

# Market Outlook: Bubblicious

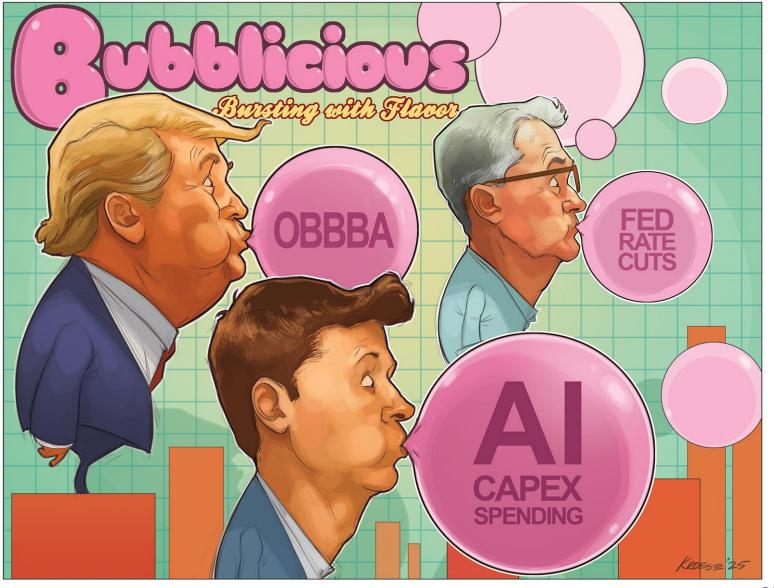
Q4, 2025



The U.S. continues to be a pace setter, driven by consistent consumer spending as well as tech investments in Al and data centers... But overall, while growth is cooling somewhat, and we're keeping an eye on the labor market, America's economic engine is indeed still humming."

Jane Fraser, Citigroup CEO







# Summary

A concise review of the prior quarter, portfolio positioning and rationale, and an outline of the key themes and asset allocation priorities for the quarter ahead.



#### **Market Commentary:**



### **Equity**

U.S. corporate earnings remain resilient, supported by the fiscal backdrop, declining rates, and continued Al-related investment. Valuations for U.S. large-cap stocks are at historically elevated levels, while small caps have staged a sharp rebound, underpinned by constructive forward earnings expectations.



### **Fixed Income & Credit**

Bond yields declined over the quarter, with the yield curve steepening slightly, as markets responded to modest improvements in the fiscal deficit, contained inflation, and the prospects of further rate cuts. Credit spreads remain relatively tight suggesting continued economic resilience and a market still comfortable with current levels of fiscal spending.

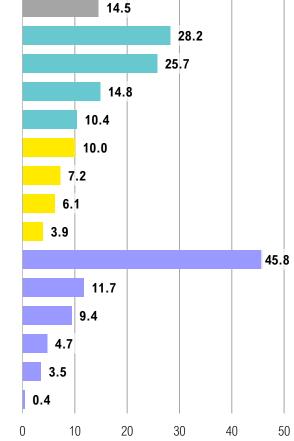


### **Diversifiers**

While previously underowned themes like uranium, gold, and bitcoin have attracted flows as the 'debasement' theme has become more popular, fundamentals remain constructive. We continue to see opportunities in biotech, discounted closed-end funds, and select countries. Recent private credit concerns are creating opportunities in select BDCs.

### Total Returns (YTD), %





Source: Bloomberg. Returns as of 9/30/2025.



#### **Positioning:**



### **Equity**

We remain risk-on, given fiscal and monetary tailwinds to nominal growth, but have emphasized active managers and are taking incremental steps to reduce risks, and redeploy to out-of-favor parts of the market and managers.

Late Q3: Added to Brazil on breakout of long-term resistance; trimmed EM, ACWI, given rally.



### **Fixed Income & Credit**

Moderating inflation has stabilized yields and stopped the yield curve from steepening, reducing the attractiveness of longer-term bonds. Absent a meaningful inflation shock, political and policy dynamics suggest a very market-friendly Fed by the middle of 2026.

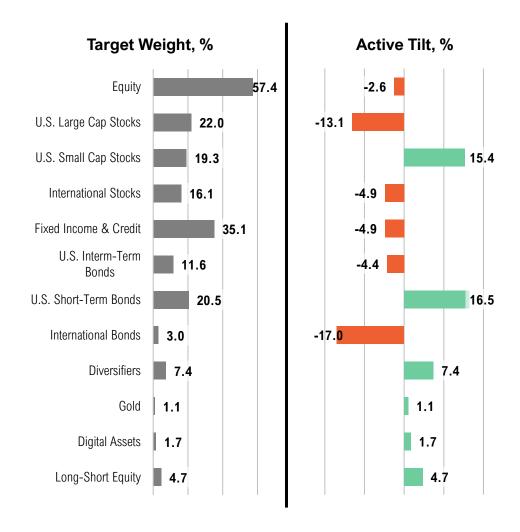
■ Late Q3: Trimmed duration by ~1 year given significant move lower in yields.



### **Diversifiers**

While previously underowned themes like uranium, gold, and bitcoin have attracted flows as the 'debasement' theme has become more popular, fundamentals remain constructive. We continue to see opportunities in biotech, discounted CEFs, and select countries. Recent private credit concerns are creating opportunities in select BDCs.

- Late Q3: Added to private markets, energy, platinum; trimmed select Power Play themes given substantial rally.
- Early Q4: added to long/short equity given mean reversion potential.





Global Opportunities and SpringTide Tactical Opportunities in an 85/15 blend. Figures shown may be rescaled or an approximation and are not reflective of actual trade sheets. Please refer to the portfolio look-through reports and trade sheets for further detail.





Do I buy Treasuries when government owes \$38tn, corporate bonds with spreads at 20-year lows, stocks trading on a 40x CAPE, or gold that's just gone vertical? Tricky."

Michael Hartnett, BofA/Merrill Lynch Chief Investment Strategist



Theme Commentary Positioning

Fiscal Spending/ 'Nothing Stops this Train'

- Structural fiscal spending remains a key driver of the economy, sustaining nominal growth (but less of a discrete inflationary risk).
- Low credit spreads, a low unemployment rate, low gas prices, strong tax receipts, and a healthy high-end consumer all suggest the U.S. economy has ample runway for growth.

 Maintain a healthy balance of risk, tilted towards areas with strong fundamentals and policy tailwinds.

Inflation: Warm, not Hot

- Inflation is running warm, and Fed cuts should continue to support nominal growth while keeping inflation elevated. Higher nominal growth generally supports asset prices.
- That said, it is unlikely that inflation runs out of control given collapsing oil prices, softening in the labor market, and housing rents slowing.

- Keep duration below benchmark.
- Warm inflation supports nominal growth and asset prices.

The Path of Least Resistance: Lower Rates

- Absent an inflation shock, the White House, policymakers, and most voters will want lower interest rates in 2026. Markets are currently pricing in five 0.25% rate cuts through December 2026.
- Bond markets may continue to ratify this view if the deficit and inflation stay contained.

 Lower rates help the deficit (as long as inflation stays contained) and should support asset prices.

Trade Tensions
Resurface

- U.S.-China trade tensions are resurfacing, with rare earths and critical minerals now at the center. Expect tensions to ebb and flow, but persist, given how much is at stake for both sides.
- China's export controls and U.S. reshoring efforts signal rising strategic friction.
- All eyes on the Xi-Trump meeting at month-end (if it happens).

- Chinese assets should have a small "war premium" attached.
- Tactical overweight rare earths/critical minerals

Al Boom or Bubble

- Strong cash flow, solid balance sheets, and supportive policy underpin higher U.S. equity valuations—but only if bond yields stay contained.
- Big Tech faces slower growth, rising competition, and rich valuations, yet earnings continue to defy expectations.

- Maintain risk-on preference until policy backdrop sours.
- Emphasize high-quality active managers.

Small Caps Time to Shine

Recent breakouts to new highs are a promising sign for U.S. small cap stocks. If earnings
growth materializes and Fed policy becomes more supportive, it should bode well for small
cap returns.

- Overweight active small cap.
- · Active management remains key.

☐ Growth, Inflation & Policy







**Diversifiers** 

Theme Commentary Positioning

Ex-U.S.: Valuation vs. Innovation

- Lower valuations in foreign developed and emerging markets create select opportunities, but few countries offer sufficient growth and innovation to justify overweights.
- We prefer high quality active managers and, where possible, discounted closed-end funds to implement select country views.

- Slightly overweight emerging markets; underweight DM.
- Select CEFs to implement countryspecific views.

Opportunities Outside the Mega Caps

• Outside U.S. large caps, selective opportunities exist in biotech, power generation, emerging markets, and second-wave beneficiaries of U.S. industrial policy and resource security.

 Overweight biotech, small cap, utilities and private markets (esp. secondaries), among other areas.

A "Curious Balance" in Bonds

- Bonds are caught between resilient nominal growth and persistent inflation. Fed cuts and firm growth keep yields elevated, but falling oil prices, a softening labor market, and slower rents limit runaway inflation.
- Bond supply adds another headwind, making Treasuries less attractive.

 Tactically manage duration, extending or reducing duration on meaningful moves up or down in yields, respectively.

Short Duration Still Prudent  Fed cuts (of which two more are expected before year-end) stand to further support nominal economic growth, put upwards pressure on inflation, and reduce the attractiveness of longerterm bonds.

- Keep duration below benchmark.
- Warm inflation supports nominal growth and asset prices.

Credit Risks in the Regional Banks

- A common thread in the recent issues at First Brands and Tricolor appears to be fraud.
- We view these developments as more idiosyncratic than indicative of broader systemic issues. While there is concern that similar vulnerabilities could emerge elsewhere, particularly within private credit, the fallout so far appears contained and manageable.

- BDCs are attractive; add on further weakness from tax-loss selling.
- High yield bond spreads at current levels remain uncompelling.

☐ Growth, Inflation & Policy







**Diversifiers** 



Theme **Positioning** Commentary

**Gold & Precious Metals** 

- · Gold has reaffirmed its role as a store of value and portfolio diversifier, reaching record highs in 2025, while silver and platinum have outperformed on favorable supply-demand dynamics.
- Precious metals miners should continue to benefit from high bullion prices and lower energy costs boosting margins and earnings potential.

**Biotech** 

- Big pharma faces a looming "patent cliff" that could impact over \$200 billion in annual revenue by 2030, positioning the biotech sector for potential M&A activity.
- Opportunities persist within biotech, but with growing risks as the space has rebounded 58% since the April 8 lows; there will be outlier winners, and losers.

**Power Play** 

- Al data centers are straining power grids, with U.S. demand set to double by 2030. Their need for reliable baseload power boosts utilities companies as key Al beneficiaries.
- · Strong sentiment, solid fundamentals, and policy tailwinds keep uranium and nuclear stocks outperforming. While the long-term thesis remains intact, valuations appear stretched.

**Bitcoin & Digital Assets** 

- · Recent policy announcements from a pro-crypto government pave the way for greater regularity and in turn the possibility for more conservative institutional and advisor investors to view digital assets as a legitimate asset class.
- While distant, quantum hack risks appear to be gaining attention.

- Maintain reduced tactical position in gold, silver, and platinum.
- · Correction may have further to run; fundamentals remain constructive.
- Active management remains critical given dynamic and often binary nature of the sector.
- Maintain reduced tactical position in uranium and uranium/nuclear equities.
- Given Bitcoin's shared characteristics with gold, we favor a diversified approach across both physical and digital assets.





**Fixed Income & Credit** 



**Diversifiers** 



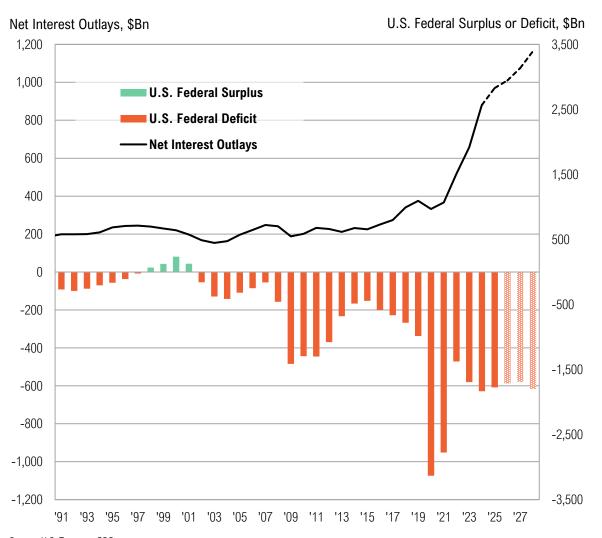
# The Growth, Inflation & Policy

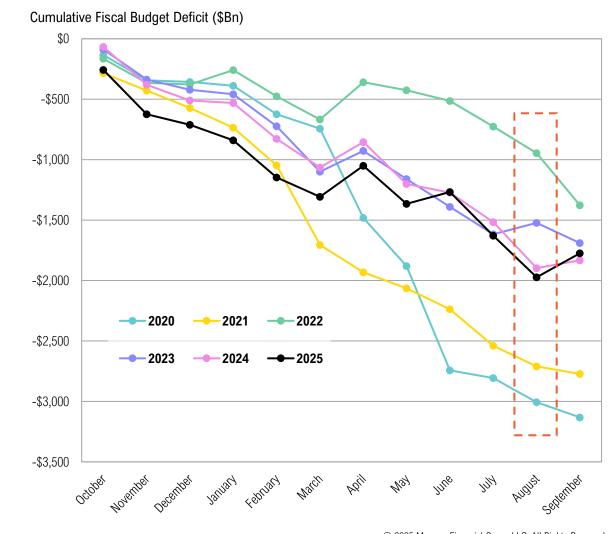
Structural fiscal spending remains a key driver of the economy, sustaining nominal growth—but with less of a discrete inflationary risk. While stimulative policy should keep inflation elevated, it is unlikely that inflation runs out of control given collapsing oil prices, softening in the labor market, and housing rents slowing. Monetary policy expected to ease dramatically in 2026.





# The fiscal deficit ended FY'25 at \$1.78tn, less than the expected \$1.94tn deficit, and a marginal improvement over FY'24



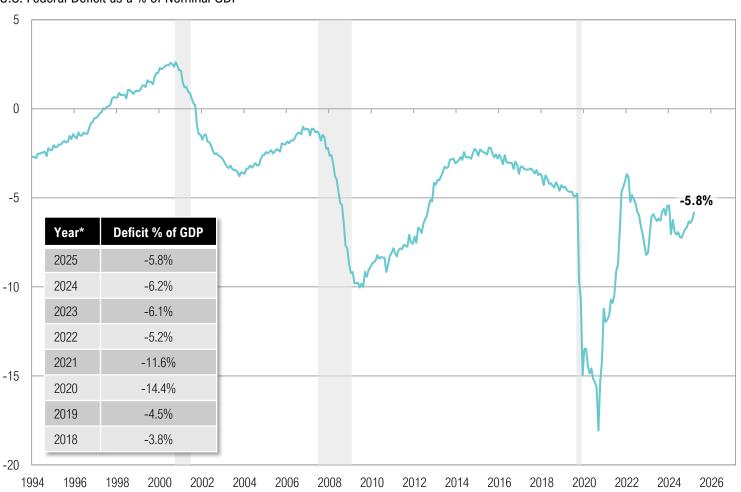


Source: U.S. Treasury, CBO



# On a dollar basis, the U.S. is still running very large deficits, but as a percentage of GDP, it is starting to improve

U.S. Federal Deficit as a % of Nominal GDP





Today's Monthly Treasury Statement reflects what I've been saying: Strong private sector led growth alongside constrained federal spending means the deficit to GDP will take care of itself.

FY 2025's deficit to GDP is now projected to be under 6%. And with continued fiscal restraint, we can reach 3% by 2028."

Scott Bessent, U.S. Treasury Secretary

Estimated 'Race to 3%' At Current Nominal GDP Growth Rates

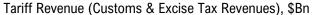
Year	Nominal GDP Growth (%)	GDP (\$Tn)	Deficit (\$Tn)	Deficit (% of GDP)
2025	2.5	30.33	1.775	5.85
2026	2.5	31.09	1.456	4.68
2027	2.5	31.87	1.194	3.75
2028	2.5	32.66	0.980	3.00

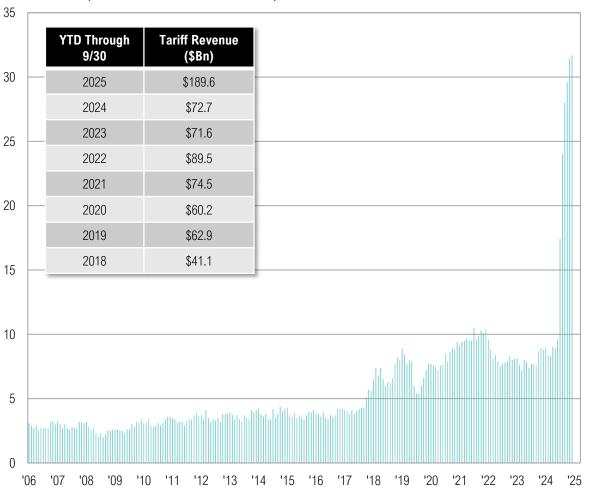
Source: Bloomberg, X. \*Fiscal year through September.



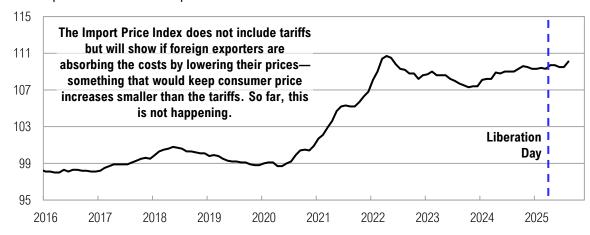


# Tariff revenues contributed to the improvement in the U.S. fiscal deficit; the impact of tariffs on suppliers has been more manageable than initially expected

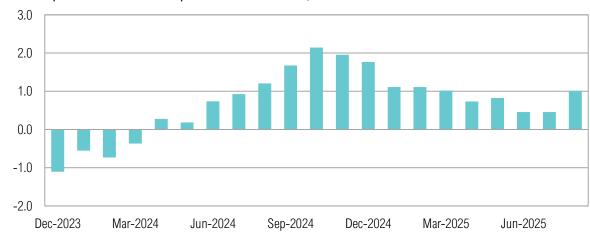




U.S. Import Price Index: All Imports Ex. Food & Fuels



U.S. Import Price Index: All Imports Ex. Food & Fuels, Y/Y %

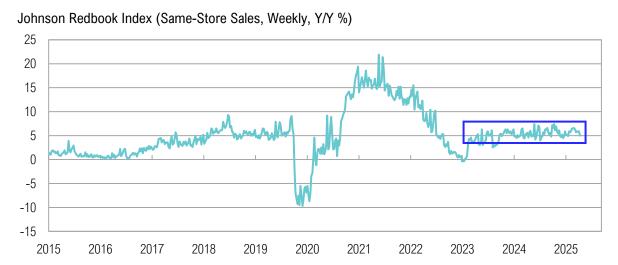


Source: Bloomberg

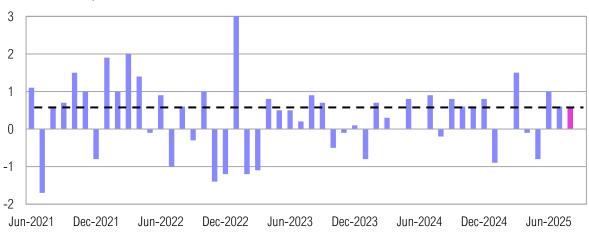
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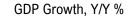


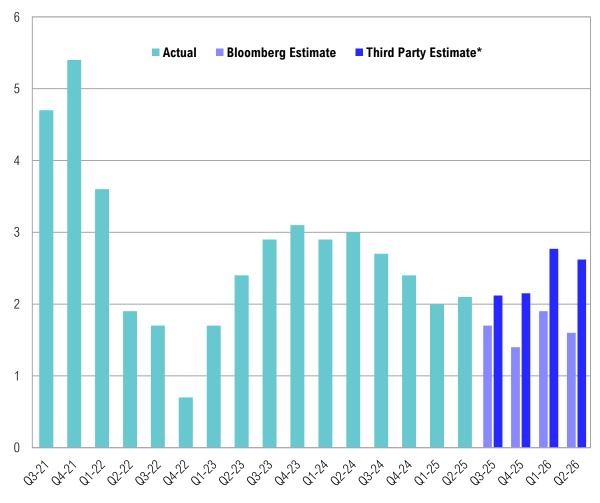
### Retail sales remain strong; estimates show economic growth improving in Q1'26









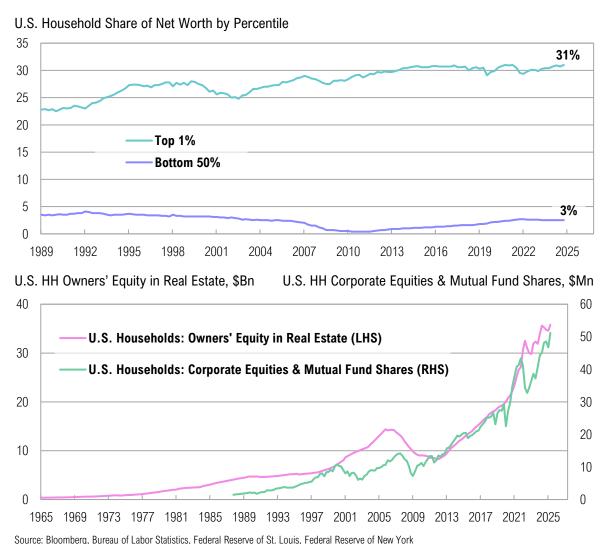


Source: Bloomberg. \*Third Party Estimate: Hedgeye.

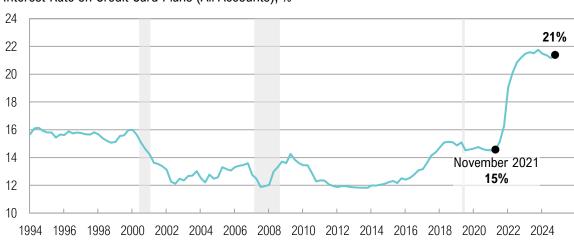
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# The K-shaped economy: those with wealth tied to stocks and rising home values are doing well, while others are struggling with high rates and affordability issues



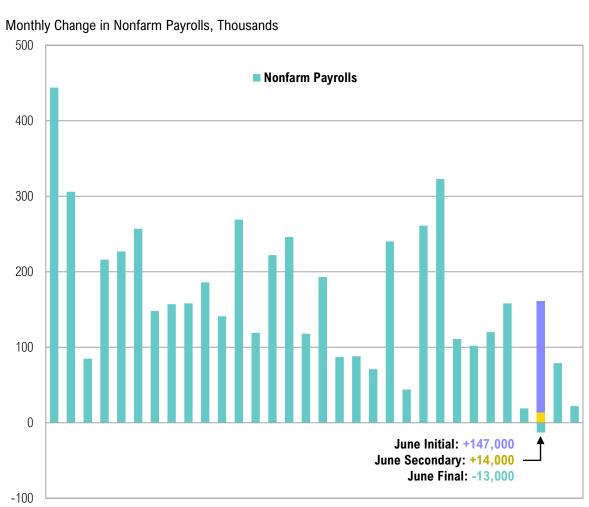


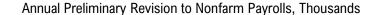


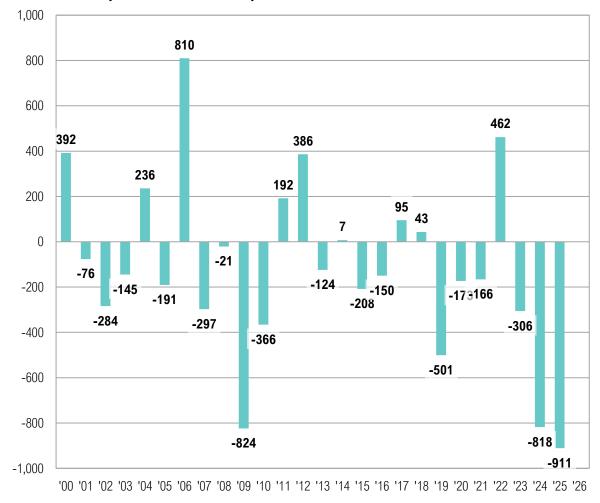




# Recent notable downward revisions to labor market data (including the first monthly drop in employment since 2020) suggest the labor market is losing some momentum







Source: Bloomberg, Bureau of Labor Statistics. As of 8/30/2025.

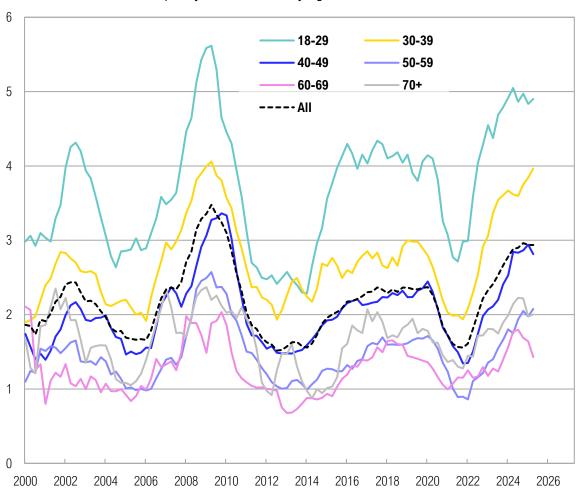
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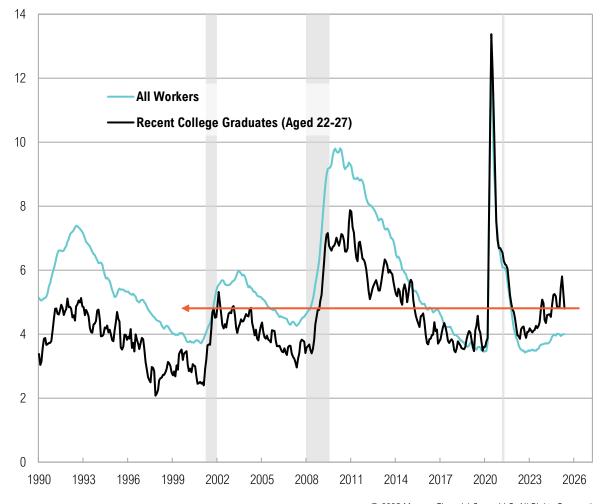


### The collapse of First Brands and Tricolor highlights how rising auto loan delinquencies and weak consumer credit are rippling through the auto sector; delinquencies are highest among 18–29-year-olds, who also face elevated unemployment

Transition into Serious Delinquency for Auto Loans by Age, %



U.S. Unemployment Rate for College Graduates & Total Labor Market, %

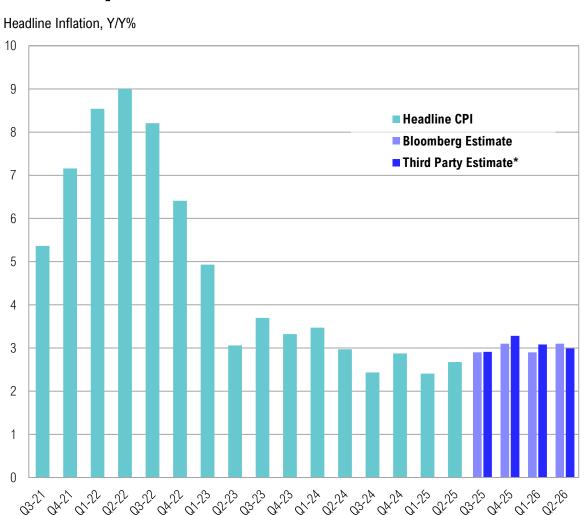


Source: Federal Reserve Bank of New York

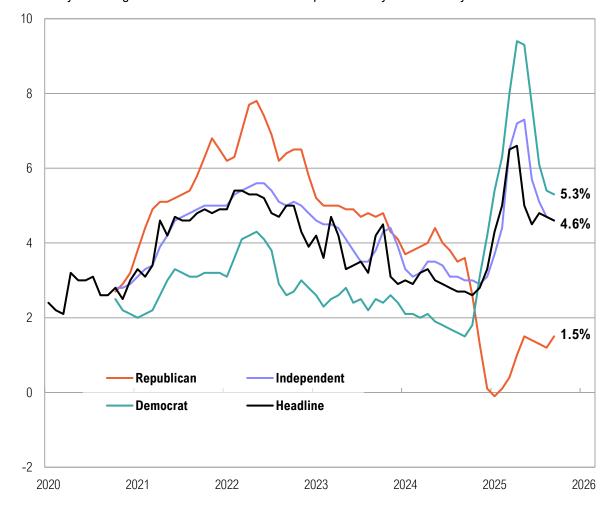




# Inflation has been above the Fed's official 2% target for 55 months and expectations are for it to remain there for the foreseeable future



University of Michigan: 1-Year Consumer Inflation Expectations by Political Party Affiliation



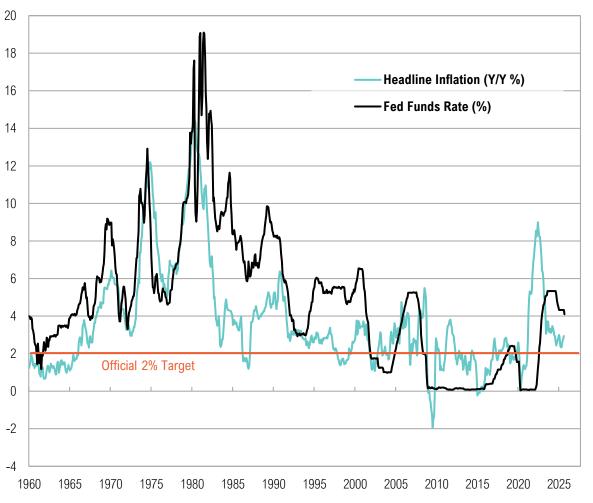
Source: Bloomberg. \*Third Party Estimate: Hedgeye.





### The Powell Fed has cut rates twice with CPI > 2%





Key Data at the Start of Powell Rate-Cutting "Cycles"

Metric	7/31/2019	9/20/2024	9/17/2025
Real Fed Funds Rate	0.6%	2.2%	1.4%
Unemployment Rate	3.6%	4.2%	4.3%
Initial Jobless Claims	202,000	219,000	231,000
Continuing Jobless Claims	1,623,000	1,829,000	1,920,000
Credit Spreads	3.71%	3.15%	2.62%
Headline CPI (Y/Y)	1.8%	2.6%	2.9%
Core CPI (Y/Y)	2.1%	3.2%	3.1%
S&P 500 PE Ratio (12-Mo Fwd)	17.2x	21.7x	22.5x
ISM Manufacturing PMI	51.5	47.2	48.7
ISM Services PMI	55.2	51.5	52.0
10-Year Treasury Yield	2.0%	3.8%	4.1%

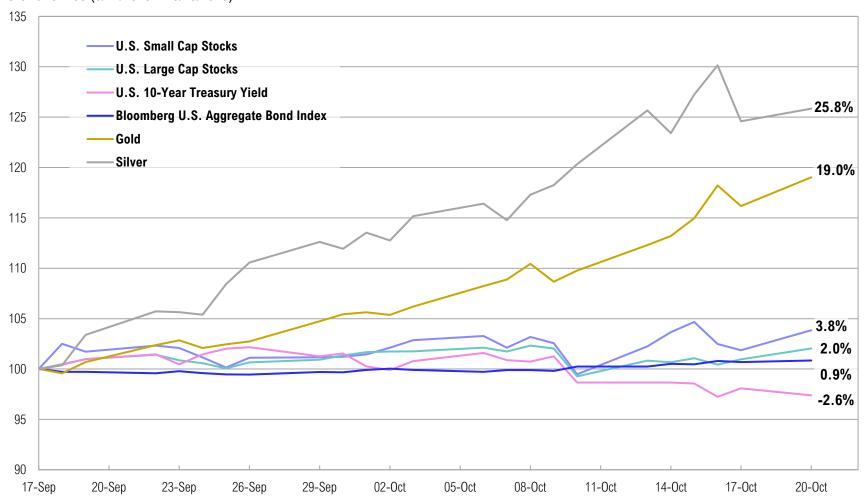
Source: Bloomberg





# Since the Fed cut rates on September 17, markets have responded as if it were a meaningful pivot, with precious metals & small caps outperforming

Growth of 100 (9/17/2025 – 10/20/2025)



### Performance Since September 17

• U.S. Small Cap Stocks: +4%

• U.S. Large Cap Stocks: +2%

• 10-Year Treasury Yields: -3%

Intermediate-Term Bonds: +1%

• Gold: +19%

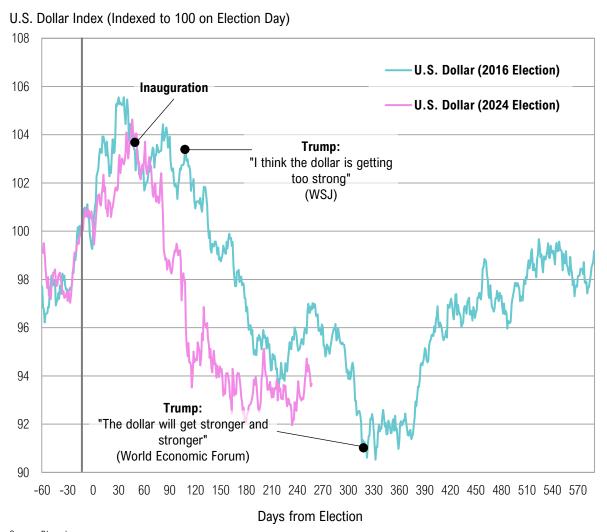
• Silver: +26%



Source: Bloomberg



# A weaker dollar is also part of Trump's policy preference (boost U.S. exports, support domestic manufacturing); the U.S. Dollar Index reached a three-year low on September 16





Source: Bloomberg



# Policy backdrop is mixed: several have the potential to be net positive for growth and risky assets over time, but almost all come with trade-offs and hinge on bond market 'consent'

**Expected Market Impact** 

Mar-a-Lago Accord	Goal	Impact	Progress/ Anecdotes	Stocks	Bonds	U.S. Dollar
Fiscal Policy						
Tax Cuts	Provide fiscal stimulus through reduced tax burdens on households and corporations, with the intent of boosting consumption and investment.	Supportive for consumer activity and corporate earnings, though typically negative for long-term deficits and bond markets due to increased government borrowing needs.	The OBBB was passed on July 4th.	<b>^</b>	•	-
Deficit Reduction	Implement measures to contain and reduce the federal budget deficit, particularly in light of compounding interest expenses and fiscal sustainability concerns.	May weigh on near-term economic growth and risk assets, but constructive for fixed income markets and long-term macro stability.	While the deficit has slightly decreased as a % of GDP, it remains at historic levels.	* 1	•	-
Trade/ Foreign Policy						
Tariffs	Address perceived trade imbalances by imposing tariffs on foreign imports, with the intention of encouraging reciprocal concessions and supporting domestic production.	Once-off inflationary shock for consumers, bad for stocks as supply chains and margins get disrupted.	Customs duties topped \$100bn for the first time as tariffs continue to be implemented.	•	<b>^</b>	•
Defense Burden-Sharing	Encourage allied nations to increase their financial and operational contributions to collective defense arrangements, aligning with strategic and fiscal U.S. interests.	Primarily geopolitical in nature, serving as a diplomatic lever rather than a direct fiscal driver. It could free up room in the budget and be supportive of the deficit.	France has announced plans to accelerate military spending.	-	<b>1</b>	-
Currency Realignment	Promote a more balanced global currency regime by encouraging foreign trading partners to allow their currencies to appreciate relative to the U.S. dollar.	Could lead to a structurally weaker dollar, enhancing U.S. export competitiveness and influencing multinational earnings.	The USD has depreciated year- to-date, but Asian currencies have depreciated more.	-	-	<b>4</b>
Domestic Policy						
Reshoring	Support the relocation of manufacturing and supply chains to the U.S. to enhance economic resilience and reduce dependency on foreign production.	Likely inflationary in the short term due to higher domestic cost structures; may offer long-term benefits to industrial capacity and employment in strategic sectors.	Policy announcements regarding strategic reshorting of critical minerals "rare earths."	<b>^</b>	-	-
Energy Dominance	Strengthen the U.S. position as a leading global producer and exporter of fossil fuels, improving trade balances and energy security.	Tailwind for inflation via lower energy costs; increased U.S. exports good for USD & trade balance.	Oil prices are at their lowest levels over the past 5 years.	<b>↑</b>	<b>1</b>	<b>↑</b>
Industrial Revival/ De-Regulation	Reinforce domestic industrial activity by reducing regulatory burdens and improving the operating environment for businesses.	Growth-supportive, especially in heavily regulated industries, would likely lead to productivity gains but might cause inflationary pressures.	Banking regulation reforms.	<b>^</b>	-	-
Net Impact				₩ 1	?	•

Source: SpringTide. Expected market impact is intended to provide a directional illustration of how policy effects may vary across asset classes. This analysis is based on specified assumptions and simplified frameworks; actual market responses may differ materially due to timing, market structure, investor positioning, and broader macroeconomic conditions.



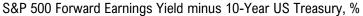
# **Equity**

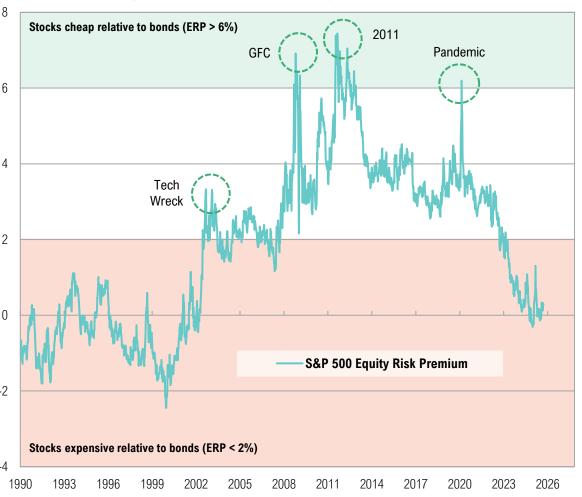
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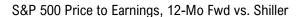




# Using a simple yield-to-earnings yield comparison (ERP), U.S. stocks are less attractively priced vis-à-vis bonds than at any point since the 1990s; U.S. large cap valuations are nearing extremes







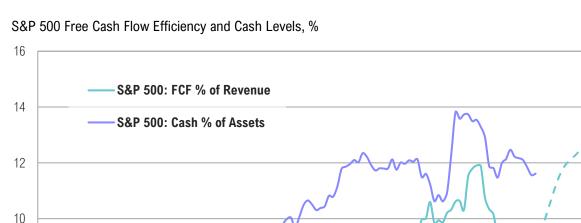


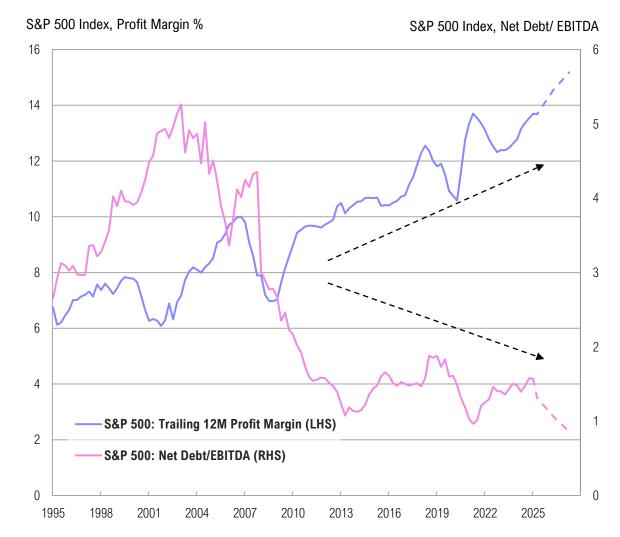
Source: Bloomberg. Equity risk premium calculated as S&P 500 earnings yield minus 10-year Treasury yield.





# The corporate sector is strong by historical standards: capital expenditures, R&D, and tech investment have boosted scalability and efficiency, enabling improved margins and reducing debt





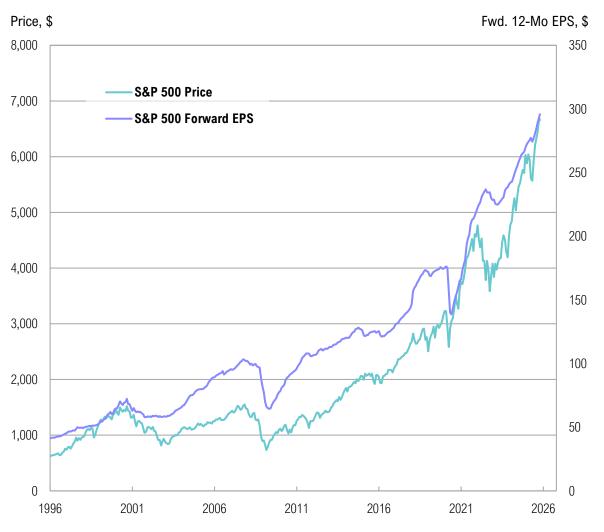
Source: Bloomberg

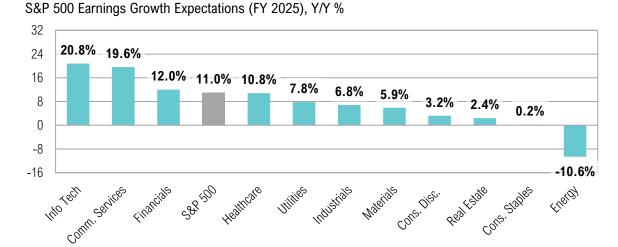
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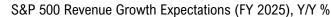


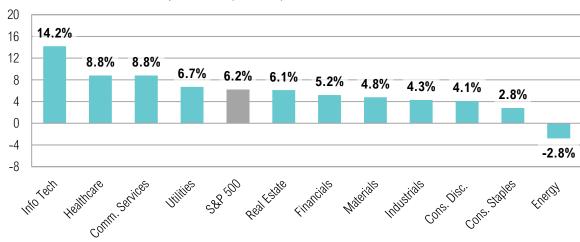


# Stock prices tend to follow earnings—and both have been on an upward trajectory; strong earnings growth, particularly in tech, has been supported by revenue growth









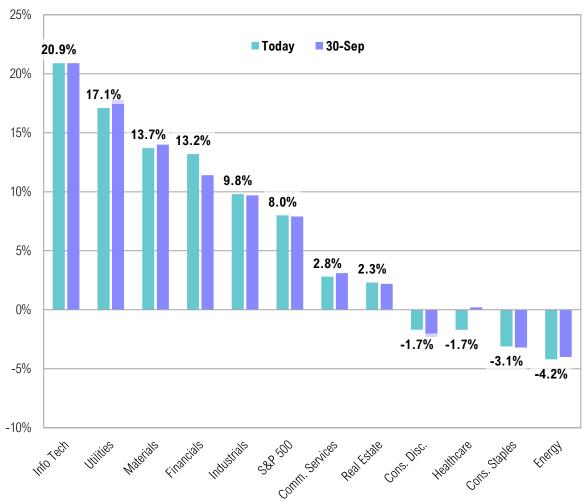
Source: Bloomberg, FactSet. As of 10/17/2025.



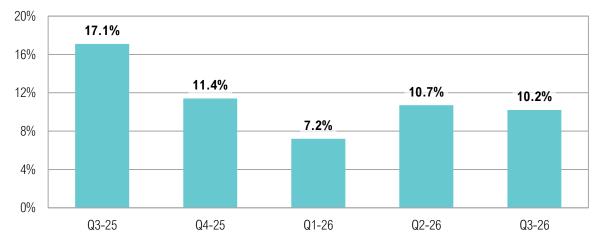


# The utilities sector is expected to report the second-highest Q3 earnings growth rate (17.1%) of all 11 S&P 500 sectors, second only to tech

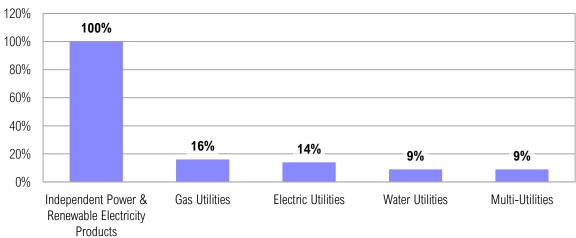
S&P 500 Earnings Growth Expectations (Q3), Y/Y %



S&P 500 Utilities Sector Earnings Growth Expectations (Q3 2025 – Q3 2026), Y/Y %



S&P 500 Utilities Sector: Q3 Industry Earnings Growth Expectations, Y/Y %

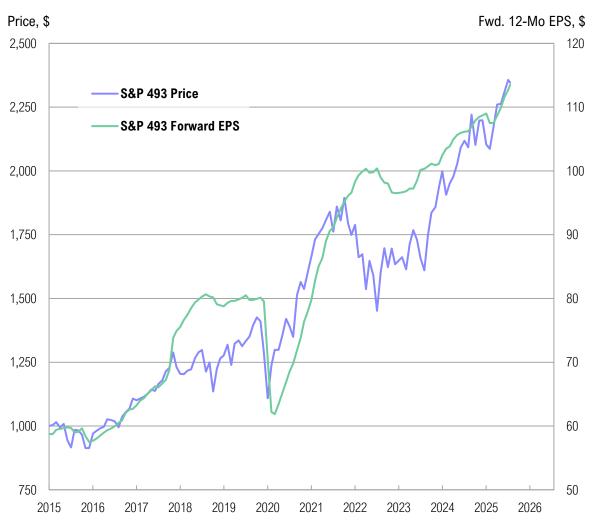


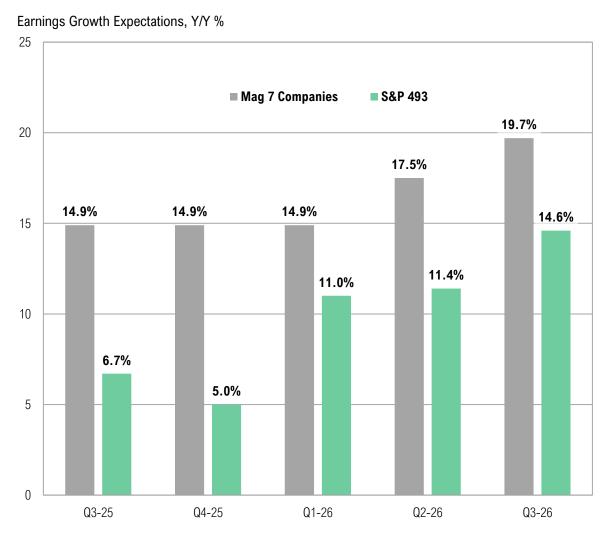
Source: FactSet. As of 10/10/2025.





# The Magnificent 7 remain key contributors to S&P 500 earnings growth, but their growth divergence from the rest of the market is expected to narrow into 2026



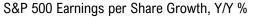


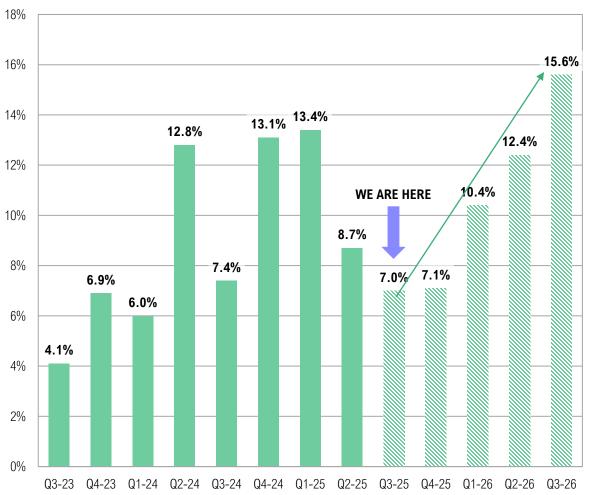
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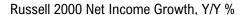


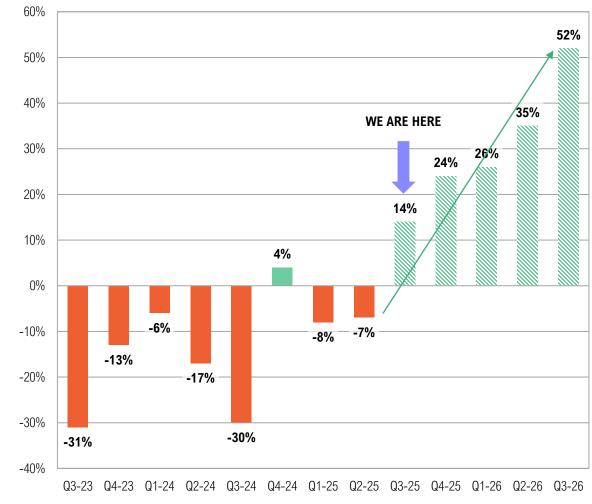


### Is the stock market broadening just beginning?







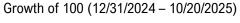


Source: Bloomberg, Hedgeye.



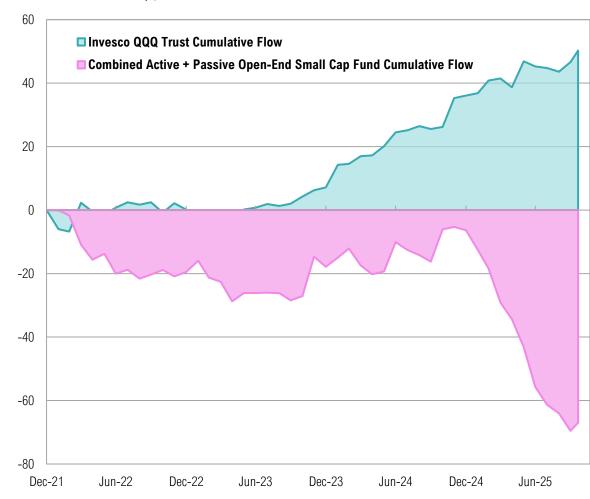


# Small cap stocks have outperformed large caps since the April 8 lows (by 7%); YTD, open-end small cap funds have seen \$61Bn in outflows, while QQQ alone has seen \$14bn in inflows









Source: Bloomberg. As of 10/20/2025.

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# Capital flows to where it is treated best; the list of largest companies in the world is a reminder of where innovation is rewarded

MSCI All-Country World Index: Top 23 Holdings

Name	Sector	Market Value	Location
Nvidia	Information Technology	1,163,159,686.52	United States
Apple	Information Technology	969,095,714.22	United States
Microsoft	Information Technology	918,798,546.10	United States
Amazon	Consumer Discretionary	535,284,377.86	United States
Meta	Communication	398,245,999.80	United States
Broadcom	Information Technology	380,906,337.56	United States
Alphabet	Communication	358,311,593.41	United States
Tesla	Consumer Discretionary	318,910,020.00	United States
Taiwan Semiconductor Manufacturing	Information Technology	278,275,470.77	Taiwan
JPMorgan	Financials	215,551,645.85	United States
Berkshire Hathaway	Financials	169,355,192.24	United States
Eli Lilly	Health Care	166,231,966.15	United States
Visa	Financials	149,417,188.80	United States
Tencent	Communication	140,767,632.51	China
Netflix	Communication	124,766,207.19	United States
Mastercard	Financials	124,629,959.09	United States
Oracle	Information Technology	123,339,381.90	United States
Exxon Mobil	Energy	120,940,957.51	United States
Johnson & Johnson	Health Care	112,952,535.26	United States
Walmart	Consumer Staples	112,687,566.30	United States
Palantir Technologies	Information Technology	106,809,103.95	United States
AbbVie	Health Care	105,453,953.36	United States
Costco	Consumer Staples	102,619,566.72	United States



Europe has gone from 90% U.S. GDP to 65% over 10 or 15 years. That's not good. You're losing [and] if you fragment the economic alliances, Europe eventually goes back to every country for itself."

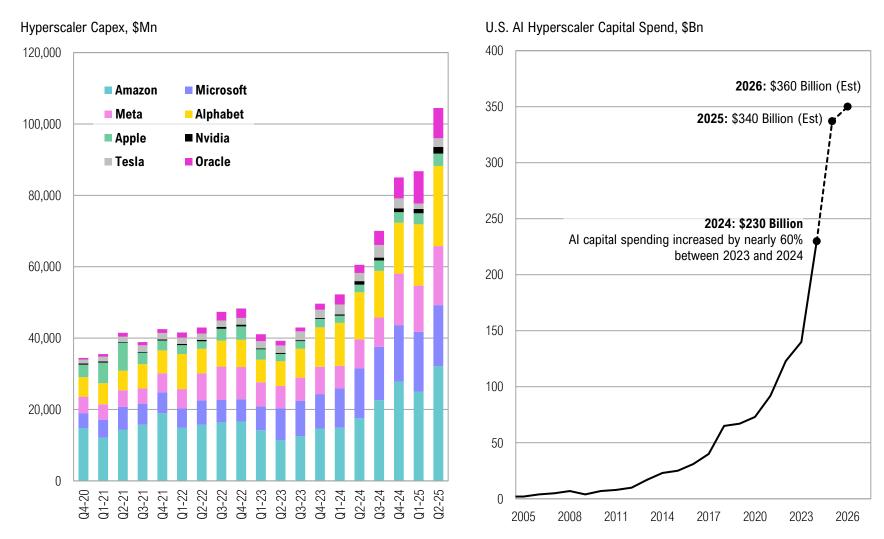
Jamie Dimon, JPMorgan CEO

Source: Morningstar. As of 9/30/2025.





### Estimates show the AI industry would need to generate \$320bn or more in annual revenues for at least a decade just to break even on 2025's capex investment—more than 10x current AI revenue levels



#### **Key Assumptions\***

#### 2025 Capex Breakdown Assumptions

- Total Al data center spending: \$400bn (Praetorian Capital estimate\*)
- Buildings & land: 25% of total cost
- Power systems, cooling, wiring, racking: 40% of total cost
- GPUs & chips: 35% of total cost

#### **Depreciation**

- GPUs: obsolete in 3-5 years
- Supporting infrastructure: lasts 10 years
- With \$400bn in 2025 capex, 3–5 year depreciation implies annual depreciation of \$80–\$133bn

#### **Revenue Requirements**

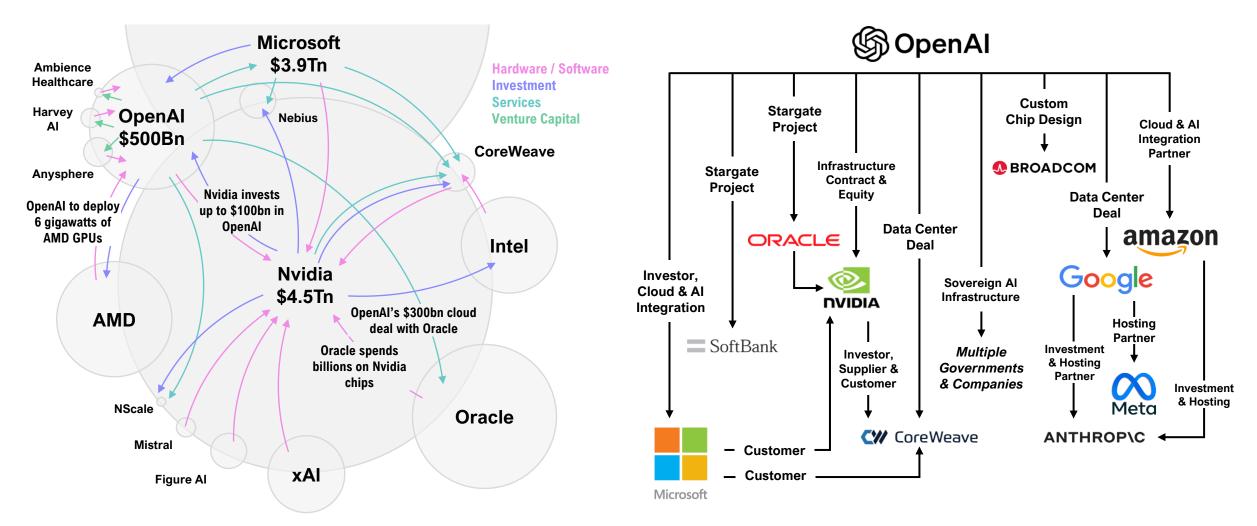
- Assuming a 25% gross margin (reflecting high electricity and labor costs), the industry would need \$320– \$480bn in annual revenue to cover depreciation alone
- To achieve a 20% return on invested capital, revenue would need to reach \$480bn

Source: Bloomberg, Visual Capitalist, Morgan Stanley, Praetorian Capital. \*Based on a study by Praetorian Capital in October 2025.





### The circular nature of Al investments:



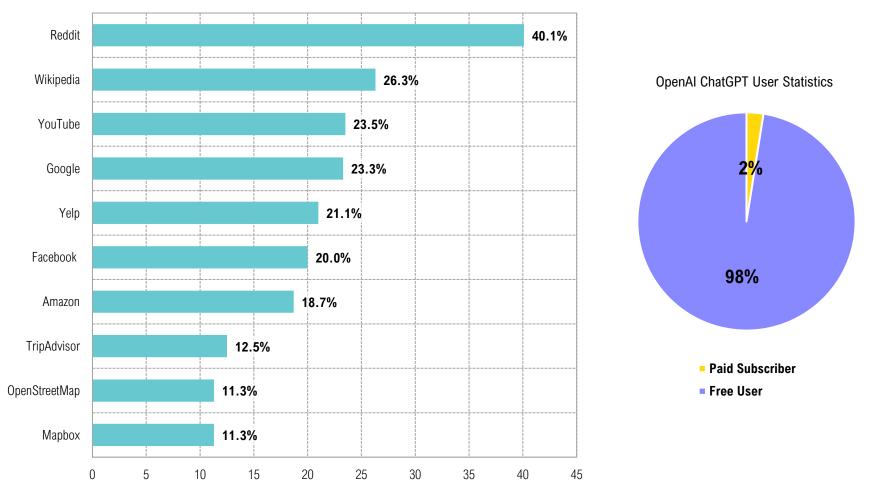
Source: Bloomberg, Financial Times. Deal details as of 9/30/2025.





# Despite the hype, there are some use concerns about LLMs such as ChatGPT (including source reliability); only 2% of all ChatGPT users pay for the service

Top 10 Web Domains Cited as Sources by LLMs\*



Deloitte was caught using AI in \$290,000 report to help the Australian government crack down on welfare after a researcher flagged hallucinations



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Source: Statista via Semrush, McKinsey, The Information, OpenAl. \*Google's Al Mode, Al Overviews, ChatGPT, and Perplexity. Based on 150,000 citations from 5,000 randomly-selected keywords from Semrush database.



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My guess is that I think all the ingredients are in place for some kind of a blow off... History rhymes a lot, so I would think some version of it is going to happen again. If anything, now is so much more potentially explosive than 1999."

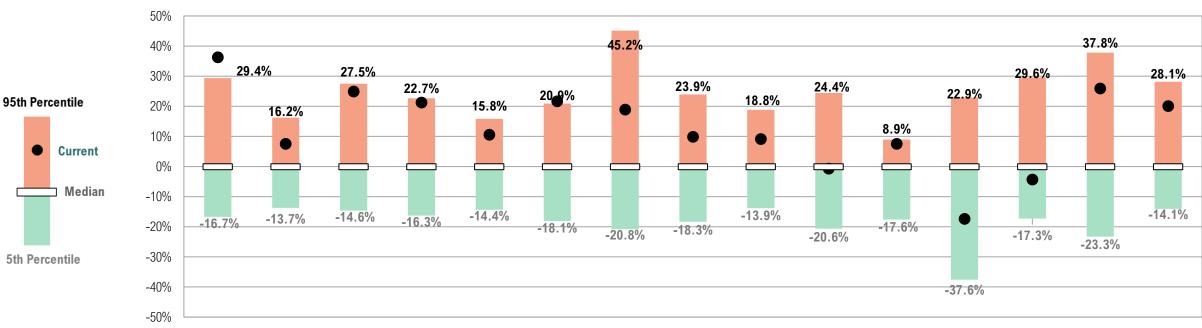
Paul Tudor Jones, U.S. Investor





## U.S. large cap stocks have reached a new 10-year high valuation; Brazil & Mexico are the only countries trading below median, with Hong Kong at median valuations

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



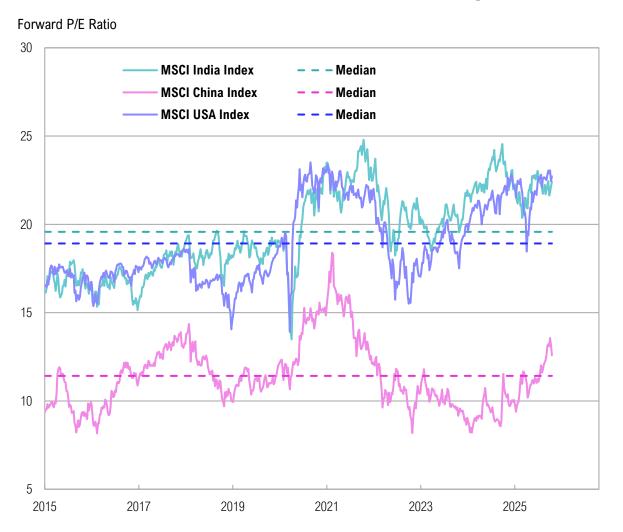
	U.S. Large		Emerging					United							
	Сар	EAFE	Markets	Canada	Europe	Germany	Netherlands	Kingdom	Japan	Hong Kong	Australia	Brazil	Mexico	China	India
High Valuation Date	10/8/2025	12/31/2020	1/31/2021	11/30/2016	6/30/2021	12/31/2020	10/31/2021	7/31/2016	12/31/2020	5/31/2021	12/31/2020	12/31/2020	5/31/2015	1/31/2021	9/30/2024
Low Valuation Date	9/30/2015	9/30/2022	9/30/2015	9/30/2022	9/30/2022	9/30/2022	2/29/2016	9/30/2022	12/31/2018	1/31/2025	9/30/2022	6/30/2022	12/31/2024	9/30/2015	3/31/2020
Valuation Premium on 12/31/2024	26%	-3%	2%	6%	-1%	6%	5%	-7%	9%	-19%	1%	-37%	-26%	-6%	23%
Valuation Premium on 12/31/2023	13%	-3%	4%	-5%	-6%	-9%	12%	-18%	0%	-16%	-7%	-24%	1%	-17%	23%
Valuation Premium on 12/31/2022	-4%	-12%	-4%	-20%	-14%	-19%	8%	-15%	-19%	0%	-18%	-37%	-14%	-5%	15%
Valuation Premium on 12/31/2021	27%	9%	12%	6%	13%	4%	55%	0%	6%	14%	4%	-31%	26%	10%	27%
Valuation Premium on 12/31/2020	28%	21%	33%	10%	18%	24%	22%	8%	25%	22%	11%	37%	10%	40%	19%

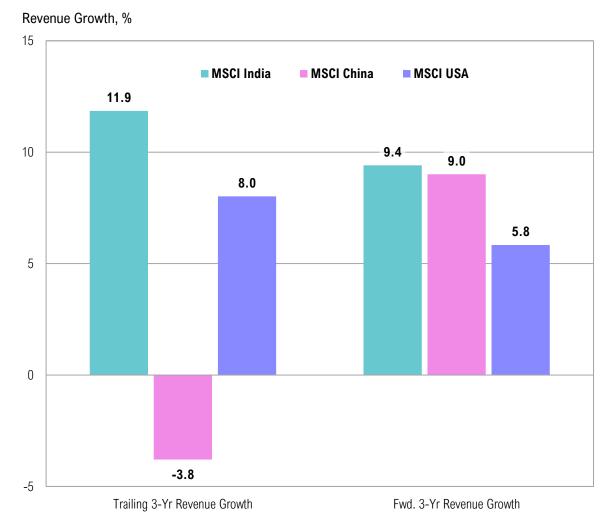
Source: Bloomberg. \*The composite valuation selectively weights four valuation metrics (Fwd P/E, Fwd P/CF, TTM P/S and TTM EV/EBITDA) relative to each respective countries' 10-year medium valuation. As of 9/30/2025.





## While India and China both trade above their 10-year average valuations, they remain attractive relative to the U.S., given stronger growth expectations in both regions



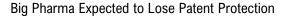


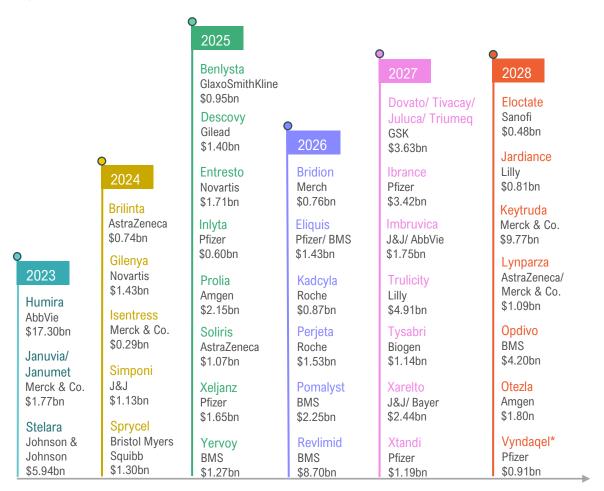
Source: Bloomberg. As of 10/20/2025.

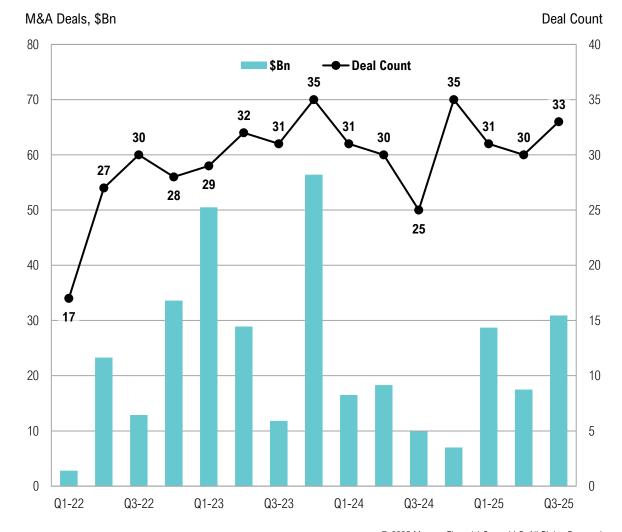
MAGNU!



## Big pharma faces a "patent cliff" which could impact more than \$200Bn in annual revenue by 2030, which could position the biotech sector for further M&A activity







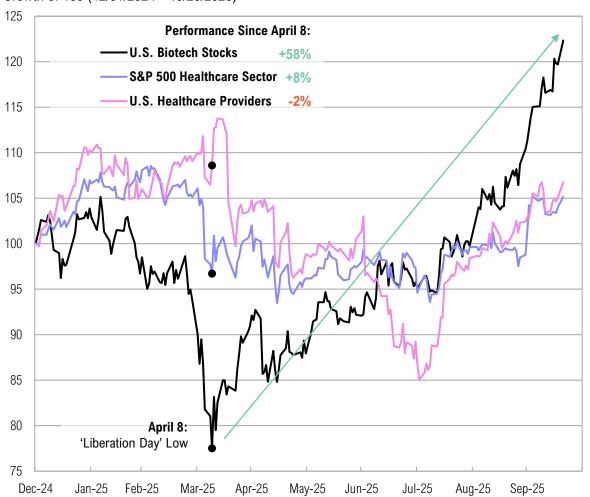
Source: Eventide. \*Pending patent term extension; CMS.





### Biotech stocks have gained nearly 60% since the April 8 lows, far outpacing the broader healthcare sector, which continues to face pressure amid regulatory and market developments

Growth of 100 (12/31/2024 – 10/20/2025)



Select U.S. Government Announcements Directed at the Healthcare Industry

Announcement	Date	Туре	Details
Reducing Drug Prices for Americans & Taxpayers (MFN Pricing)	July 31	Government Announcement	President Trump sends letters to leading pharma manufacturers outlining steps needed to reduce prices of prescription drugs in the U.S. to match prices in other developed nations.
U.S. Pharmaceutical Supply Chain Resilience	August 13	Executive Order	Order signed to fill the Strategic Active Pharmaceutical Ingredients Reserve with critical drug components, ensuring resilient domestic supply chain for essential medicines.
Greater Transparency & Accuracy in Direct-to- Consumer Prescription Drug Advertising	September 9	Presidential Memorandum	HHS and the FDA to enforce existing laws ensuring prescription drug ads (across TV, social media, and online) provide full, accurate, and balanced information, including clear disclosure of risks and side effects.
First Agreement with Major Pharmaceutical Company to Offer MFN Pricing	September 20	Government Announcement	Pfizer agrees to bring U.S. drug prices in line with lowest paid by other developed nations for every State Medicaid program.
Second Agreement with Major Pharmaceutical Company to Offer MFN Pricing	October 10	Government Announcement	AstraZeneca agrees to bring U.S. drug prices in line with lowest paid by other developed nations for every State Medicaid program.

Source: Bloomberg





### Key risk: leveraged ETFs have >\$300bn in notional long exposure

U.S. Listed Leveraged Equity Exchange-Traded Funds with >\$1Bn AUM

Name	Underlying Exposure	Leverage Multiplier	Fund AUM	Implied Exposure
ProShares UltraPro QQQ	Nasdaq 100	3x	\$29.2	\$87.5
Direxion Daily Semicondct Bull 3X ETF	Semiconductors	3x	\$13.5	\$40.6
ProShares Ultra QQQ	Nasdaq 100	2x	\$10.3	\$20.6
Direxion Daily TSLA Bull 2X Shares	Tesla	2x	\$8.0	\$16.0
ProShares Ultra S&P500	S&P 500	2x	\$7.4	\$14.8
Direxion Daily S&P500® Bull 3X ETF	S&P 500	3x	\$5.7	\$117.0
ProShares UltraPro S&P500	S&P 500	3x	\$4.6	\$13.8
GraniteShares 2x Long NVDA Daily ETF	Nvidia	2x	\$4.5	\$9.0
Direxion Daily Technology Bull 3X ETF	Technology Sector	3x	\$4.2	\$12.7
Direxion Daily Financial Bull 3X ETF	Financials Sector	3x	\$2.6	\$7.7
MicroSectors™ Slct FANG Inn 3X Lvgd ETNs	Technology Sector	3x	\$2.5	\$7.4
Microsectors FANG+ 3x Leveraged ETNs	Technology Sector	3x	\$2.4	\$7.2
Direxion Daily Small Cap Bull 3X ETF	Russell 2000	3x	\$2.2	\$6.6
ProShares Ultra Semiconductors	Semiconductors	2x	\$1.6	\$3.2
T-REX 2X Long MSTR Daily Target ETF	Microstrategy	2x	\$1.2	\$2.3
Direxion Daily Gold Miners Bull 2X ETF	Gold Miners	2x	\$1.2	\$2.3
Direxion Daily FTSE China Bull 3X ETF	Chinese Stocks	3x	\$1.0	\$3.1

\$330 Billion, and growing...

Combined notional long exposure of U.S. leveraged ETFs, dominated by technology stocks

(\$129bn AUM with an average leverage multiplier of 2.6x)

Source: Morningstar. There are 291 individual leveraged exchange traded funds listed in the U.S. As of 10/20/2025.



## Fixed Income & Credit

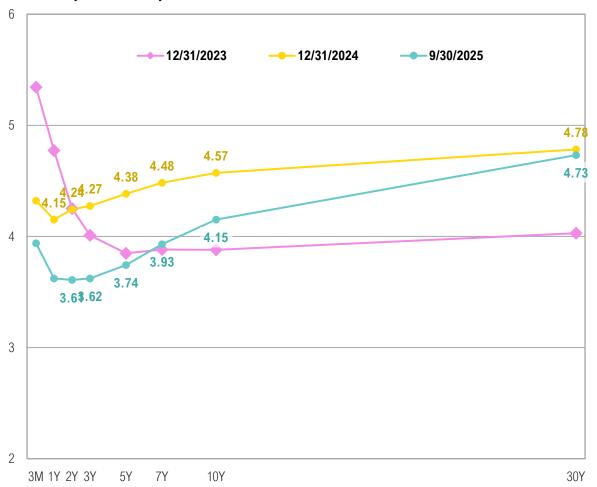
Bond yields declined over the quarter, with the yield curve steepening slightly, as markets responded to modest improvements in the fiscal deficit, contained inflation, and the prospects of further rate cuts. Credit spreads remain relatively tight suggesting continued economic resilience and a market still comfortable with current levels of fiscal spending.



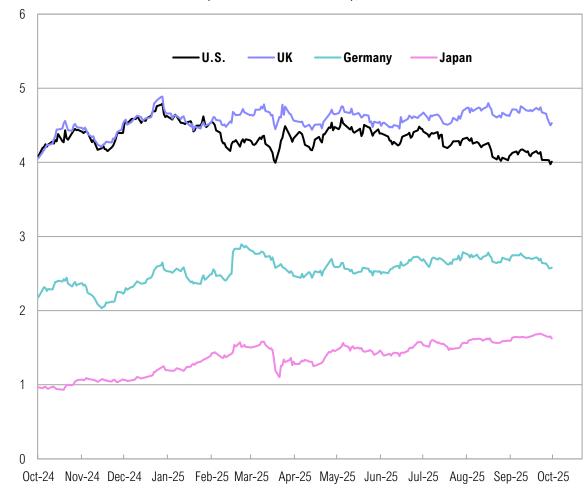


## Since the start of the year, U.S. Treasury yields have fallen across all maturities; U.S. bonds are one of the few among developed markets with yields lower today than a year ago

U.S. Treasury Yield Curve by Date



10-Year Government Bond Yields (10/18/2024 – 10/20/2025), %

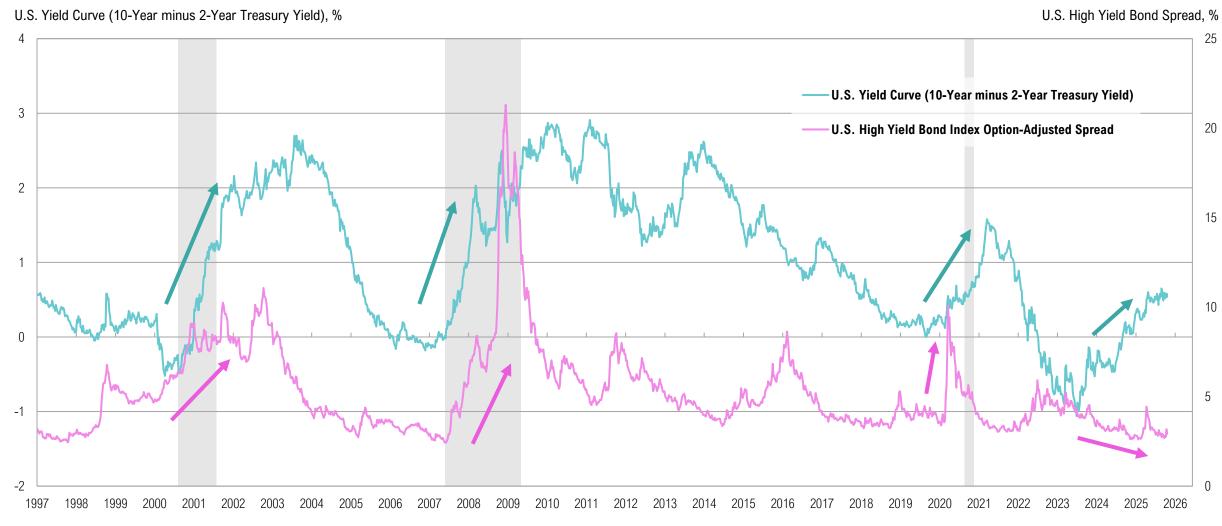


Source: Bloomberg





### While the yield curve continues to steepen, credit spreads remain low by any longterm standard, even despite the recent uptick (driven by renewed trade war concerns)



Source: Bloomberg. As of 10/20/2025.





Since June 2022, we have reduced the size of our balance sheet by \$2.2 trillion—from 35 percent to just under 22 percent of GDP—while maintaining effective interest rate control. Our long-stated plan is to stop balance sheet runoff when reserves are somewhat above the level we judge consistent with ample reserve conditions. We may approach that point in coming months, and we are closely monitoring a wide range of indicators to inform this decision..."

Jerome Powell, Chairman of the Federal Reserve (October 2025)



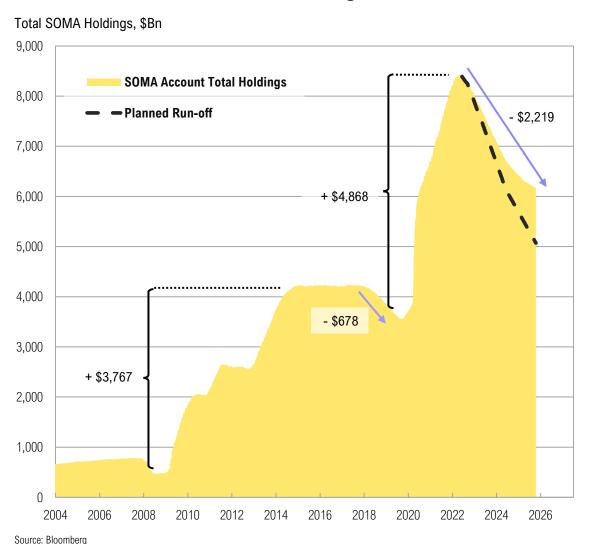
Monetization would involve a permanent increase in the money supply to basically pay the government's bills through money-creation. That is not what we are doing. What we are doing here is a temporary measure which will be reversed so that at the end of this process... the amount of the Fed's balance sheet will be no permanent increase, either in the Fed's balance sheet, or in inflation."

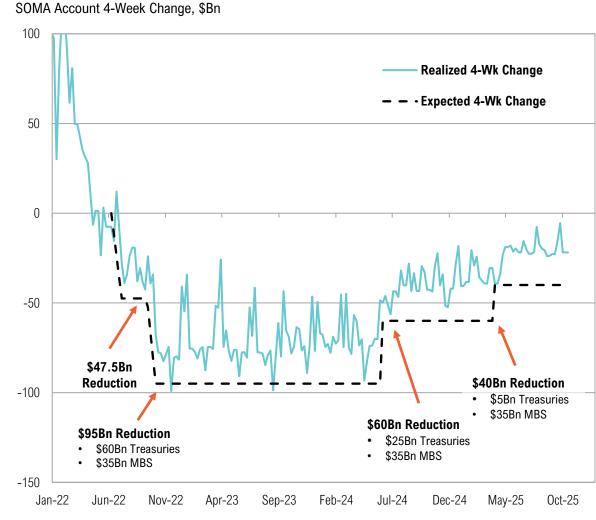
Ben Bernanke, Former Chairman of the Federal Reserve (June 2014)





## Since April 1, the Fed has slowed QT from \$60 billion to \$40 billion, with a maximum Treasury runoff of \$5 billion per month









## Median discounts across the BDC universe widened over the quarter, providing compelling pockets of value

Median BDC Premium/Discount to Net Asset Value, %

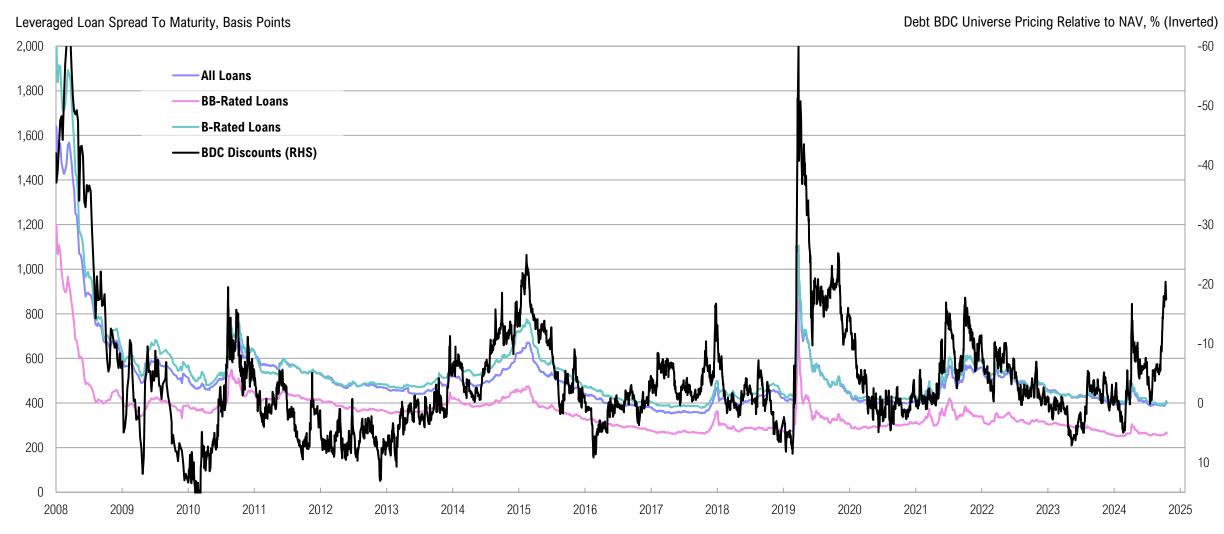


Source: Bloomberg. As of 10/20/2025.





## While BDC discounts have historically been more volatile than leveraged loan spreads, the current disconnect is unprecedented



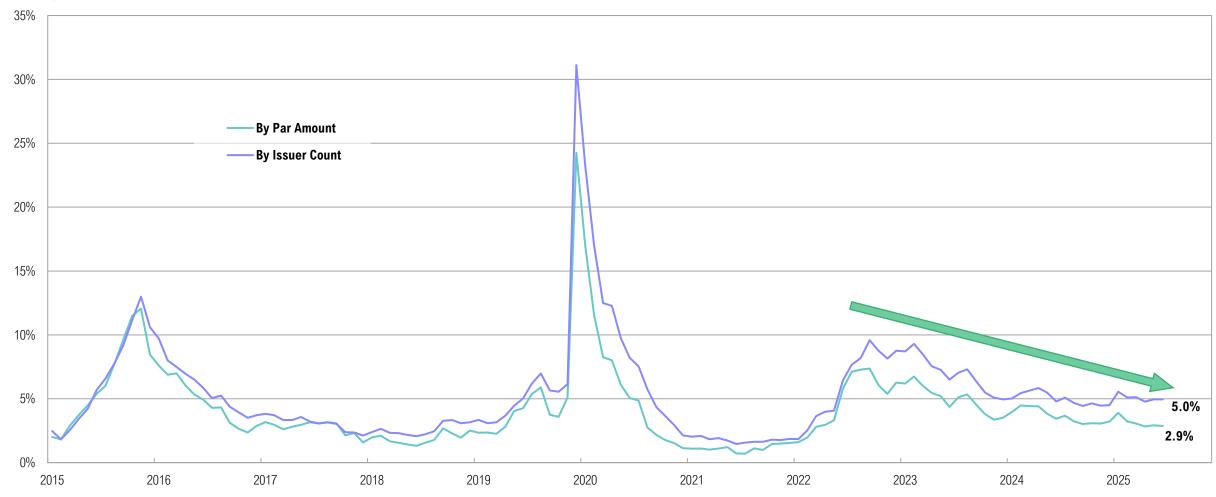
Source: Pitchbook, SpringTide. As of 10/17/2025.

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# Granular data about the leveraged loan market suggests that credit appears healthy

Morningstar/ LSTA Leveraged Loan Index Distressed Ratio



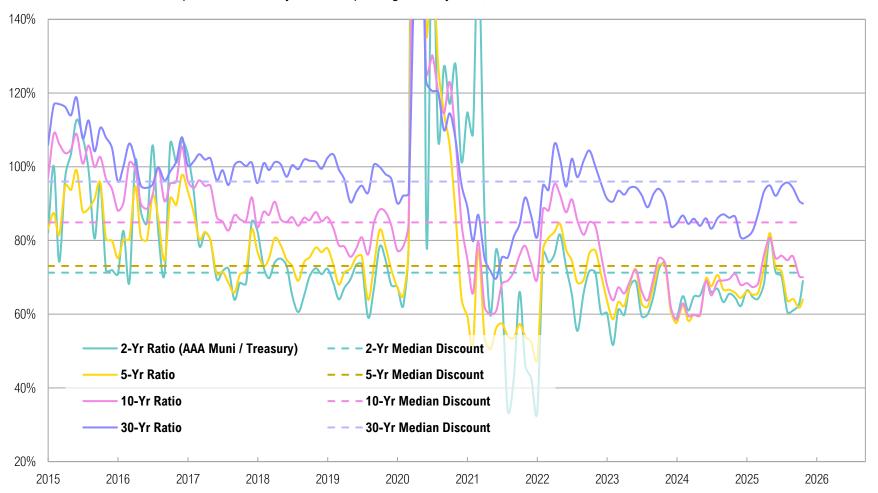
Source: Pitchbook, As of 9/30/2025.





## National municipal yield spreads to Treasuries are currently below their 10-year median levels but remain attractive on a tax-adjusted basis

Ratio: U.S. AAA National Municipal Yield Divided by the Corresponding Treasury Yield, 2015 - 2025



#### **Muni/Treasury Ratio:**

#### 2-Year:

• Current Ratio: 69%

Historical Median: 71%

#### 5-Year:

· Current Ratio: 64%

Historical Median: 73%

#### 10-Year:

• Current Ratio: 70%

Historical Median: 85%

#### 30-Year:

Current Ratio: 90%

Historical Median: 96%

Source: Bloomberg. As of 9/11/2025. Historical median calculated from 1/1/2015-10/20/2025.



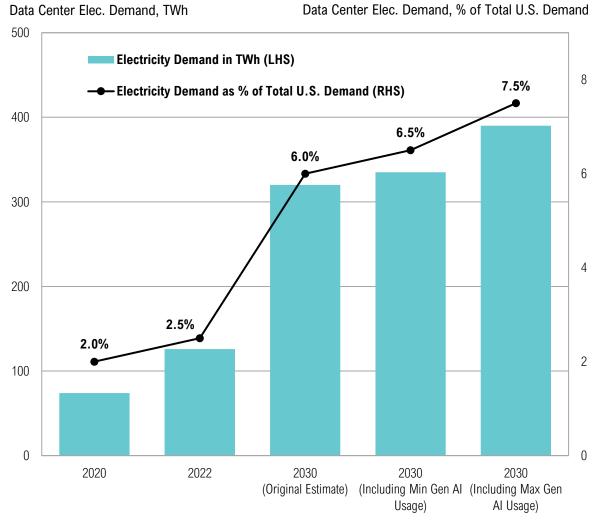
### **Diversifiers**

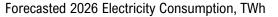
With stock and bond correlations remaining elevated, opportunity remains to improve the risk-return profile of a portfolio by finding investment opportunities that have distinct return sources—such as gold, uranium, utilities, and more.

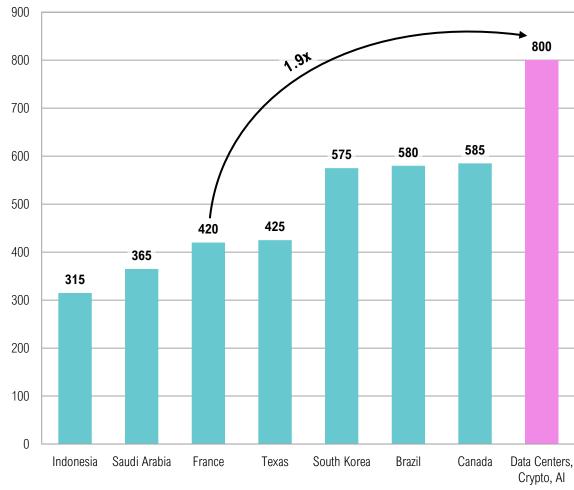




### Al and data centers are expected to drive U.S. power demand; in 2026, global data centers + Al + crypto energy consumption is estimated to be nearly double that of France





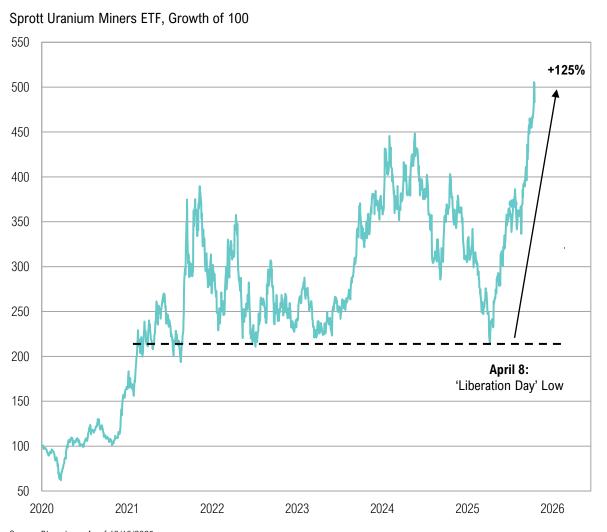


Source: Bloomberg, Boston Consulting Group, U.S. Energy Information Administration, International Energy Agency.





### Uranium and nuclear stocks have rallied >125% from the "Liberation Day" lows, driven by strong sentiment, solid fundamentals, and ongoing policy support; while the long-term thesis remains intact, valuations appear stretched



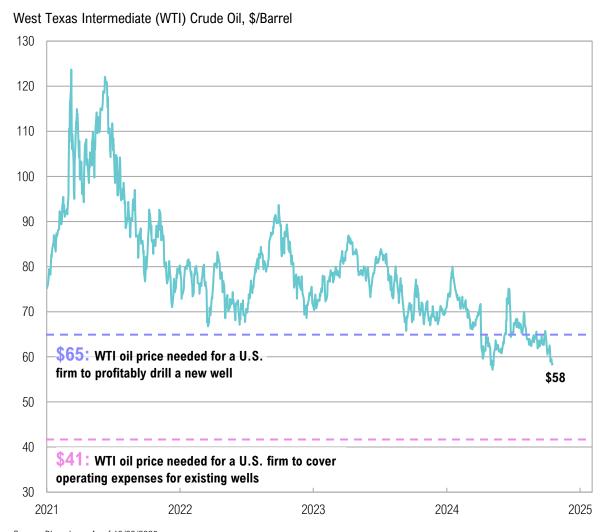


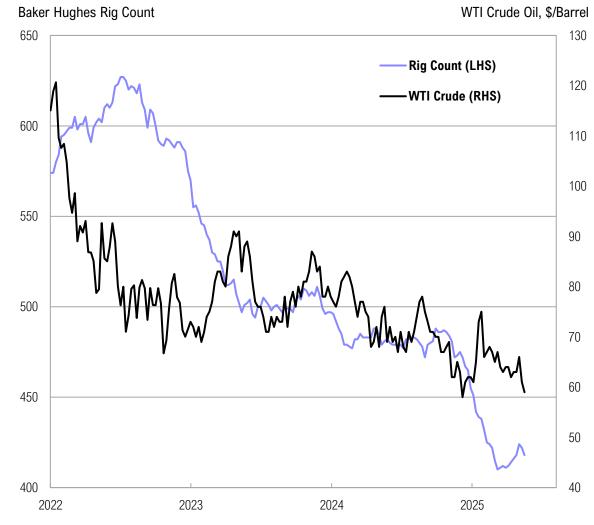
Source: Bloomberg. As of 10/16/2025.





## At \$58 per barrel, WTI crude is below the level needed for a U.S. firm to profitably drill a new well; rig counts are near the lowest levels in at least three years



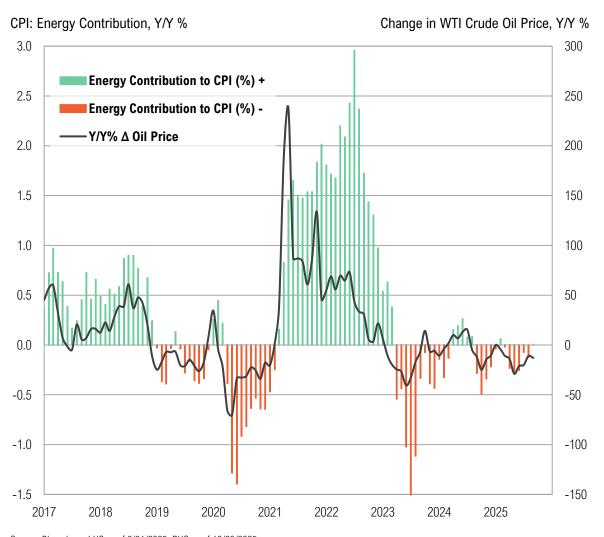


Source: Bloomberg. As of 10/20/2025.

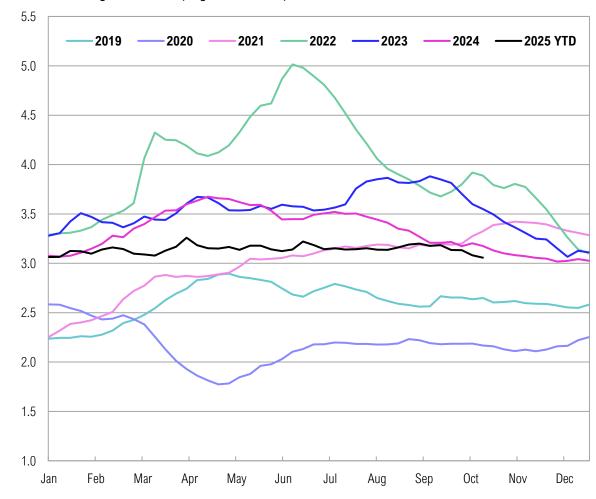




### Low oil prices = lower gas prices; lower energy prices detract from CPI



National Average Gas Prices (Regular Unleaded) \$/Gallon



Source: Bloomberg. LHS as of 8/31/2025; RHS as of 10/20/2025.





You see some of the constraints and they exist in multiple places... The single biggest constraint is power."

Andy Jassy, Amazon CEO



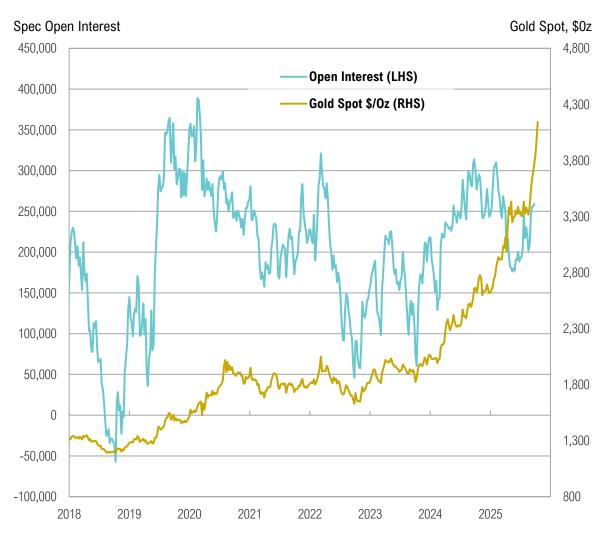
One thing is clear, the benefits of nuclear energy for families, for local communities, for states and the economy as a whole is something we can all agree on."

Joseph Dominguez, Constellation Energy CEO

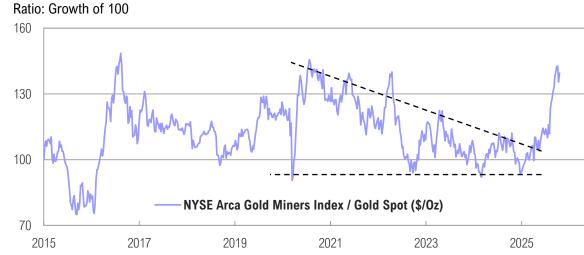




### Despite record gold prices, spec positioning remains below recent peaks (albeit no new data since the government shutdown); while gold miners have seen strong YTD outperformance, fundamentals remain constructive







Source: Bloomberg. As of 10/17/2025.





## Both silver and platinum have experienced a major breakout; silver has broken through its 2011 high, while platinum remains 35% below the 2008 peak



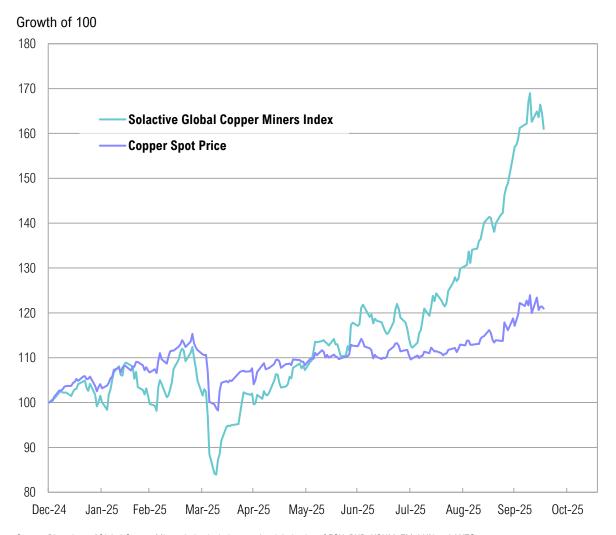


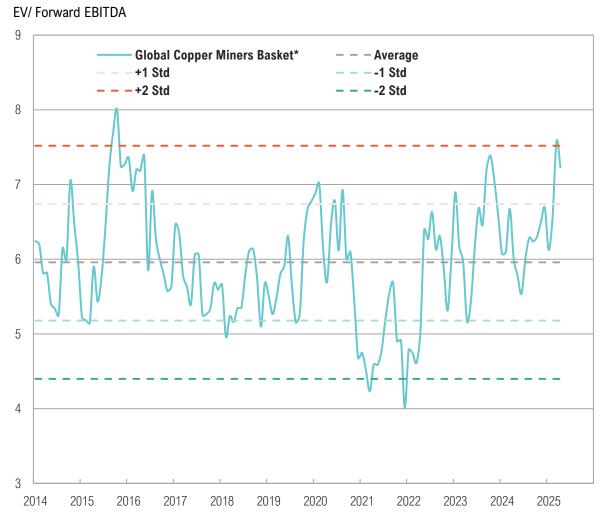
Source: Bloomberg. As of 10/20/2025.





### Copper prices are 'only' 20% higher since the start of the year, yet miners have rallied more than 60%; despite the constructive backdrop, copper miner valuations are looking stretched



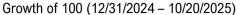


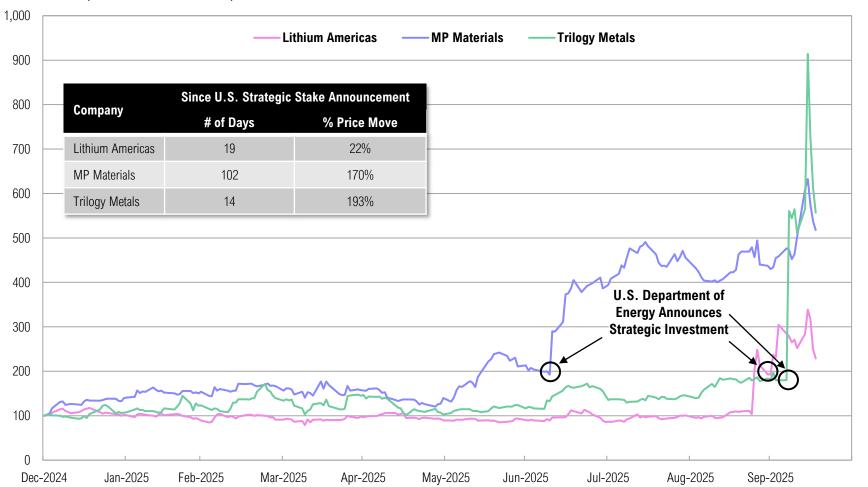
Source: Bloomberg, \*Global Copper Miners Index includes equal weight basket of FCX, BHP, KGHM, FM, LUN and ANTO.





### The U.S. government has been offering both policy support for the domestic critical minerals industry and taking strategic stakes in various businesses in efforts to reshore the domestic supply chain





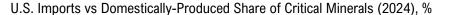
- The U.S. is ramping up investment in domestic critical mineral production to reduce dependence on China, which dominates global processing.
- China handles 98% of refined gallium, 68% of germanium, and most cobalt, lithium, and rare earths.
- The U.S. imports over 80% of its rare earths and relies entirely on foreign sources for 12 of its 50 critical minerals—a vulnerability underscored by China's recent export restrictions.

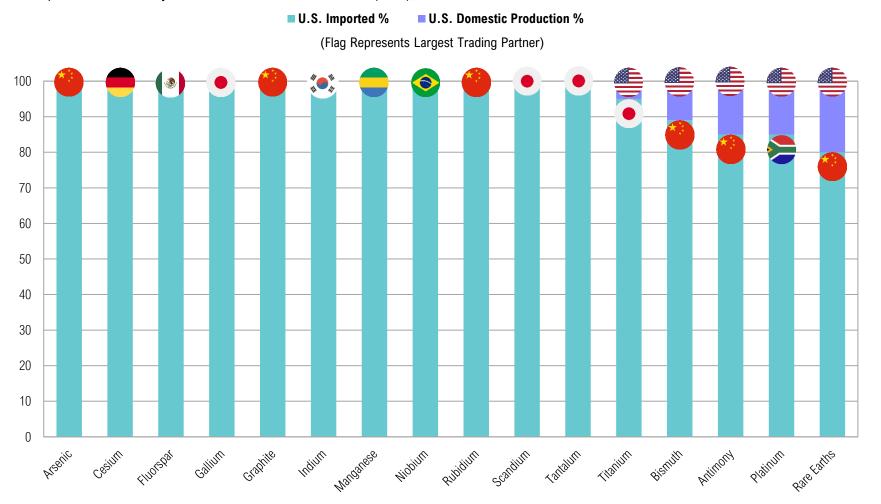
Source: Bloomberg. As of 10/20/2025.





### President Trump and Chinese President Xi Jinping are expected to meet at the end of this month to seal a 'fair' trade deal; critical minerals will be a significant part of the deal





- There is growing recognition on both sides that while the U.S. and China have significant economic interdependence, neither is in a position to concede easily.
- China maintains substantial leverage through its dominance in critical minerals and key manufacturing supply chains, while the U.S. and Europe remain vital end markets for Chinese exports.
- This mutual dependency limits the likelihood of a full-scale economic rupture but heightens the complexity of negotiations.

Source: U.S. Geographical Survey (March 2025)





### Private assets need public buyers."

Matt Levine, Bloomberg Columnist



There is, across the entire economy, a real surge in business investment taking place right now, and in artificial intelligence & other areas in the technology space that is helping to propel growth."

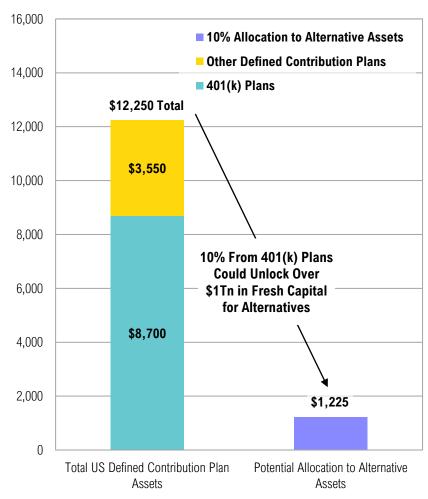
Ken Griffin, Citadel Founder



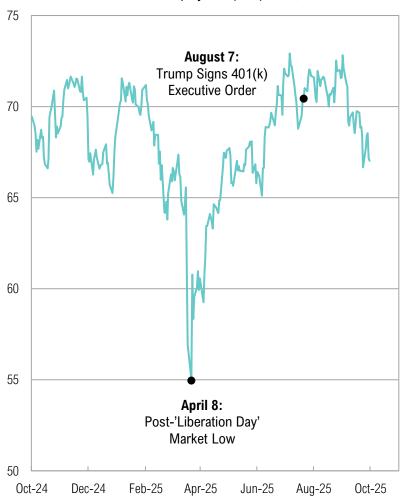


### On August 7, 2025, President Trump signed an Executive Order aimed at broadening retirement investment options by easing restrictions on 401(k) plans to invest in alternative investments

U.S. Defined Contribution Plan Market Size, \$Tn



Invesco Global Listed Private Equity ETF (PSP) Price, \$



- By unlocking access to retirement savings, alternative managers gain a pathway to tap a large, previously inaccessible pool of capital.
- A 10% allocation of U.S. defined contribution assets could provide \$1.2 trillion in fresh capital to alternatives.
- By February 3, 2026: DOL must clarify fiduciary guidance for alternatives in DC plans.
- Mid-2026: Possible release of new regulations or safe harbor rules for plan sponsors
- 2027 and beyond: Gradual employer adoption through pilot programs and expanded plan menus.

Source: Bloomberg





## The executive order effectively opens the door for partnerships between traditional and alternative managers—a development that could help private markets

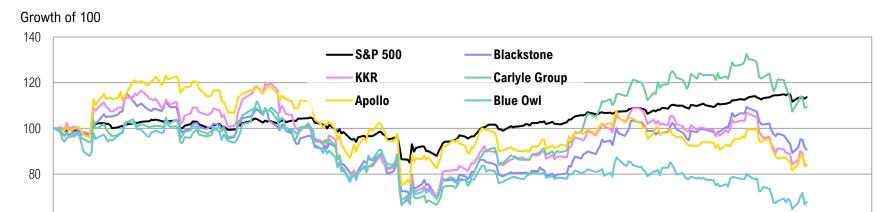
Jul-25

Jun-25

Aug-25

Oct-25

Sep-25



Apr-25

May-25

#### Rolling 12-Month Distribution Yields by Asset Class

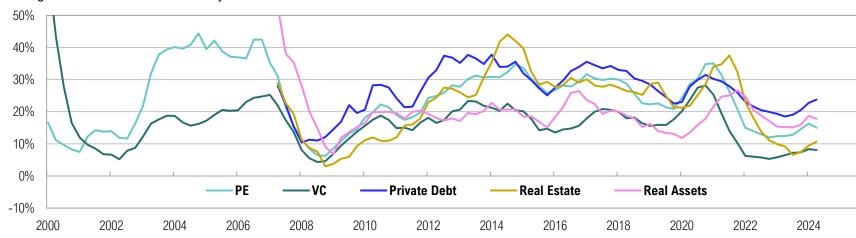
Dec-24

Jan-25

Feb-25

Mar-25

Nov-24



- Private markets are facing a challenging deal environment: private funds are returning the lowest amount of capital since the GFC, while also drawing capital down more slowly.
- Market response has been muted since the announcement, which could create a constructive setup, provide there is a follow-through on policy implementation.

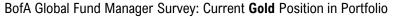
Source: Bloomberg

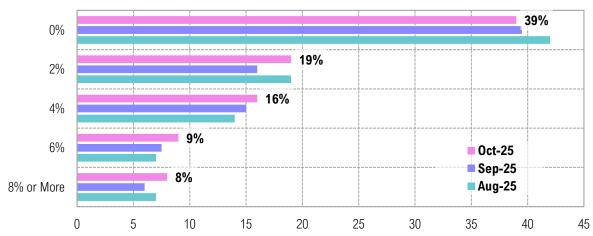
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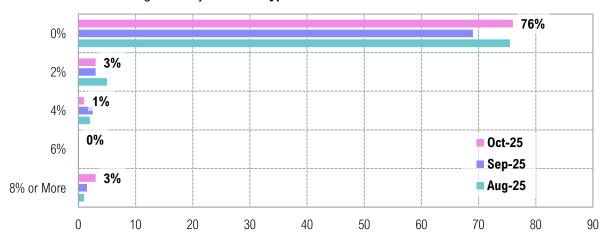


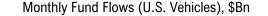
# Gold and bitcoin (which share several key characteristics) both continue to have limited allocations in portfolios, despite recent increase in ETF flows



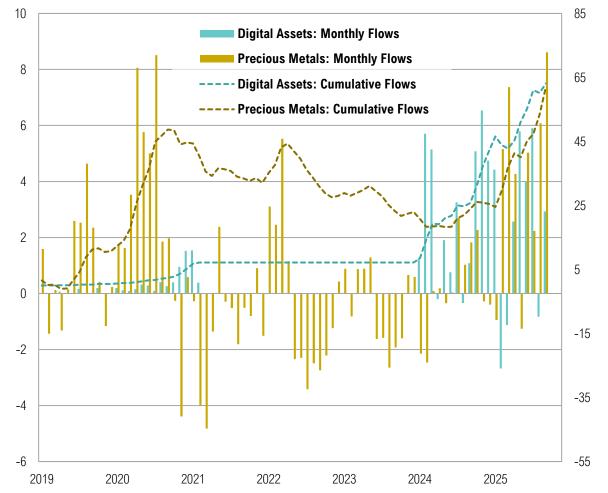


BofA Global Fund Manager Survey: Current Crypto Position in Portfolio









Source: Bank of America Global Fund Manager Survey, Morningstar. LHS as of 10/10/2025; RHS as of 9/30/2025.





# As the pro-crypto government advances clearer regulations, major U.S. RIAs and investment platforms have started to ease their stance on crypto

2025 Year-to-Date\* Pro-Crypto U.S. Government Policy Developments



#### Strengthening American Leadership in Digital Financial Technology

**January 23:** President Trump issues an Executive Order promoting blockchain innovation and banning federal CBDCs (Central Bank Digital Currency).



#### Strategic Bitcoin Reserve and U.S. Digital Asset Stockpile

**March 6:** An Executive Order aimed at centralizing custody and management of government digital asset holdings for national security purposes.



#### **CLARITY Act**

**July 17:** CLARITY Act passed the House with the aim of clarifying CFTC jurisdiction over most digital assets and SEC's anti-fraud role, pending Senate action.



#### **Anti-CBDC Surveillance State Act**

July 17: Anti-CBDC Surveillance State Act passed the House, banning issuance of a U.S. central bank digital currency to prevent surveillance risks.



#### **GENIUS Act**

**July 18:** GENIUS Act signed into law. It establishes the first federal regulatory framework for payment stablecoins with regulatory clarity and consumer protections.



#### Democratizing Access to Alternatives for 401(k) Investors

**August 7:** EO signed enabling inclusion of cryptocurrencies, alt. assets & private equity in 401(k) plans by directing regulatory agencies to develop accommodating frameworks.

Major U.S. RIA Platforms' Crypto Stance

Firm Name	Estimated AUM** (\$Bn)	Crypto Stance
Vanguard***	\$9,300	Considering allowing trading of third-party crypto ETFs on its brokerage platform; cautious but opening up due to client demand and regulatory clarity. No plans to launch own crypto ETFs.
Charles Schwab	\$8,000	Schwab provides crypto exposure via funds, equities, trusts, and futures, but not direct coin trading. The firm cites regulatory constraints and plans to offer spot trading when conditions permit.
Fidelity Investments	\$1,500	Provides bitcoin custody services for institutional clients and offers bitcoin investment options, including ETFs, across accounts.
BNY Mellon's Pershing	\$350	Has announced plans to offer cryptocurrency custody services but does not currently provide direct bitcoin trading.
LPL Financial	\$210	LPL Financial allows access to certain bitcoin ETFs but requires advisors to undergo training before offering them to clients.
Raymond James	\$100	Does not allow bitcoin purchases on its platform.
Betterment	\$45	Betterment does not offer direct bitcoin investments but provides portfolios with cryptocurrency exposure through funds.
Goldman Sachs Custody Solutions	Unknown	Provides bitcoin-related investment products to certain clients but does not offer direct bitcoin trading on its RIA platform.

Source: Various.\*As of 10/20/2025. \*\*Estimated AUM as of 12/31/2024. \*\*\*Retail brokerage, not traditional RIA platform.





## Although median discounts across the closed-end fund universe remain relatively tight, we continue to find compelling pockets of value

Median Closed-End Fund Premium/Discount to Net Asset Value



Source: Bloomberg, SpringTide.. As of 10/20/2025.



# Appendix

Supporting materials, including Capital Market Expectations and additional research referenced throughout the Market Outlook.





### With equity valuations expanding and yields falling, longer-term U.S. return assumptions have declined marginally





Expected 10-Year Volatility (Standard Deviation), %

Source: Bloomberg, CA, Pitchbook, Morningstar, NAREIT, SpringTide calculations. Returns are gross of fees unless stated otherwise. As of 9/30/2025.

Asset Class	Expected Returns (%)	Expected Volatility (%)
<ul><li>Venture Capital</li></ul>	10.3	13.8
<ul><li>Digital Assets</li></ul>	8.6	29.1
<ul><li>U.S. Small &amp; Micro Cap</li></ul>	8.2	21.3
Intl Dev Small & Micro Stocks	8.1	18.3
Closed-End Funds	8.0	13.0
Midstream Energy	7.8	25.0
Relative Value	7.3	4.7
U.S. High Yield Muni Bonds	7.1	7.9
Insurance-Linked Securities	6.9	4.5
Gold	6.9	17.4
Private Credit	6.7	7.4
Private Real Estate	6.4	17.5
<ul><li>U.S. REITs</li></ul>	6.4	20.1
<ul><li>Ex U.S. Real Estate Securities</li></ul>	6.4	20.3
Commodity Futures	6.4	16.9
Public BDCs	6.2	21.7
Intl Dev Large Cap Stocks	6.2	18.2
<ul><li>U.S. Bank Loans</li></ul>	5.8	7.1
Long-Short Equity	5.5	8.0
Emerging & Frontier Mkt Bonds	5.4	9.9
<ul><li>Global Macro</li></ul>	5.3	6.4
U.S. High Yield Bonds	4.7	9.4
U.S. Interm-Term Muni Bonds	4.7	2.9
Private Equity	4.6	15.1
U.S. Interm-Term Bonds	4.4	4.7
<ul><li>Global Stocks</li></ul>	4.3	17.2
U.S. Short-Term Muni Bonds	3.7	1.5
Emerging & Frontier Mkt Stocks	3.4	23.5
U.S. Short-Term Bonds	3.4	2.1
Cash/Ultra-Short Bonds	3.0	1.1
Intl Developed Bonds	2.7	9.2
U.S. Large Cap Stocks	2.5	15.7



<sup>&</sup>lt;sup>3</sup> Estimated returns include impact of currency adjustment

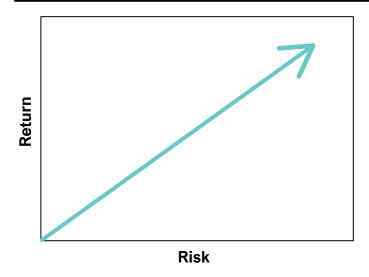
<sup>†</sup> Reported on a taxable-equivalent basis assuming 35% marginal tax rate.



## Setting a strategic risk tolerance is about finding the optimal level of risk that can operationally and emotionally be assumed without incentivizing harmful behavior

How risk and return are often believed to be interrelated...

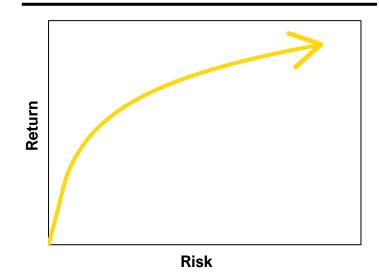
**Constant linear risk-return** 



During bull markets, many investors assume a linear tradeoff, a notion that may be reinforced as asset prices go up and all incremental risk is temporarily rewarded.

How risk and return are theoretically interrelated

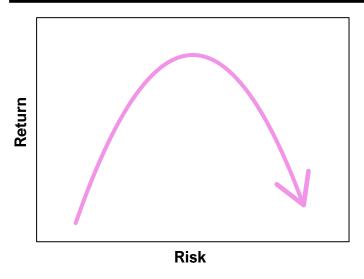
Positive, but diminishing (logarithmic)



In theory, the relationship between risk and return is positive, but diminishing whereby incremental risk results in incrementally higher returns that follow a logarithmic curve.

How risk and return are interrelated in practice...

Positive, then declining arc



The true tradeoff between risk and return follows an arc that peaks, then trends back down to zero. Initially, prudent risks are rewarded, but after a threshold risk level is surpassed, incremental risk introduces a negative reaction function that lowers the expected return.

Source: SpringTide

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Asset Class	Benchmark	Index	Start Date	End Date	Data Source	
U.S. Large Cap Stocks		S&P 500 TR Index	01/31/1970	n/a	Bloomberg, Ibbotson Associates,	
	S&P 500 Index	IA SBBI US Large Stock TR Index	01/31/1926	12/31/1969	NYU/Stern	
		NYU/Stern S&P 500 TR	01/31/1920	12/31/1925	NTO/Sterri	
		Russell 2000 TR Index	01/31/1979	n/a	Bloomberg, Ibbotson Associates,	
U.S. Small & Micro Cap	Russell 2000 TR Index	IA SBBI US Small Stock TR Index	01/31/1926	12/31/1978	SpringTide	
		SpringTide U.S. Small & Micro Cap Premium-Based Extension	01/31/1920	12/31/1925	Springride	
Intl Dev Stocks	MSCI EAFE NR Index	MSCI EAFE NR Index	01/31/1970	n/a	MSCI, NYU/Stern	
IIIII Dev Olocko	MOGI EALE MIX IIIUEX	NYU/Stern Developed World Indices	01/31/1920	12/31/1969	WISOI, WTO/Sterri	
EM & Frontier Stocks	MSCI Emerging Markets NR Index	MSCI Emerging Markets NR Index	01/31/2001	n/a	MSCI, NYU/Stern	
EINI & FIUIILIEI SLUCKS	Wisor Emerging Warkers NN muex	NYU/Stern Emerging World Index (Price)	01/31/1920	12/31/2000	WISCI, NTO/Sterri	
Global Stocks	MSCI ACWI NR Index	MSCI ACWI NR Index	01/31/2001	n/a	MSCI, NYU/Stern	
GIODAI SLOCKS	WISCI ACWI IN IIIUEX	NYU/Stern All World Index (Price)	01/31/1920	12/31/2000	WISCI, NTO/Sterri	
Venture Capital	Cambridge Venture Capital	Cambridge Venture Capital	01/01/1981	n/a	Cambridge, SpringTide	
venture Gapitai	Cambridge venture Capital	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	Diagraham	
U.S. MIUIII DONUS	bioomberg Municipal 1-101 blend 1-121 TK index	USA Municipal AAA Bonds Total Return Index (TRUSAMUM)	01/31/1920	06/30/1993	Bloomberg	
II C. Lana Tama Danda	Bloomberg US Long Gov/Corp TR Index	Bloomberg US Long Gov/Corp TR Index	02/28/1999	n/a	Bloomberg, NYU/Stern	
U.S. Long-Term Bonds		NYU/Stern US 30Yr Government Bond TR Index	01/31/1920	01/31/1999	bloomberg, NY 0/Stern	
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	
U.S. IIILEIIII-TEIIII DOIIUS	bloomberg os Aggregate bolla TK lildex	NYU/Stern US Total Return AAA Corporate Bond Index	01/31/1920	12/31/1975	bloomberg, NTO/Stern	
	Bloomberg US Corporate High Yield TR Index	Bloomberg US Corporate High Yield TR Index	07/31/1983	n/a	Plaambara Ibhataan Assasistas	
U.S. High Yield Bonds		IA Bloomberg US HY Corporate Bonds	02/28/1926	06/30/1983	Bloomberg, Ibbotson Associates, SpringTide	
		SpringTide U.S. High Yield Bonds Premium-Based Extension	01/31/1920	01/31/1926	Springride	
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	
	Bloomberg Global Aggregate ex-03D TK index	NYU/Stern All World ex-USA Government Bond Index	01/31/1920	12/31/1989	bloomberg, NTO/Stern	
U.S. REITs	MSCI US REIT GR Index	MSCI US REIT GR Index	01/01/1995	n/a	Bloomberg, Winans	
U.S. NEIIS	Wisci us hell dr illuex	Winans US Real Estate Index (WIREI)	01/01/1920	12/31/1994	bloomberg, winans	
Commodity Euturos	Bloomberg Commodity TR Index	Bloomberg Commodity TR Index	01/31/1991	n/a	Bloomberg	
Commodity Futures	Bloomberg Commodity 18 maex	Thompson Jefferies CRB Core Commodity Total Return Index	01/31/1920	12/31/1990	bloomberg	
Midstream Energy		Alerian MLP TR Index	01/31/1996	n/a		
	Alerian MLP TR Index	S&P 500 Energy Index	01/31/1946	12/31/1995	Alerian, Bloomberg	
		ExxonMobil Corp (XOM)	01/31/1920	12/31/1945	-	
Gold	LDMA Cold Drice	LBMA Gold Price	02/29/1968	n/a	LPMA Plaambara	
	LBMA Gold Price	New York Spot Bullion	01/31/1920	01/31/1968	LBMA, Bloomberg	
Cook/Illtra Chart Doods	Disambara HC T Bill 1 2 Month TD Index	Bloomberg US T-Bill 1-3 Month TR Index	12/31/1991	n/a	Diagraphera NVII/Ctorn	
Cash/Ultra-Short Bonds	Bloomberg US T-Bill 1-3 Month TR Index	NYU/Stern USA Total Return T-Bill Index	01/31/1920	11/30/1991	Bloomberg, NYU/Stern	



#### **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 1-10 (1-12 Yr) Muni Bond TR Index

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

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

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

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

**Intl Developed Bonds**: Bloomberg 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 U.S. T-Bill 1-3 Month TR Index U.S. Short-Term Muni Bonds: Bloomberg Municipal 1-3 Yr TR Index

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

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

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

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