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Flows & Liquidity

Bottoming out?

- **Our overall equity positioning metric points to significantly lower equity positioning currently from the recent peak in mid-September.**
- **This suggests that while some of the near-term headwinds we noted last week remain in place, there has been some signs of adjustments in positioning that could start to limit downside from here.**
- **Neoclouds are neither a critical nor large segment of the overall AI ecosystem.**
- **Little sign of diversification flows out of the US at the aggregate level.**
- **While various US regulatory bodies enact rules to encourage institutional participation in the crypto ecosystem, somewhat offsetting the negative from the failure of the Congress to pass the Clarity Act, elevated political and legal risk premia are likely to persist over the longer term until comprehensive market-structure legislation is eventually passed.**

Global Markets Strategy

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Cross Asset Fund Flow Monitor

Current level shows the latest percentile of weekly flows; Min is denoted by 0 and Max by 1. As of 14th Oct 26.

MF & ETF Flows	Min	Max	4 wk avg ($bn)	2025 avg ($bn)
All Equities			2.0	8.1
All Bonds			7.7	11.3
US Equities			-3.6	3.5
US Bonds			5.6	4.3
Non-US Equities			5.6	4.6
Non-US Bonds			2.1	7.0
US HG Bonds			13.9	3.4
US HY Bonds			-0.3	0.4
US Lev. Loans *			1.0	0.0
US MMFs			0.0	4.0
EM Equities			-0.7	0.9
EM Bonds			0.56	0.50
Japan Equities			-0.5	-0.1
China Equities			-0.62	-0.15
Europe				
Europe Equities			0.1	0.9
Europe Bonds			-0.2	4.3
Europe HG Bonds			-0.1	0.9
Europe HY Bonds			-0.11	0.17
Europe MMFs			1.0	3.8
Other Equities			7.00	3.00

Source: Lipper, ICI, Bloomberg Finance L.P. and J.P. Morgan Flows & Liquidity.
* US LL historical flows are monthly averages converted to weekly for comparison. China onshore A-share ETFs have been excluded.

Cross Asset Positioning Monitor

Current level shows the latest percentile, Min is denoted by 0 and Max by 1.

As of 20-Oct-26	MIN	MAX	Current percentile
Equities			0.65
Govt Bonds			0.52
Credit			0.12
Dollar			0.85
Commodities ex Gold			0.78
Gold			0.39
Bitcoin			0.84
EM Equities			0.81
EM Bonds/FX			0.05
Japan Equities			0.59
Europe Equities			0.58
US Equity Sectors:			
Energy			0.77
Materials			0.54
Industrials			0.34
Discretionary			0.65
Staples			0.31
Health Care			0.57
Financials			0.22
Technology			0.53
Communication Services			0.43
Utilities			0.36

Source: J.P. Morgan Flows & Liquidity.
Cross Asset Positioning Monitor aggregates across the various position indicators of Appendix ranging from positioning proxies across various futures contracts, momentum signals as proxies of how trend-following funds/ CTAs are positioned, mutual fund betas as proxies of how mutual fund managers are positioned, risk parity fund positioning and leverage proxies, hedge fund betas as proxies of how hedge fund managers are positioned, client surveys, asset allocation estimates of private non-bank investors at global level, short interest indicators, etc.

See page 28 for analyst certification and important disclosures.

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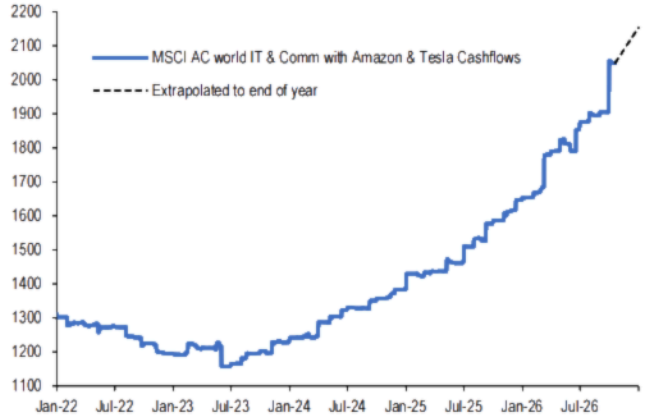
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- The funding concerns around neoclouds (specialized AI infrastructure providers that rent out compute for AI workloads) have taken center stage over the past week. Is the funding model of neoclouds unsustainable? How important are neoclouds for the overall AI ecosystem? Are concerns about neoclouds threaten overall AI capex financing warranted?
- Our colleagues in credit research covering publicly listed neoclouds (see Technology & Telecom Weekly by Egan et al.) have answered the first question: as funding costs via high yield debt markets rise for publicly listed neoclouds, they might need to become more inventive with their financing relying less on company debt and shifting more towards equity financing and project specific debt. And our colleagues in equity research note that while an increase in the cost of capital given concerns in debt markets and the rise in yields more broadly could limit headroom for return generation, the favorable demand backdrop for compute can also enable some passing on of the cost through to customers (CoreWeave, Chatterjee et al, Oct 16th).
- But even in an adverse scenario where this thesis does not play out and eventually the funding model of publicly listed neoclouds becomes unviable because of the timing mismatch between their capex and revenues, we do not believe that the AI capex cycle will be derailed for two reasons.
- First, publicly listed neoclouds are a relatively small segment of the overall AI ecosystem. From the roughly $2.2tr of cash flows (Figure 1) and $1.8tr of capex (Figure 2) projected by analysts for publicly listed tech companies globally for this year, neoclouds account for around $30bn and $80bn, respectively. In other words, the build-up of AI infrastructure by neoclouds could be absorbed by other tech companies with stronger balance sheets and more diverse revenue sources, such as hyperscalers.

Figure 1: Tech sector trailing 12m operating cash flows

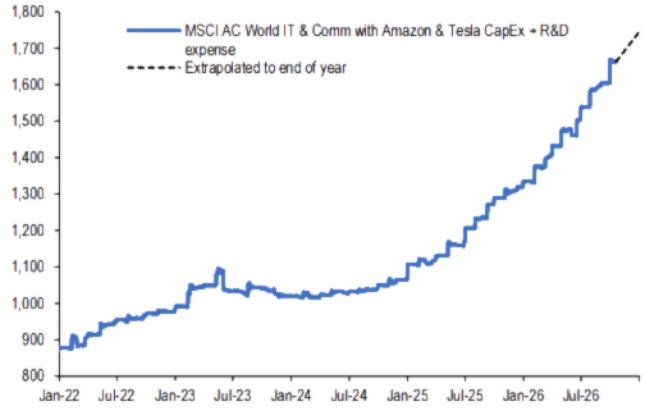
In $bn. 2026 represents a projection based on the YTD trajectory.



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Figure 2: Tech sector trailing 12m Capital expenditures and R&D Expenses

In $bn. 2026 represents a projection based on the YTD trajectory.



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

- Second, the tech sector overall is still running a financing surplus of around $400bn for this year as cash flows exceed capex. Therefore, at an aggregate level, the tech sector does not need external financing. And it might be able to run a surplus for years to come. Figure 3 shows that in a hypothetical scenario where the tech sector grows its capex by 25% a year in the five-year period to 2030, and grows its cash flows by 20% a year, there could still be a slight surplus by 2030.

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Figure 3: Financing gap projections for the tech sector

In $bn.

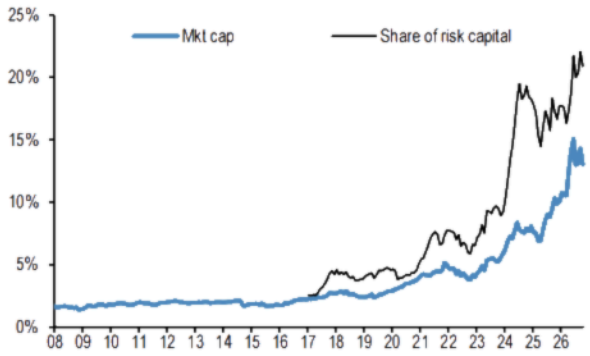
	2025	2026	2027	2028	2029	2030
cash flows	1652	2150	2640	3130	3621	4111
capex	1336	1750	2332	2914	3495	4077
cash flows-capex	316	400	308	217	125	34
financing gap after buybacks/dividends	-384	-500	-696	-936	-1176	-1284
net debt required to close the financing gap	384	500	696	936	1176	1284
net debt raised via loans/SPVs/private credit	230	175	348	468	588	642
net debt raised via bond issuance	154	325	348	468	588	642

Source: J.P. Morgan Flows & Liquidity.

- Why is the tech sector issuing debt then? As shown in Figure 3, the tech sector is still deploying a large amount of share buybacks and it is mostly because the tech sector seeks to maintain these buybacks even as it undertakes more capex that is in need for external financing. In an adverse scenario where current funding concerns start spreading to other tech companies beyond neoclouds, tech companies would in principle be able to respond by postponing buybacks and engaging in more circular financing, i.e. the tech companies with financing surpluses such as chip makers to help fund tech companies with financing deficits such as neoclouds. In other words, by running a financing surplus in aggregate, the tech sector holds internal funding backstops.
- And as we argued previously in our publication (see F&L, August 20th) the AI capex and cash flow cycle is underpinned by spending on AI by large enterprises which based on surveys could reach $1.5tr globally this year.
- It also important to put the latest correction in AI infrastructure stocks into the context of a higher frequency of semiconductor VaR shocks. As we argued in our publication last June (F&L, Jun 17th), since the second quarter of this year we have likely entered a new phase in equity markets where semiconductor VaR shocks would become more frequent even if the fundamentals of the AI cycle remain robust. This is because of the meteoric rise in the share of semiconductor stocks including memory stocks in overall equity markets. VaR shocks do not necessarily need to have a fundamental trigger, but rather often reflect positioning adjustments. A combination of two structural forces, rising equity allocation and low net equity supply, has helped induce lower equity volatility, meaning that investors with risk budgets such as VaR frameworks have tended to take larger positions when vol is low and are forced to cut positions as market vol rises, which can trigger self-reinforcing volatility-induced selling.
- As we had noted in our previous publication, this rise in the market cap weight of semiconductors has made investors more exposed to this sector. But even this share in the market cap weight arguably understates the importance of semiconductors given the rise in volatility relative to the broader equity market. To estimate the share of risk capital taken up by semiconductors, we first estimate the shares of risk capital of each sector in the MSCI ACWI index as their share of market capitalization multiplied by its 6-month annualized volatility. For the information technology sector overall, the current share of risk capital in the broader MSCI ACWI index is at around 40% vs. its 28% market cap weight. And of this, the semiconductor industry group is around 21% vs. its 13% market cap weight, with Figure 4 showing how the risk capital weight of semiconductors has evolved over time. In other words, companies in the semiconductor index effectively consume around a fifth of the total risk capital in global equity markets.

Figure 4: Share of semiconductors in the MSCI ACWI index by market cap and by risk capital

In %.



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

- And this vulnerability of VaR sensitive investors such as hedge funds and asset managers has been recently reflected in the closeness of their performance to the performance of semiconductor stocks. Indeed, when we look at the movements of semiconductor stocks (the SMH US ETF) and the HFRX equity hedge index of daily reporting equity hedge funds (which includes equity quant hedge funds), these movements have closely followed each other since late September (Figure 5), similar to what had taken place earlier this year from early April to late July. In the upswing this is indicative of elevated positioning among hedge funds, but in corrections given tight risk limits among hedge funds this increased co-movement can be indicative of forced de-risking that amplifies the drawdown. Given the recent declines in semiconductor stocks, we suspect that the previous overhang of elevated long semiconductor exposures has been largely unwound by hedge funds including momentum-based investors such as CTAs as shown in Figure 6. In addition, our overall equity

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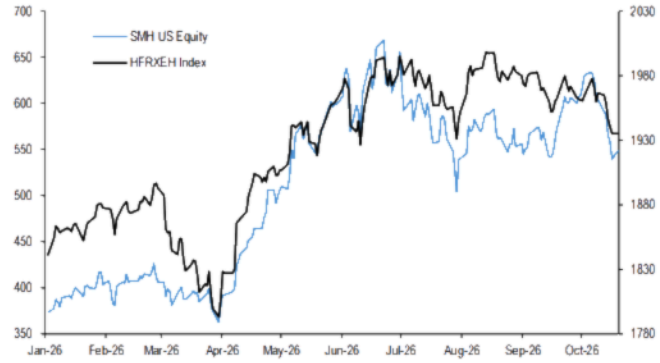
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positioning metric from our cross asset positioning monitor points to significantly lower equity positioning currently from the recent peak in mid-September (Figure 7). This suggests that, while some of the near-term headwinds we noted last week (F&L, Oct 14th) remain in place, there have been some signs of adjustments in positioning that could start to limit downside from here.

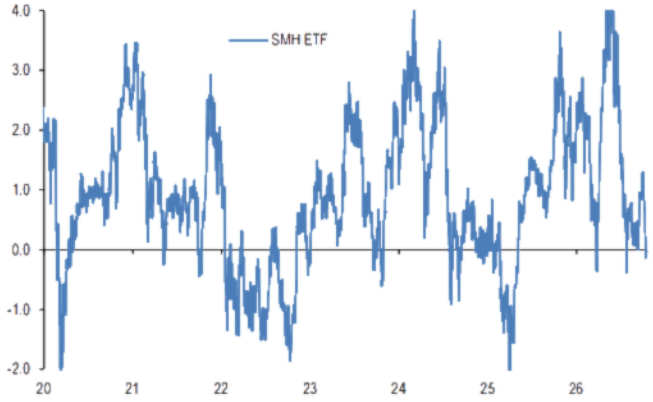
Figure 5: HFRX Equity Hedge Index vs. SMH Semiconductor US Equity ETF



Source: Bloomberg Finance L.P., HFR, J.P. Morgan Flows & Liquidity.

Figure 6: Momentum signals for SMH US Equity ETF

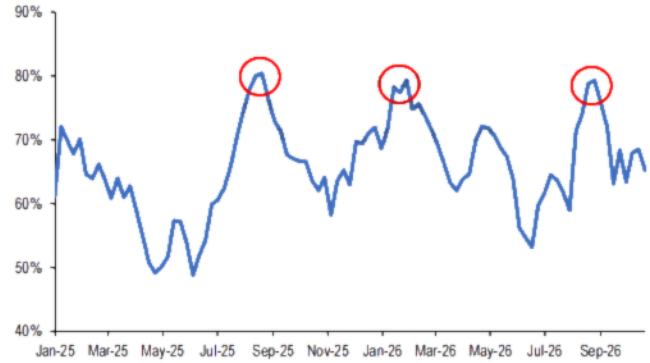
Average z-score of Short- and Long-term momentum signal in our Trend Following Strategy framework shown in Tables A3 and A4 below in the Appendix.



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Figure 7: Broad equity positioning proxy from our cross-asset positioning monitor

Composite percentile since 2016.



Source: J.P. Morgan Flows & Liquidity.

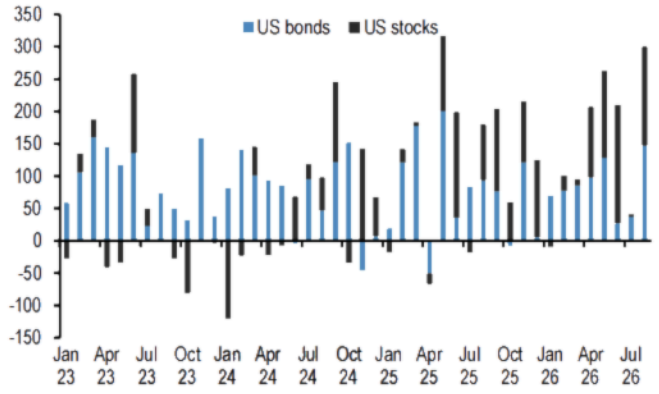
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Little sign of diversification flows out of the US at the aggregate level

- In the aftermath of the "Liberation Day" tariff announcement last year the question of diversification flows had emerged in our client conversations, and resurfaced this year amid tensions over Greenland and after the start of the Middle East conflict. How have these concerns played out in recent months?
- The US TIC data currently covers 2026 up to August, depicted in Figure 8. It suggests that foreign purchases of both US equities and bonds have remained relatively strong in recent months. While the combined net purchases in July of $40bn were the weakest since the net sales in April 2025, August purchases rebounded strongly to around $300bn in total. Looking through the monthly volatility, the average pace of net purchases in 2026 to-date of around $75bn per month of equities and just under $85bn per month in bonds have both been stronger than their respective averages in 2025 of just over $60bn and just under $75bn per month respectively. In other words, there is little sign that fears over "de-dollarization" flows out of US assets have been translated into sustained outflows at the aggregate level.

Figure 8: Net purchases of US equities and bonds by foreign investors

In $bn.



Source: US TIC, J.P. Morgan Flows & Liquidity.

- What about cross-border flows more broadly? Figure 9 shows the net flows from the liability side of the US, Euro area and Japanese balance of payments, i.e. net purchases of portfolio assets by foreign investors for each economy. It suggests that similar to the US, looking through monthly volatility net inflows into European and Japanese assets have remained relatively strong overall YTD. For Euro area bonds inflows had been stronger YTD than for the full year 2025, though August did see some modest outflows before the widening in French spreads to Bunds began in earnest in September.

Figure 9: Net inflows into US, Euro area and Japanese portfolio assets from foreign investors in 2025 and 2026 to-date

In $bn.

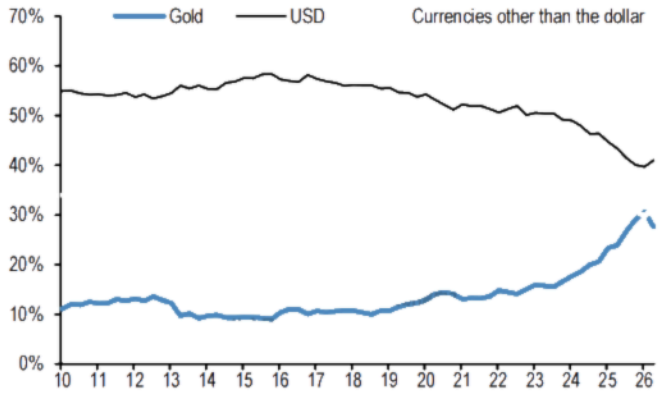
	US		Euro eara		Japan	
$bn	Equities	Bonds	Equities	Bonds	Equities	Bonds
2025	742	877	415	441	58	144
Jan	-9	70	69	69	18	34
Feb	23	78	73	79	22	19
Mar	10	86	-23	76	-46	12
Apr	110	98	28	3	59	27
May	135	128	82	47	14	4
Jun	183	27	72	218	-18	-11
Jul	4	37	50	54	11	7
Aug	154	147	11	-8	0	1
2026 YTD	608	671	362	538	61	94

Source: J.P. Morgan Flows & Liquidity.

- Where there has been some evidence of diversifying away from US assets is among FX reserve managers where the dollar share of reserves has declined. But this has been a long-standing trend, as shown in Figure 10. And at the aggregate level, when we look at total reserves, the main beneficiary has been gold.

Figure 10: Share of gold, the dollar and other currencies of total reserves

In %. Total reserves defined as COFER reserves + central bank gold holdings.



Source: IMF, World Gold Council, Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

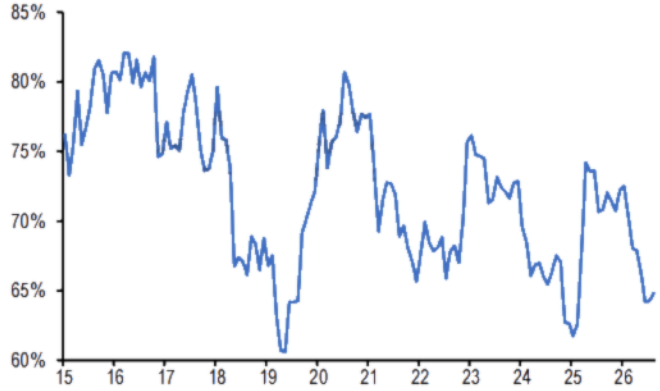
- Similarly, there had been some evidence of increased FX hedge ratios in 1H25 among Danish and Finnish pension funds (Figure 11 and Figure 12) and among Australian superannuation funds in 2H25 (Figure 13). But this year has seen a reversal among the Danish and Finnish pension funds' FX hedge ratios, while for Australian superannuation funds the hedge ratios have been little changed.

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Figure 11: Danish pension funds' FX hedge ratios for USD assets

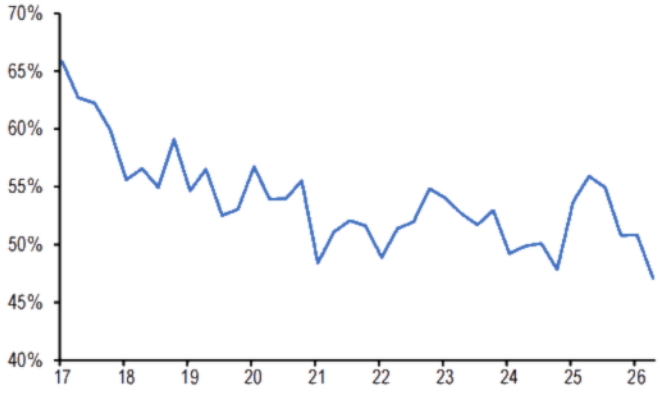
In %, ratio of hedged to total USD currency exposure.



Source: Danmarks Nationalbank, J.P. Morgan Flows & Liquidity.

Figure 12: Finnish pension funds' FX hedge ratios

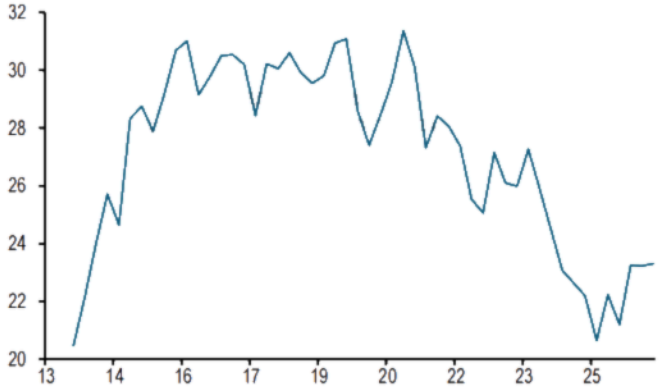
In %. Defined as (100 – open currency position as a % of non-Euro area assets).



Source: TELA, J.P. Morgan Flows & Liquidity.

Figure 13: Currency hedge ratio for foreign equity holdings of Australian super funds

Hedge ratios, % of foreign portfolio for listed equities, last obs is for Q2 2026.

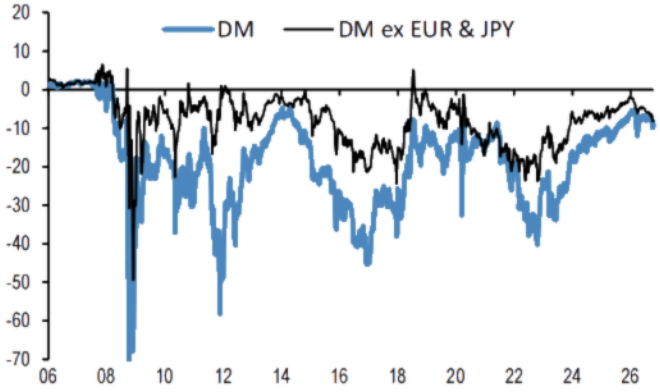


Source: APRA, J.P. Morgan Flows & Liquidity.

- More broadly, as we have noted previously (F&L, Jul 9th 2025) there is a strong link between hedging demand and the cross-currency basis. This suggests that if there is a significant increase in hedging activity, it should show up in the cross-currency basis. However, when we look at cross-currency basis swaps across major DM currencies (EUR, JPY, GBP, AUD, CAD and CHF) in Figure 14, the basis remains consistent with only a modest inclination to hedge dollar exposures.

Figure 14: 1y dollar FX basis

In bps. Weighted average basis of the basis of USD-DM pairs: EUR, JPY, CAD, AUD and CHF.

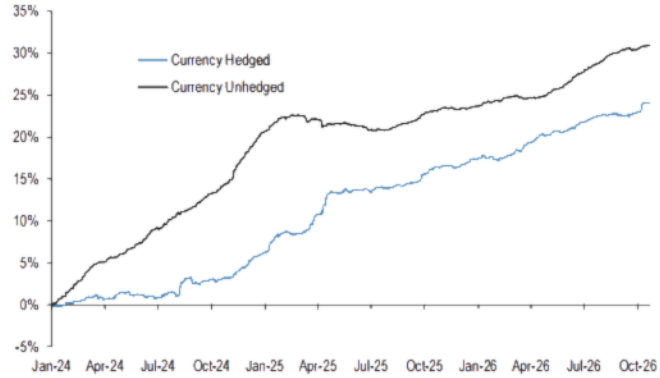


Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

- Finally, there is little sign of increased demand for hedges via inflows into currency-hedged US equity ETFs domiciled outside the US relative to unhedged ETFs beyond early 2025 (Figure 15). If anything, since late April there have been proportionally larger flows into currency-unhedged US equity ETFs than currency-hedged ETFs have continued, even with the recent rise in the latter in early October.

Figure 15: Cumulative inflow into top 100 currency-hedged and top 100 currency unhedged US equity ETFs domiciled outside the US as a % of AUM

In %.



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

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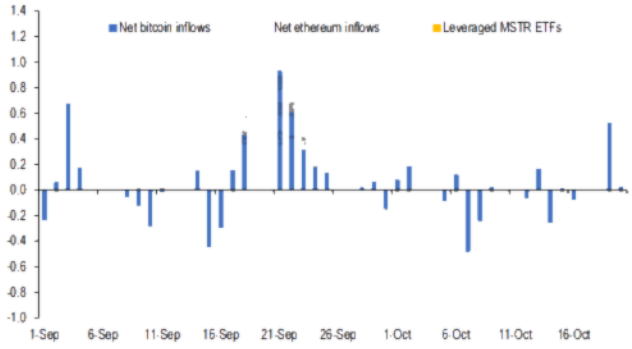
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Regulator-led measures can encourage institutional participation in the crypto ecosystem over the near term, but only legislation would make the framework more durable over the longer term

- The Senate's failure to advance the CLARITY Act on September 15th could have been a major setback for crypto markets. Instead, crypto market sentiment has stayed relatively constructive, even as passage this year now looks unlikely and hopes shift to 2027. In the meantime, attention has moved to what regulators can do now. Agencies such as the SEC, CFTC, and OCC are using existing authority to remove practical frictions that have kept many institutions on the sidelines. For markets, the key issue is less the precise legal label of the framework and more whether it creates workable, regulated channels for institutional participation.
- The SEC is laying the groundwork for regulated tokenization. It is developing a pathway for tokenized securities, which are digital representations of traditional assets, through a proposed five-year Innovation Exemption. This would allow tokenized versions of listed equities to trade for longer hours, potentially 24/7, on tightly controlled venues, with faster settlement. Any token would need to preserve the same economic exposure and shareholder voting rights as the underlying stock. The scope, however, is intentionally narrow and excludes synthetic tokens. Venues would face limits on how many names they can support and how large token trading can become relative to the traditional market.
- Importantly, issuers can opt out of having their shares tokenized. In recent weeks, we've seen more companies exercise this option. In turn, this dented sentiment for application tokens such as ethereum with outflows from ethereum ETFs (Figure 16) and a deterioration in its futures-position proxy (Figure 17 and Figure 18). This contrasts with the initial period following the September 15th SEC announcement, when both ETF flows and our futures-position proxy had increased.

Figure 16: Daily flows into spot bitcoin ETFs, spot ethereum ETFs and leveraged MicroStrategy ETF

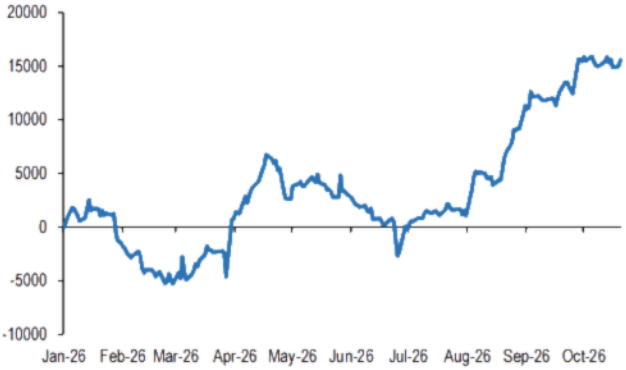
In $bn



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Figure 17: Our position proxy based on open interest changes in bitcoin futures contracts

In number of contracts. Latest data until October 20th



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Figure 18: Our position proxy based on open interest changes in ethereum futures contracts

In number of contracts. Latest data until October 20th



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

- Beyond the SEC, the CFTC is exploring a path to bring

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leveraged crypto activity onshore. Most leveraged crypto trading today occurs on offshore venues that many US participants cannot access. The CFTC has floated the idea of a new market category that could enable leveraged retail trading on compliant US platforms, with customer accounts and assets generally held through registered intermediaries. This remains early stage and is best viewed as a request for feedback rather than a final proposal, and meaningful implementation is unlikely before 2027. Still, the benefit could be indirect but important. Activity that migrates onshore can deepen liquidity, improve price formation, and eventually support the development of more liquid regulated venues that institutions are more likely to use.

- From a regulatory point of view, stablecoins have been the most durable segment so far. Supported by the GENIUS Act and related regulatory actions, stablecoins are increasingly being positioned as a practical tool for payments and liquidity. The OCC has granted national trust charters to a growing set of stablecoin issuers and digital asset firms, bringing activities like custody, reserve management, and issuance under federal oversight. These charters are not immune from challenge, as community banks, through the ICBA, have sued the OCC over aspects of the approvals. Even so, once granted, charters tend to be difficult to unwind in practice.
- Finally, the FASB is considering accounting treatment that would allow corporate treasuries to classify certain qualifying stablecoins as cash equivalents on the balance sheet. The proposal is open for comment until November 19. Adoption would support broader use beyond crypto trading, toward payments and liquidity management for corporates and institutions.
- In all, while various US regulatory bodies enact rules to encourage institutional participation in the crypto ecosystem, somewhat offsetting the negative from the failure of the Congress to pass the Clarity Act, elevated political and legal risk premia are likely to persist until comprehensive market-structure legislation is eventually passed. For now, the crypto industry has to rely on a patchwork of regulatory actions that could be overturned in as soon as two years, if a Democrat wins the White House.

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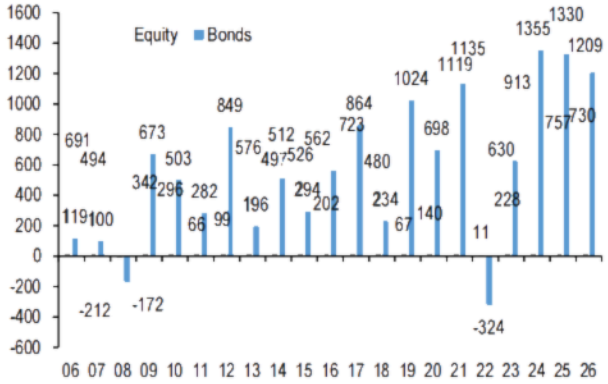
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Appendix

Chart A1a: Global equity & bond fund flows

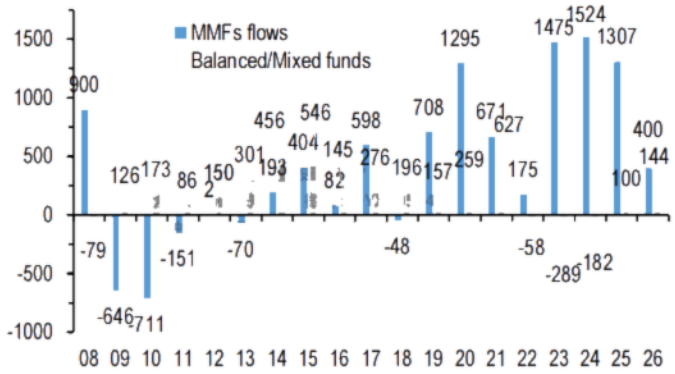
$bn per year of Net Sales, i.e. includes net new sales + reinvested dividends for Mutual Funds and ETFs globally, i.e. for funds domiciled both inside and outside the US. Flows come from ICI (worldwide data up to Q2'26). Data since then are a combination of monthly and weekly data from Lipper and Bloomberg.



Source: ICI, LSEG Lipper, Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A1b: Quarterly Balanced/Mixed funds & MMFs flows worldwide

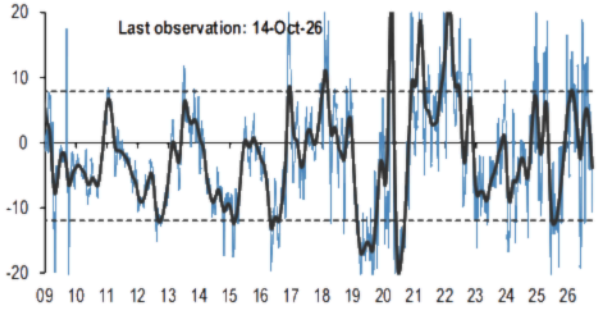
$bn per quarter of Net Sales, i.e. includes net new sales + reinvested dividends for Mutual Funds and ETFs globally, i.e. for funds domiciled both inside and outside the US. Data come from ICI (worldwide data) and are till Q2'26.



Source: ICI, J.P. Morgan Flows & Liquidity.

Chart A2: Fund flow indicator

Difference between flows into Equity and Bond funds: $bn per week. Difference between flows into Equity vs. Bond funds in $bn per week. Flows include Mutual Fund and ETF flows globally, i.e. funds domiciled both inside and outside the US (source: Lipper). The thin blue line shows the 4-week average of difference between Equity and Bond fund flows. Dotted lines depict ±1 StDev of the blue line since 2009. The thick black line shows a smoothed version of the same series. The smoothing is done using a Hodrick-Prescott filter with a Lambda parameter of 100. China onshore A-share ETFs have been excluded.



Source: LSEG Lipper, J.P. Morgan Flows & Liquidity.

Table A2: Trading turnover monitor

Volumes are monthly and Turnover ratio is annualised (monthly trading volume annualised divided by the amount outstanding). UST Cash is primary dealer transactions in all US government securities. UST futures are from Bloomberg Finance L.P. JGBs are OTC volumes in all Japanese government securities. Bunds, Gold, Oil and Copper are futures. Gold includes Gold ETFs. Min-Max chart is based on Turnover ratio. For Bunds and Commodities, futures trading volumes are used while the outstanding amount is proxied by open interest. The diamond reflects the latest turnover observation. The thin blue line marks the distance between the min and max for the complete time series since Jan-2005 onwards. Y/Y change is change in YTD notional volumes over the same period last year.

As of Sep-26	MIN	MAX	Turnover ratio	Vol (tr)	y/y chng
Equities					
EM Equity			1.1	$1.4	108%
DM Equity			1.4	$14.8	43%
Govt Bonds					
UST cash			13.8	$24.8	12%
UST futures			0.8	$19.6	12%
JGBs			45.7	¥4,268	12%
Bund futures			1.5	€14.1	25%
Credit					
US HG			1.1	$0.8	16%
US HY			0.3	$0.1	-7%
US Convertibles			3.0	$0.03	6%
Commodities					
Gold			59.5	$1.9	26%
Oil			89.7	$3.8	13%
Copper			2.0	$1.0	68%
Digital Assets					
CME Bitcoin			113.8	$0.087	-33%
CME Ethereum			125.4	$0.041	-20%

* Data with one month lag

Source: Bloomberg Finance L.P., Federal Reserve, Trace, Japan Securities Dealer Association, WFE, J.P. Morgan Flows & Liquidity.

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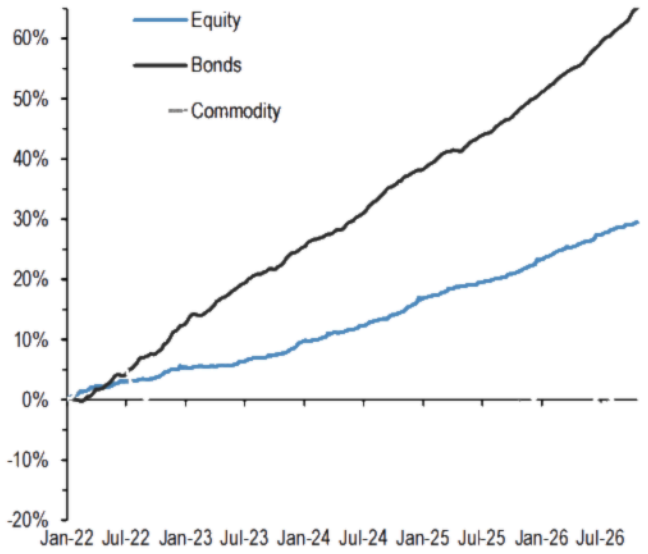
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ETF Flow Monitor (as of 21st October)

Chart A3: Global Cross Asset ETF Flows

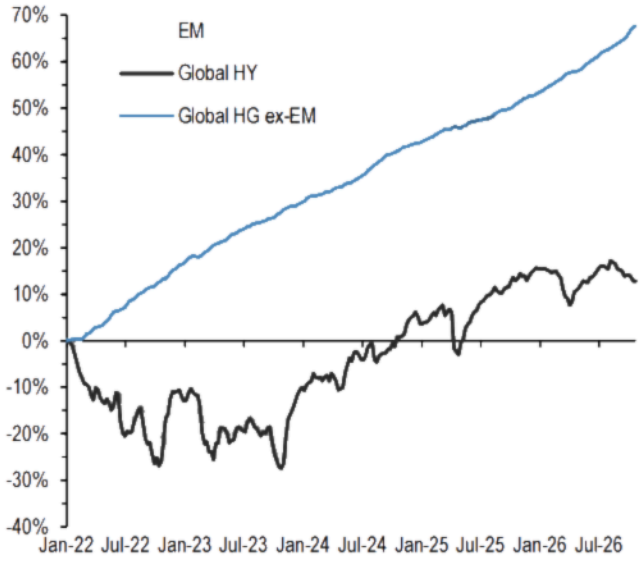
Cumulative flows into ETFs as a % of AUM



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity. China onshore A-share ETFs have been excluded.

Chart A4: Bond ETF Flows

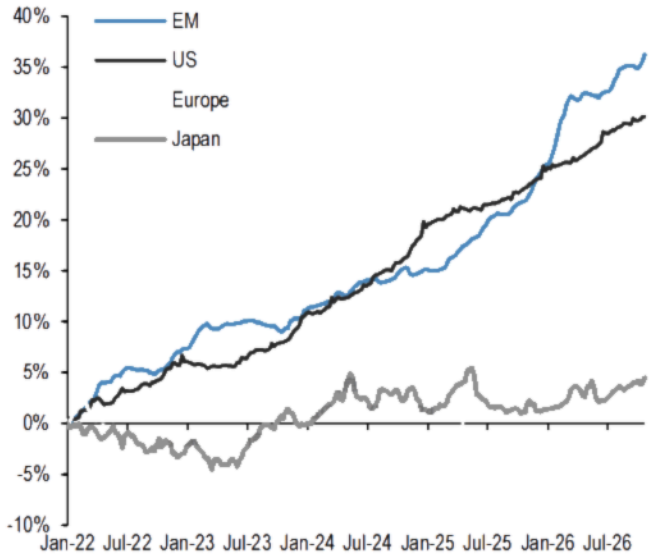
Cumulative flows into bond ETFs as a % of AUM



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A5: Global Equity ETF Flows

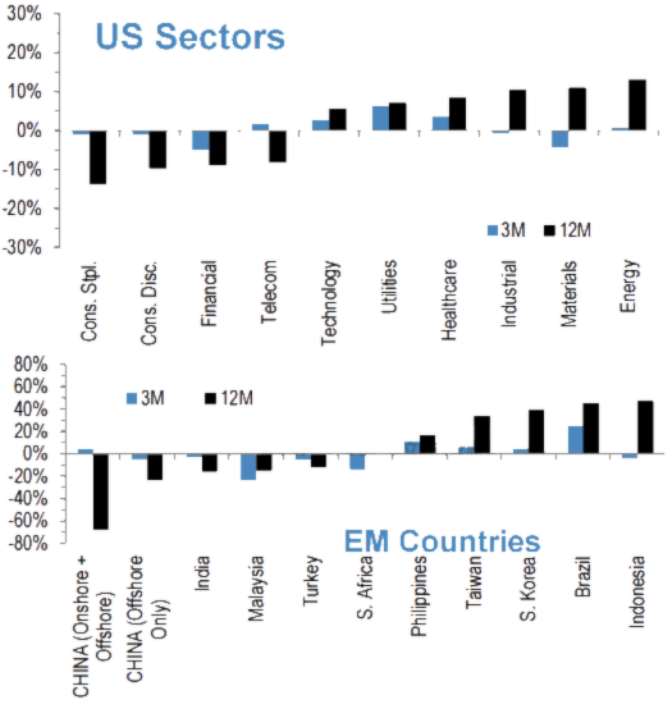
Cumulative flows into global equity ETFs as a % of AUM



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.
Note: We include ETFs with AUM > $200mn in all the flow monitor charts. In Chart A5 for Japan, we subtract the BoJ buying of ETFs. China onshore A-share ETFs have been excluded.

Chart A6a: Equity Sectoral and Regional ETF Flows

Rolling 3-month and 12-month change in cumulative flows as a % of AUM. Both sorted by 12-month change



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

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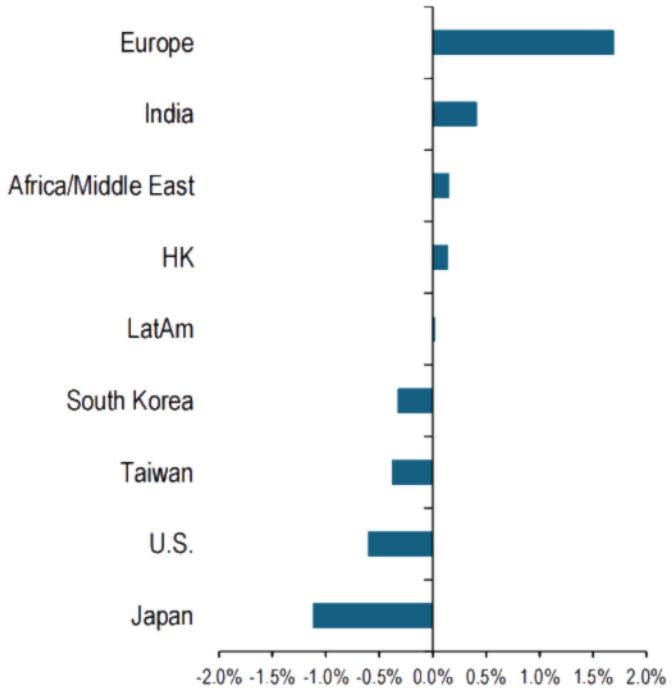
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Chart A6b: Regional Equity Allocation Monitor Implied by ETFs

In %.



Source: Bloomberg Finance L.P., MSCI and J.P. Morgan Flows & Liquidity.
Note: Our regional equity allocation monitor implied by ETFs is based on a comparison of the share of each region in the equity ETF space relative to their corresponding shares in global equity indices.

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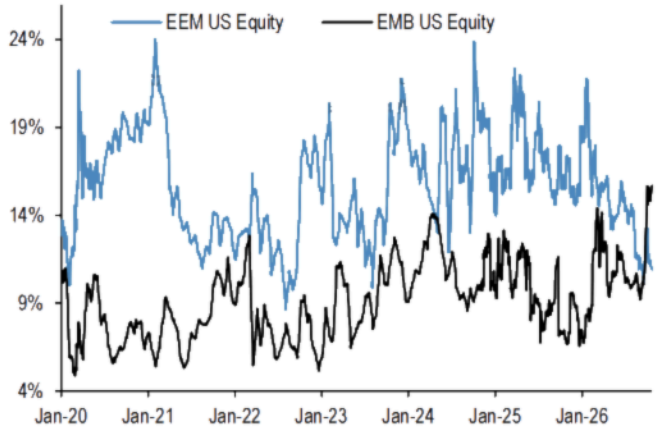
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Short Interest Monitor

Chart A7: Short interest on the EEM and EMB US ETF

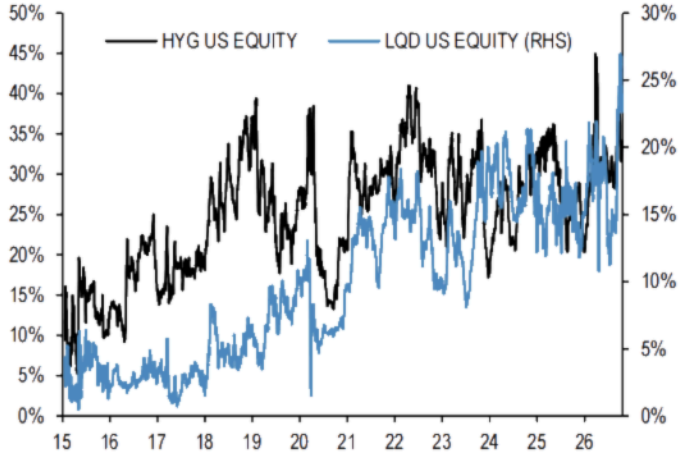
Short Interest as a % share of shares outstanding.



Source: S3, J.P. Morgan Flows & Liquidity.

Chart A8: Short interest on the LQD and HYG US ETF

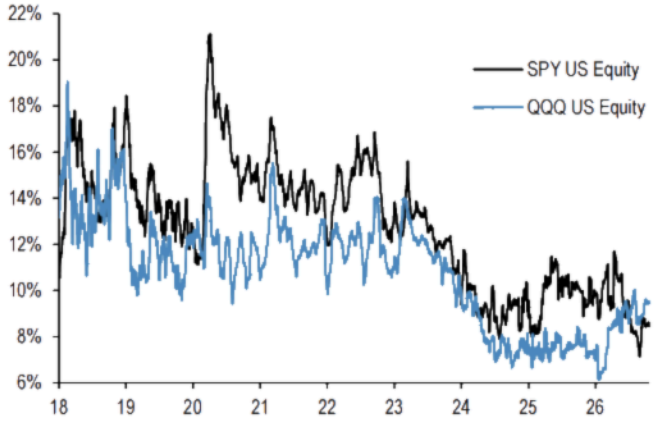
Short Interest as a % share of shares outstanding.



Source: S3, J.P. Morgan Flows & Liquidity.

Chart A9: Short interest on the SPY and QQQ US ETF

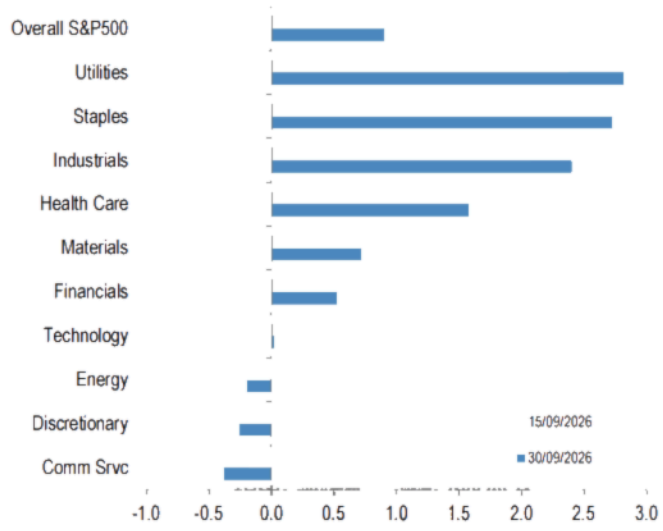
Short Interest as a % share of shares outstanding. Last obs is for 20th Oct 2026.



Source: S3, J.P. Morgan Flows & Liquidity.

Chart A10: S&P500 sector short interest

Short interest as a % of shares outstanding based on z-scores. A strategy which overweights the S&P500 sectors with the highest short interest z-score (as % of shares o/s) vs. those with the lowest, produced an information ratio of 0.7 with a success rate of 56% (see F&L, Jun 28,2013 for more details).



Source: NYSE, Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

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Chart A11a: Cross Asset Volatility Monitor 3m ATM Implied Volatility (1y history), as of 19th Oct-2026

This table shows the richness/cheapness of current three-month implied volatility levels (red dot) against their one-year historical range (thin blue bar) and the ratio to current realised volatility. Assets with implied volatility outside their 25th/75th percentile range (thick blue bar) are highlighted. The implied-to-realised volatility ratio uses 3-month implied volatilities and 1-month (around 21 trading days) realised volatilities for each asset.

Asset	Current	Low	Low date	High	High date	Upside	Downside	Implied/realized volatility
S&P 500	15%	14%	03-Sep-26	24%	27-Mar-26	9%	1%	1.55x
EuroSTOXX	16%	14%	05-Jan-26	26%	27-Mar-26	10%	3%	1.35x
Nikkei 225	27%	20%	25-Dec-25	33%	31-Mar-26	6%	7%	0.91x
Hang Seng	18%	17%	04-Sep-26	24%	26-Mar-26	7%	1%	1.06x
MSCI EM	23%	14%	09-Dec-25	38%	01-Jul-26	15%	9%	1.24x
Gold	20%	18%	07-Nov-25	33%	26-Mar-26	14%	2%	1.04x
Oil (brent)	46%	27%	11-Nov-25	89%	30-Mar-26	43%	19%	1.41x
Copper	18%	18%	13-Jul-26	37%	03-Feb-26	18%	1%	1.10x
BB commodity index	18%	13%	10-Dec-25	25%	30-Mar-26	7%	4%	1.77x
EUR/USD	6%	5%	15-Jun-26	8%	13-Mar-26	2%	1%	1.01x
USD/NOK	9%	8%	17-Dec-25	11%	30-Mar-26	3%	0%	1.56x
USD/JPY	8%	7%	16-Jul-26	10%	27-Mar-26	2%	1%	1.16x
GBP/USD	6%	6%	14-Aug-26	8%	27-Mar-26	2%	0%	0.93x
USD/CHF	7%	6%	29-May-26	9%	29-Jan-26	2%	1%	1.00x
10y US swaps	100%	62%	27-Jan-26	108%	05-Oct-26	8%	38%	1.32x
10y Eur swaps	83%	43%	26-Feb-26	99%	02-Oct-26	16%	40%	1.35x
CDX IG	46%	37%	22-Sep-26	62%	27-Mar-26	16%	10%	2.15x
CDX HY	43%	31%	09-Jan-26	57%	30-Mar-26	14%	12%	2.07x
iTraxx	46%	37%	09-Jan-26	70%	27-Mar-26	24%	9%	1.51x
iTraxx X/O	49%	38%	16-Jun-26	66%	27-Mar-26	17%	11%	1.56x

Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Note: Swaps volatility is 3m 10y payer ATMF implied annualized BP vol and credit volatility is 3m 5y on-the-run ATM spread volatility. MSCI EM, Gold, Oil, Copper, BB Commodity Index and Treasury futures are 3m implied vol from Bloomberg.

Definitions:

Current:	Latest available closing level (19-Oct-26)
Low:	Lowest closing level in the last 1y
Low date:	Date the lowest closing level was reached (or the first time it was reached in the case of several identical low closing levels)
High:	Highest closing level in the last 1y
High date:	Date the highest closing level was reached (or the first time it was reached in the case of several identical high closing levels)
Graph:	Shows the current level and the 25th/75th percentile relative to the 1y high/low
Upside:	Implied return/volatility percentage points from current level up to the High (note: return is calculated as simple difference for spread products)
Upside (σ):	Upside in terms of standard deviations (Upside / Current 1y realized volatility)
Downside:	Implied return/volatility percentage points from current level down to the Low (note: return calculated as simple difference for spread products)
Downside (σ):	Downside in terms of standard deviations (Downside / Current 1y realized volatility)
Implied/realized volatility:	Current 3m implied volatility / current realized 3m volatility

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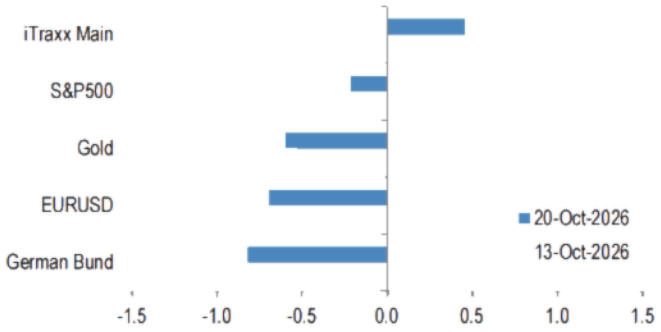
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Chart A11b: Option skew monitor

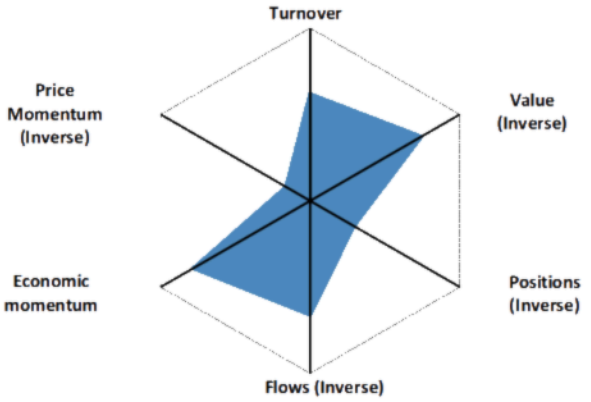
Skew is the difference between the implied volatility of out-of-the-money (OTM) call options and put options. A positive skew implies more demand for calls than puts and a negative skew, higher demand for puts than calls. It can therefore be seen as an indicator of risk perception in that a highly negative skew in equities is indicative of a bearish view. The chart shows z-score of the skew, i.e. the skew minus a rolling 2-year avg skew divided by a rolling two-year standard deviation of the skew. A negative skew on iTraxx Main means investors favour buying protection, i.e. a short risk position. A positive skew for the Bund reflects a long duration view, also a short risk position.



Source: J.P. Morgan Flows & Liquidity.

Chart A11c: Equity market health map

Each of the six axes corresponds to a key indicator for markets. The position of the blue line on each axis shows how far the current observation is from the extremes at either end of the scale. Overall, the larger the blue area within the hexagon, the better the outlook for the S&P500. All variables are expressed as the percentile of the distribution that the observation falls into. I.e. a reading in the middle of the axis means that the observation falls exactly at the median of all historical observations. **Turnover**: Percentile rank of the 21-day rolling S&P500 turnover since 2007. **Value**: Inverse of percentile rank of our quarterly S&P 500 Equity Risk Premium (ERP) estimate since 1957 as described in "A fair value model for US Bonds, Credit and Equities", Panigirtzoglou and Loeys, Jun 2005. **Positions**: Percentile rank of the difference between government bonds and equity positioning from the cross-asset positioning monitor on the front page of our publication since 2016. **Flows**: Inverse of percentile rank of the difference between equity and bond fund flows from the cross-asset fund flow monitor on the front page of our publication since 2007. **Economic momentum**: Percentile rank of the 2-month change in the global manufacturing PMI since 1998, see "REVISITING: Using the Global PMI as trading signal", Nikolaos Panigirtzoglou, Jan 2012). **Price momentum**: Inverse of the percentile rank of the z-score of the difference in the momentum signal of S&P500 vs. 10y USTs since 2016 (based on the average z-score of Short- and Long-term momentum signal in our Trend Following Strategy framework shown in Tables A3 and A4 in the Appendix). China onshore A-share ETFs have been excluded. Last obs. as of 16th Oct.



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

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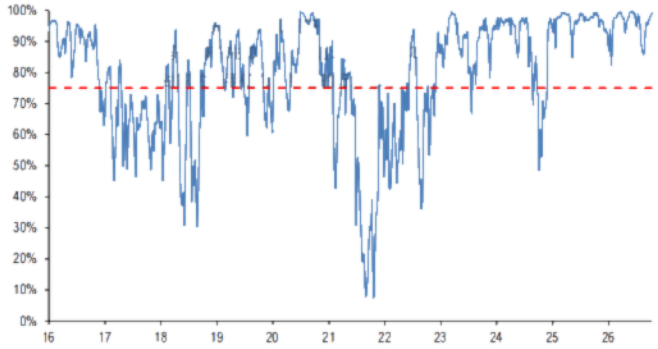
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Chart A11d: Implied probability of the S&P500 rising over the next six months with a cutoff set at 75%

Based on the methodology laid out in the F&L, 25th June 2025.



Source: J.P. Morgan Flows & Liquidity.

Chart A11e: Logistic regression model for direction of the S&P 500 over a 6 month horizon & Ex-ante probability of an up-move from the logistic regression algorithm vs. the ex-post realised 6-month return in the S&P 500

In %. Based on the methodology laid out in the F&L, 25th June 2025.

Dependent Variable: S&500 UP (1) or DOWN (0) over the next six months
Method. ML - Binary Logit (Newton-Raphson / Marquardt steps)

Sample (adjusted): 1/08/2016 12/20/2024
Included observations: 468 after adjustments

Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	3.42	0.84	4.08	0.00
TURNOVER	2.97	0 72	4.15	0.00
VALUE	-3.47	0.90	-3.88	0.00
POSITIONS	-0.77	0.55	-1.39	0.16
FLOWS	-1.79	0.53	-3.38	0.00
ECON_MOMENTUM	3.35	0.62	5.42	0.00
MOMENTUM	-1.36	0 62	-2 19	0.03



Source: J.P. Morgan Flows & Liquidity.

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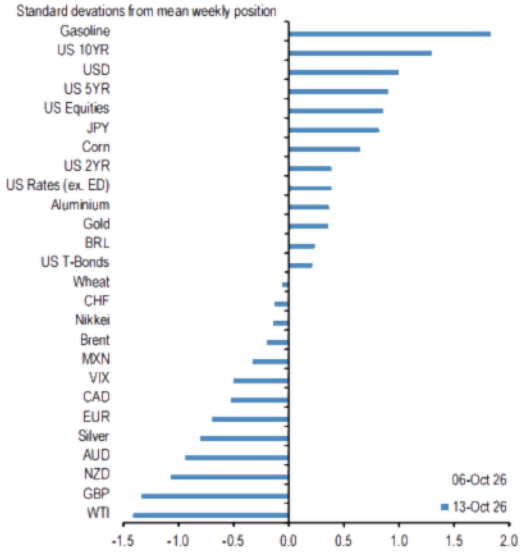
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Spec position monitor

Chart A12: Weekly Spec Position Monitor

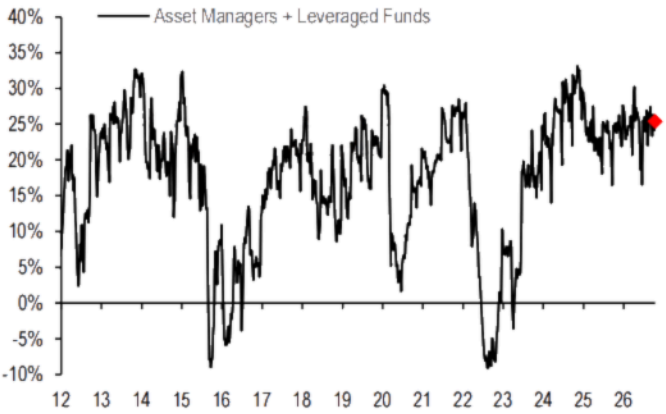
Net spec positions are proxied by the number of long contracts minus the number of short contracts using the speculative category of the Commitments of Traders reports (as reported by CFTC). To proxy for speculative investors for equity and US Treasury bond futures positions we use Asset managers and leveraged funds (see Chart A13), whereas for other assets we use the legacy Non-Commercial category. This net position is then converted to a dollar amount by multiplying by the contract size and then the corresponding futures price. We then scale the net positions by open interest. The chart shows the z-score of these net positions. US rates is a duration-weighted composite of the individual UST futures contracts excluding the Eurodollar contract.



Source: Bloomberg Finance L.P., CFTC, J.P. Morgan Flows & Liquidity.

Chart A13: Positions in US equity futures by Asset managers and Leveraged funds

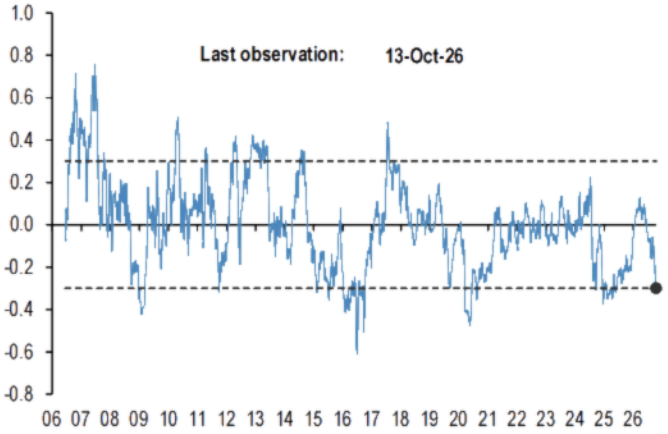
CFTC positions in US equity futures by Leveraged funds and Asset managers (as a % of open interest). It is an aggregate of the S&P500, DowJones, NASDAQ and their Mini futures contracts.



Source: CFTC, Bloomberg Finance L.P. and J.P. Morgan Flows & Liquidity.

Chart A14: Spec position indicator on Risky vs. Safe currencies

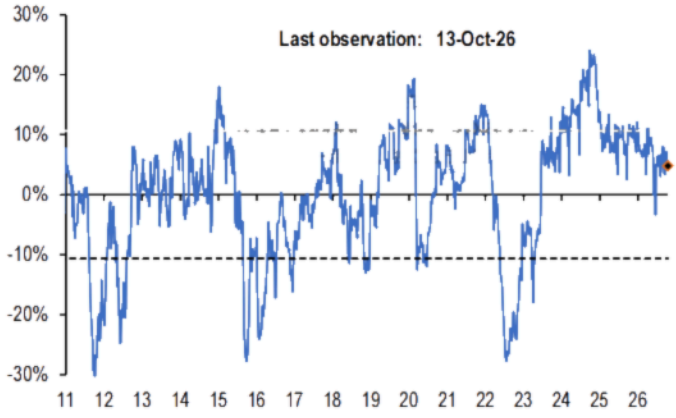
Difference between net spec positions on risky & safe currencies. Net spec position is calculated in USD across 5 'risky' and 3 'safe' currencies (safe currencies also include Gold). These positions are then scaled by open interest and we take an average of 'risky' and 'safe' assets to create two series. The chart is then simply the difference between the"risky" and "safe" series. The final series shown in the chart below is demeaned using data since 2006. The risky currencies are: AUD, NZD,CAD, MXN and BRL. The safe currencies are: JPY, CHF and Gold.



Source: Bloomberg Finance L.P., CFTC, J.P. Morgan Flows & Liquidity.

Chart A15: Spec position indicator on US equity futures vs. intermediate sector UST futures

Difference between net spec positions on US equity futures vs. intermediate sector UST futures. This indicator is derived by the difference between total CFTC positions in US equity futures by Asset managers + Leveraged Funds scaled by open interest minus the Asset managers + Leveraged Funds spec position on intermediate sector UST futures (i.e. all UST futures duration weighted ex ED and ex 2Y UST futures) also scaled by open interest.



Source: CFTC, Bloomberg Finance L.P. and J.P. Morgan Flows & Liquidity.

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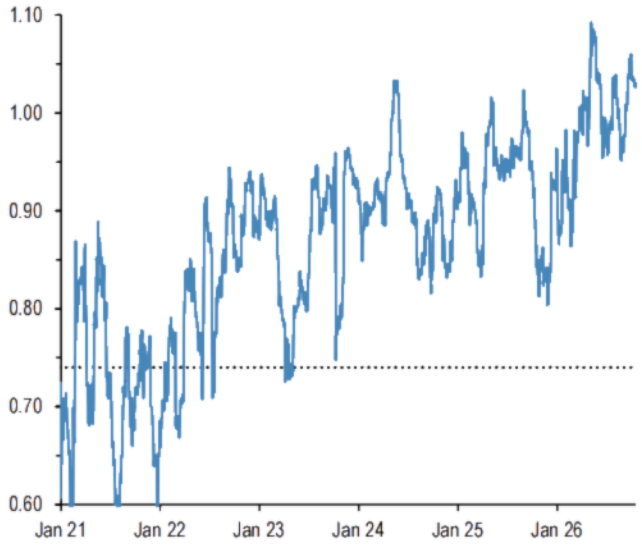
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Mutual fund and hedge fund betas

Chart A16: 21-day rolling beta of 20 biggest active US bond mutual fund managers with respect to the US Agg Bond Index

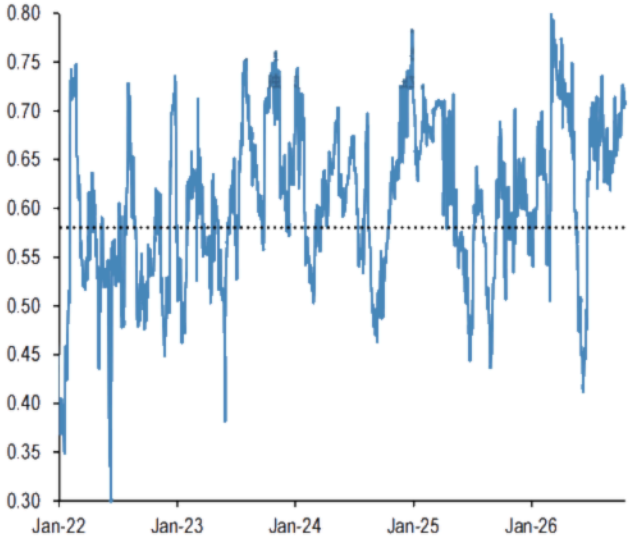
The dotted line shows the average beta since 2013.



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A17: 21-day rolling beta of 20 biggest active Euro bond mutual fund managers with respect to the Euro Agg Bond Index

The dotted line shows the average beta since 2013.



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A18: Performance of various types of investors

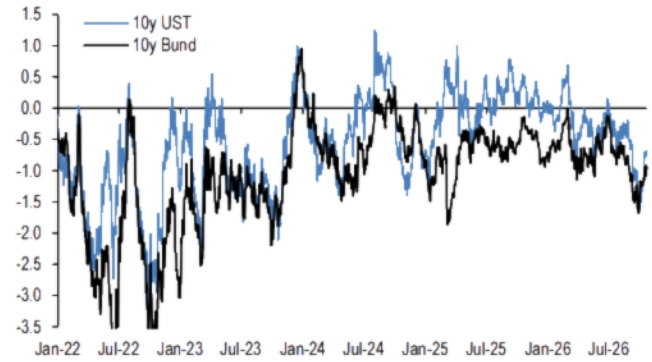
The table depicts the performance of various types of investors in % as of 19th Oct 2026.

Date	2020	2021	2022	2023	2024	2025	2026
Investors							
Equity L/S	13.4%	9.3%	-7.0%	11.3%	13.0%	15.5%	6.6%
Macro ex-CTAs	4.9%	4.3%	11.5%	1.3%	6.0%	10.2%	7.1%
CTAs	1.2%	8.8%	14.7%	-2.5%	2.9%	-1.1%	13.7%
Risk Parity Funds	3.5%	4.7%	-18.6%	6.0%	5.0%	17.3%	6.1%
US Balanced MFs	13.2%	14.4%	-13.0%	13.8%	11.4%	14.4%	7.1%
Benchmark							
MSCI AC World	16.3%	16.4%	-18.4%	22.2%	17.5%	22.3%	12.6%
Barclays Global Agg	5.6%	-2.5%	-11.2%	7.1%	3.4%	4.9%	-0.6%
S&P Riskparity Vol 10	11.5%	12.8%	-16.2%	15.0%	5.4%	15.9%	15.8%
60 US Equity : 40 US Bonds	13.3%	14.8%	-15.4%	18.6%	16.4%	12.7%	7.8%

Source: Bloomberg Finance L.P., HFR, Pivotal Path, J.P. Morgan Flows & Liquidity.

Chart A19: Momentum signals for 10Y UST and 10Y Bunds

Average z-score of Short- and Long-term momentum signal in our Trend Following Strategy framework shown in Tables A3 and A4 below in the Appendix.



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

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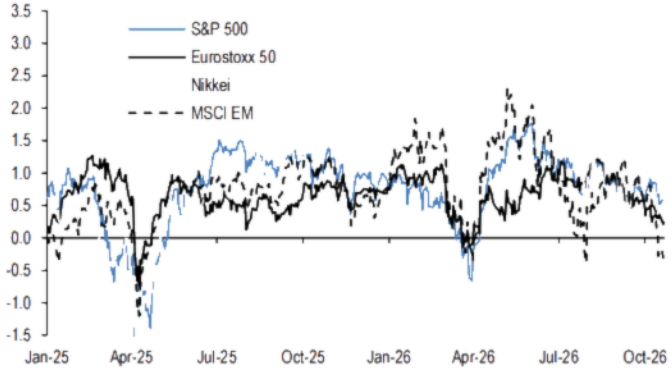
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Chart A20: Momentum signals for S&P500

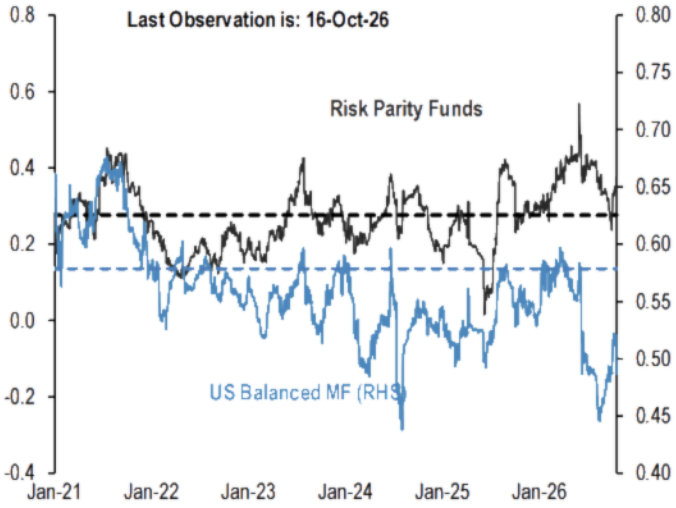
Average z-score of Short- and Long-term momentum signal in our Trend Following Strategy framework shown in Tables A3 and A4 below in the Appendix.



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A21: Equity beta of US Balanced Mutual funds and Risk Parity funds

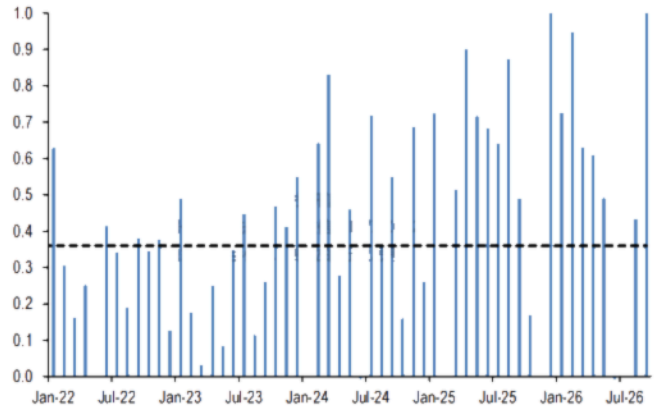
Rolling 42-day equity beta based on a bivariate regression of the daily returns of our Balanced Mutual fund and Risk Parity fund return indices to the daily returns of the S&P 500 and BarCap US Agg indices. Given that these funds invest in both equities and bonds we believe that the bivariate regression will be more suitable for these funds. Our risk parity index consists of 40 daily reporting Risk Parity funds. Our Balanced Mutual fund index includes the top 20 US-based active funds by assets and that have existed since 2006. Our Balanced Mutual fund index has a total AUM of $700bn, which is around half of the total AUM of $1.5tr of US based Balanced funds which we believe to be a good proxy of the overall industry It excludes tracker funds and funds with a low tracking error. Dotted lines are average since 2015.



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A22: Equity beta of monthly reporting Equity Long/Short hedge funds

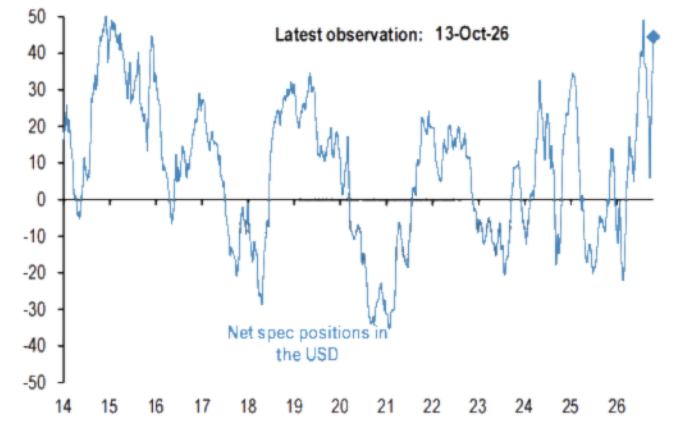
Proxied by the ratio of the monthly performance of Pivotal Path Asset-Weighted Equity Diversified hedge fund index divided by the monthly performance of MSCI AC World Index. Latest obs. is Sept. 26 based on provisional data.



Source: Bloomberg Finance L.P., Pivotal Path, J.P. Morgan Flows & Liquidity.

Chart A23: USD exposure of currency hedge funds

The net spec position in the USD as reported by the CFTC. Spec is the non-commercial category from the CFTC.



Source: CFTC, Barclays, Datastream, Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

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CTAs – Trend following investors' momentum indicators

Table A3: Simple return momentum trading rules across various commodities

Optimal look-back period of each momentum strategy combined with a mean reversion indicator that turns signal neutral when momentum z-score more than 1.5 standard deviations above or below mean, and a filter that turns neutral when the z-score is low (below 0.05 and above -0.05) to avoid excessive trading. Look-backs, current signals and z-scores are shown for shorter-term and longer-term momentum separately, along with performance of a combined signal. Annualised return, volatility and information ratio of the signal; current signal; and z-score of the current return over the relevant look-back period; data from 1999 onward.

		Lookback (moving avg, days)	Annualized return (%)	Vol (%)	IR	Current signal	Time since last change (days)	Z-score	% Change of return index from its moving average
WTI	short	21	6.4	22.8	0.28	1	6	1.0	6.1%
	long	462				0	35	2.0	59.8%
Brent	short	84	4.6	21.5	0.22	0	13	1.9	23.6%
	long	504				0	36	2.6	73.1%
Unleaded gas	short	105	4.0	23.3	0.17	1	11	1.0	13.8%
	long	483				0	81	2.5	67.2%
Heat Oil	short	63	4.7	22.1	0.21	1	7	1.1	11.8%
	long	483				0	165	3.5	111.0%
Gasoil	short	63	9.0	21.5	0.42	1	3	1.3	14.3%
	long	378				0	81	3.6	109.2%
Nat gas	short	105	13.3	35.7	0.37	-1	2	-0.3	-4.8%
	long	315				-1	186	-0.5	-15.3%
Emission allowances	short	42	11.0	28.7	0.38	0	2	0.0	0.4%
	long	483				1	94	0.2	10.1%
TTF	short	21	44.3	43.4	1.02	1	9	0.7	8.8%
	long	294				0	6	1.5	89.8%
Gold	short	21	3.2	10.7	0.30	-1	11	-0.6	-1.6%
	long	483				1	97	0.2	2.1%
Silver	short	10	5.9	19.7	0.30	-1	3	-0.4	-1.5%
	long	462				1	0	0.1	1.9%
Palladium	short	42	11.8	23.2	0.51	0	0	-1.6	-12.9%
	long	273				-1	110	-1.2	-27.3%
Platinum	short	105	3.4	18.7	0.18	-1	19	-0.6	-5.5%
	long	273				-1	28	-0.9	-14.3%
Aluminium	short	105	5.7	15.1	0.38	-1	86	-1.0	-7.6%
	long	357				-1	0	-0.1	-0.8%
Copper	short	147	7.4	17.2	0.43	1	178	0.4	5.5%
	long	399				1	184	1.0	21.3%
Lead	short	126	0.8	19.1	0.04	-1	96	-0.3	-3.4%
	long	357				-1	197	-0.4	-8.8%
Nickel	short	42	11.9	22.9	0.52	-1	37	-0.5	-4.1%
	long	336				-1	28	-0.3	-8.2%
Zinc	short	126	8.1	19.6	0.41	1	146	0.3	3.0%
	long	399				1	276	0.8	18.4%
Wheat	short	168	3.9	23.3	0.17	-1	1	-0.3	-3.2%
	long	294				1	33	0.2	2.6%
Kansas wheat	short	147	8.1	20.9	0.39	-1	2	-0.3	-3.6%
	long	483				1	76	0.3	5.5%
Corn	short	63	7.4	16.6	0.45	-1	8	-1.1	-8.2%
	long	399				-1	7	-0.4	-7.3%
Soybeans	short	42	4.9	14.5	0.34	-1	5	-0.7	-3.5%
	long	231				1	49	0.3	4.2%
Cotton	short	168	5.2	18.5	0.28	0	0	0.0	-0.2%
	long	483				1	11	0.1	3.1%
Sugar	short	63	6.9	21.6	0.32	1	1	1.2	11.0%
	long	252				1	2	1.3	24.6%
Coffee	short	63	7.7	24.0	0.32	1	2	0.4	3.4%
	long	273				1	2	0.3	5.6%
Cocoa		10	4.9	31.5	0.16	1	0	0.5	1.7%

*For cocoa, uses only short-term momentum and a z-score threshold of 3 rather than 1.5 as for other contracts

Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Table A4: Simple return momentum trading rules across international equity indices, bond futures and FX

Optimal look-back period of each momentum strategy combined with a mean reversion indicator that turns signal neutral when momentum z-score more than 1.5 standard deviations above or below mean, and a filter that turns neutral when the z-score is low (below 0.05 and above -0.05) to avoid excessive trading. Look-backs, current signals and z-scores are shown for shorter-term and longer-term momentum separately, along with performance of a combined signal. Annualised return, volatility and information ratio of the signal; current signal; and z-score of the current return over the relevant look-back period; data from 1999 onward.

		Lookback (moving avg, days)	Annualized return (%)	Vol (%)	IR	Current signal	Time since last change (days)	Z-score	% Change of return index from its moving average
S&P 500	short	84	7.8	12.3	0.63	1	24	0.3	1.3%
	long	315				1	91	1.0	9.8%
Nasdaq 100	short	84	9.3	16.1	0.58	0	2	0.0	-0.1%
	long	462				1	80	1.0	18.9%
Nikkei	short	63	3.4	13.3	0.25	-1	4	-0.3	-1.8%
	long	420				0	145	1.7	25.7%
FTSE 100	short	168	5.4	12.0	0.45	1	8	0.4	2.7%
	long	504				1	2	1.4	15.4%
Eurostoxx 50	short	168	4.7	16.6	0.29	1	140	0.1	1.0%
	long	294				1	147	0.4	4.3%
MSCI EM	short	42	12.6	11.5	1.09	-1	7	-1.2	-5.9%
	long	357				1	72	0.5	8.4%
LQD credit return	short	168	0.4	3.4	0.12	-1	19	-0.3	-0.7%
	long	273				-1	19	-0.3	-0.8%
HYG credit return	short	10	2.5	6.5	0.38	-1	6	-0.3	-0.4%
	long	189				-1	36	-0.5	-2.4%
2Y USTs	short	252	0.9	1.1	0.81	-1	14	-1.2	-1.4%
	long	462				-1	165	-0.9	-1.8%
5Y USTs	short	252	1.6	2.8	0.57	-1	6	-1.3	-3.2%
	long	420				-1	131	-1.1	-3.7%
10Y USTs	short	42	2.1	3.6	0.58	-1	9	-0.4	-0.6%
	long	441				-1	131	-0.9	-4.5%
2Y Schatz	short	189	0.6	0.8	0.81	0	48	-1.6	-1.4%
	long	504				0	164	-1.9	-3.4%
5y Bobl	short	63	1.4	1.9	0.76	-1	14	-0.7	-0.6%
	long	483				-1	14	-1.4	-4.6%
10y Bund	short	105	2.3	3.4	0.67	-1	14	-0.9	-1.9%
	long	462				-1	766	-1.0	-5.4%
10Y JGB	short	126	0.9	2.3	0.39	-1	8	-0.6	-0.6%
	long	273				0	166	-1.6	-2.6%
10Y Gilts	short	42	2.5	4.1	0.61	-1	8	-0.6	-0.9%
	long	399				0	2	-1.5	-8.1%
10y OAT vs Bund	short	189	0.5	1.5	0.32	0	24	-5.9	-5.4%
	long	294				0	21	-5.3	-5.3%
10y BTP vs. Bund	short	84	2.3	6.2	0.37	-1	30	-0.8	-2.1%
	long	273				-1	24	-0.6	-2.4%
Euro	short	42	3.3	6.4	0.52	-1	6	-1.0	-2.2%
	long	273				-1	175	-1.0	-6.0%
Yen	short	21	3.5	6.3	0.56	-1	22	-0.2	-0.3%
	long	462				-1	59	-1.1	-9.3%
Sterling	short	168	1.6	7.1	0.23	-1	38	-0.3	-1.3%
	long	294				-1	169	-0.4	-2.2%
AUD	short	42	3.7	7.8	0.48	-1	21	-0.3	-0.9%
	long	420				1	1	0.1	0.9%
CAD	short	168	1.5	5.9	0.25	-1	122	-0.7	-2.7%
	long	504				-1	404	-0.9	-6.2%
G10 FX	short	42	2.1	5.1	0.41	1	25	0.6	1.0%
	long	189				1	27	0.6	2.2%
EMCI	short	42	2.4	4.9	0.50	1	0	0.1	0.2%
	long	189				0	0	0.0	0.1%

Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

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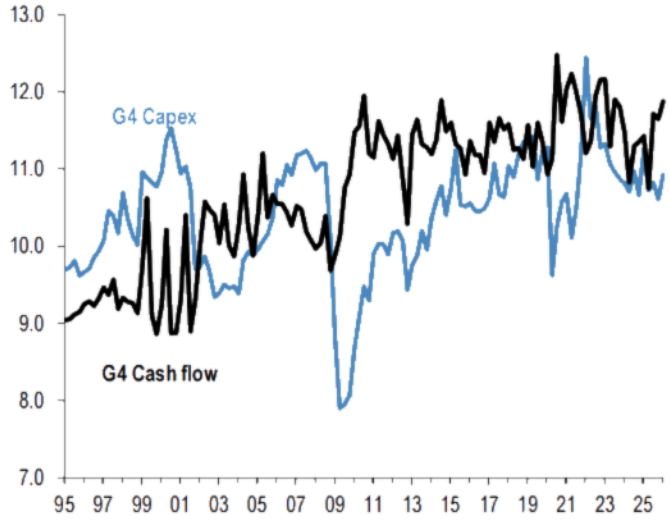
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Corporate Activity

Chart A24: G4 non-financial corporate capex and cash flow as % of GDP

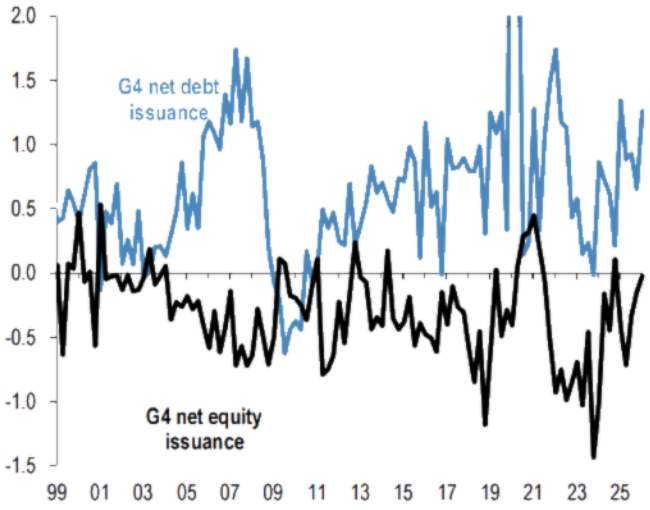
% of GDP, G4 includes the US, the UK, the Euro area and Japan. Last observation as of Q1 2026.



Source: ECB, BOJ, BOE, Federal Reserve flow of funds, J.P. Morgan Flows & Liquidity.

Chart A25: G4 non-financial corporate sector net debt and equity issuance

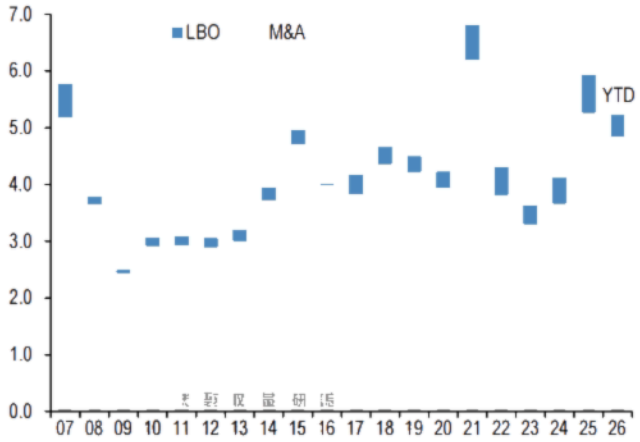
$tr per quarter, G4 includes the US, the UK, the Euro area and Japan. Last observation as of Q1 2026.



Source: ECB, BOJ, BOE, Federal Reserve flow of funds, J.P. Morgan Flows & Liquidity.

Chart A26: Global M&A and LBO

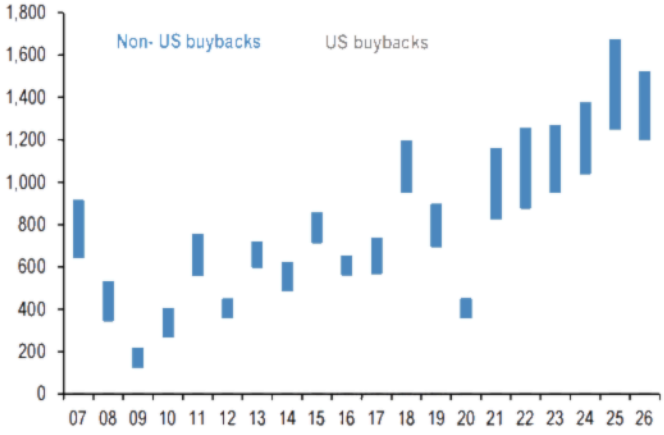
$tr. M&A and LBOs are announced.



Source: Dealogic, J.P. Morgan Flows & Liquidity.

Chart A27: US and non-US share buyback

$bn, are as of Oct 26. Buybacks are as announced.



Source: Bloomberg Finance L.P., LSEG, J.P. Morgan Flows & Liquidity.

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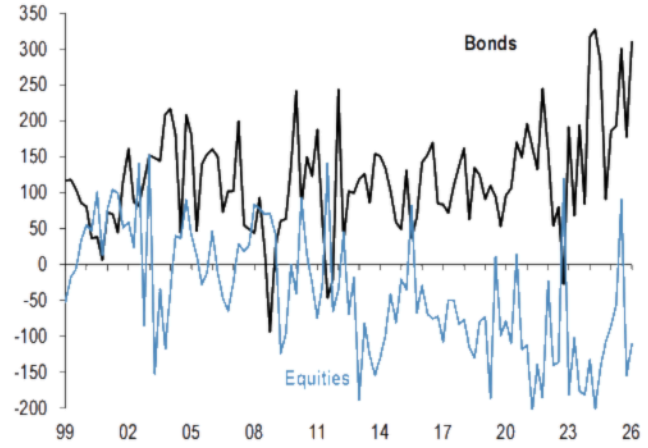
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Pension fund and insurance company flows

Chart A28: G4 pension funds and insurance companies equity and bond flows

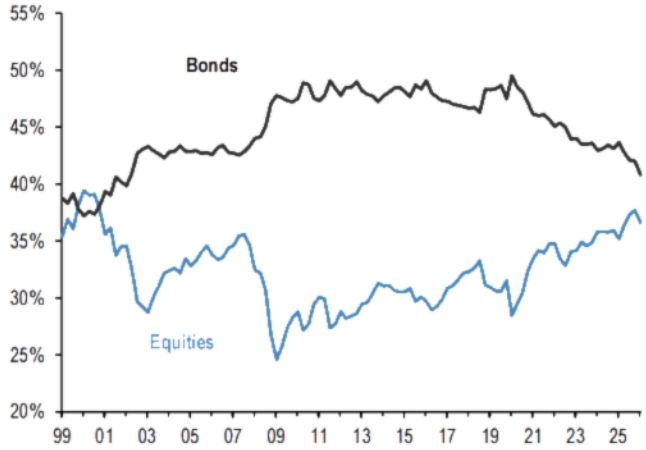
Equity and bond buying in $bn per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q1 2026.



Source: ECB, BOJ, BOE, Federal Reserve flow of funds, J.P. Morgan Flows & Liquidity.

Chart A29: G4 pension funds and insurance companies equity and bond levels

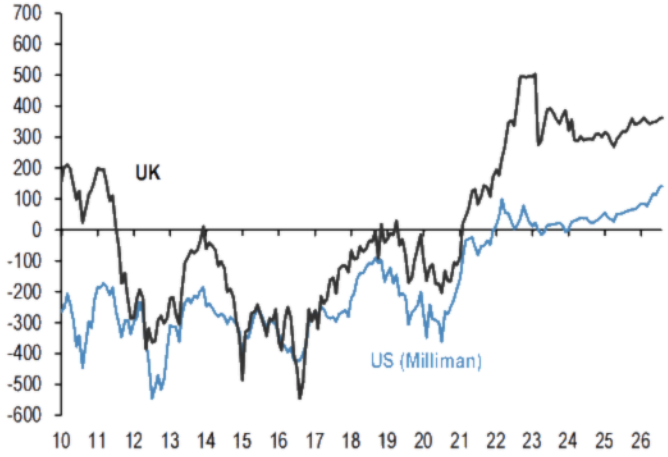
Equity and bond as % of total assets per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q1 2026.



Source: ECB, BOJ, BOE, Federal Reserve flow of funds, J.P. Morgan Flows & Liquidity.

Chart A30: Pension fund deficits

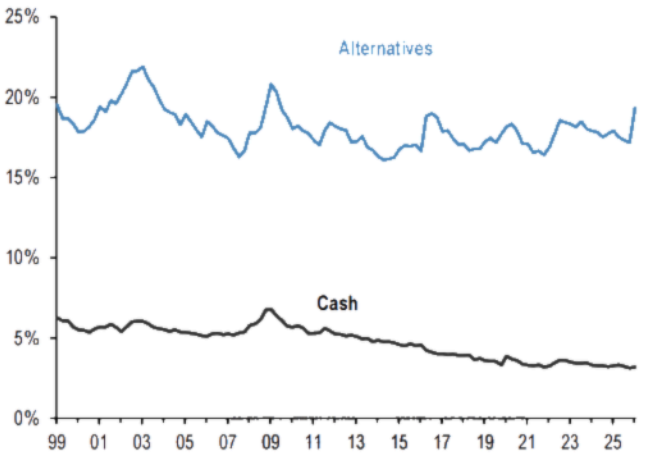
US$bn. For US, funded status of the 100 largest corporate defined benefit pension plans, from Milliman. For UK, funded status of the defined benefit schemes eligible for entry to the Pension Protection Fund, converted to US$ at today's exchange rates. Last obs. is August'26 for US & UK.



Source: Milliman, UK Pension Protection Fund, J.P. Morgan Flows & Liquidity.

Chart A31: G4 pension funds and insurance companies cash and alternatives levels

Cash and alternative investments as % of total assets per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q1 2026.



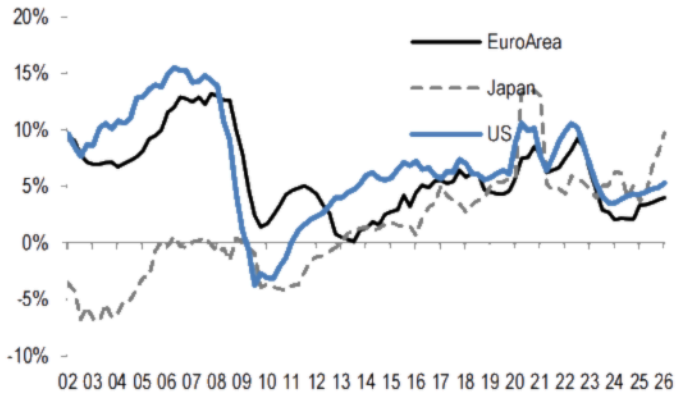
Source: ECB, BOJ, BOE, Federal Reserve flow of funds, J.P. Morgan Flows & Liquidity.

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Credit Creation

Chart A32: Credit creation in the US, Japan and Euro area

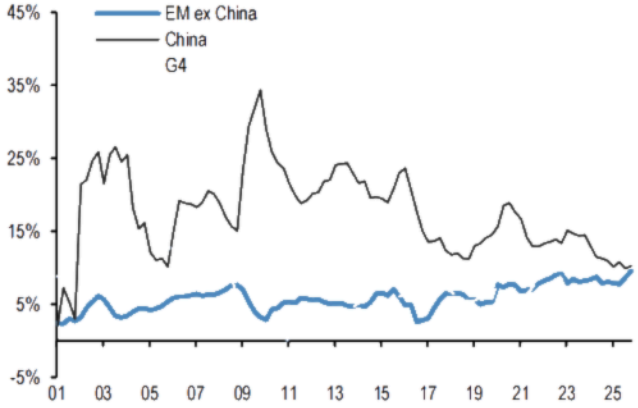
Rolling sum of 4-quarter credit creation as % of GDP. Credit creation includes both bank loans as well as net debt issuance by non-financial corporations and households. Last obs. is Q1'26 for Japan, Euro Area and US.



Source: Fed, ECB, BoJ, Bloomberg Finance L.P., and J.P. Morgan Flows & Liquidity.

Chart A33: Credit creation in EM

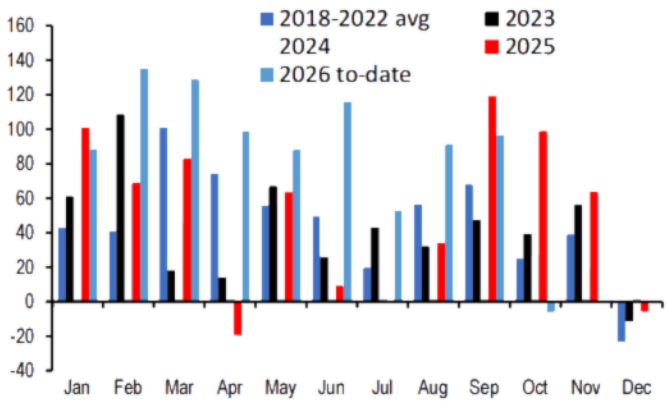
Rolling sum of 4-quarter credit creation as % of GDP. Credit creation includes both bank loans as well as net debt issuance by non-financial corporations and households. The chart uses the FX rates as of the latest observation to calculate the credit creation at constant exchange rates. Last obs. is for Q4'25.



Source: G4 Central banks FoF, BIS, ICI, Barcap, Bloomberg Finance L.P., IMF, and J.P. Morgan Flows & Liquidity.

Chart A34: Monthly net issuance of US HG bonds

$bn. Up to October 15th.



Source: Dealogic, J.P. Morgan Flows & Liquidity.

Table A5: Equity and Bond issuance

$bn, Equity supply and corporate announcements are based on announced deals, not completed. M&A is announced deal value and buybacks are announced transactions. Y/Y change is change in YTD announcements over the same period last year.

Equity Supply	9-Oct	4 wk avg	13 wk avg	y/y chng
Global IPOs	2.0	3.2	3.9	117%
Secondary Offerings	7.8	6.9	11.2	39%
Corporate announcements				
M&A - Global	126.4	97.2	102.8	32%
- US Target	65.8	45.1	47.2	44%
- Non-US Target	60.6	52.2	55.6	21%
Net bond issuance	**Feb-26**	**3 mth avg**	**YTD avg**	**y/y chng**
USD	8	144	179	-50%
Non-USD	162	129	277	-4%

Source: Bloomberg Finance L.P., Dealogic, Thomson Reuters, J.P. Morgan Flows & Liquidity.

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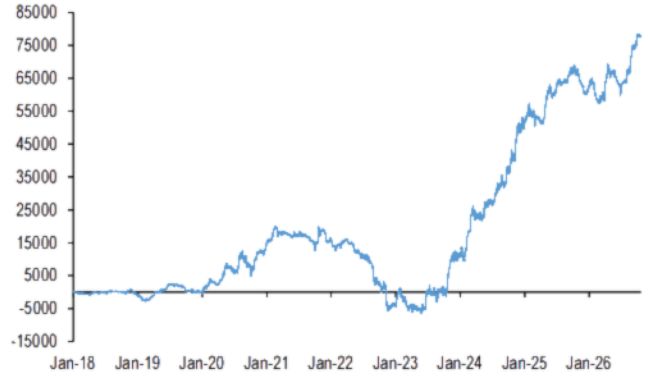
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Bitcoin monitor

Chart A35: Our Bitcoin position proxy, based on open interest in CME Bitcoin futures contracts

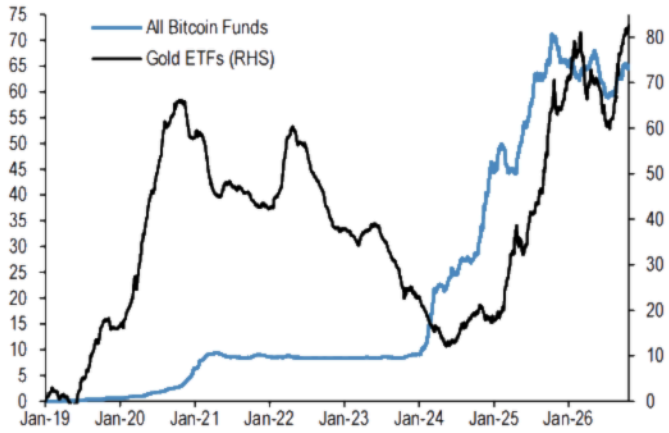
In number of contracts. Last obs. for 20th Oct 2026



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A36: Cumulative Flows in all Bitcoin funds and Gold ETF holdings

Both the y-axis in $bn.



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A37: Ratio of bitcoin market price to production cost

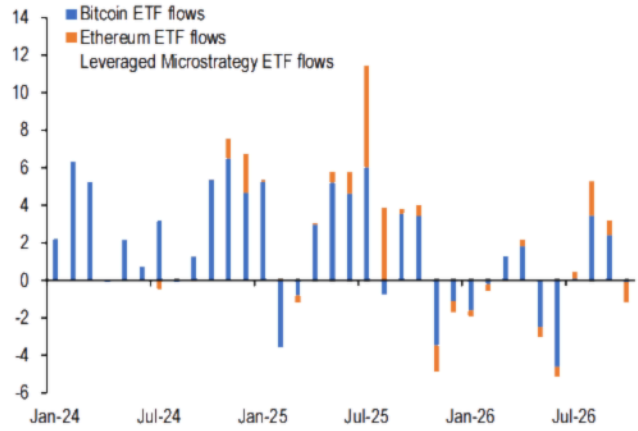
Based on the cost of production approach following Hayes (2018).



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A38: Monthly flows into spot bitcoin ETFs, spot ethereum ETFs and leveraged MicroStrategy ETF

$bn.



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

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Japanese flows and positions

Chart A39: Tokyo Stock Exchange margin trading: total buys minus total sells

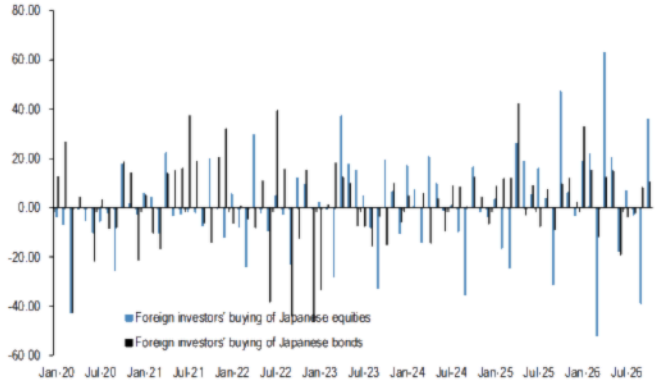
In bn of shares. Topix on right axis.



Source: Tokyo Stock Exchange, Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A40: Monthly net purchases of Japanese bonds and Japanese equities by foreign residents

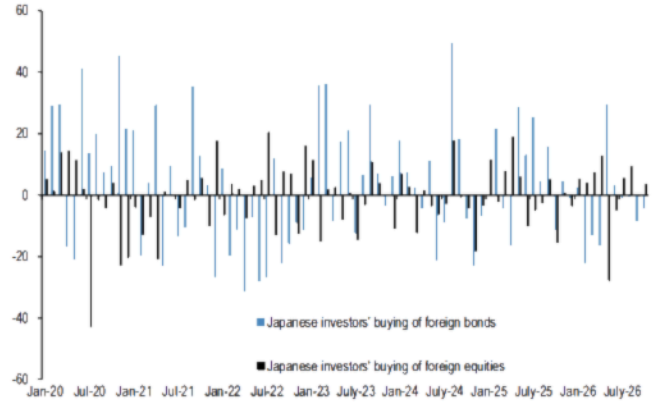
$bn, Last weekly obs. is for 9th Oct' 26.



Source: Japan MoF, Bloomberg Finance L.P., and J.P. Morgan Flows & Liquidity.

Chart A41: Monthly net purchases of foreign bonds and foreign equities by Japanese residents

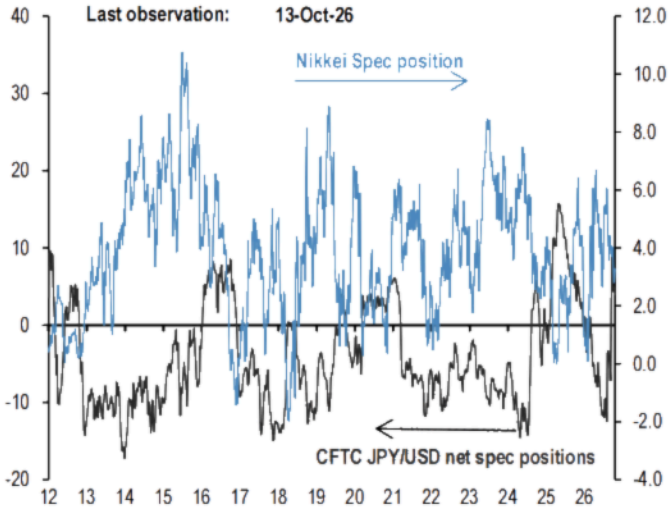
$bn, Last weekly obs. is for 9th Oct' 26.



Source: Japan MoF, Bloomberg Finance L.P., and J.P. Morgan Flows & Liquidity.

Chart A42: Overseas CFTC spec positions

CFTC spec positions are in $bn. For Nikkei we use CFTC positions in Nikkei futures (USD & JPY) by Leveraged funds and Asset managers.



Source: Bloomberg Finance L.P., CFTC, J.P. Morgan Flows & Liquidity.

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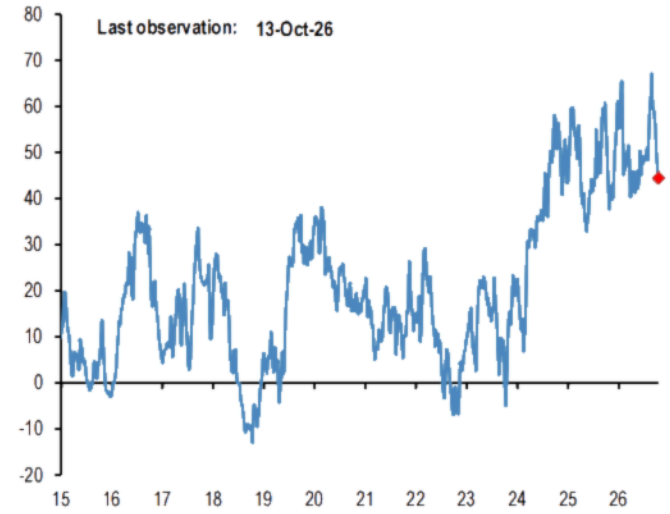
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Commodity flows and positions

Chart A43: Gold spec positions

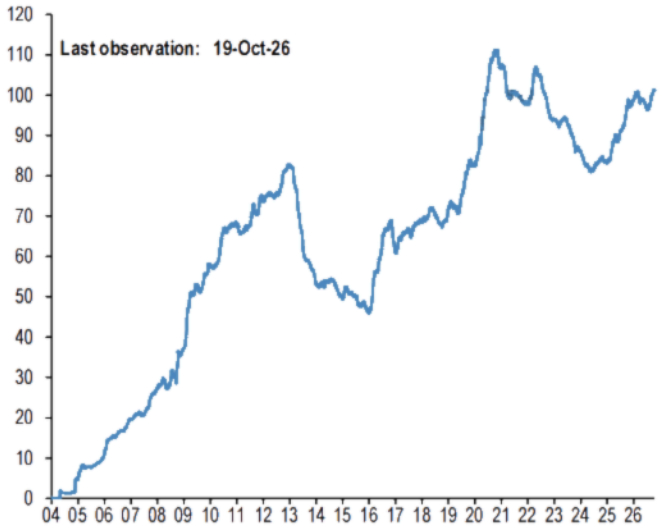
$bn. CFTC net long minus short position in futures for the Managed Money category.



Source: CFTC, Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A44: Gold ETFs

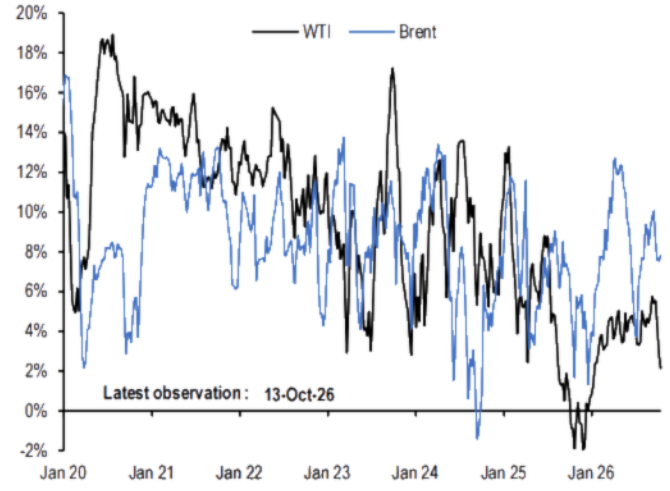
Mn troy oz. Physical gold held by all gold ETFs globally.



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A45: Oil spec positions

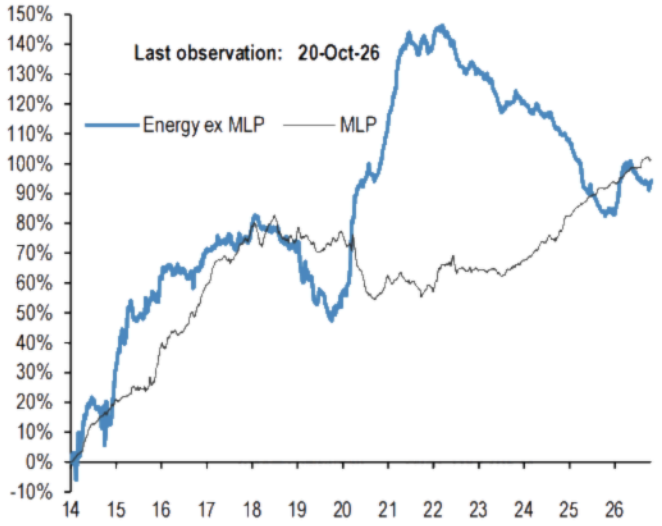
Net spec positions divided by open interest. CFTC futures positions for WTI and Brent are net long minus short for the Managed Money category.



Source: CFTC, Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A46: Energy ETF flows

Cumulative energy ETFs flows as a % of AUM. MLP refers to the Alerian MLP ETF.



Source: CFTC, Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

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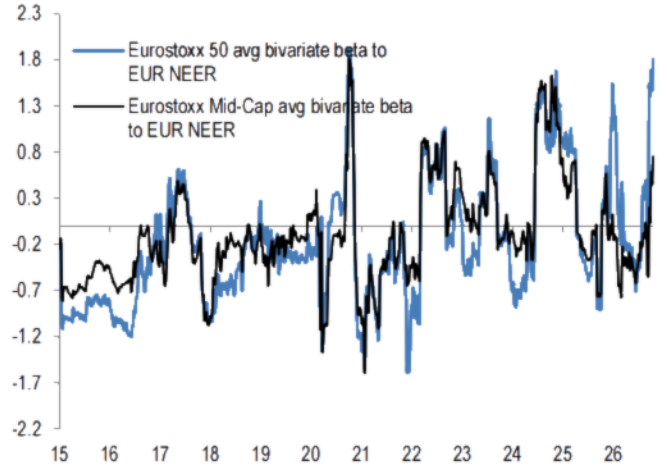
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Corporate FX hedging proxies

Chart A47: Average beta of Eurostoxx 50 companies and Eurostoxx Mid-Cap to trade-weighted EUR

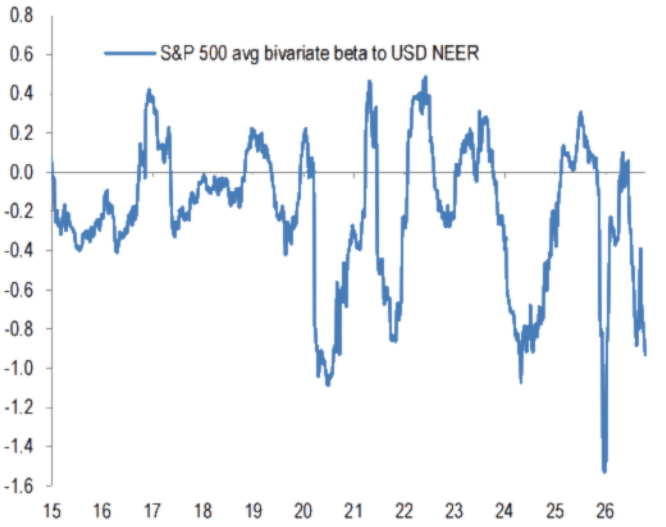
Rolling 26 weeks average betas based on a bivariate regression of the weekly returns of individual stocks in the Eurostoxx 50 index to the weekly returns of the MSCI AC World and JPM EUR Nominal broad effective exchange rate (NEER).



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A48: Average beta of S&P500 companies to trade-weighted US dollar

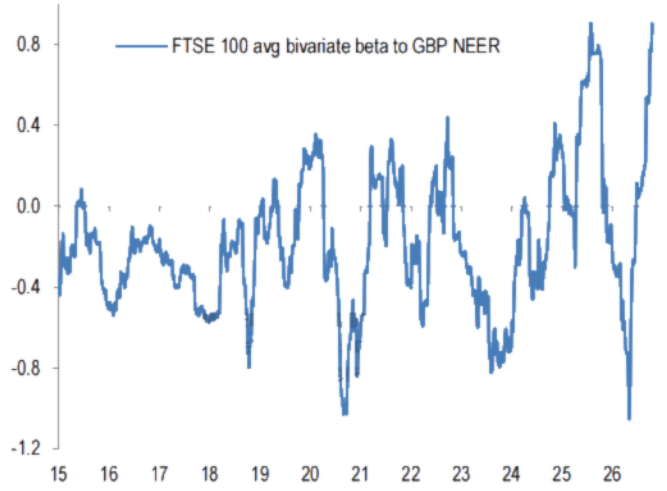
Rolling 26 weeks average betas based on a bivariate regression of the weekly returns of stocks in the S&P500 index to the weekly returns of the MSCI AC World and JPM USD Nominal broad effective exchange rate(NEER).



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A49: Average beta of FTSE 100 companies to trade-weighted GBP

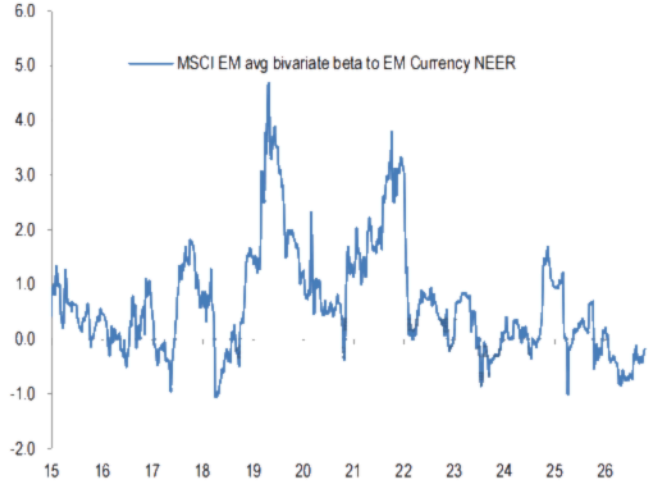
Rolling 26 weeks average betas based on a bivariate regression of the weekly returns of individual stocks in the FTSE 100 index to the weekly returns of the MSCI AC World and JPM GBP Nominal broad effective exchange rate (NEER).



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

Chart A50: Average beta of MSCI EM companies to trade-weighted EM Currency Index

Rolling 26 weeks average betas based on a bivariate regression of the weekly returns of individual stocks in the MSCI EM index to the weekly returns of the MSCI AC World and JPM EM Nominal broad effective exchange rate (NEER).



Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

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Non-Bank investors' implied allocations

Chart A51: Implied equity allocation by non-bank investors globally

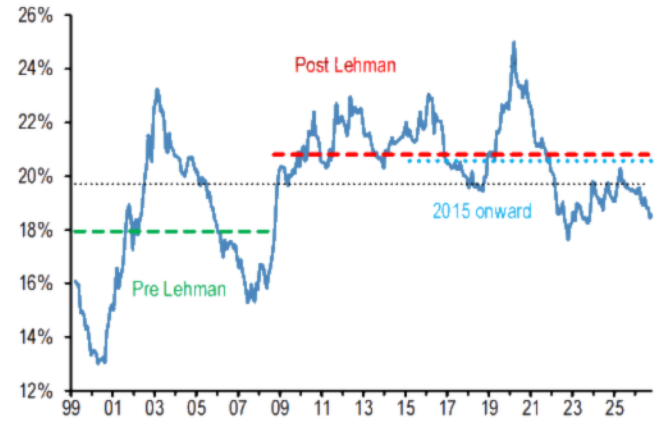
Global equities as % total holdings of equities/bonds/M2 by non-bank investors/ Commodities including gold held by private investors. Dotted lines are averages.



Source: Bloomberg Finance L.P., LSEG DataStream, J.P. Morgan Flows & Liquidity.

Chart A52: Implied bond allocation by non-bank investors globally

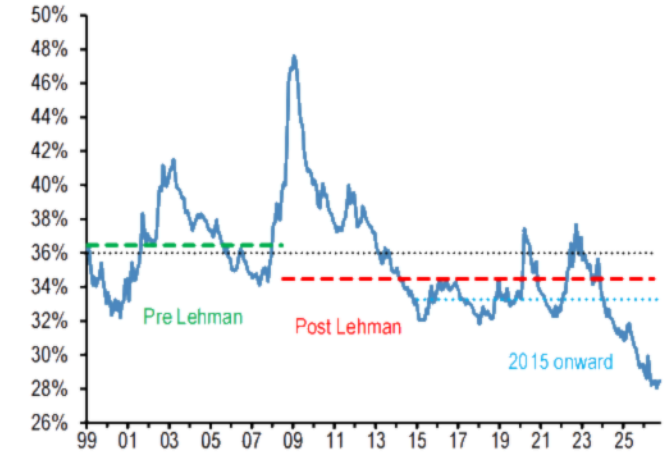
Global bonds as % total holdings of equities/bonds/M2 by non-bank investors/ Commodities including gold held by private investors. Dotted lines are averages.



Source: Bloomberg Finance L.P., LSEG DataStream, J.P. Morgan Flows & Liquidity.

Chart A53: Implied cash allocation by non-bank investors globally

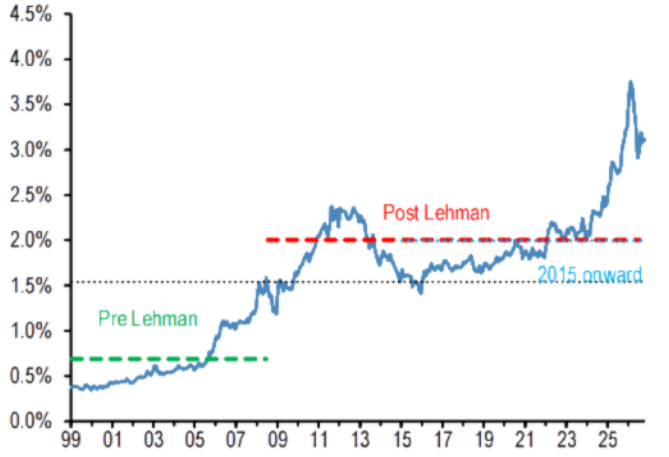
Global cash held by non-bank investors as % total holdings of equities/bonds/M2 by non-bank investors/Commodities including gold held by private investors. Dotted lines are averages.



Source: Bloomberg Finance L.P., LSEG DataStream, J.P. Morgan Flows & Liquidity.

Chart A54: Implied commodity allocation (including privately held gold) by non-bank investors globally

Proxied by the open interest of commodity futures ex gold and privately held gold as % of the stock of equities, bonds, cash held by non-bank investors globally and commodities including gold held by private investors.



Source: Bloomberg Finance L.P., LSEG DataStream, J.P. Morgan Flows & Liquidity.