Charge

SI-related issuance:

- Please summarize recent trends in corporate bond issuance related to super intelligence and associated businesses.
- How much of such issuance has occurred to date and is projected for the future?
- What types of investors are the primary buyers of such debt?
- To what extent does such debt issuance compete with Treasury securities for investor demand?
- What other potential effects on fixed income markets should Treasury be monitoring?

Executive summary

We observe a large tech financing cycle, but no clear evidence of broad crowding out to date. Higher Treasury yields primarily reflect growth, policy expectations and energy, not an issuance-driven supply shock.

1	**Financing needs are large and broadening.**	Nearly $600 billion of tech-related debt is projected in 2026 and more than $700 billion in 2027, with upside risk and a growing role for equity.
2	**Tech borrowers retain capacity and incentive to invest.**	Aggregate net leverage for the tech ecosystem is 0.28x versus 1.3x for the S&P excluding financials; expected returns support continued spending, although individual borrowers remain vulnerable.
3	**Capital is becoming selective, not broadly unavailable.**	Lenders are demanding stronger terms and secured structures within tech; Treasury auction results and resilient non-tech spreads show no clear evidence of broader crowding out.
4	**The investor base can expand.**	Insurers, pensions, households and foreign investors provide multiple sources of demand; modest reallocations from cash and equities could finance a meaningful share of projected borrowing.
5	**Capex-driven growth has been the principal transmission channel to rates, not overwhelming supply.**	Growth, policy expectations and energy best explain higher Treasury yields; the analysis finds little independent explanatory power from tech issuance.

- How much tech-related issuance has occurred to date and is projected for the future?

- Please summarize recent trends in corporate bond issuance related to super intelligence and associated businesses.

An accounting of the capital raising to date and forecasts through 2027.

Capex & Cash Flow ($bn)	2025 Actual	2026E	2027E
Tech Ecosystem Capex	514	1,000	1,700
Cash Flow from Operations	607	804	1,078

Debt Issuance ($bn)	2025 Actual	2026E	2027E
Hyperscaler Unsecured	136	327	360
Other Tech IG	20	20	50
IG GPU Financing		107	200
Total IG	156	454	610
HY & Loans	17	100	50
Securitized	28	32	75
Total Debt Issuance	**201**	**586**	**735**
Cumulative Debt Issuance	**201**	**787**	**1,522**

Equity Issuance ($bn)	2025 Actual	2026E	2027E
Total Hyperscaler Equity		130	100
Other Public Equity	2	61	200
Convertibles	30	60	60
Private Equity	70	250	200
Total Equity Issuance	**102**	**501**	**560**
Cumulative Equity Issuance	**102**	**603**	**1,163**

Total Issuance ($bn)	2025 Actual	2026E	2027E
Total Issuance	**303**	**1,087**	**1,295**
Total Cumulative Issuance	**303**	**1,390**	**2,685**

- **Demonstrable shortage of contracted compute is fueling upward revisions for 2027 capex.**

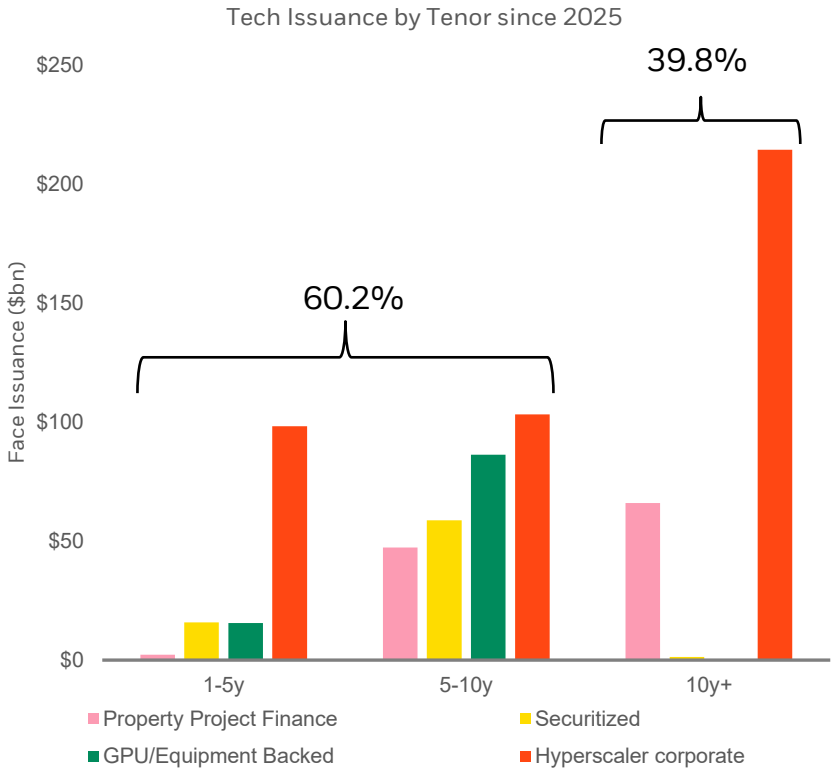
- **Tech-related free cash flow (FCF) turned negative in 2026; the expected 2027 funding gap is over $600 billion.**
- **2027 tech debt issuance estimated at $735 billion.**
- **Total 2027 capital raising estimated at ~$1.3 trillion.**
- **Secured financing is becoming an increasingly important funding tool.**
- **Equity raising (particularly IPOs) remains an integral part of ecosystem financing plans.**
- ***Planned capital raising that exceeds estimated funding gap, plus large existing cash balances, suggests concern exists about ongoing capital availability.***

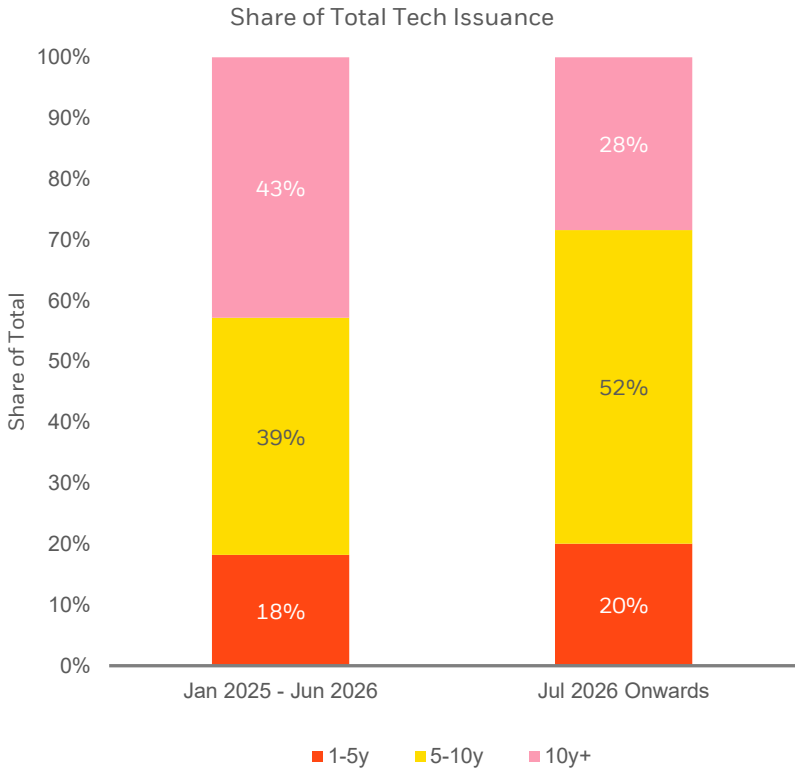
Source: Company Filings, Presenter's Calculations.

Tech debt issuance is broadening beyond long-dated corporate bonds, as secured and asset-backed structures increasingly bring financing inside 10 years.

Hyperscaler issuance has relied on the back-end of the curve but short and intermediate borrowing for the tech ecosystem as a whole, has been notionally larger than in longer tenors.

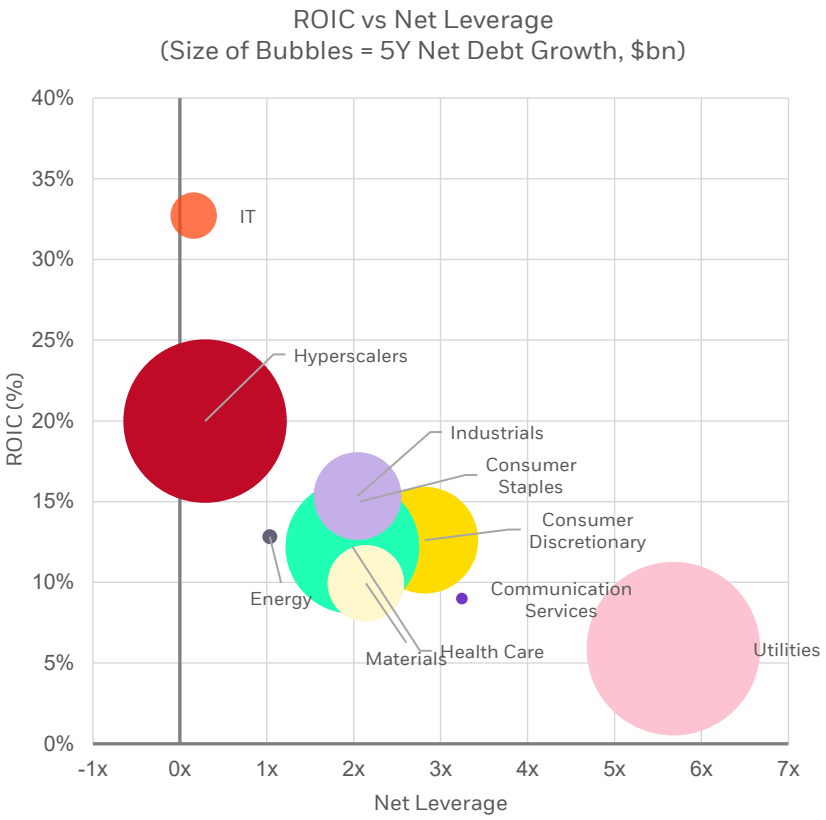
While issuance has recently shifted toward shorter maturities, additional long-dated borrowing is forecast. GPU-backed and other project debt is becoming a larger part of the mix, which has shortened the tenor of more recent issuance.

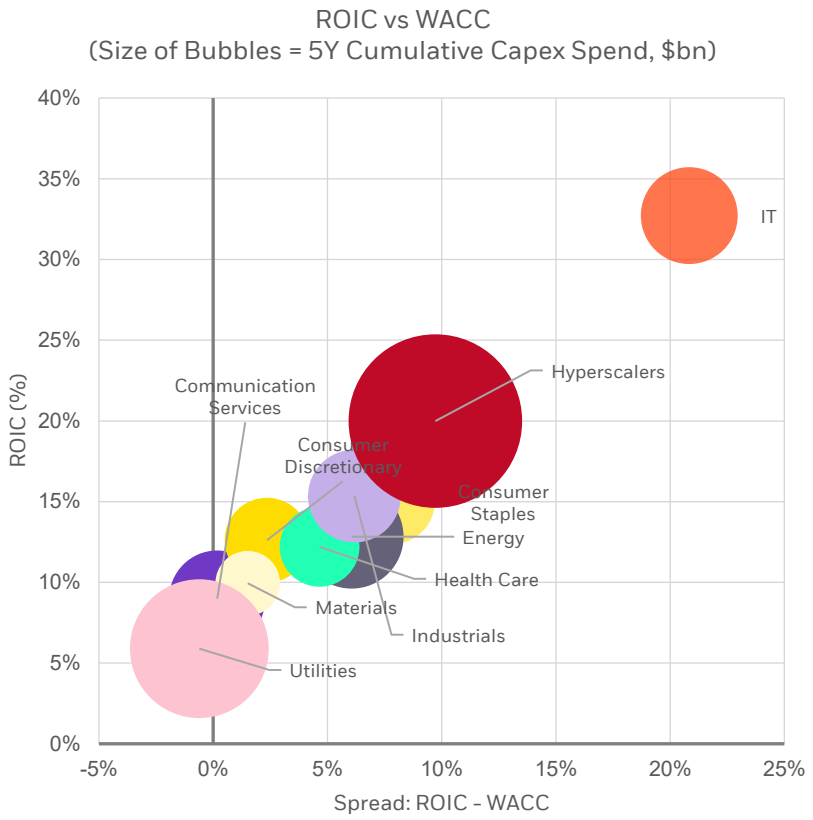




Source: Bloomberg, Securities and Exchange Commission, Dealers.

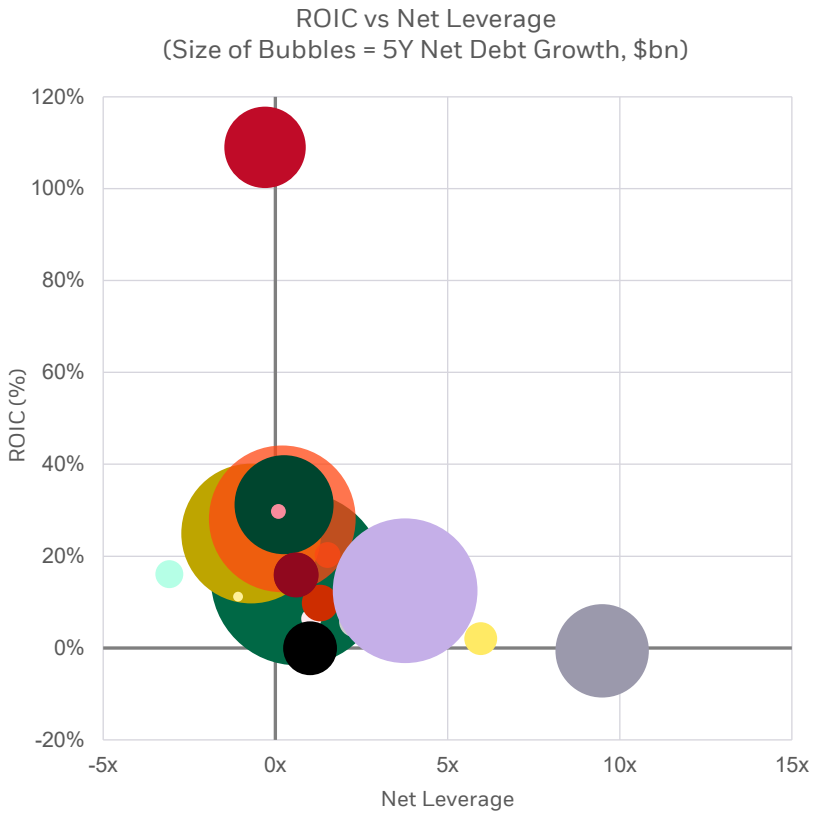
Viewed as a single ecosystem, the technology sector has both the capacity and the incentive to continue borrowing and investing.

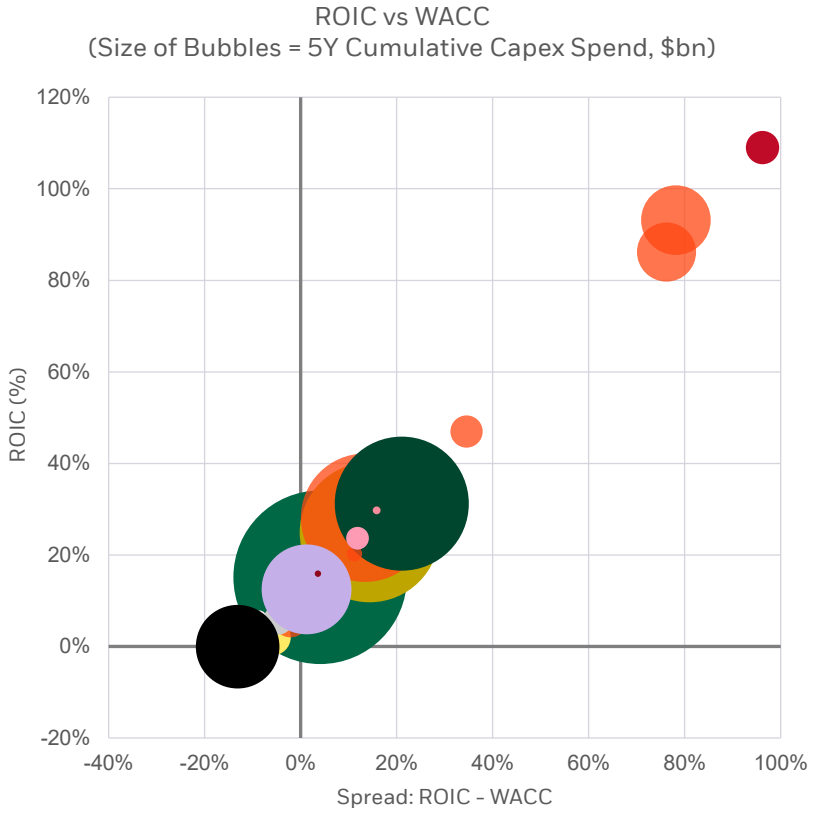




Source: Bloomberg, Company Filings, Presenter's Calculations.

A deeper dive within the broader cohort reveals a much greater rate sensitivity for many of the constituents.





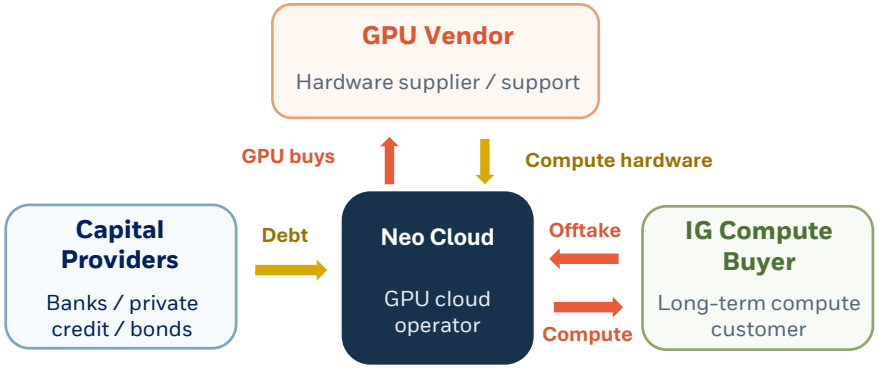
Some of the constituents are already constrained by leverage, and many are far more sensitive to rising capital costs than the largest members of the cohort.

Source: Bloomberg, Company Filings, Presenter's Calculations.

The balance sheet of the broader ecosystem provides important support for the existing and incremental compute infrastructure.

A strong ecosystem balance sheet and structural compute deficit create incentive to sustain existing compute infrastructure while new capacity comes online. While some individual compute operators might not remain viable, the physical infrastructure will continue to find demand.

Circular Financing is a feature

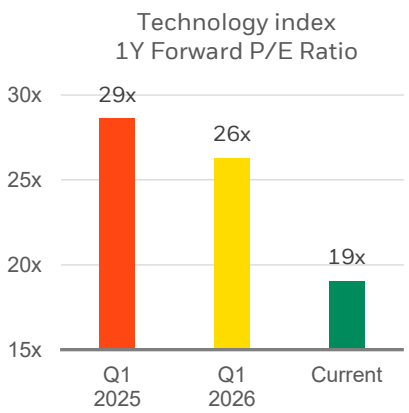


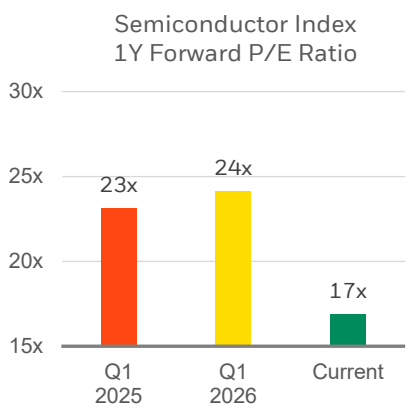
Tech 25 Totals	Q2 2026	Change Since 9/1/2025
EBITDA ($bn)	1,334	407
Cash & marketable securities	998	313
Net Debt ($bn)	373	152
Net Debt / EBITDA	0.3x	0.04x
Net Debt / EBITDA for S&P 500 ex Fins	1.3x	-0.26x

Despite the strength of the broader ecosystem, the market's increasingly discerning capital provisioning instincts are a healthy signal.

Project / Market	October 2026 Outcome
Large data center IPO candidate APAC	Withdrawn
Data center REIT IPO APAC	Postponed
Tech infrastructure IPO APAC	-32% day one
Listed data center operator APAC	-42% share price
HY neocloud	Unsecured debt trading at "distressed" levels

Equity valuations have rerated lower

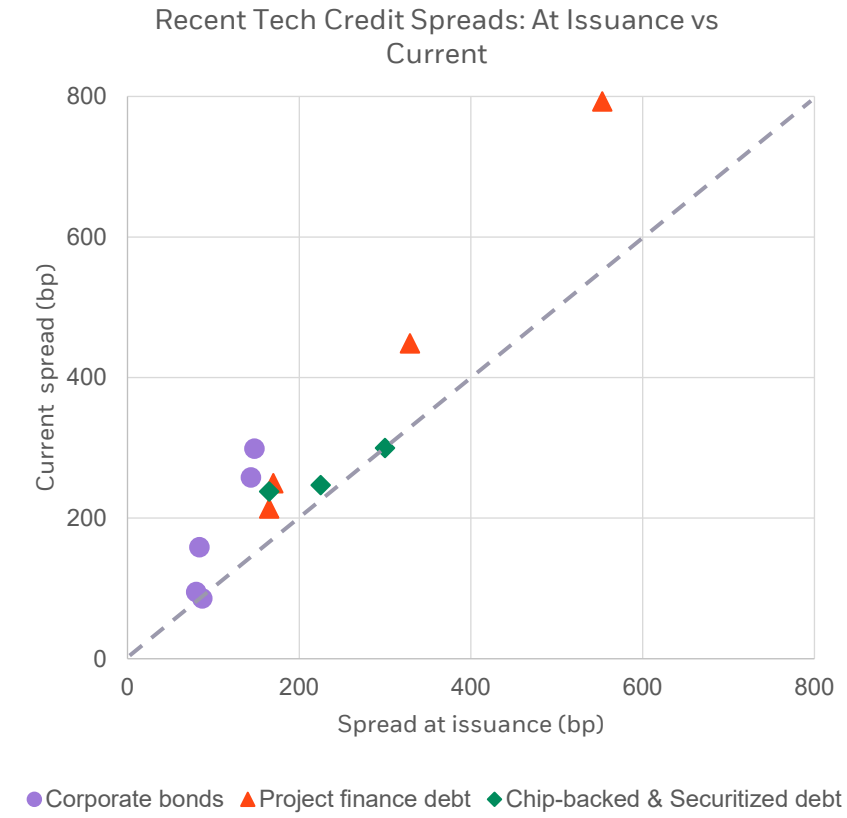




Source: Bloomberg, Company Filings and Press Releases.

As credit markets become more selective, issuance is adjusting in structure, maturity, and price to better align with lenders' demands.

Rapid spread widening of new deals in the secondary market is driving larger new issue concessions in a recurring cycle. Lenders are not only demanding more yield they're demanding more attractive structures as well.



Recent chip-backed deals introduce a different financing model, converting contracted compute demand into investment-grade debt backed by physical assets.

IG Compute Customer

Signs a long-term compute capacity / offtake agreement.

Secured Lenders

Debt backed by contracted revenue and physical collateral with rapid principal repayment.

Contracted payments

Debt proceeds

Project Company (SPV)

Owns the hardware (10,000+ GPUs) and receives contracted customer payments. Funded through debt and equity.

Buys equipment

Repayment waterfall

Hard asset Collateral

Leading-edge GPUs/TPUs, physical servers, equipment and related contractual rights.

Debt Service & Equity Incentive

Contracted revenue funds operating costs, debt service, and reserves; equity receives residual distributions.

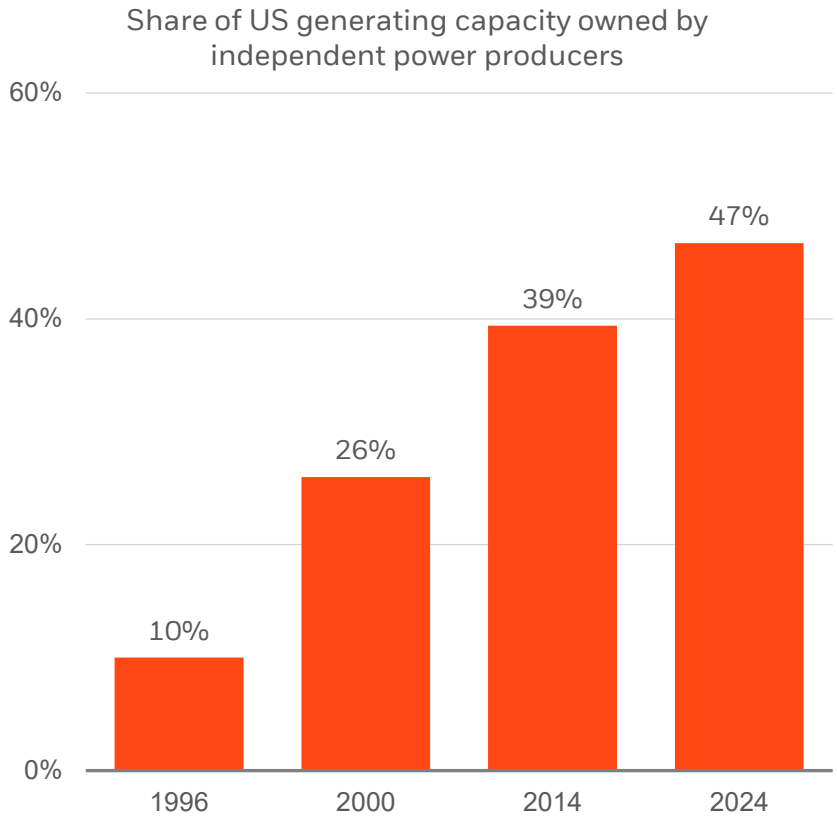
$100+ billion of chip deals moved to close during the week of October 26, 2026. Each was indicated at a significant concession to existing indebtedness.

Chip-backed structures account for 60% of the forecast increase in 2027 investment-grade tech borrowing, signaling a meaningful change in the composition of forward supply. These structures expand the investor base while allowing borrowers to continue financing investment, without relying exclusively on traditional corporate debt markets.

Source: Bloomberg, Dealers, Company Filings.

A traded market for compute could unlock new sources of financing, much as hedging markets did for merchant power.

In response to private sector calls for a liquid tradable market for compute, the Commodity Futures Trading Commission is exploring a regulatory compute trading framework, while exchanges are proposing standardized futures linked to GPU rental prices.



Why this matters for compute financing

Why it worked for power:

Liquid hedging markets made future revenues more predictable, allowing lenders to finance independent power projects.

How does it work for compute today?

GPU lenders rely heavily on creditworthy offtakers given uncertain utilization, compute prices and hardware depreciation.

What could change?

Standardized pricing and liquid, longer-dated hedges could reduce revenue risk and broaden the pool of willing lenders.

The opportunity is not simply cheaper financing, but a broader investor base able to underwrite compute assets independently.

Source: US Energy Information Administration, Congressional Research Service report RL32728, Bloomberg.

- What types of investors are the primary buyers of such debt?

Who are the main investors in US corporate credit securities?

Who owns the market today?

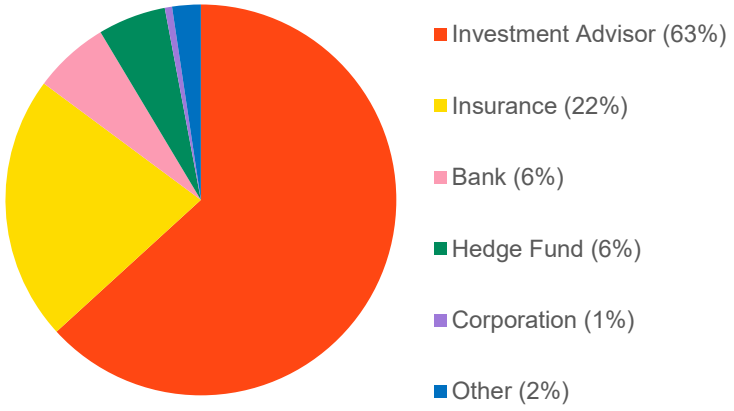
% Ownership Share by Investor Type:
Treasuries and Corporate Credit Outstanding

	US Treasuries	US Corporate Credit
Rest of World	**32%**	**29%**
Insurance	2%	**27%**
Mutual funds & ETFs	**9%**	**24%**
Pension	4%	**9%**
Banks & Credit Unions	**7%**	**6%**
Other Financial Companies	4%	3%
State & Local government	**6%**	2%
Households & Nonprofits	**10%**	1%
Fed	**14%**	0%
Money market funds	**11%**	0%
Non-fin businesses	1%	0%

89%

Who is buying the tech debt?

% Disclosed Ownership Share by Investor Type*:
Tech bonds issued since September 2025



Where could incremental demand come from?

Insurers
have the lowest allocation to fixed income in 50 years.

Pensions
are overfunded, which incentivizes shifting from equities to fixed income.

Households
have the lowest allocation to fixed income since 1973. Active ETFs are broadening access.

Foreign Investors
have sought the depth and breadth of US debt markets.

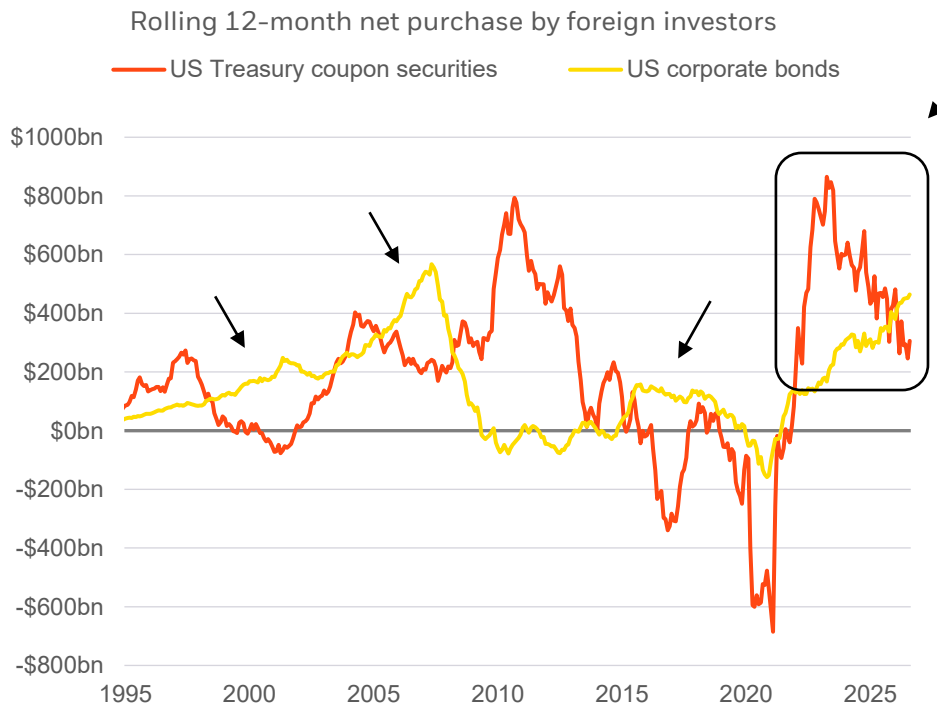
Source: Federal Reserve (Z1 data), Bloomberg, Company Filings, Presenter's Calculations.
*Note: % Disclosed ownership share represents the share of identified bond holdings attributable to each investor type, based on publicly available CUSIP-level holdings disclosures compiled by Bloomberg and aggregated by Presenter. Data do not capture holdings of investors that do not publicly disclose CUSIP-level positions. Classification of investor type is based on the reporting firm, which may not reflect the ultimate end-investors.

Foreign buyers of US fixed-income assets have accelerated purchases this year. Buyers are choosing higher-yielding credit securities over Treasuries at the margin.

Annual net purchase of US fixed income by foreign investors ($bn)

2018	2019	2020	2021	2022	2023	2024	2025	2026 YTD (as of 8/31)	2026 YTD annual-ized
292	182	-225	544	1222	1100	877	877	671	1006

Foreign net purchases of US fixed income are accelerating in 2026.



We are seeing a 2026 reduction of Treasury purchases against an increase in corporate bond purchases from foreign investors.

This is consistent with other periods of strong growth and likely reflects a reaction to recent performance more than issuance.

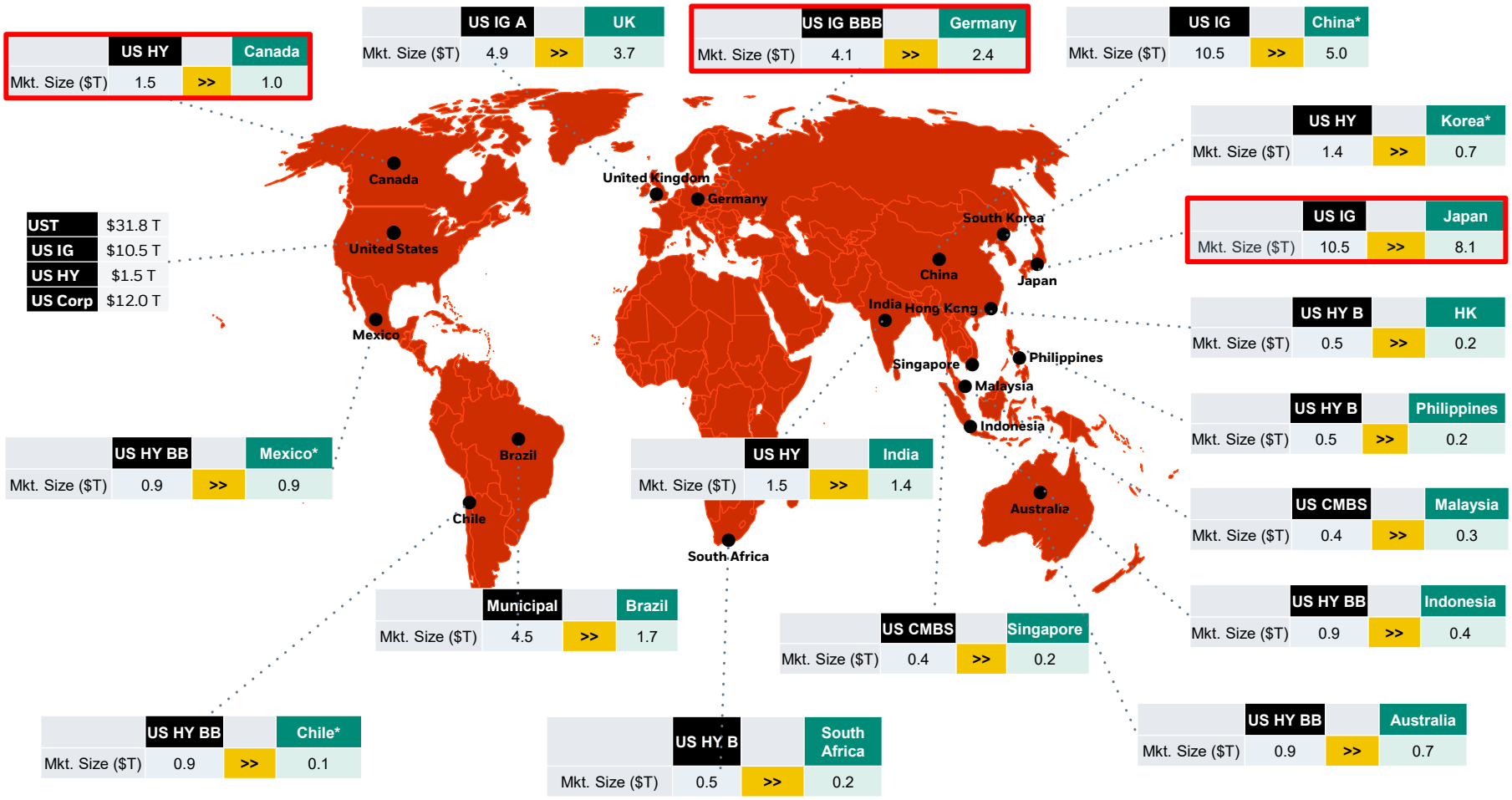
We saw this same type of flow in the 1990s, the 2000s, and the mid-2010s briefly, alongside a concurrent rise in risk-free rates.

Return since 12/31/2020 (through 9/30/26)	
7-10Y US Treasury Index	-12.3%
1-5Y US Treasury Index	+6.9%
1-5Y US IG Credit	+12.6%
1-10Y US IG Credit	+6.6%
US HY Credit	+24.8%

Source: Bloomberg, US Department of the Treasury (TIC data), Presenter's Calculations.
Note: Net purchase of US fixed income securities comprises Treasury notes and bonds, US government corporations and Federal agency bonds, and US corporate bonds.

Foreign investors seek the breadth and depth of US fixed-income opportunities that simply do not exist elsewhere.

The scale of US fixed income markets is unmatched globally, with individual corporate credit segments larger than entire sovereign bond markets.

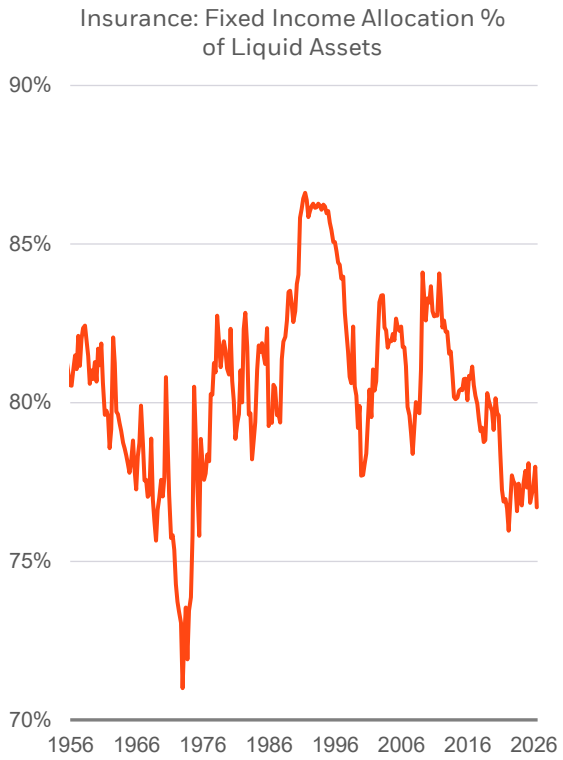


Source: Bloomberg, S&P, SIFMA.

Pensions and insurance companies together hold $32 trillion in liquid assets.

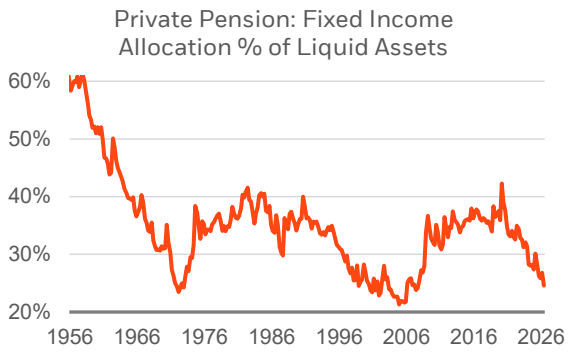
Insurance companies hold $10 trillion in liquid assets.

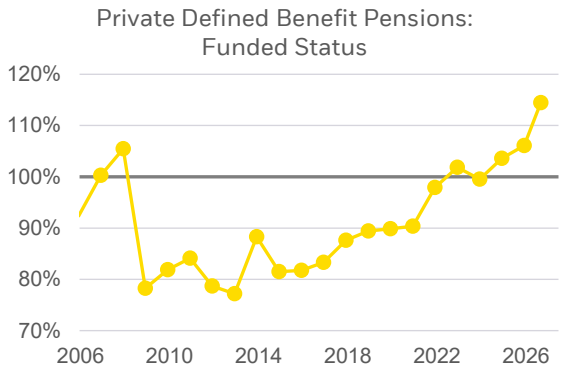
Insurance companies have the lowest allocation to fixed income in a generation.



Private pension plans hold $14 trillion in liquid assets.

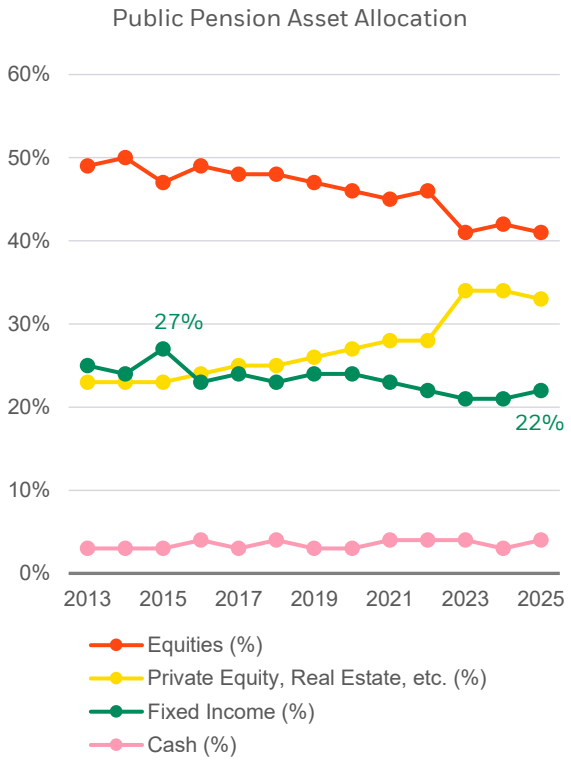
For private defined benefit pension plans, an improved funded ratio may encourage a higher fixed income allocation.





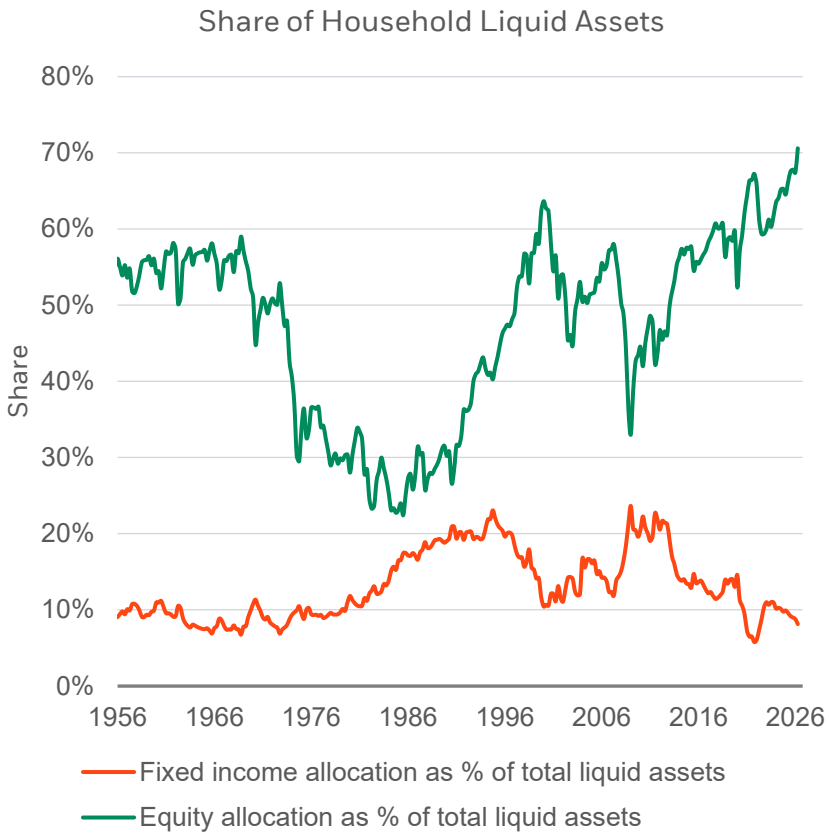
Public pension plans hold $8 trillion in liquid assets.

Public pension plans' fixed income allocation is also near the low end of the observations over the past decade.



Source: Federal Reserve (Z1 data), Milliman, Presenter's Calculations.
Note: Liquid assets include cash, deposits, money market holdings, debt securities, corporate equities, and investment fund shares. Investment fund holdings are allocated proportionally between fixed income and equities based on the relative value of reported debt securities and corporate equity holdings.

The Household liquid balance sheet is another potential funding source for large future fixed income issuance.



US Household Liquid Assets are $95 trillion
(relative to a $10 trillion US IG market).

Fixed Income is 8% of Liquid Assets,
the lowest since 1973. It was around 24% in 1994 and the early 2010s; the 1990s and 2010s averaged around 15%.

Equities are 71%, a record high.

Source: Federal Reserve (Z1 data), Presenter's Calculations.
Note: Liquid assets include cash, deposits, money market holdings, debt securities, corporate equities, and investment fund shares based on Z1 data (Table S1M.s). Investment fund holdings are allocated proportionally between fixed income and equities based on the relative value of reported debt securities and corporate equity holdings. This does not include the look-through from households' pension and insurance assets.

A reallocation of liquid assets from cash and equities into bonds could be impactful on borrowing costs. Interest received is another potential source of wherewithal.

A 1% reallocation of assets from cash and/or equities and into bonds would raise $2 trillion.

	Assets	Hypothetical $ Demand from a 1% Incremental Allocation to Fixed Income	Pro-Forma Fixed Income Allocation for a 1% Incremental Allocation to Fixed Income
US Households	$95 tn	**$1.0 tn**	9%
Rest of OECD*	$70 tn	**$0.7 tn**	22%
US Pension & Insurance	$32 tn	**$0.3 tn**	42%
Total	**$197 tn**	**$2.0 tn**	19%

Annual coupon received by debt investors has doubled since the 2010s.

Source: Federal Reserve, Bloomberg.
*Note: 2024 OECD data use look-through. 2024 OECD household financial assets, excluding the US. Pension entitlements, life insurance/annuities and investment fund shares are allocated 60% to equities and 40% to fixed income. Non-life insurance is excluded to avoid double counting.

Household access to credit markets has improved dramatically.

Before 2002 there were no public trade prints; even after, the odd-lot buyer still paid an onerous toll to invest directly in this sector.

1.4%

round-trip cost on a $20,000 corporate bond trade vs 0.08% on $5 million block (2003-05)

0.66%

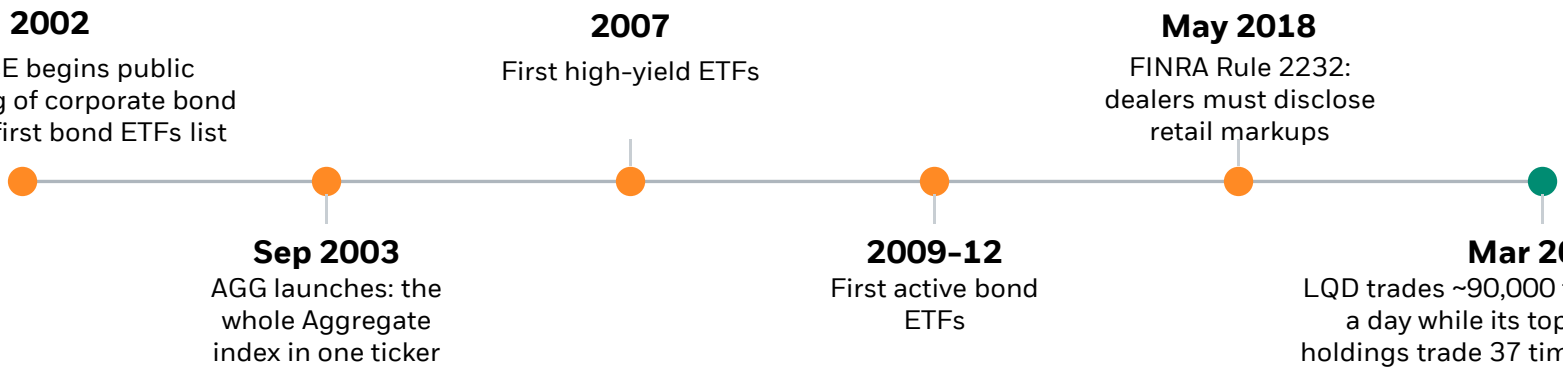
median dealer markup on retail-size IG trades, 95th percentile 2.15% (2014)

<1%

of 21,000 registered corporate bonds trade on a given day (2019)

$0.56 vs $0.18

Odd-lot vs block effective bid-offer spreads (2023-24)



Households have dramatically reduced their direct corporate bond holdings: direct holdings fell from 8.5% of corporate bonds outstanding in 2000 to 1.2% in 2025, while ETFs went from zero to 8.0% and mutual funds from 7.4% to 15.1%.

Active ETFs have broadened access to non-benchmark assets that sit at the heart of the contemporary financing.

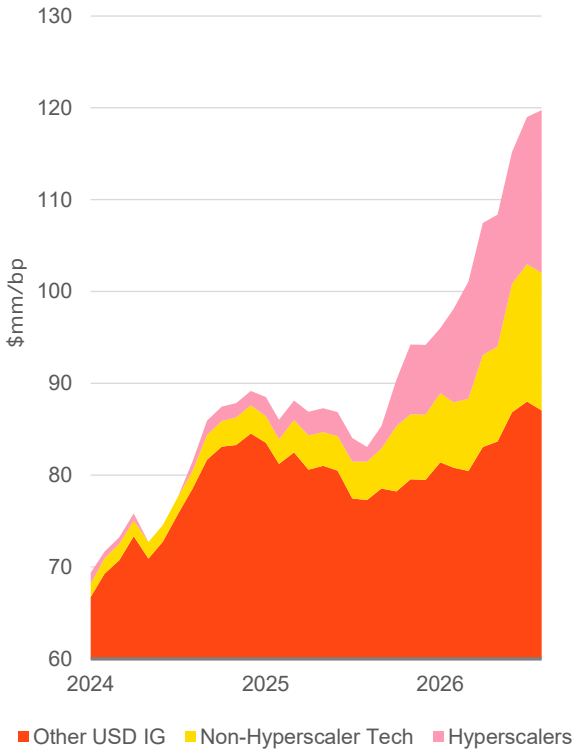
Source: FINRA, Bloomberg, Federal Reserve.

- To what extent does such debt issuance compete with Treasury securities for investor demand?

Putting the pace and scale of issuance in perspective.

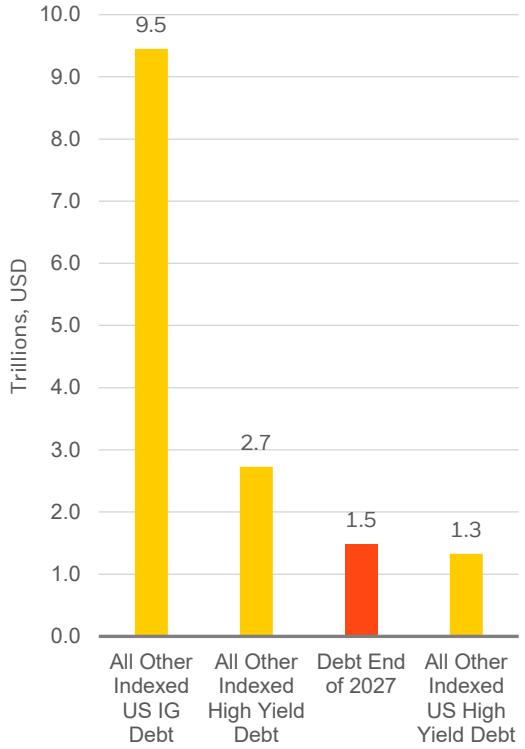
Tech accounts for 70% of the increase in IG issuance since 2024 and may exceed 50% of total notional IG issuance in 2027.

Trailing 1Y Average Monthly US IG Issuance DV01



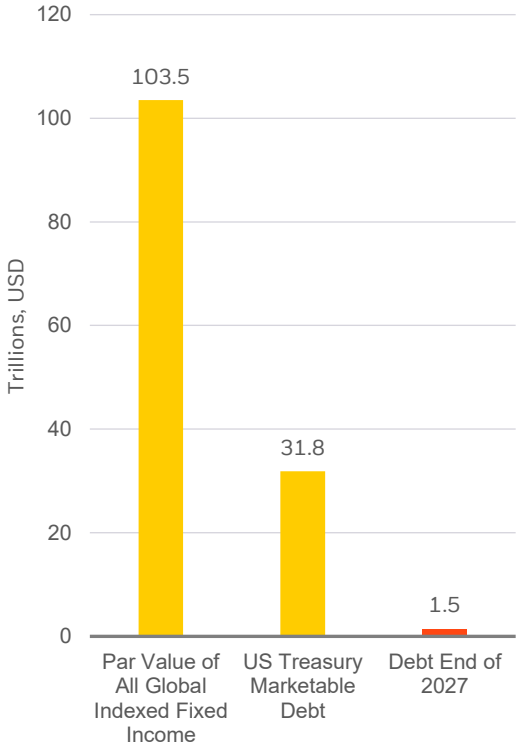
By the end of 2027, outstanding tech debt will be larger than the entire US HY index market cap.

Tech-related Debt Outstanding relative to Corporate Markets



Even after large 2027 tech debt issuance, overall tech debt will be a small fraction of broader global Fixed-Income markets.

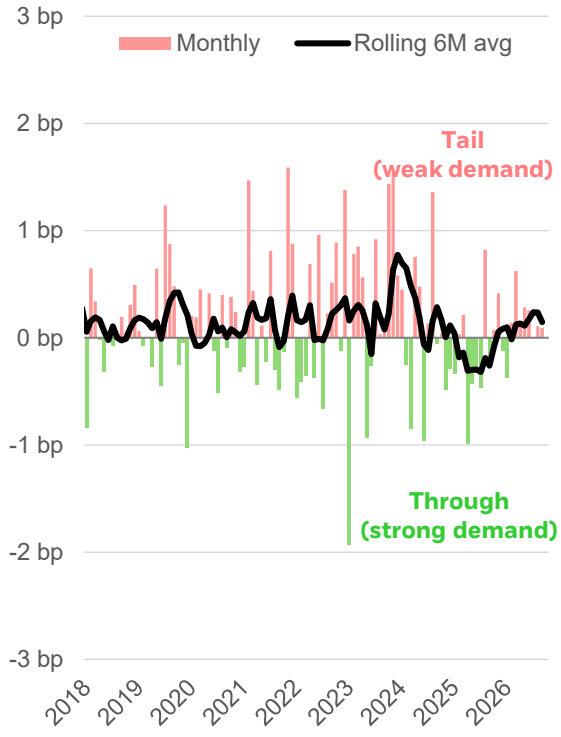
New Tech-related Debt relative to Broader Markets



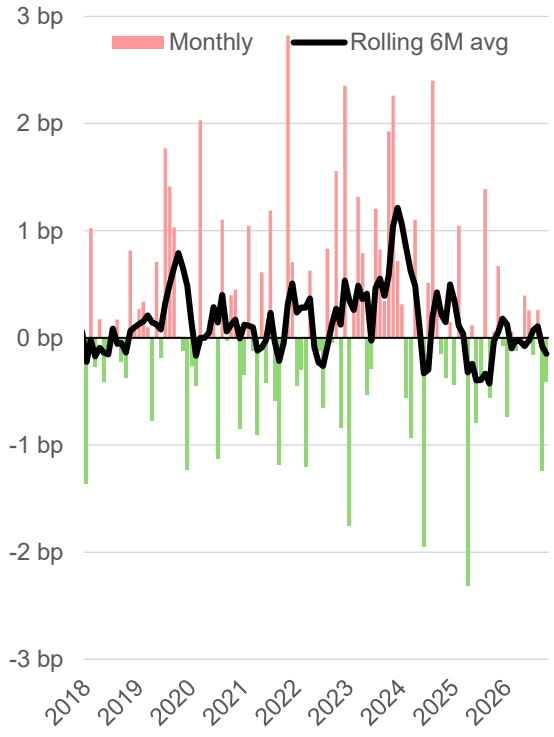
Source: Bloomberg, Dealers.

Treasury auction results do not show 2026 tech-related issuance crowding out Treasury demand at the long-end.

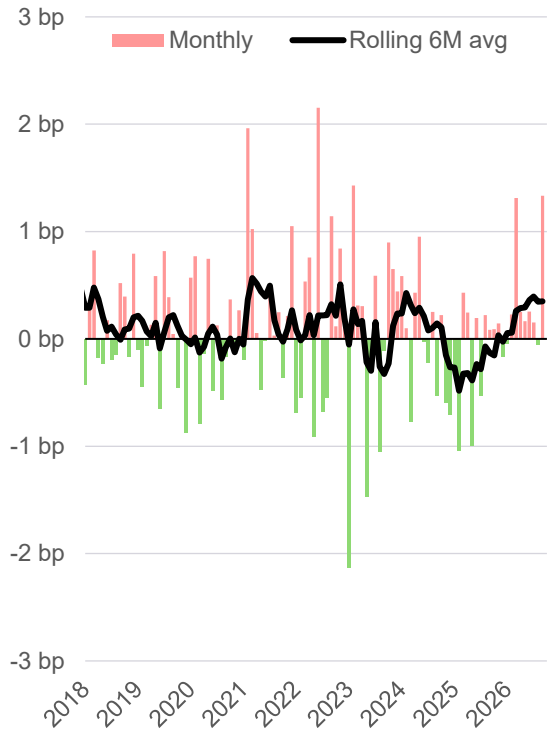
All nominal coupon Treasuries:
auction tail vs through



10-30Y nominal Treasuries:
auction tail vs through



2-7Y nominal Treasuries:
auction tail vs through



Source: Bloomberg.
Note: Bars show the DV01-weighted average auction result (bp of tail vs through) for auctions that occurred during each month

Tech issuance has little independent explanatory power for Treasury yield movements.

A regression analysis of 10y Treasury yield moves suggests tech issuance does not have a statistically significant effect on daily moves of Treasury yields after accounting for front-end yield moves, oil price moves, and Treasury supply.

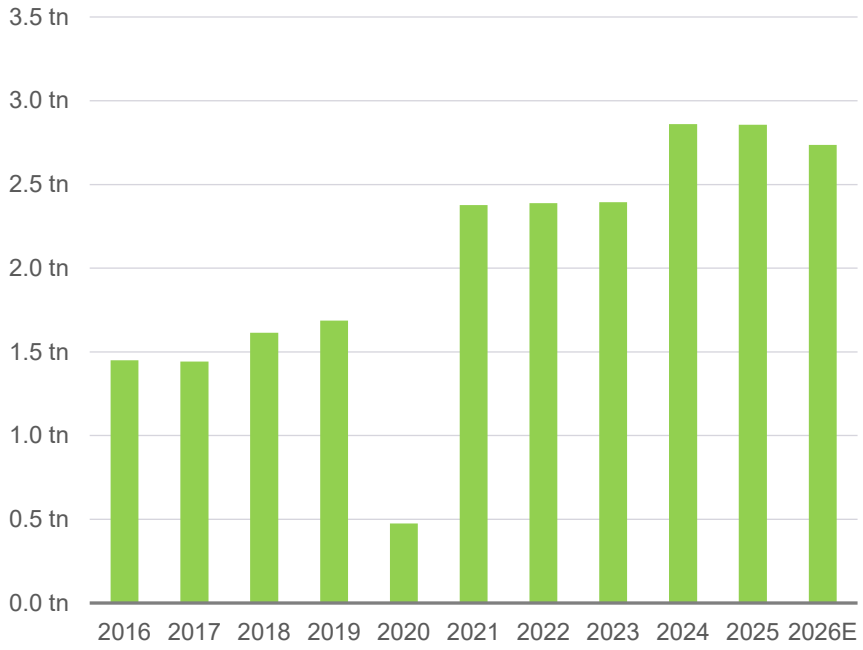
Regression of 3-day change in 10y Treasury yield against the following variables. Sample is January 2026 to present.

	Statistical significance*		
3-day change in 2-year Treasury yield	Highly Significant	T = 14	Growth and Fed expectations are clearly the dominant drivers of yield moves. These explain the majority of the yield moves.
3-day change in Oil price	Significant	T = 2.0	Energy market volatility is also a relevant factor.
US Treasury issuance dv01 (3-day sum)	Marginally Significant	T = 1.8	Treasury auctions marginally impact post-auction valuations.
Tech credit issuance dv01 (3-day sum)	Not Significant	T = -0.5	Tech credit issuance does not explain a statistically significant move in Treasury yields beyond the above-mentioned factors.

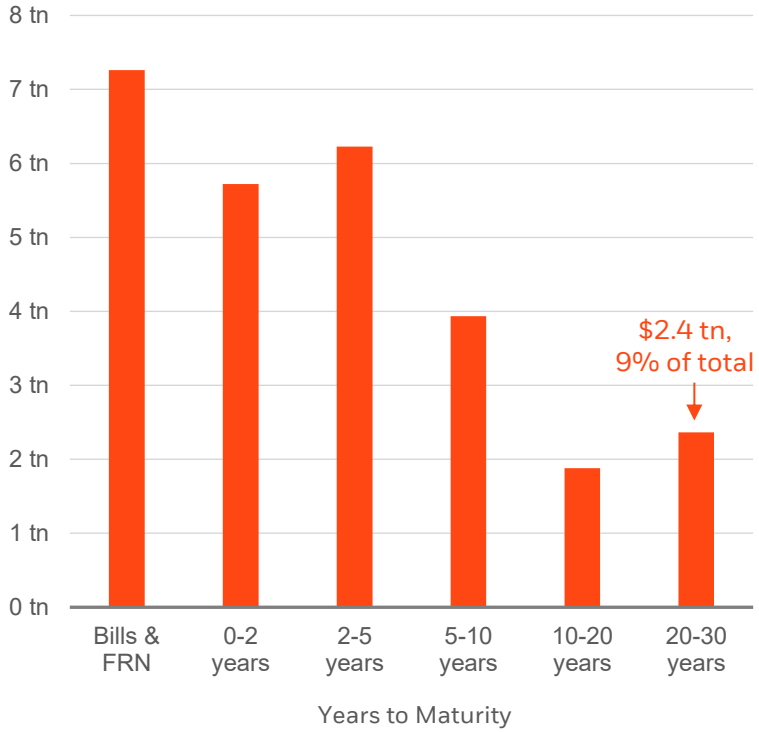
Source: Bloomberg, US Department of the Treasury, Presenter's Calculations.
*Note: Characterization of statistical significance is based on the absolute value of t-stat: highly significant (greater than 2.58), significant (1.96–2.58), marginally significant (1.65–1.96), and not significant (less than 1.65).

Treasury duration supply has not increased since 2024; 20+ year marketable Treasury debt is $2.4 trillion. Technicals in long-dated Treasuries are structurally sound.

Annual duration net supply from Treasuries that the market needs to absorb* (in 10-year Treasury equivalents)

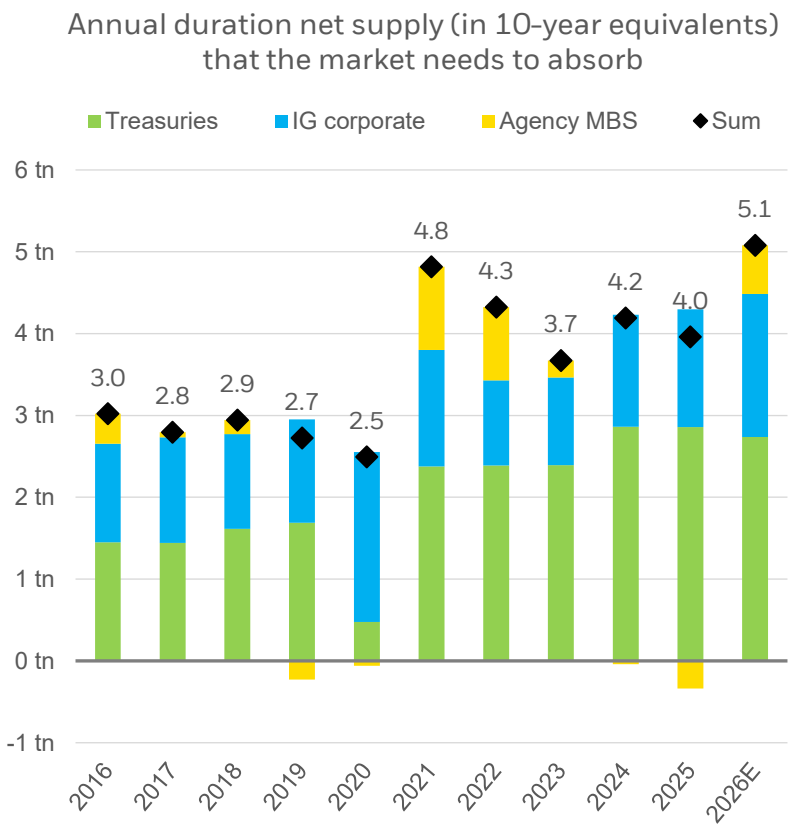


Marketable Treasuries outstanding excluding Fed's holdings by years-to-maturity buckets



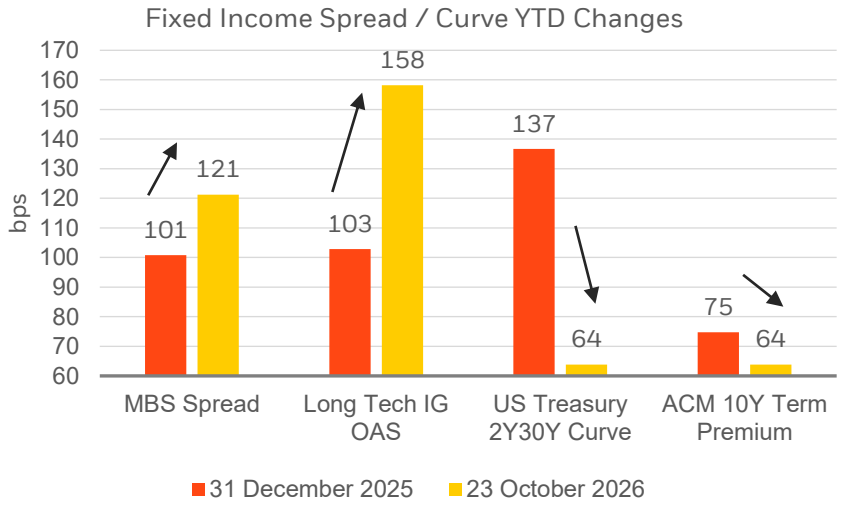
Source: US Department of the Treasury, Federal Reserve, Presenter's Calculations.
*Note: 2026 estimate assumes the following for the remainder of the year: 1) a continuation of roughly $6bn per long-end buyback operation; 2) no change in auction sizes of Treasury coupon securities.

Duration supply has increased in IG and MBS, which is where we have seen re-pricing (in spreads).



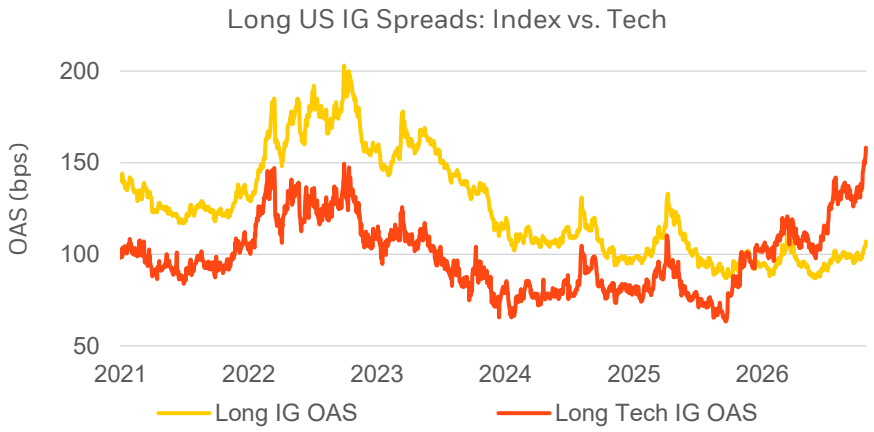
Duration supply from the US fixed income market (in 10-year Treasury equivalents): <u>5.1tn in 2026 versus 4.0tn in 2025.</u>

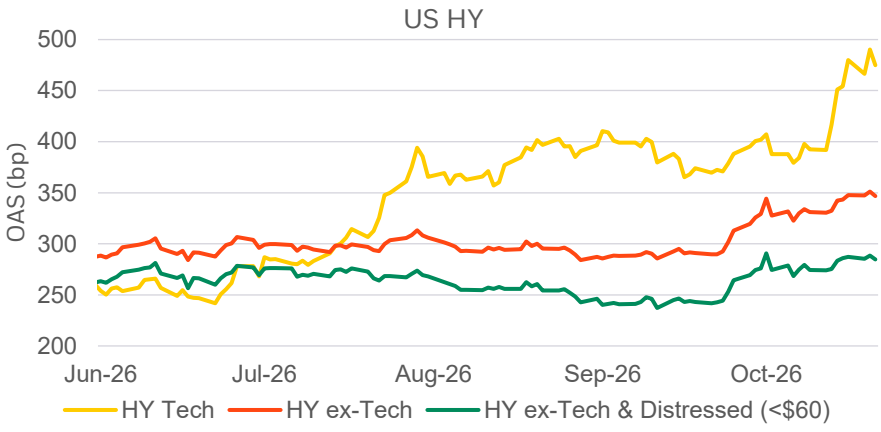
- **Tech IG and MBS accounted for the entirety of the increase - this is where we've seen spread widening.**
- This duration supply might have put some marginal upward pressure on Treasury yields but it hasn't been the primary driver of the rates selloff YTD.

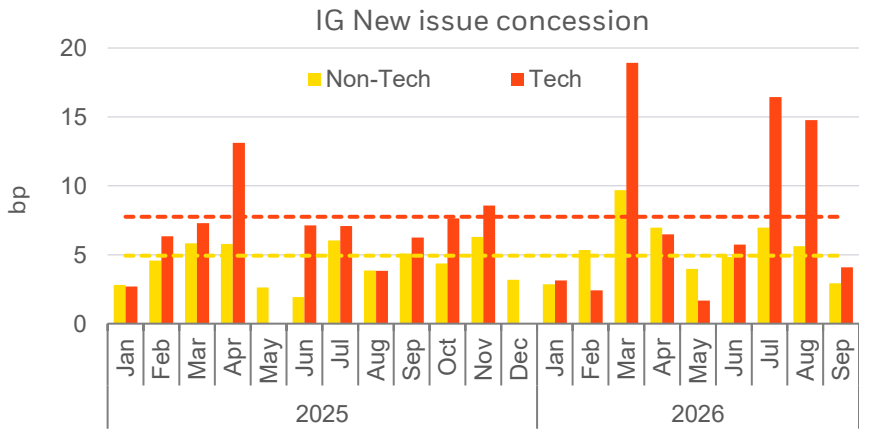


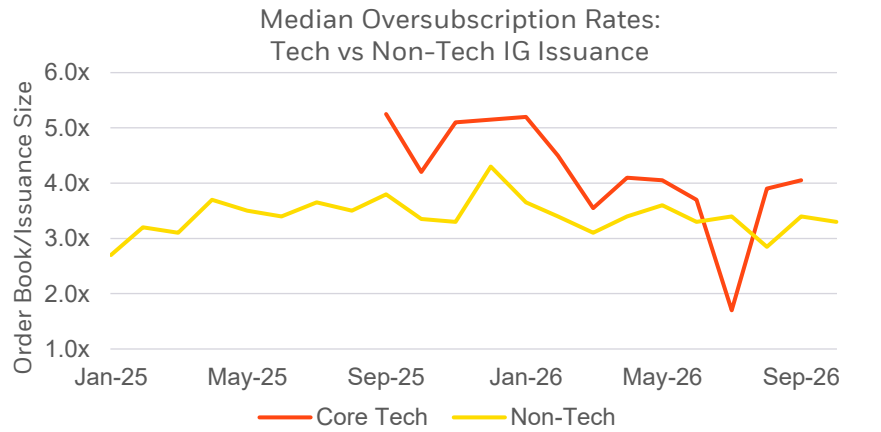
Source: Bloomberg, US Department of the Treasury, Dealers, Presenter's Calculations.
*Note: Treasuries and Agency MBS numbers adjust for Fed's holdings as well as Treasury's buybacks so they represent the supply that the market needs to absorb. Treasury supply estimates for 2026 assume no changes to current policy: approximately $6bn buyback per long-end buyback operation and unchanged Treasury coupon auction sizes through year-end. Agency MBS numbers include organic supply as well as duration extension/contraction from agency MBS held by convexity-hedgers (assume 40% of agency MBS is held by convexity-hedgers ex Fed), and do not adjust for GSE purchases.

There are no clear signs yet of crowding out within the broader credit market from tech issuance.









Secondary spread widening has been mostly contained to tech debt, with some residual widening in rate-sensitive credits.

Unusually large new issue concessions have been largely contained within the tech sector.

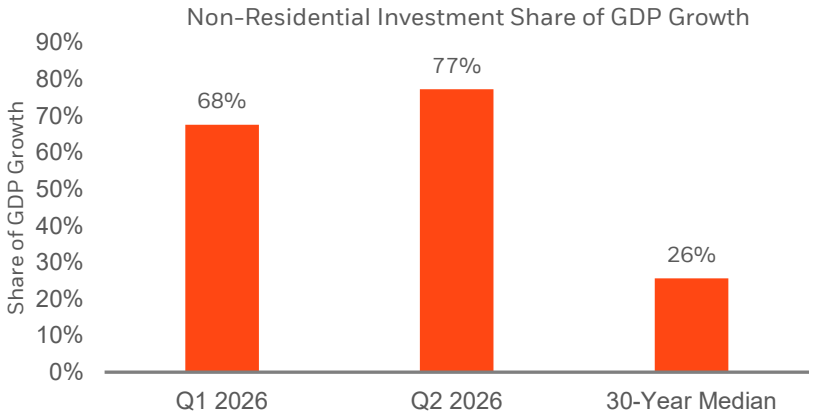
Demand for non-tech credit new issuance as measured by order book-to-deal-size ratios has been steady throughout 2026.

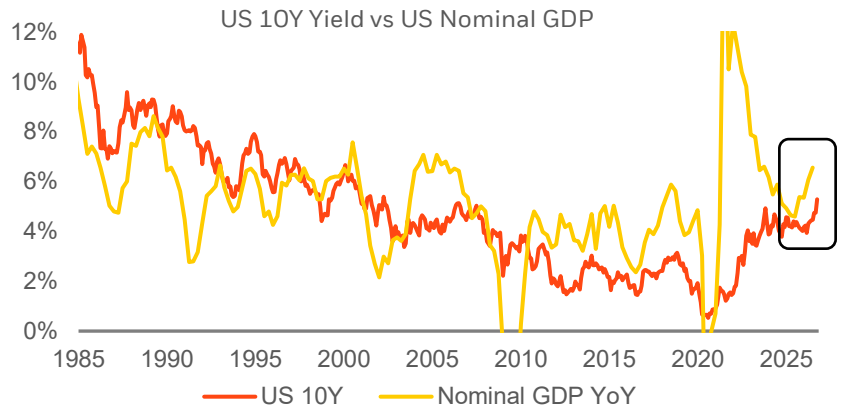
Source: Bloomberg, Dealers.

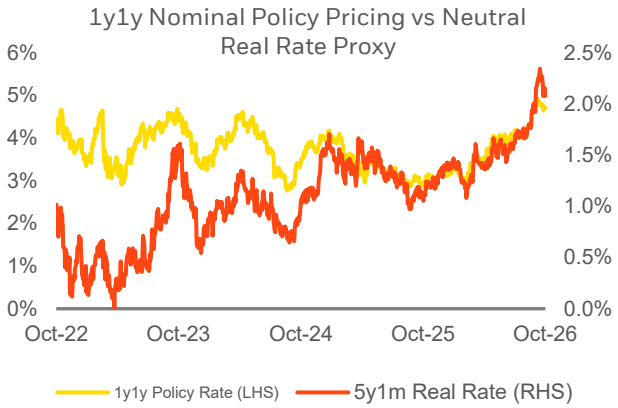
- What other potential effects on fixed income markets should Treasury be monitoring?

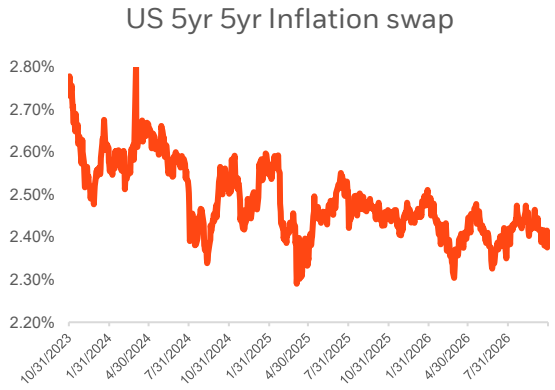
The tech impact on rates is from higher growth, not crowding out. The repricing has been in policy expectations and real rates, not an isolated long-end supply shock.

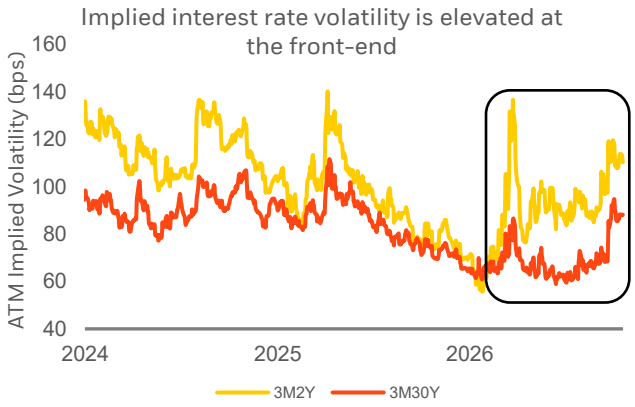
Tech investment is contributing disproportionately to economic growth, lifting real rates and financing costs through the growth channel rather than direct crowding out. Repricing of rates has come primarily at the front-end and looks consistent with stronger growth alongside anchored inflation expectations.











Source: BEA, Bloomberg.

Conclusions

The capex financing cycle is large, accelerating, and broadening. Tech-related debt issuance is projected to rise from approximately **$586 billion in 2026 to $735 billion in 2027**, with upside risk and an increasing role for secured borrowing and equity. Intentions to raise excess capital above projected funding gaps may suggest concern over eventual capital scarcity.

The technology ecosystem retains both the capacity and the incentive to invest. Low aggregate leverage and expected returns above the cost of capital support continued borrowing and spending, but the strength of the overall cohort should not obscure the vulnerabilities of individual borrowers.

Capital provisioning is becoming more discerning, not yet broadly unavailable. Lenders are demanding more favorable terms and secured structures, while lower-rated borrowers face greater scrutiny; crowding out is most evident within the technology ecosystem rather than across the broader Fixed Income markets.

The investor base has capacity to finance the next phase. Insurers, pensions, households, and foreign investors provide multiple sources of demand, while even modest reallocations from cash and equities into fixed income could finance a meaningful share of projected borrowing.

There is no clear evidence to date that tech issuance is crowding out Treasuries or non-tech credit. Treasury auction results and resilient non-tech credit spreads suggest that markets are absorbing the financing wave, with supply-related repricing concentrated within the technology ecosystem rather than impairing access to capital more broadly.

Higher Treasury yields are primarily a growth, policy-expectations, and energy story, not an issuance-driven supply shock. The analysis finds little independent explanatory power from tech issuance; the durability of capex-led growth remains more important for the rates outlook than financing volumes alone.