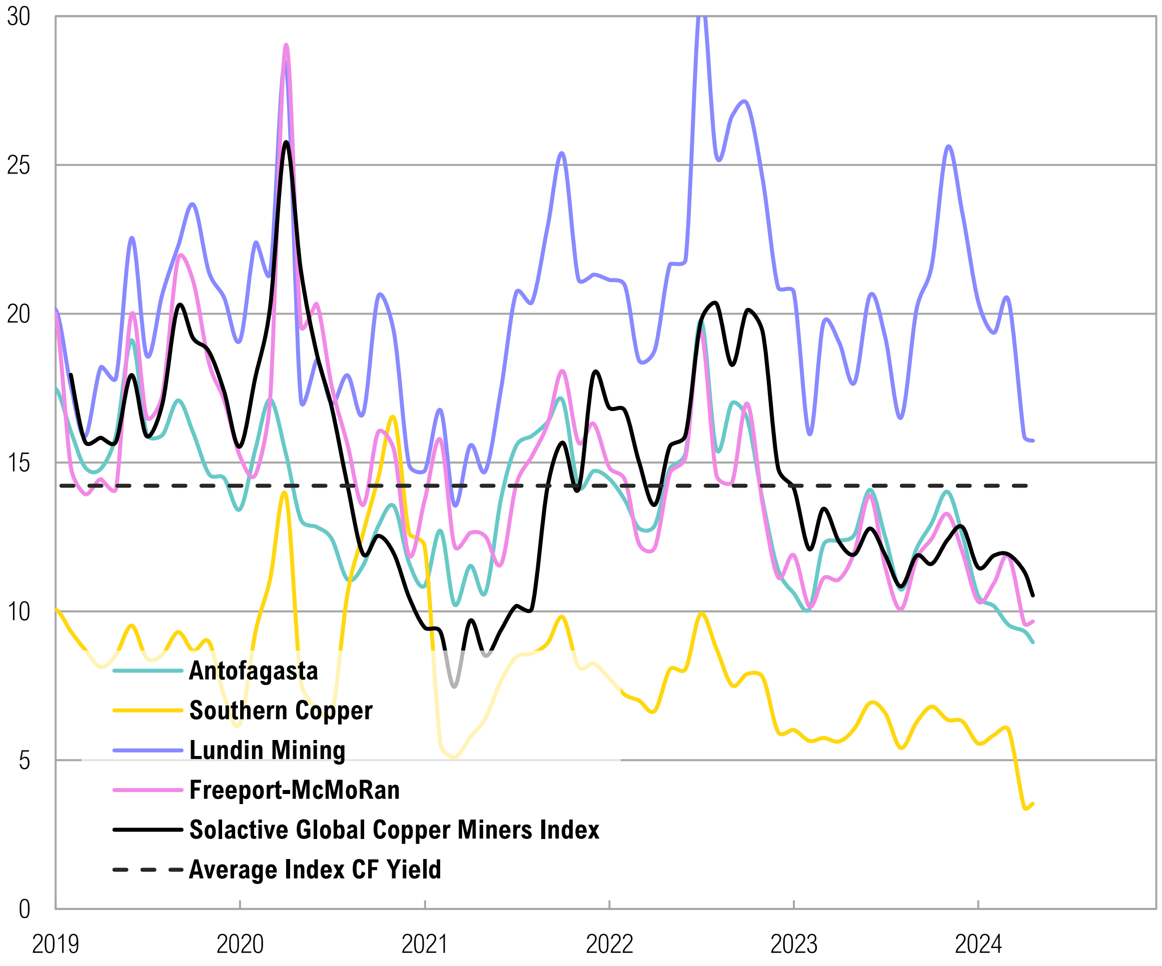
Source: Bloomberg. Copper exchange inventories includes inventories on the LME, SHFE, and COMEX.

Copper miners are highly sensitive to spot prices, making them appealing during copper bull markets; most miners are trading at a premium relative to their historical cash flow yields with valuations reflecting optimism

Rolling 1-Year Return, %



Forward 12-Month Operating Cash Flow Yield, %



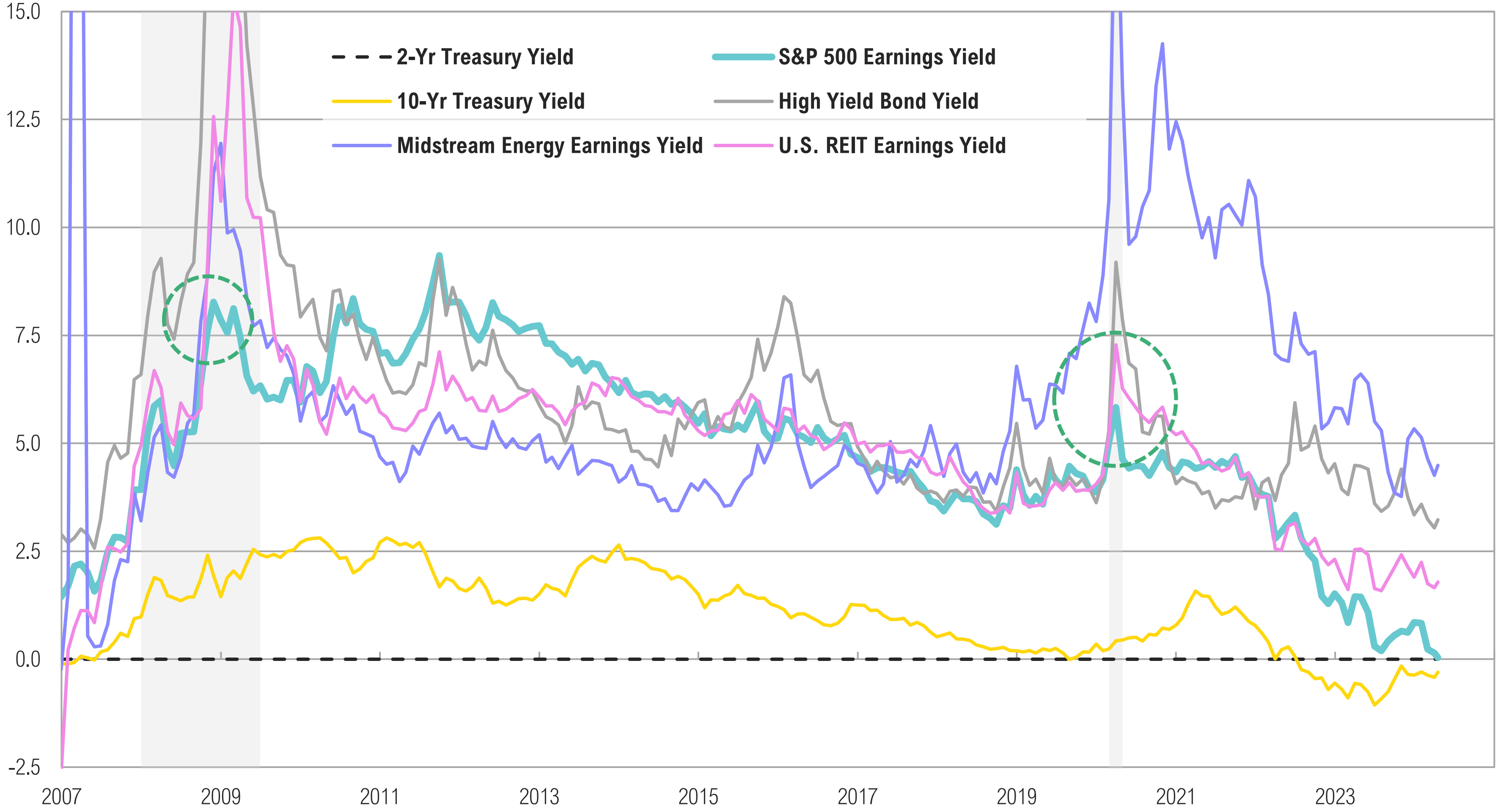
Source: Bloomberg

> **There's a lot of excitement around the transactions that happened in pharmaceutical industry of buying some of the smaller companies. The valuations were robust. That creates a positive aura. And you feel that tone in terms of the biotech industry… In line with what we assumed in the guidance is that the market improves as the year unfolds.**

Marc Casper, *Thermo Fisher Scientific CEO*

Most asset classes look unattractive relative to the 2-year Treasury yield

Current Yield vs. 2-Year Treasury, %



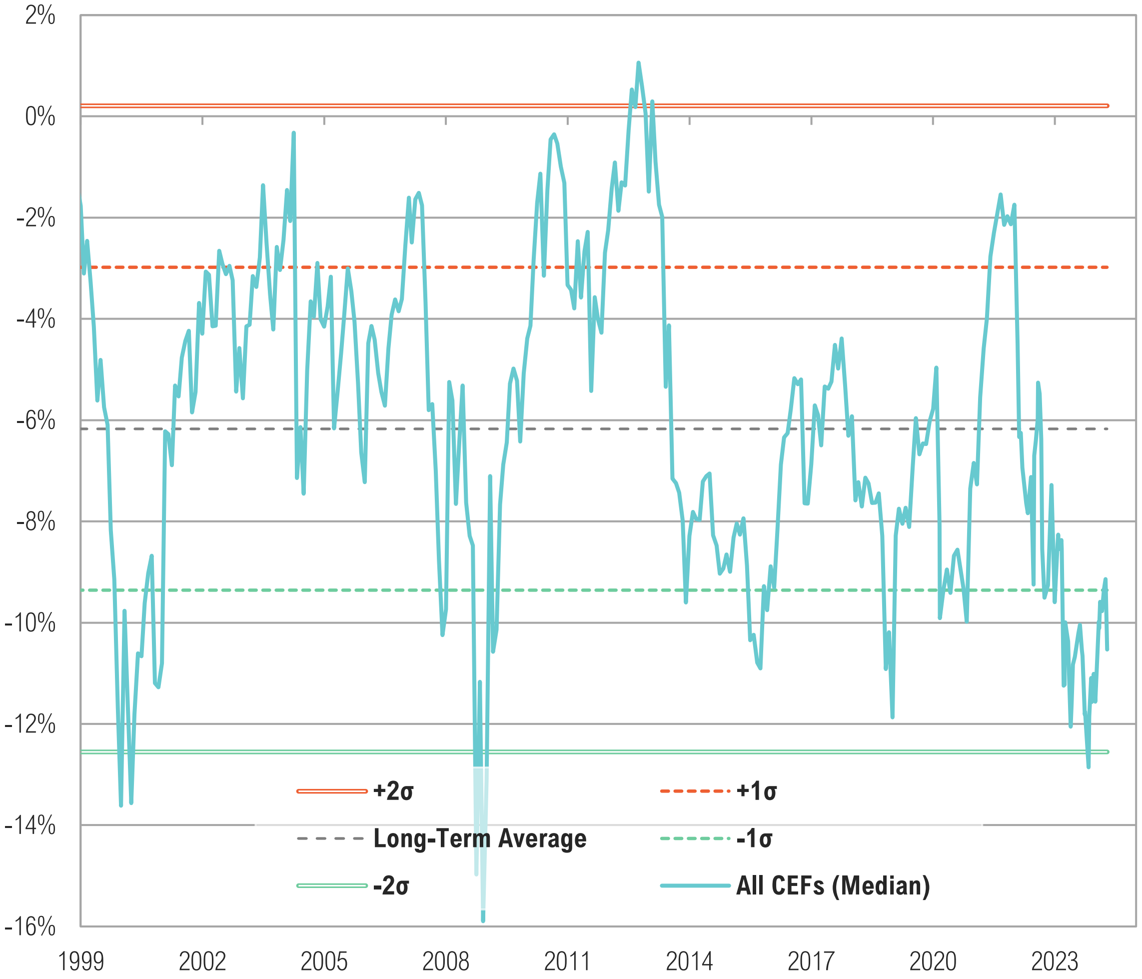
Current Yield:

- 2-Year Treasury: 4.94%
- 10-Year Treasury: 4.64%
- U.S. High Yield Bonds: 8.17%
- S&P 500: 4.98%
- Midstream Energy: 9.43%
- U.S. REITs: 6.73%

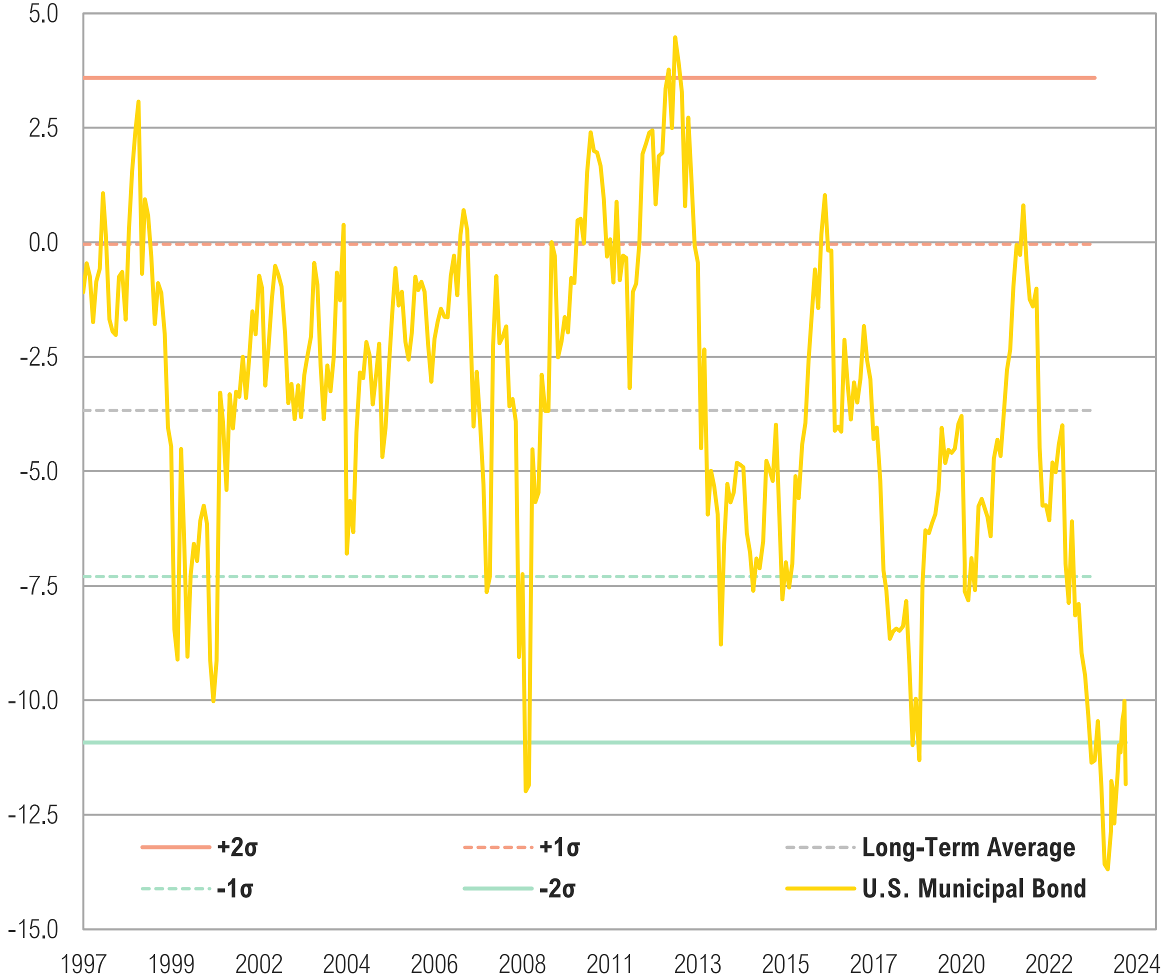
Source: Bloomberg. S&P 500, Midstream Energy and U.S. REIT yields proxied by forward 12-month estimated earnings yields.

Median CEF discounts had been narrowing since October, but have widened over April to -10.5%; U.S. Muni CEFs are trading at a compelling 11.8% discount to NAV, but relative muni yields are less enticing

Median Premium/Discount to Net Asset Value, %

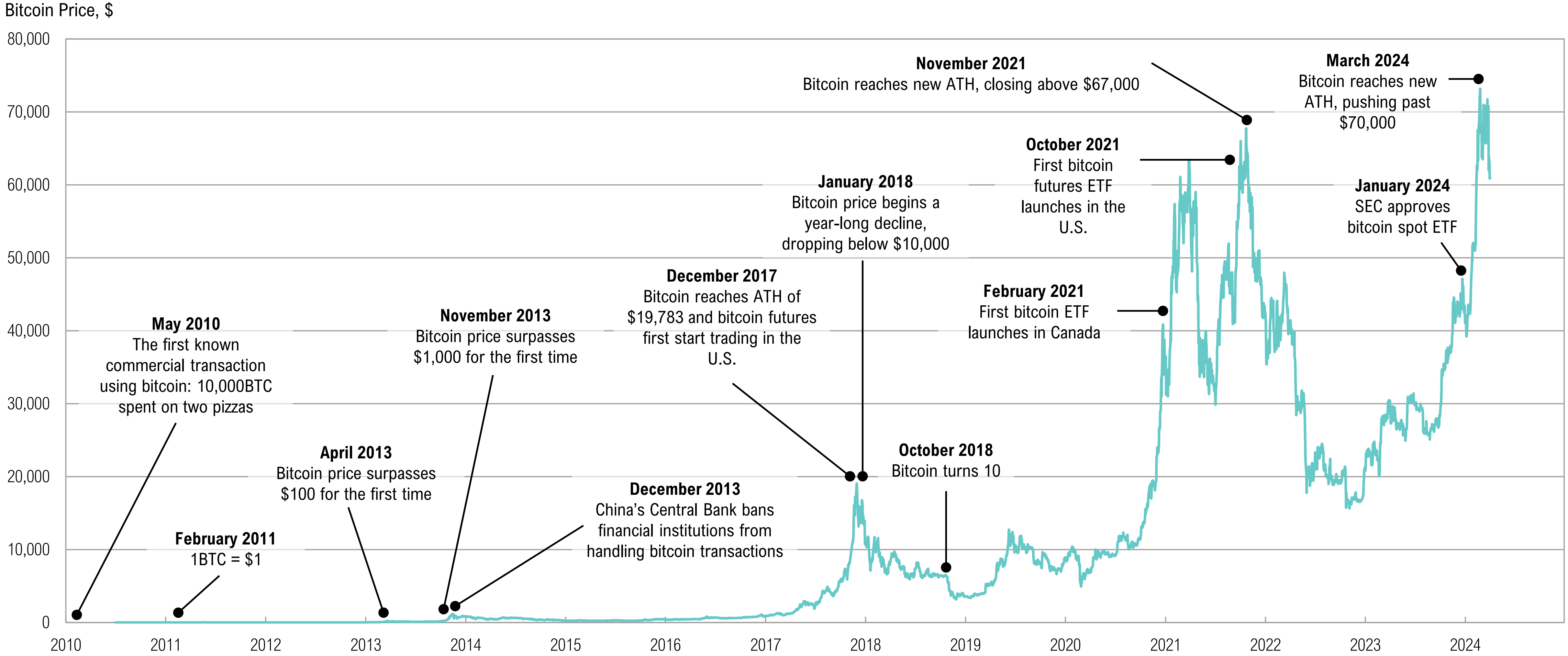


Average Premium/Discount to Net Asset Value



Source: Bloomberg

Historically, major bitcoin product launches have ended in ‘sell the news’—a trend that repeated with the recent launch of bitcoin spot ETFs; bitcoin since reached a new ATH before dropping below $65,000



May 2010
The first known commercial transaction using bitcoin: 10,000BTC spent on two pizzas

February 2011
1BTC = $1

April 2013
Bitcoin price surpasses $100 for the first time

November 2013
Bitcoin price surpasses $1,000 for the first time

December 2013
China’s Central Bank bans financial institutions from handling bitcoin transactions

December 2017
Bitcoin reaches ATH of $19,783 and bitcoin futures first start trading in the U.S.

January 2018
Bitcoin price begins a year-long decline, dropping below $10,000

October 2018
Bitcoin turns 10

February 2021
First bitcoin ETF launches in Canada

October 2021
First bitcoin futures ETF launches in the U.S.

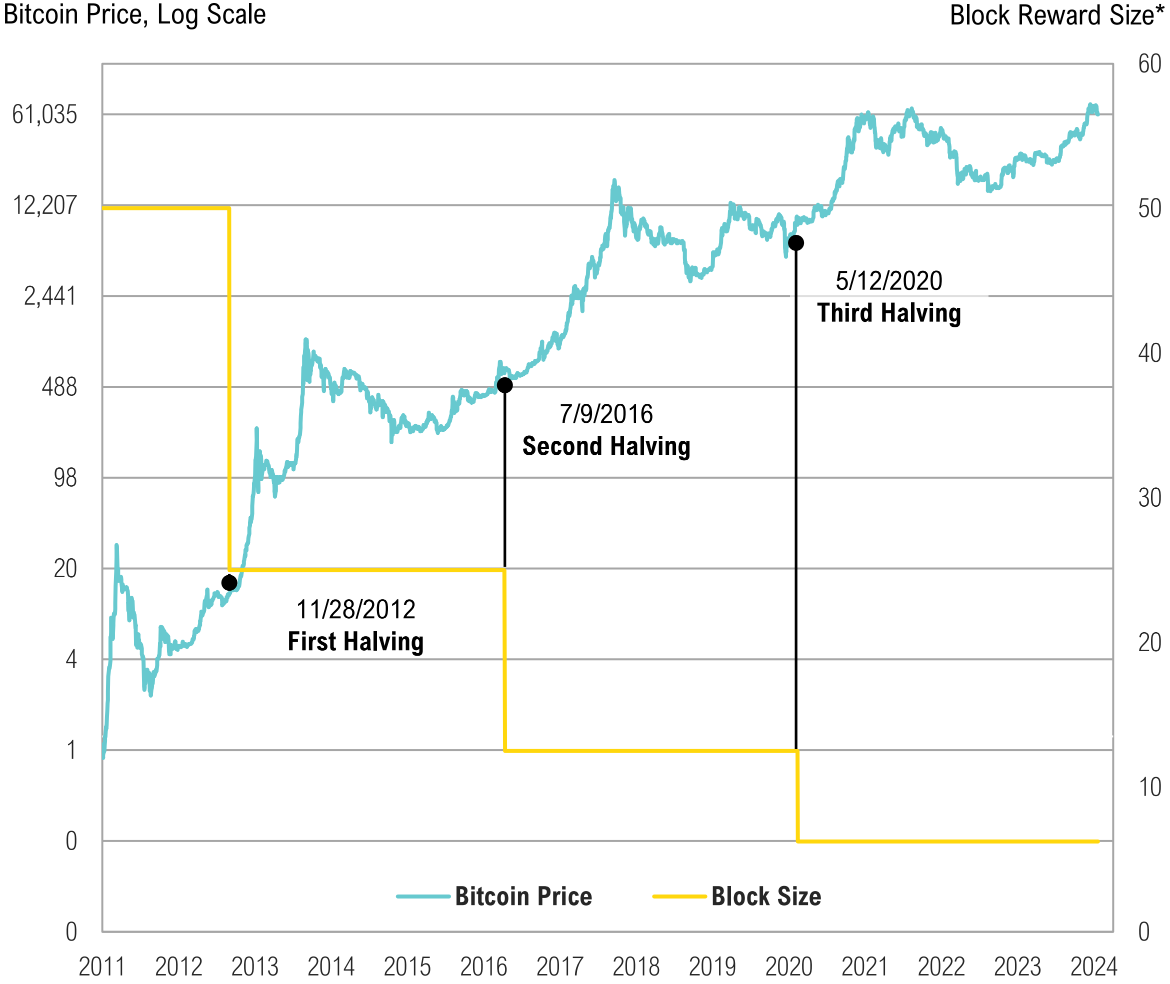
November 2021
Bitcoin reaches new ATH, closing above $67,000

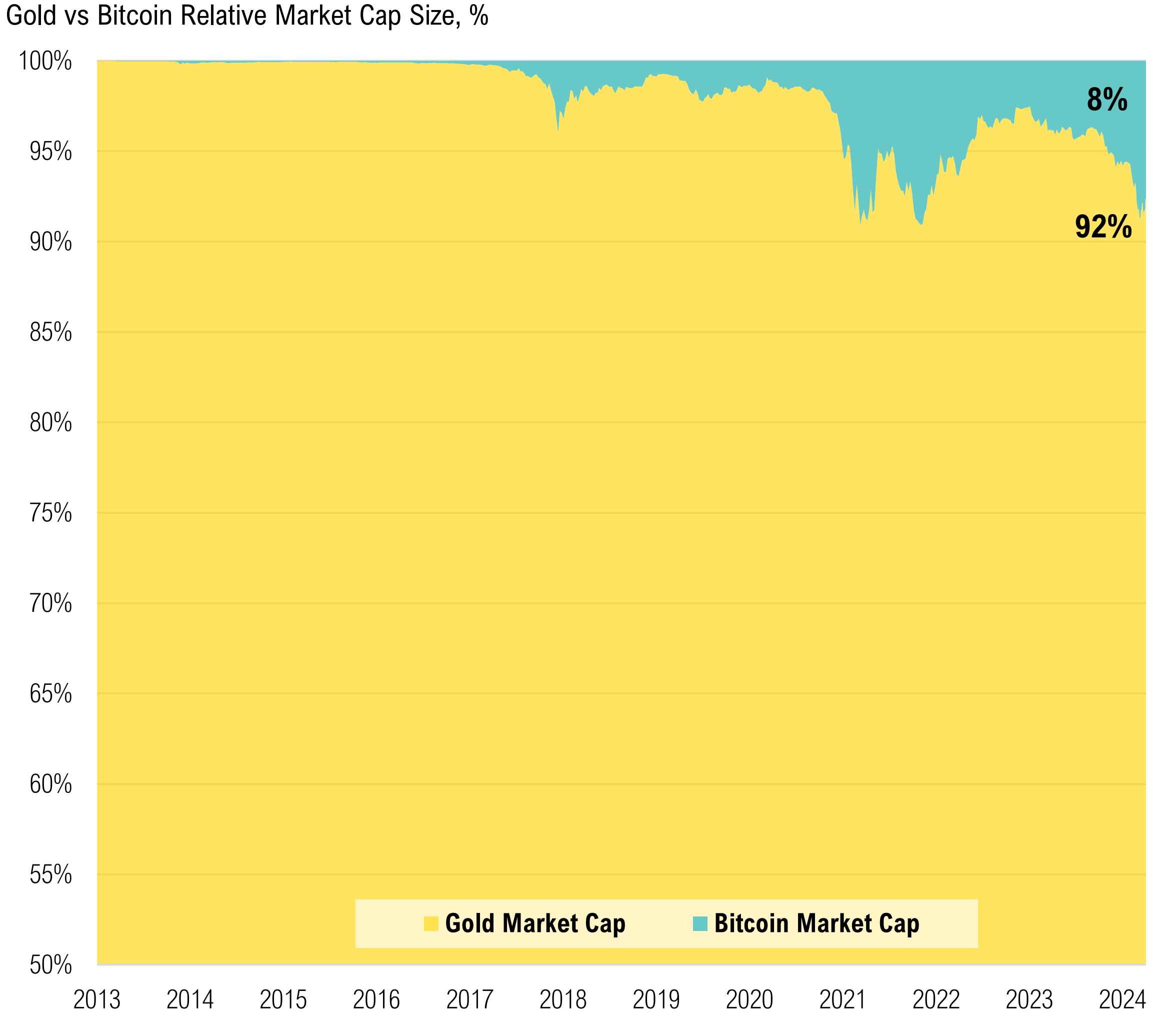
January 2024
SEC approves bitcoin spot ETF

March 2024
Bitcoin reaches new ATH, pushing past $70,000

Source: Bloomberg, Various. As of 4/17/2024.

Bitcoin price tends to rise after each halving event, the next which is imminent; gold and bitcoin together represent nearly $17Tn, about a tenth of the global fixed income market





Source: Bloomberg, Bitcoin Visuals. *Reward started at 50BTC and halves every 210,000 blocks. The block reward is how new bitcoin is 'minted' or brought into the economy. Halving is programmed into bitcoin's code and occurs every four years to control inflation by reducing the rate at which new bitcoins are created. If there are fewer bitcoins available, and demand stays the same or increase, the value of bitcoin is likely to increase. LHS as of 4/17/2024.

> **Well, I do stand by my prediction that, before the year is out, there'll be a rate cut.**

President Joe Biden, *(at a White House Press Conference on April 10, 2024)*

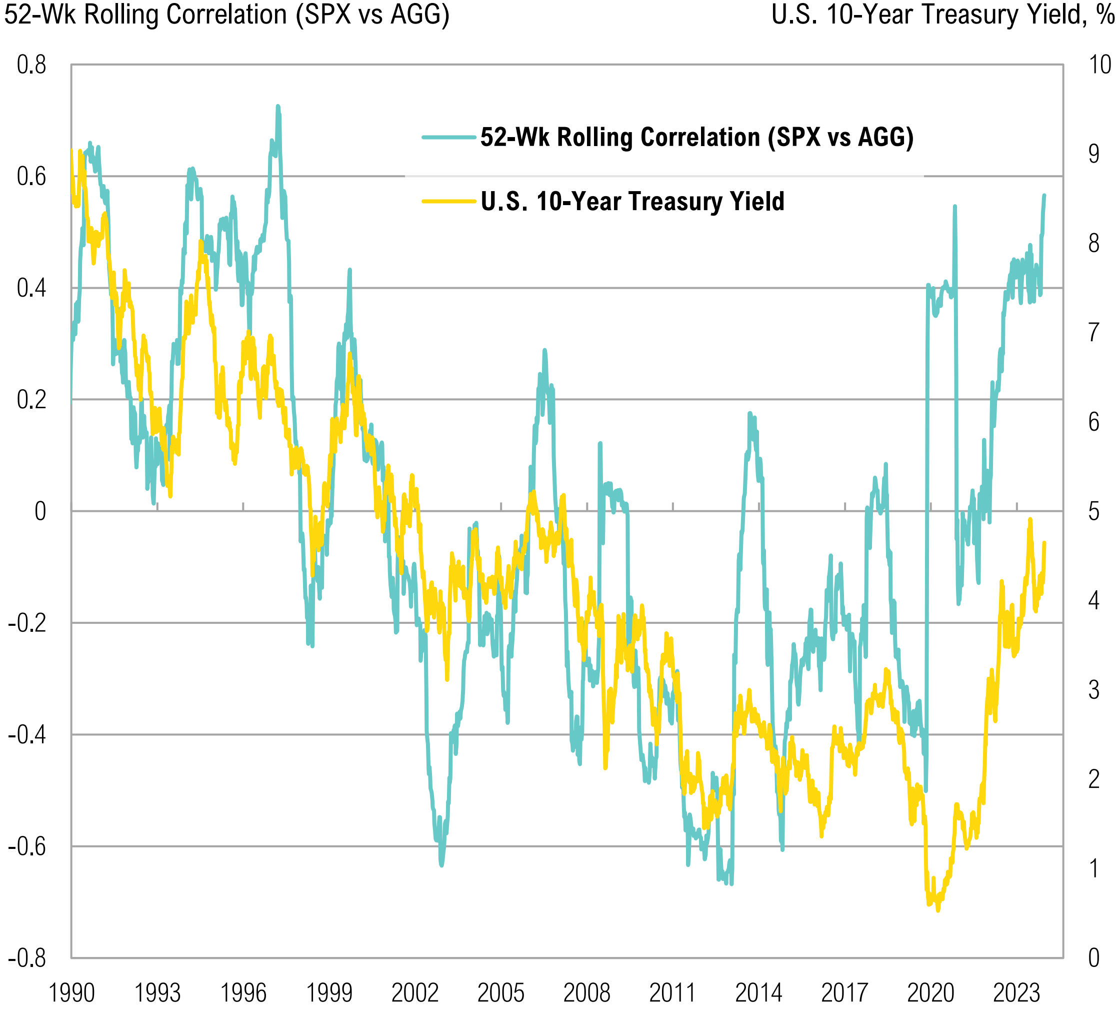
Even if not base case, returns during periods of stress (stagflation, bubble unwinds, banking crisis) *contrast so starkly* with the last 15 years that they should be considered

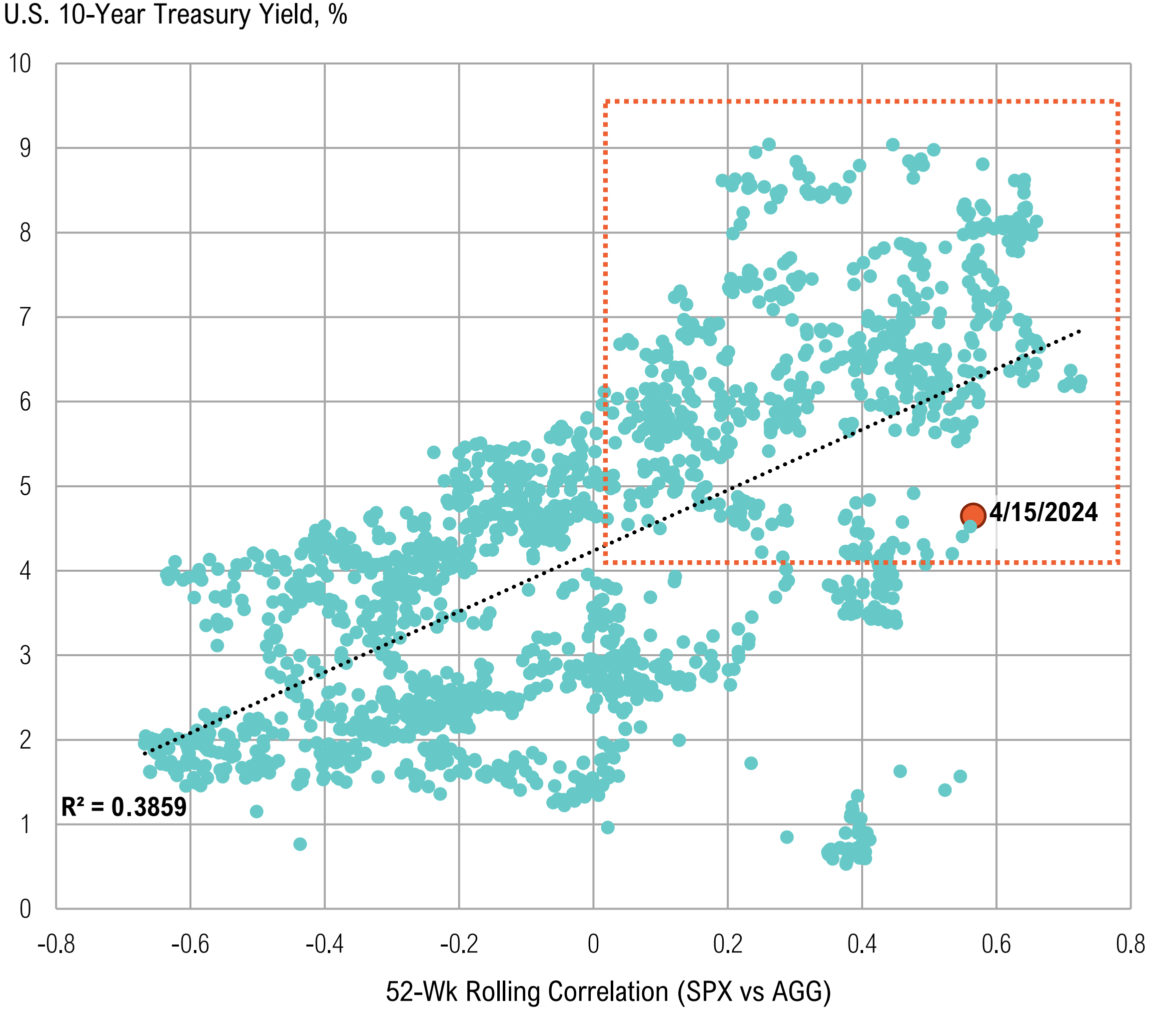
1970s Stagflation				Tech Bubble					GFC				**	Fed Pivot
1972	1973	1974	1975	1999	2000	2001	2002	2003	2007	2008	2009	2010	Geo. Avg.	12/12/23
Gold 48.3%	Gold 73.5%	Gold 67.0%	U.S. Small Cap 52.8%	EM Stocks 57.6%	Midstrm Energy 45.7%	Midstrm Energy 43.7%	Commodities 25.9%	EM Stocks 55.8%	EM Stocks 39.4%	U.S. Interm Bds 5.2%	EM Stocks 78.5%	Midstrm Energy 35.9%	Gold 19.7%	Gold 20.3%
Commodities 37.0%	Commodities 58.4%	Commodities 9.8%	U.S. Large Cap 37.2%	Intl Dev Stocks 27.0%	Commodities 31.8%	U.S. REITs 12.8%	Gold 24.0%	U.S. Small Cap 47.3%	Gold 31.6%	Intl Dev Bonds 4.4%	Midstrm Energy 76.4%	U.S. REITs 28.5%	Midstrm Energy 14.6%	Midstrm Energy 12.7%
Intl Dev Stocks 30.1%	U.S. REITs 20.2%	Cash 8.0%	Intl Dev Stocks 32.3%	Commodities 24.3%	U.S. REITs 26.8%	U.S. Interm Bds 8.4%	Intl Dev Bonds 22.4%	Midstrm Energy 44.5%	Commodities 16.2%	U.S. Muni Bds 4.2%	U.S. HY Bonds 58.2%	Gold 27.7%	Commodities 13.3%	U.S. Large Cap 9.2%
Midstrm Energy 20.3%	Cash 7.3%	EM Stocks 6.0%	Midstrm Energy 27.1%	U.S. Small Cap 21.3%	U.S. Interm Bds 11.6%	U.S. Muni Bds 5.5%	U.S. Interm Bds 10.3%	Intl Dev Stocks 38.6%	Midstrm Energy 12.7%	Gold 3.4%	Intl Dev Stocks 31.8%	U.S. Small Cap 26.9%	U.S. REITs 8.2%	Commodities 7.0%
U.S. Large Cap 19.0%	Intl Dev Bonds 6.9%	U.S. REITs 4.8%	U.S. 60/40 24.7%	U.S. Large Cap 21.0%	U.S. Muni Bds 8.2%	U.S. HY Bonds 5.3%	U.S. Muni Bds 8.7%	U.S. REITs 36.7%	Intl Dev Stocks 11.2%	Cash 1.8%	U.S. REITs 28.6%	EM Stocks 18.9%	EM Stocks 5.9%	Intl Dev Stocks 5.7%
U.S. REITs 17.4%	U.S. HY Bonds 6.8%	U.S. Interm Bds 4.1%	U.S. HY Bonds 16.4%	U.S. 60/40 12.2%	Cash 6.1%	Cash 4.1%	U.S. REITs 3.6%	U.S. HY Bonds 29.0%	Intl Dev Bonds 11.0%	U.S. 60/40 -21.6%	Gold 27.6%	Commodities 16.8%	Intl Dev Bonds 5.9%	U.S. 60/40 5.5%
U.S. 60/40 12.2%	Midstrm Energy 5.8%	Intl Dev Bonds 2.9%	U.S. REITs 14.1%	Cash 4.8%	U.S. 60/40 -1.1%	U.S. Small Cap 2.5%	Cash 1.7%	U.S. Large Cap 28.7%	U.S. Interm Bds 7.0%	U.S. HY Bonds -26.2%	U.S. Small Cap 27.2%	U.S. HY Bonds 15.1%	U.S. Interm Bds 5.6%	EM Stocks 4.9%
Intl Dev Bonds 9.4%	U.S. Muni Bds 4.8%	U.S. Muni Bds -5.6%	Intl Dev Bonds 8.7%	U.S. HY Bonds 2.4%	EM Stocks -1.6%	Gold 1.4%	U.S. HY Bonds -1.4%	Commodities 24.0%	U.S. 60/40 6.2%	U.S. Small Cap -33.8%	U.S. Large Cap 26.5%	U.S. Large Cap 15.1%	U.S. HY Bonds 5.0%	U.S. Small Cap 3.9%
U.S. Small Cap 4.4%	U.S. Interm Bds 3.3%	U.S. 60/40 -14.6%	Cash 5.9%	Gold 1.2%	U.S. Small Cap -3.0%	EM Stocks -2.6%	Midstrm Energy -3.4%	Gold 21.7%	U.S. Large Cap 5.5%	Commodities -35.6%	Commodities 18.9%	U.S. 60/40 12.2%	U.S. Muni Bds 4.1%	U.S. HY Bonds 2.8%
Cash 4.2%	EM Stocks 3.3%	U.S. HY Bonds -17.2%	U.S. Interm Bds 5.6%	U.S. Muni Bds 0.6%	Intl Dev Bonds -3.9%	U.S. 60/40 -3.3%	EM Stocks -6.2%	Intl Dev Bonds 19.4%	U.S. Muni Bds 4.8%	Midstrm Energy -36.9%	U.S. 60/40 18.5%	Intl Dev Stocks 7.8%	Cash 3.8%	Cash 1.9%
U.S. HY Bonds 3.5%	U.S. 60/40 -7.7%	U.S. Small Cap -19.9%	U.S. Muni Bds 4.6%	U.S. Interm Bds -0.8%	U.S. HY Bonds -5.9%	Intl Dev Bonds -3.7%	U.S. 60/40 -9.5%	U.S. 60/40 18.6%	Cash 4.8%	U.S. Large Cap -37.0%	Intl Dev Bonds 7.5%	U.S. Interm Bds 6.6%	U.S. 60/40 2.7%	U.S. Muni Bds 0.1%
U.S. Muni Bds 3.2%	Intl Dev Stocks -10.7%	Midstrm Energy -20.8%	Commodities -0.8%	U.S. REITs -4.6%	Gold -6.3%	U.S. Large Cap -11.9%	Intl Dev Stocks -15.9%	U.S. Muni Bds 4.4%	U.S. HY Bonds 1.9%	U.S. REITs -38.0%	U.S. Muni Bds 7.2%	Intl Dev Bonds 4.9%	U.S. Small Cap 2.1%	U.S. Interm Bds -0.2%
U.S. Interm Bds 2.4%	U.S. Large Cap -14.7%	Intl Dev Stocks -25.4%	EM Stocks -12.9%	Midstrm Energy -7.8%	U.S. Large Cap -9.1%	Commodities -19.5%	U.S. Small Cap -20.5%	U.S. Interm Bds 4.1%	U.S. Small Cap -1.6%	Intl Dev Stocks -43.4%	U.S. Interm Bds 5.9%	U.S. Muni Bds 3.1%	Intl Dev Stocks 0.2%	Intl Dev Bonds -2.4%
EM Stocks -27.2%	U.S. Small Cap -30.9%	U.S. Large Cap -26.5%	Gold -25.2%	Intl Dev Bonds -8.8%	Intl Dev Stocks -14.2%	Intl Dev Stocks -21.4%	U.S. Large Cap -22.1%	Cash 1.0%	U.S. REITs -16.8%	EM Stocks -53.3%	Cash 0.1%	Cash 0.1%	U.S. Large Cap -0.3%	U.S. REITs -2.9%

- ■ **U.S. 60/40**
- ■ **U.S. Large Cap**
- ■ **U.S. Small Cap**
- ■ **Intl Dev Stocks**
- ■ **Emerging Stocks**
- ■ **U.S. Municipal Bonds**
- ■ **U.S Int-Term Bonds**
- ■ **U.S. High Yield Bds**
- ■ **Intl Dev Bonds**
- ■ **U.S. REITs**
- ■ **Commodities**
- ■ **Gold**
- ■ **Midstream Energy**
- ■ **Cash**

Source: Bloomberg, SpringTide. See disclosures for asset class, index and portfolio definitions. Returns are gross of fees. It is not possible to invest directly in an index. **Geometric average calculated on the years included to the left. Returns for periods longer than 1 year are annualized. YTD returns as of 4/15/2024.

If inflation concerns (or bond yields) don't ease, higher yields (>5%) will likely start to impact equity multiples and vice versa

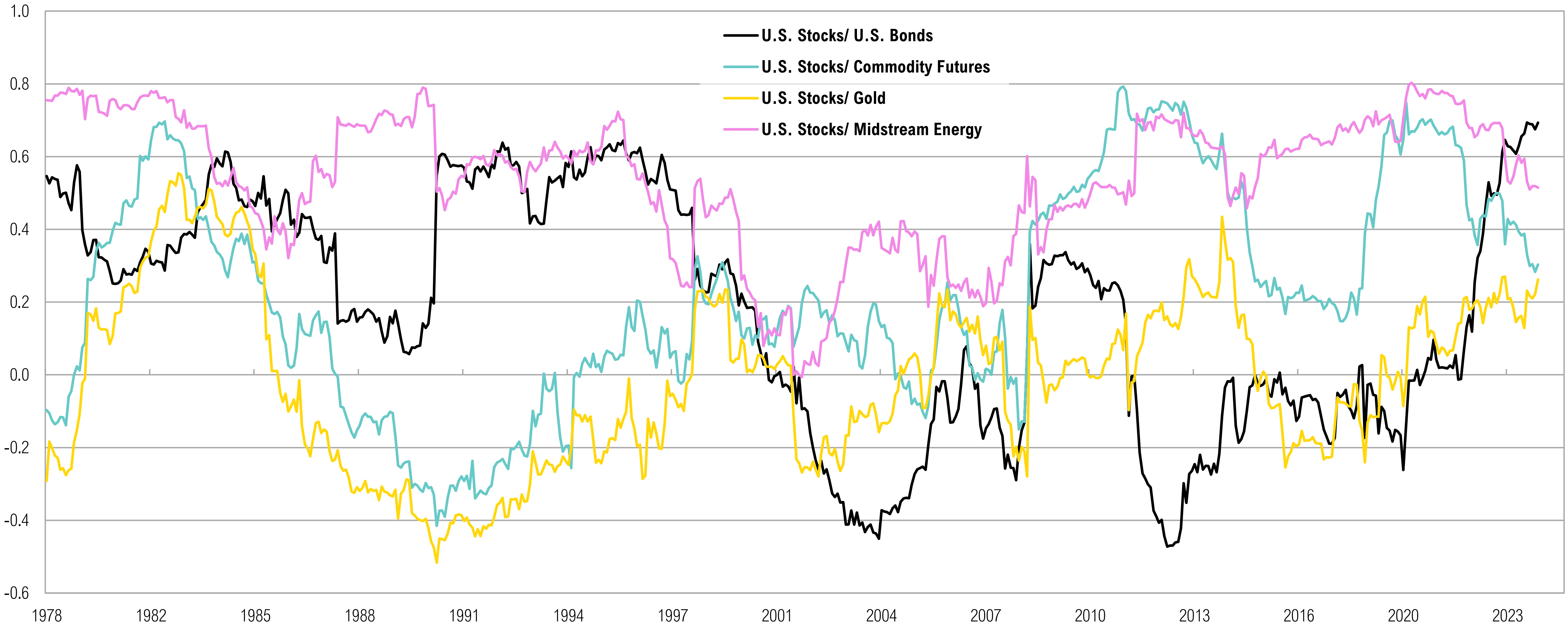




Source: Bloomberg, SpringTide. SPX = S&P 500 Index; AGG = Bloomberg U.S. Aggregate Bond Index. Scatterplot starts at 1/1/1990.

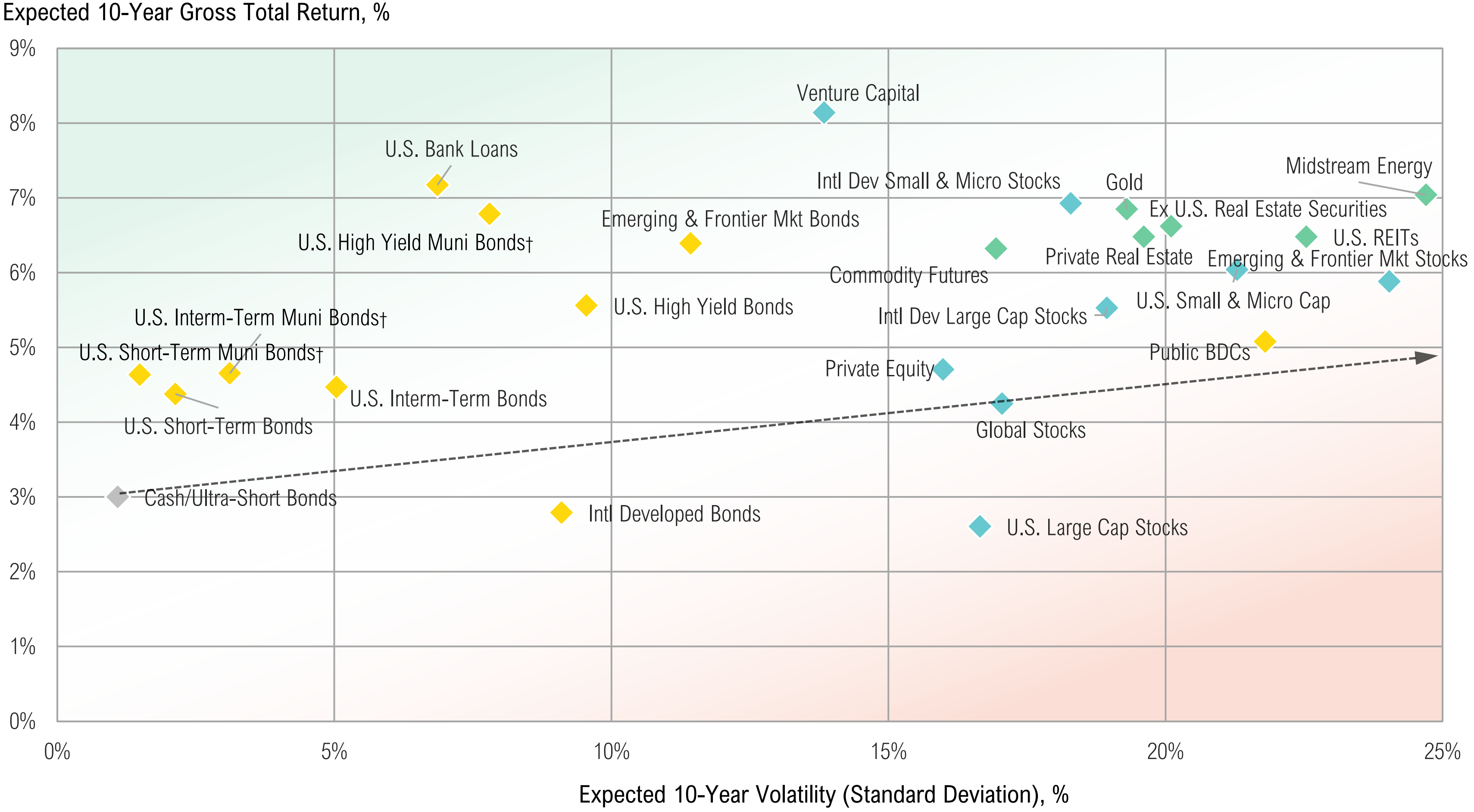
Bonds have recently provided less diversification benefits to stocks than other asset classes

Correlation, Rolling 3-Year



Source: Bloomberg. U.S. Stocks = S&P 500 TR Index; U.S. Bonds = Bloomberg U.S. Aggregate TR Index; Commodity Futures = Bloomberg Commodity TR Index; Gold = LBMA Gold Price AM; Midstream Energy = Alerian MLP TR Index.

Expected 10-year returns for both stocks and bonds fell as equities rallied and yields fell; muni bonds are no longer attractive on an after-tax basis



	Δ vs. Last Qtr Exp Rets (10 Yr)	3/31/2024 Exp Rets (10 Yr)
Equity		
U.S. Large Cap Stocks	-0.4%	2.6%
U.S. Small & Micro Cap	-0.3%	6.0%
Intl Dev Large Cap Stocks	-0.5%	5.5%
Intl Dev Small & Micro Stocks	-0.1%	6.9%
Emerging & Frontier Mkt Stocks	-0.2%	5.9%
Global Stocks	-0.4%	4.2%
Private Equity	-0.4%	4.7%
Venture Capital	-0.3%	8.1%
Fixed Income & Credit		
U.S. Interm-Term Muni Bonds†	0.5%	4.7%
U.S. Short-Term Muni Bonds†	0.7%	4.6%
U.S. High Yield Muni Bonds†	-0.1%	6.8%
U.S. Interm-Term Bonds	0.3%	4.5%
U.S. Short-Term Bonds	0.4%	4.4%
U.S. High Yield Bonds	0.1%	5.6%
U.S. Bank Loans	0.2%	7.2%
Intl Developed Bonds	0.1%	2.8%
Emerging & Frontier Mkt Bonds	-0.1%	6.4%
Public BDCs	-0.4%	5.1%
Private Credit	0.1%	7.6%
Real Assets & Infrastructure		
U.S. REITs	0.3%	6.5%
Ex U.S. Real Estate Securities	0.0%	6.6%
Private Real Estate	0.3%	6.5%
Commodity Futures	-0.8%	6.3%
Midstream Energy	-0.4%	7.0%
Gold	0.0%	6.9%
Private Energy & Infrastructure	-0.4%	8.9%
Opportunistic		
Long-Short Equity	-0.1%	5.5%
Relative Value	-0.1%	6.9%
Closed-End Funds	0.0%	7.9%
Global Macro	0.9%	6.3%
Insurance-Linked Securities	0.0%	6.9%
Digital Assets	-0.2%	5.9%
Cash & Cash Equivalents		
Cash & Cash Equivalents	0.0%	3.0%

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[3] Estimated returns include impact of currency adjustment

† Reported on a taxable-equivalent basis assuming 35% marginal tax rate.

Source: Bloomberg, CA, Pitchbook, Morningstar, NAREIT, SpringTide calculations.

Disclosures

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Appendix: Asset Class Definitions

Asset Class	Benchmark	Index	Start Date	End Date	Data Source
U.S. Large Cap Stocks	S&P 500 Index	S&P 500 TR Index	01/31/1970	n/a	Bloomberg, Ibbotson Associates, NYU/Stern
		IA SBBI US Large Stock TR Index	01/31/1926	12/31/1969	
		NYU/Stern S&P 500 TR	01/31/1920	12/31/1925	
U.S. Small & Micro Cap	Russell 2000 TR Index	Russell 2000 TR Index	01/31/1979	n/a	Bloomberg, Ibbotson Associates, SpringTide
		IA SBBI US Small Stock TR Index	01/31/1926	12/31/1978	
		SpringTide U.S. Small & Micro Cap Premium-Based Extension	01/31/1920	12/31/1925	
Intl Dev Stocks	MSCI EAFE NR Index	MSCI EAFE NR Index	01/31/1970	n/a	MSCI, NYU/Stern
		NYU/Stern Developed World Indices	01/31/1920	12/31/1969	
EM & Frontier Stocks	MSCI Emerging Markets NR Index	MSCI Emerging Markets NR Index	01/31/2001	n/a	MSCI, NYU/Stern
		NYU/Stern Emerging World Index (Price)	01/31/1920	12/31/2000	
Global Stocks	MSCI ACWI NR Index	MSCI ACWI NR Index	01/31/2001	n/a	MSCI, NYU/Stern
		NYU/Stern All World Index (Price)	01/31/1920	12/31/2000	
Venture Capital	Cambridge Venture Capital	Cambridge Venture Capital	01/01/1981	n/a	Cambridge, SpringTide
		SpringTide Venture Capital Premium-Based Extension	01/31/1920	12/31/1980	
U.S. Muni Bonds	Bloomberg Municipal 1-10Y Blend 1-12Y TR Index	Bloomberg Municipal 1-10Y Blend 1-12Y TR Index	07/31/1993	n/a	Bloomberg
		USA Municipal AAA Bonds Total Return Index (TRUSAMUM)	01/31/1920	06/30/1993	
U.S. Long-Term Bonds	Bloomberg US Long Gov/Corp TR Index	Bloomberg US Long Gov/Corp TR Index	02/28/1999	n/a	Bloomberg, NYU/Stern
		NYU/Stern US 30Yr Government Bond TR Index	01/31/1920	01/31/1999	
U.S. Interm-Term Bonds	Bloomberg US Aggregate Bond TR Index	Bloomberg US Aggregate Bond TR Index	01/31/1976	n/a	Bloomberg, NYU/Stern
		NYU/Stern US Total Return AAA Corporate Bond Index	01/31/1920	12/31/1975	
U.S. High Yield Bonds	Bloomberg US Corporate High Yield TR Index	Bloomberg US Corporate High Yield TR Index	07/31/1983	n/a	Bloomberg, Ibbotson Associates, SpringTide
		IA Bloomberg US HY Corporate Bonds	02/28/1926	06/30/1983	
		SpringTide U.S. High Yield Bonds Premium-Based Extension	01/31/1920	01/31/1926	
Intl Dev Bonds	Bloomberg Global Aggregate ex-USD TR Index	Bloomberg Global Aggregate ex-USD TR Index	01/31/1990	n/a	Bloomberg, NYU/Stern
		NYU/Stern All World ex-USA Government Bond Index	01/31/1920	12/31/1989	
U.S. REITs	MSCI US REIT GR Index	MSCI US REIT GR Index	01/01/1995	n/a	Bloomberg, Winans
		Winans US Real Estate Index (WIREI)	01/01/1920	12/31/1994	
Commodity Futures	Bloomberg Commodity TR Index	Bloomberg Commodity TR Index	01/31/1991	n/a	Bloomberg
		Thompson Jefferies CRB Core Commodity Total Return Index	01/31/1920	12/31/1990	
Midstream Energy	Alerian MLP TR Index	Alerian MLP TR Index	01/31/1996	n/a	Alerian, Bloomberg
		S&P 500 Energy Index	01/31/1946	12/31/1995	
		ExxonMobil Corp (XOM)	01/31/1920	12/31/1945	
Gold	LBMA Gold Price	LBMA Gold Price	02/29/1968	n/a	LBMA, Bloomberg
		New York Spot Bullion	01/31/1920	01/31/1968	
Cash/Ultra-Short Bonds	Bloomberg US T-Bill 1-3 Month TR Index	Bloomberg US T-Bill 1-3 Month TR Index	12/31/1991	n/a	Bloomberg, NYU/Stern
		NYU/Stern USA Total Return T-Bill Index	01/31/1920	11/30/1991	

Asset Class Benchmarks

Asset class performance was measured using the following benchmarks:

U.S. Large Cap Stocks: S&P 500 TR Index

U.S. Small & Micro Cap Stocks: Russell 2000 TR Index

Intl Dev Large Cap Stocks: MSCI EAFE GR Index

Intl Dev Small & Micro Stocks: MSCI EAFE GR Index

Emerging & Frontier Market Stocks: MSCI Emerging Markets GR Index

Global Stocks: MSCI ACWI GR Index

Private Equity: Cambridge Associates U.S. Private Equity

Venture Capital: Cambridge Associates U.S. Venture Capital

U.S. Interm-Term Muni Bonds: Bloomberg Barclays 1-10 (1-12 Yr) Muni Bond TR Index

U.S. High Yield Muni Bonds: Bloomberg Barclays High Yield Muni TR Index

U.S. Interm-Term Bonds: Bloomberg Barclays U.S. Aggregate Bond TR Index

U.S. High Yield Bonds: Bloomberg Barclays U.S. Corporate High Yield TR Index

U.S. Bank Loans: S&P/LSTA U.S. Leveraged Loan Index

Intl Developed Bonds: Bloomberg Barclays Global Aggregate ex-U.S. Index

Emerging & Frontier Market Bonds: JPMorgan EMBI Global Diversified TR Index

Public BDCs: S&P BDC Index

U.S. REITs: MSCI U.S. REIT GR Index

Ex U.S. Real Estate Securities: S&P Global Ex-U.S. Property TR Index

Private Real Estate: Cambridge Associates Real Estate

Commodity Futures: Bloomberg Commodity TR Index

Midstream Energy: Alerian MLP TR Index

Gold: LBMA Gold Price

Long-Short Equity: HFRI Equity Hedge Index

Global Macro: HFRI Macro-CTA Index

Relative Value: HFRI Relative Value Index

Closed-End Funds: S-Network Composite Closed-End TR Index

Insurance-Linked Securities: SwissRe Global Cat Bond TR Index

Digital Assets: MVIS CryptoCompare Digital Assets 25 Index

Cash & Cash Equivalents: Bloomberg Barclays U.S. T-Bill 1-3 Month TR Index

U.S. Short-Term Muni Bonds: Bloomberg Barclays Municipal 1-3 Yr TR Index

U.S. Short-Term Bonds: Bloomberg Barclays U.S. Agg 1-3 Yr TR Index

U.S. 60/40: 60% S&P 500 TR Index 40% Bloomberg Barclays U.S. Aggregate Bond TR Index

Global 60/40: 60% MSCI ACWI GR Index 40% Bloomberg Barclays Global Aggregate Bond TR Index

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