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Flows & Liquidity

Retail investors pour record amounts into leveraged equity ETFs

- **Retail investors poured record amounts into leveraged ETFs over the past couple of weeks, supporting the bottoming out of AI-related stocks.**
- **We see room for the retail impulse to increase into year-end, in particular via options.**
- **In addition, the short interest of the QQQ ETF rose to its highest level since 2023, suggesting there is a short base to be covered by institutional investors.**
- **Despite the large increase in capex by tech companies this year, tech buybacks have been surprisingly resilient YTD providing additional background support to equity markets.**
- **Significant unwind by momentum-based investors of shorts in government bond futures and longs in equity futures. There are still elevated shorts in 10y OATs vs. Bunds and the euro, and elevated longs in crude oil and TTF futures.**
- **Relatively modest reversal of retail inflows into Brazil after the election, while institutional investors unwound exposure.**
- **There is now less support for bitcoin vs. gold from previous elevated short interest in the IBIT vs. GLD ETF but other metrics continue to overall favor bitcoin over gold.**

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 21st Oct 26.

MF & ETF Flows	Min	Max	4 wk avg ($bn)	2025 avg ($bn)
All Equities			14.6	8.1
All Bonds			8.7	11.3
US Equities			2.2	3.5
US Bonds			5.4	4.3
Non-US Equities			12.5	4.6
Non-US Bonds			3.4	7.0
US HG Bonds			12.6	3.4
US HY Bonds			-0.4	0.4
US Lev. Loans *			1.0	0.0
US MMFs			0.9	4.0
EM Equities			2.6	0.9
EM Bonds			0.31	0.50
Japan Equities			1.3	-0.1
China Equities			-0.80	-0.15
Europe				
Europe Equities			-0.2	0.9
Europe Bonds			1.5	4.3
Europe HG Bonds			0.2	0.9
Europe HY Bonds			-0.07	0.17
Europe MMFs			2.7	3.8
Other Equities			9.05	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 27-Oct-26	MIN	MAX	Current percentile
Equities			0.65
Govt Bonds			0.63
Credit			0.19
Dollar			0.84
Commodities ex Gold			0.77
Gold			0.35
Bitcoin			0.81
EM Equities			0.73
EM Bonds/FX			0.06
Japan Equities			0.52
Europe Equities			0.57
US Equity Sectors:			
Energy			0.78
Materials			0.54
Industrials			0.36
Discretionary			0.62
Staples			0.27
Health Care			0.55
Financials			0.23
Technology			0.62
Communication Services			0.32
Utilities			0.43

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 29 for analyst certification and important disclosures.

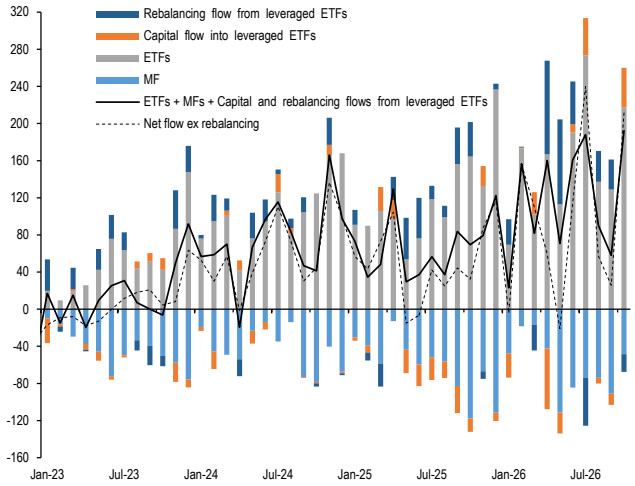
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- Led by leveraged equity ETFs, retail investors accelerated their equity fund buying over the past two weeks supporting the bottoming out in AI-related stocks. This is shown in Figure 1 which depicts the monthly flows emanating from equity funds globally. In fact, this month's capital inflow into leveraged equity ETFs has been the strongest on record.

Figure 1: Flows stemming from equity funds globally

In $bn per month.

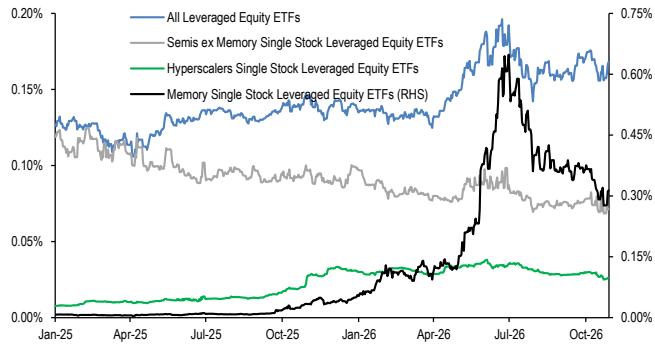


Source: Bloomberg Finance L.P., LSEG Lipper, J.P. Morgan Flows & Liquidity.

- This buying follows a further significant decline in the AUM of leveraged equity ETFs in the previous weeks with the AUM of leveraged memory stock ETFs in particular declining to its lowest level since late May (relative to the market cap of the underlying memory stocks), erasing from its peak around two thirds of the previous April/May increase (Figure 2). The lower level of the AUM of leveraged equity ETFs supports further inflows over the near term.

Figure 2: AUM of leveraged equity ETFs as % of the market cap of underlying stocks

In %.

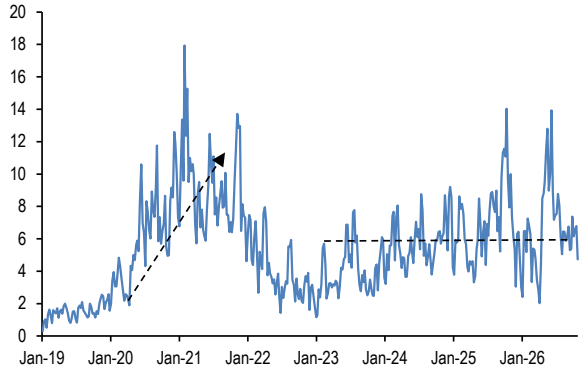


Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

- In addition, we see room for the retail impulse to increase into year-end via options as the call option buying, which had previously collapsed in the deleveraging phase of last June/July and has yet to re-emerge (Figure 3).

Figure 3: Exchange-traded Call Option Buys at Open minus Sells at Open for Customers with less than 10 contracts for options on individual equities

In mn contracts. Last obs is for the week ending 23rd Oct 2026.

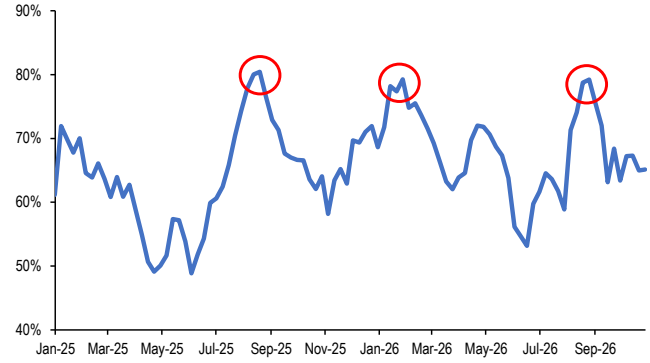


Source: OCC, J.P. Morgan Flows & Liquidity.

- What about institutional investors? As we argued last week, our overall equity positioning metric from our cross-asset positioning monitor which includes a number of metrics for speculative investors such as hedge funds, continues to point to significantly lower equity positioning from the recent peak in mid-September, again suggesting that institutional investors such as hedge funds also have room to propagate tech equities from here (Figure 4). This message is reinforced by the short interest of the QQQ ETF which rose to its highest level since 2023 as shown in Figure 5, suggesting there is room for short covering to provide support.

Figure 4: Broad equity positioning proxy from our cross-asset positioning monitor

Composite percentile since 2016.



Source: J.P. Morgan Flows & Liquidity.

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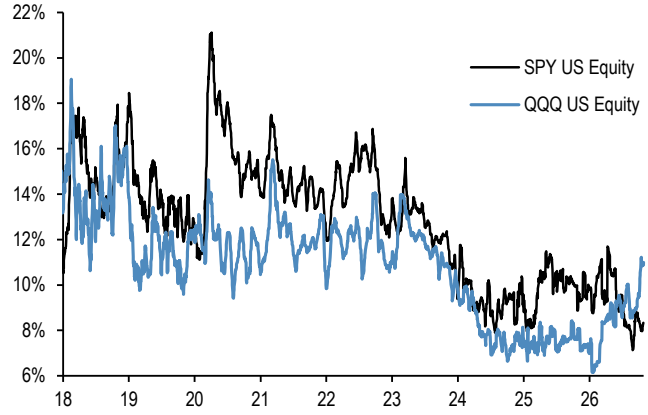
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Figure 5: Short interest on the SPY and QQQ US ETF

Short Interest as a % share of shares outstanding. Last obs is for 27th Oct 2026.

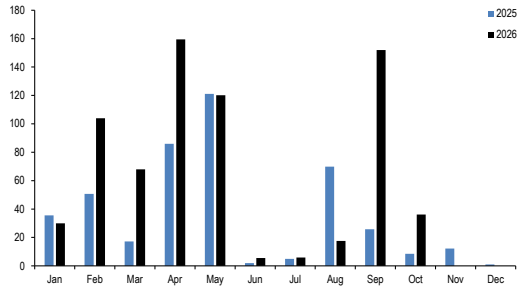


Source: S3, J.P. Morgan Flows & Liquidity.

- Finally, despite the large increase in capex by tech companies, tech buybacks have been surprisingly resilient YTD providing additional background support to equity markets (Figure 6). In particular, global share buyback announcements stand at $1.55tr YTD (Figure 7). This would imply $1.7tr of share buybacks globally for the full year after annualization, which is higher than last year (Figure 8). With the tech sector globally running a financing surplus of $400bn for this year and still comfortable access to funding (see F&L, Oct 21st), tech companies have so far been reluctant to reduce share buybacks. This could change going forward if funding conditions become restricted but at the moment, we do not believe we are in such a phase where access to funding is curtailed beyond more vulnerable companies. According to our colleagues in credit, high grade tech companies can comfortable access both public and private debt markets at the moment, including unsecured debt, bank lending, data center project finance via SPVs or GPU asset backed debt. Admittedly, unsecured debt markets have practically closed for certain neoclouds and highly leveraged tech companies but as we explained in last week's publication, these companies are neither critical nor large segments of the AI ecosystem and also not the companies driving share buybacks.

Figure 6: US Tech sector share buyback announcements YTD vs 2025

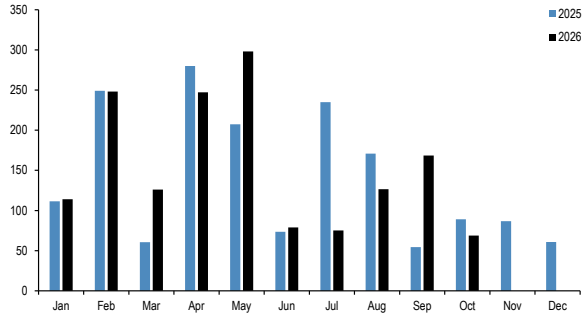
In $bn per month.



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

Figure 7: Global share buyback announcements YTD vs 2025

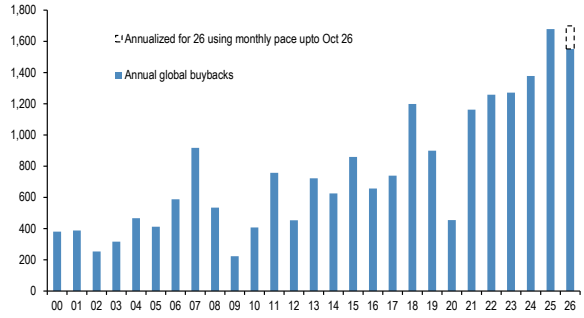
In $bn per month.



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

Figure 8: Global share buyback announcements by year

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



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

- In all, retail investors poured record amounts into leveraged ETFs over the past couple of weeks, supporting the bottoming out of AI-related stocks. We see room for the retail impulse to increase into year-end, in particular via options. In addition, the short interest of the QQQ ETF rose to its highest level since 2023, suggesting there is a short base to be covered by institutional investors. Finally, despite the large increase in capex by tech companies, tech buybacks have been surprisingly resilient YTD providing additional background support to equity markets.

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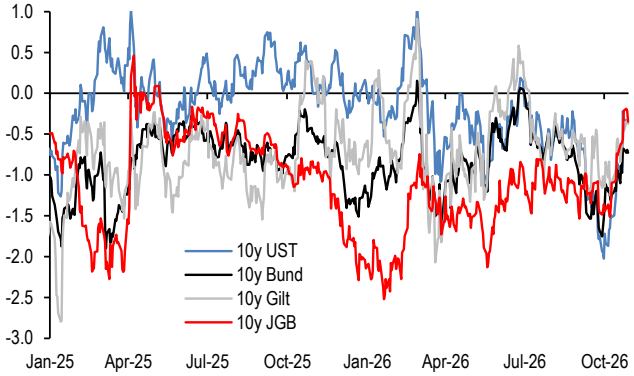
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Significant unwind by momentum-based investors of shorts in government bond futures and longs in equity futures. There are still elevated shorts in 10y OATs vs. Bunds and the euro, and elevated longs in crude oil and TTF futures.

- Given the magnitude of market moves in recent weeks, the question of how momentum-based investors have adjusted their positions and where they are more elevated has featured in our conversations. We update on our positioning signals for momentum-based investors below (see also Table A3 and Table A4 in the Appendix).
- Starting with bonds, Figure 9 shows the average z-score from the shorter- and longer-term momentum signals for 10y USTs, Bunds, gilts and JGBs. It shows that the signals were all in or close to extreme territory around the turn of the month, but that with the exception of Bunds this elevated short base has largely been unwound with z-scores in the -0.3 to -0.4 range. For Bunds, the z-score remains more negative at -0.7 suggesting some short base remains. And for 10y OATs vs. Bunds (Figure 10), the signals remain in rather extreme territory by historical standards at around -2.9. In principle this suggests that momentum investors have rather elevated shorts that may be vulnerable to profit taking or mean reversion signals being triggered, though this could require a period of stabilisation.

Figure 9: Momentum signals for 10y UST, Bund, gilt and JGB futures

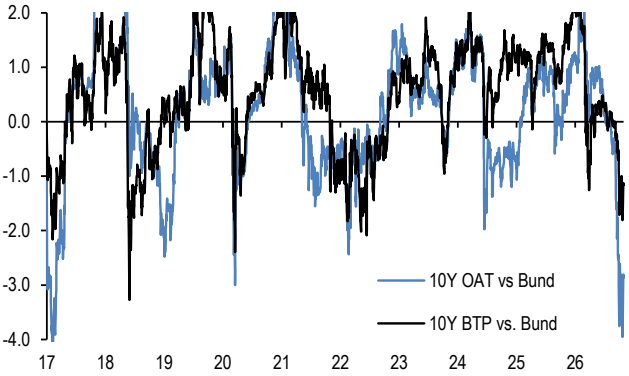
Average z-score of shorter- and longer-term momentum signal in our trend-following strategy framework (Table A3 and A4 in the Appendix), adjusted for the ratio of volatilities of the past 10 years and the past 6 months.



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

Figure 10: Momentum signals for 10y OAT vs Bund futures and 10y BTP vs Bund futures

Average z-score of shorter- and longer-term momentum signal in our trend-following strategy framework (Table A3 and A4 in the Appendix), adjusted for the ratio of volatilities of the past 10 years and the past 6 months.



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

- For equities, Figure 11 shows the average z-scores for the S&P 500, Eurostoxx 50, Nikkei and MSCI EM futures. The drawdown in semiconductor in October has seen momentum signals has seen some moderation from elevated levels of around +1.3 in early October for the S&P 500 and Nikkei to +0.9 and +0.4 respectively currently. For MSCI EM, the signals have shifted from modest longs of around +0.5 to modest shorts at -0.2 at the time of writing. Within Asia EM, Figure 12 shows that the momentum signals for KOSPI had already declined sharply since early July and had staged a relatively modest recovery to around +0.5 in late September, while for MSCI Taiwan the z-scores had recovered more notably after the July unwind and stood at +1.3 around the turn of the month. The correction in semiconductors saw both z-scores decline notably to neutral or modestly short territory, and at the time of writing the signals stood at 0 and +0.4 for KOSPI and MSCI Taiwan respectively. The HSCEI index by contrast was already modestly short at the turn of the month and currently stands at around -0.8.

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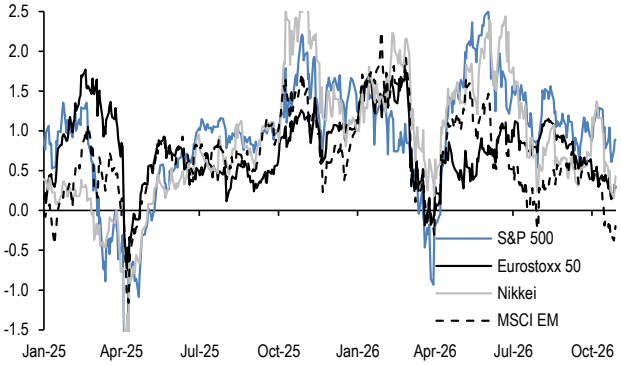
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Figure 11: Momentum signals for S&P 500, Eurostoxx 50, Nikkei and MSCI EM futures

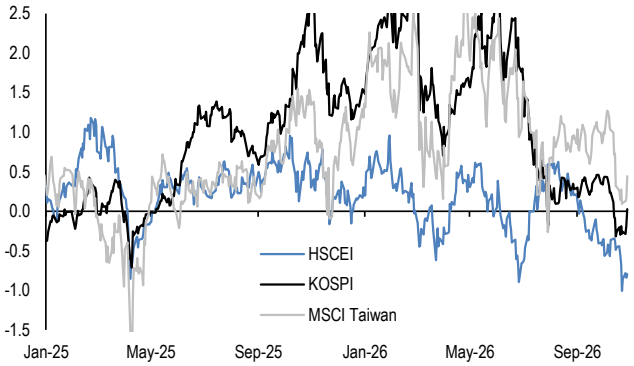
Average z-score of shorter- and longer-term momentum signal in our trend-following strategy framework (Table A3 and A4 in the Appendix), adjusted for the ratio of volatilities of the past 10 years and the past 6 months.



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

Figure 12: Momentum signals for HSCEI, KOSPI and MSCI Taiwan futures

Average z-score of shorter- and longer-term momentum signal in our trend-following strategy framework (Table A3 and A4 in the Appendix), adjusted for the ratio of volatilities of the past 10 years and the past 6 months.

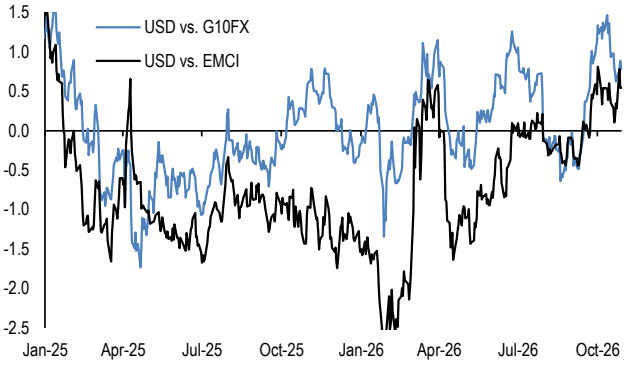


Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

- In currencies, the average z-scores for the dollar vs. G10 FX approached more extreme territory at +1.5 in early October before seeing some retrenchment and currently stands at around +0.8 (Figure 13). Looking at the signals for euro, yen and sterling separately (Figure 14), the elevated dollar positions appeared to be driven more by euro shorts, much of which were built in September, with the z-score for euro reaching -2.1 earlier in October and still sits at -1.8 at the time of writing. This elevated short by momentum-based investors does point to some risk of profit taking or mean reversion signals being triggered for the euro.

Figure 13: Momentum signals for USD vs. G10FX and EMCI

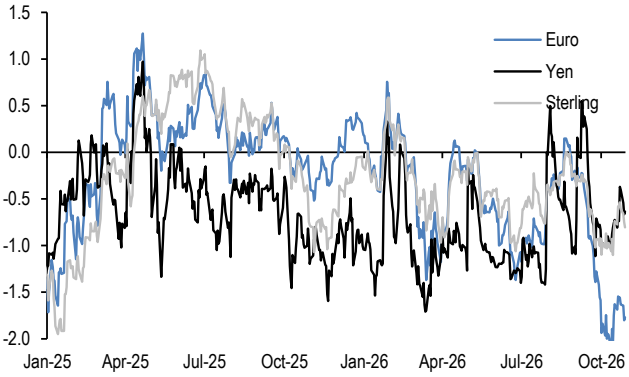
Average z-score of shorter- and longer-term momentum signal in our trend-following strategy framework (Table A3 and A4 in the Appendix), adjusted for the ratio of volatilities of the past 10 years and the past 6 months.



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

Figure 14: Momentum signals for euro, yen and sterling vs. the dollar

Average z-score of shorter- and longer-term momentum signal in our trend-following strategy framework (Table A3 and A4 in the Appendix), adjusted for the ratio of volatilities of the past 10 years and the past 6 months.



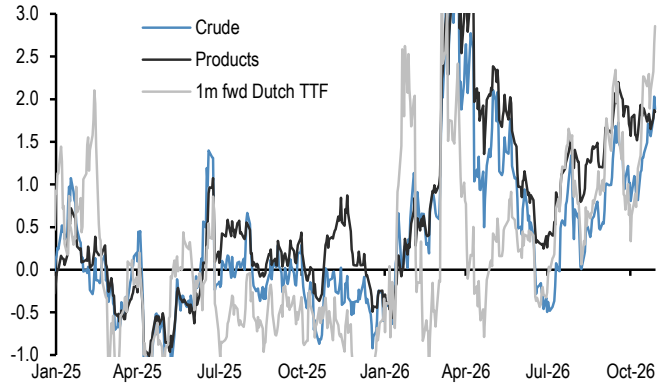
Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

- Finally, Figure 15 shows the average of the shorter- and longer-term signals for futures on crude (WTI and Brent), products (RBOB gasoline, ULSD and gasoil) as well as the TTF futures. It shows that the z-scores for crude and TTF futures had unwound some of their mid-September extremity by early October, but amid renewed concerns over a re-intensification of the Middle East conflict the z-scores reached more extreme territory again and are sitting at +1.8 for crude futures and +2.6 for TTF futures. The z-score for product futures have remained relatively elevated and currently stand at around +1.6.

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Figure 15: Momentum signals for energy futures (grouped into crude, products and natural gas)

Average z-score of short- and long-term momentum signal in our trend following strategy framework, adjusted for the ratio of volatilities of the past 10 years and the past 6 months.



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

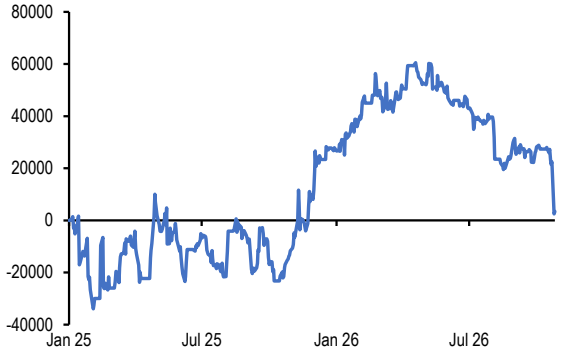
- In all, the above suggests that there has been a significant unwind by momentum-based investors of shorts in government bond futures and longs in equity futures. There are still elevated shorts in 10y OATs vs. Bunds and the euro, and elevated longs in crude oil and TTF futures.

Relatively modest reversal of retail inflows into Brazil after the election, while institutional investors unwound exposure

- Following the first round of the Brazilian presidential election, we had noted that institutional investors appeared less optimistic on Brazilian equities than retail investors (F&L, Oct 6th). How does the picture look like in the aftermath of the second round?
- Figure 16 and Figure 17 show our futures positioning proxy for CME IBOVESPA futures and CME BRL futures contracts. The former had downshifted in recent months ahead of the election and saw a further sharp downshift in the aftermath of the second round. The latter has been on an uptrend since the "Liberation Day" announcement in April 2025, and the reduction in positions in the aftermath of the second round results largely unwound the increase after the first round.

Figure 16: Our position proxy based on open interest changes in CME Ibovespa futures contracts

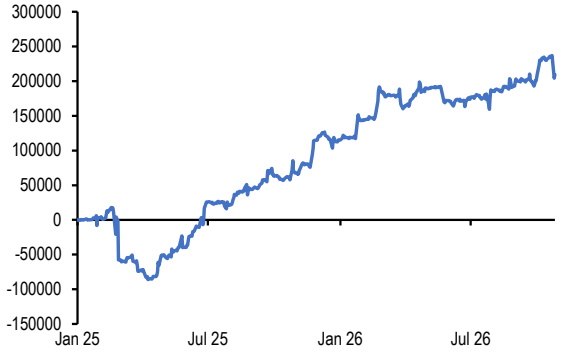
In number of contracts. Latest data until October 27th.



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

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

In number of contracts. Latest data until October 27th.



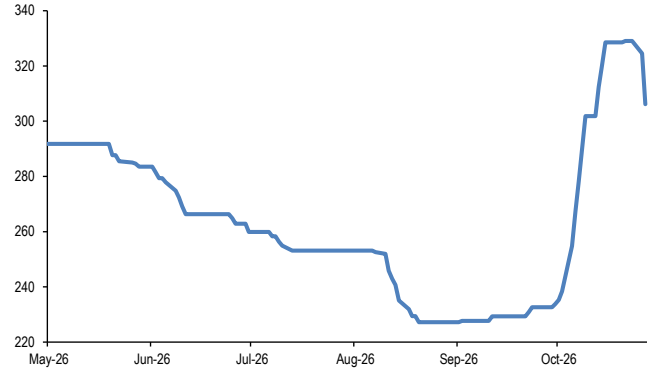
Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

- While there was relatively little buying impulse in the CME Ibovespa futures after the first round, there had been a sharp increase in inflows into the US-listed EWZ ETF (iShares MSCI Brazil), shown in Figure 18. To the extent that ETF flows tend to be more driven by retail investors, this had pointed to greater optimism on Brazilian equities by retail investors after the first round. In the aftermath of the second round, there have been some outflows though adjustment in market pricing suggests that portfolio weights have already adjusted notably lower. Different to ETF flows, ETF short interest tends to be more driven by institutional investors such as hedge funds, and this short interest had increased in mid-September and had remained more elevated until around Oct 15th (Figure 19) suggesting some institutional investors had begun to embrace the optimism from retail investors as we approached the second round. This week has seen some uptick in short interest, consistent with the unwind of net longs in equity futures in Figure 16.

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Figure 18: Shares outstanding of EWZ ETF

In mn shares.



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

Figure 19: Short interest on EWZ ETF

Short Interest as a % share of shares outstanding.



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

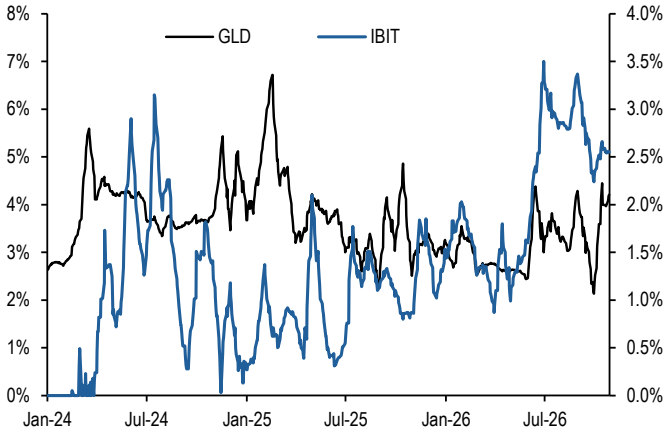
- In all, institutional investors had remained somewhat more cautious in the run-up to the second round of the Brazilian presidential elections, and appear to have reacted more quickly than retail investors. Please see also a stock take from our colleagues in Brazil equity strategy in the aftermath of the second round (Brazil Equity Strategy, Oct 27th).

Positioning metrics, coupled with shifts in the gold correlation to equities and its relative volatility to bitcoin, continue to favor bitcoin over gold.

- We had previously argued in our publication (see F&L September 16th) that from a positioning perspective, the more elevated short interest in the IBIT vs. GLD ETF could create more support for bitcoin vs. gold. Since then, the short interest of IBIT has declined while that of GLD has increased, almost closing the gap between the two (Figure 20). At face value, this implies that there is now less support for bitcoin vs. gold from previous elevated short interest in the IBIT vs. GLD ETF.

Figure 20: Short interest ratio for top gold and bitcoin ETF

In %, IBIT in RHS



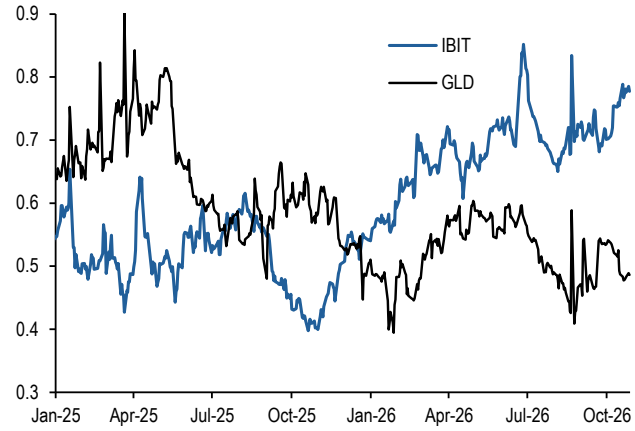
Source: S3, J.P. Morgan Flows & Liquidity.

- That said, options positioning tells a somewhat different story, with hedging demand in bitcoin looking more persistent and even rising, while hedging demand in gold appears to be declining as shown Figure 21. In other words, from an options positioning perspective, bitcoin's larger hedging overhang could further support bitcoin over gold from here.

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Figure 21: Put-to-call open interest ratio for IBIT and GLD ETFs

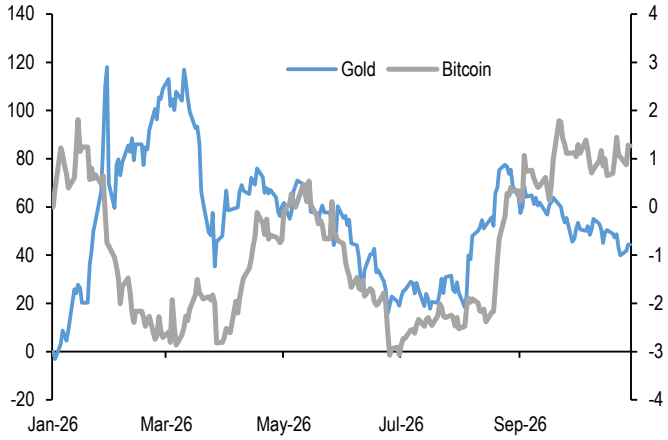


Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

- Futures markets, which tend to be more driven by institutional investors, look also more supportive for bitcoin. As shown in Figure 22, positioning in gold futures has slipped modestly, while bitcoin futures positioning has remained elevated. This divergence in the futures impulse partly reflects momentum traders such as CTAs. As shown in Figure 23 by our momentum signal framework, while momentum traders continue to build-up short positions in gold, bitcoin shows steadier long exposure.

Figure 22: Our futures position proxy based on open interest changes in CME gold and bitcoin futures contracts

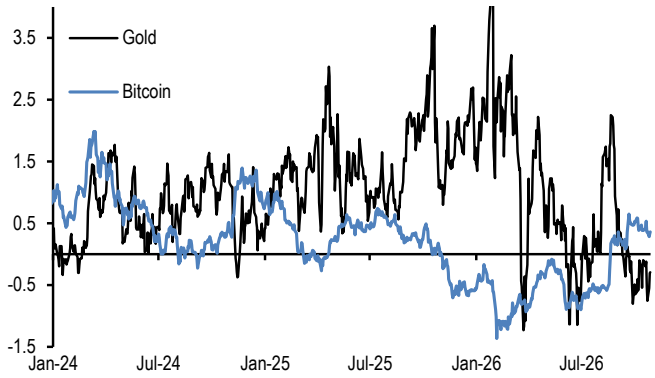
In $bn, bitcoin in RHS



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

Figure 23: Our momentum signals for gold and bitcoin

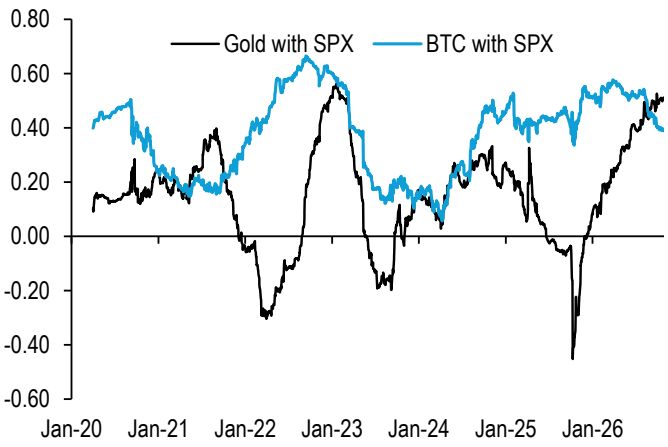
Average z-score of short- and long-term momentum signal in our trend following strategy framework



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

- Another headwind for gold is the shift in its correlation to equities and its relative volatility to bitcoin. Gold's correlation with S&P 500 returns has recently been higher than bitcoin's (Figure 24). This suggests that gold has been recently trading more like a risk asset and thus offers less diversification benefit to real money investors than in the past. And the ratio of bitcoin's six-month volatility to gold's fell to a record low of 1.36x in mid September (Figure 25). It has since rebounded to 1.5x but it remains on a declining trajectory and well below its historical average. A narrowing volatility ratio implies that bitcoin's previous volatility disadvantage vs. gold is diminishing.

Figure 24: 6-month rolling correlation between S&P500 returns and bitcoin/gold returns



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

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Figure 25: 6 month rolling volatility ratio for bitcoin over gold



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

- In all, while there is now less support for bitcoin vs. gold from previous elevated short interest in the IBIT vs. GLD, other positioning metrics coupled with shifts in the gold correlation to equities and its relative volatility to bitcoin, continue to overall favor bitcoin over gold.

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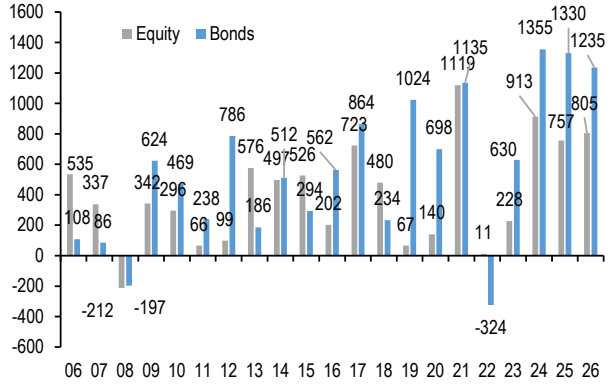
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Appendix

Chart A1a: Global equity & bond fund flows

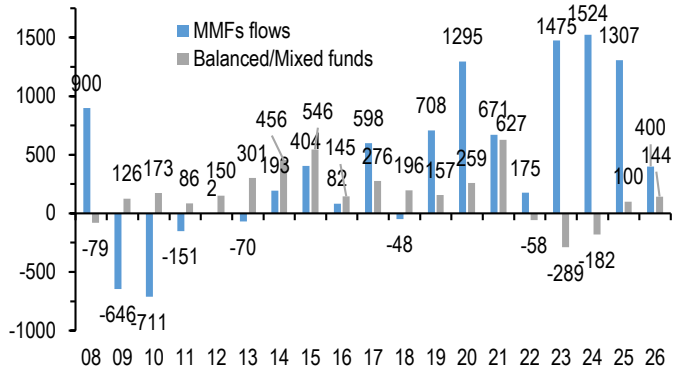
$bn per year of Net Sales, i.e. includes net new sales + reinvested dividends for Mutual Funds and ETFs globally, i.e. for funds domiciled both inside and outside the US. Flows come from ICI (worldwide data up to Q2'26). Data since then are a combination of monthly and weekly data from Lipper and Bloomberg.



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

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

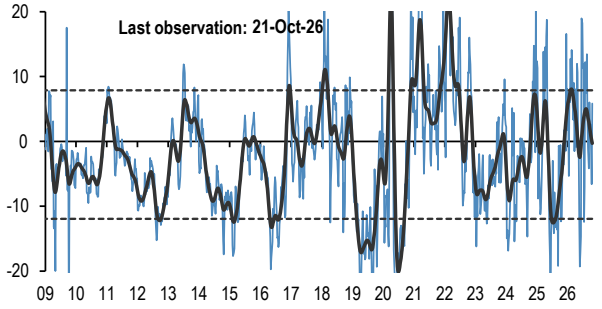
$bn per quarter of Net Sales, i.e. includes net new sales + reinvested dividends for Mutual Funds and ETFs globally, i.e. for funds domiciled both inside and outside the US. Data come from ICI (worldwide data) and are till Q2'26.



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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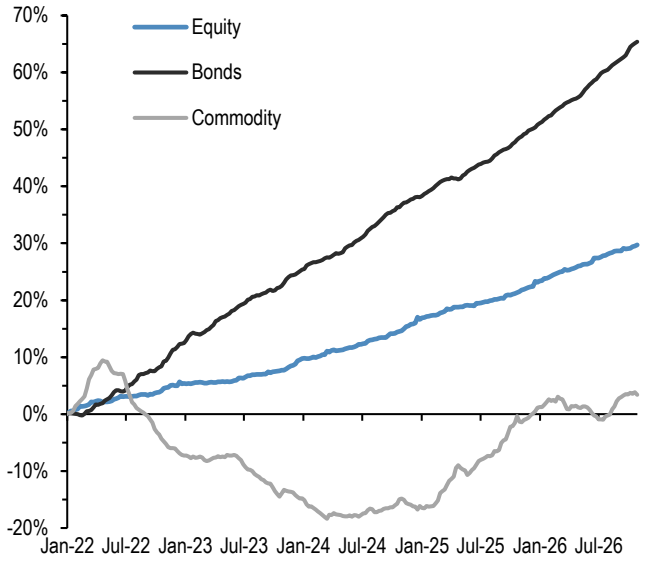
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ETF Flow Monitor (as of 28th October)

Chart A3: Global Cross Asset ETF Flows

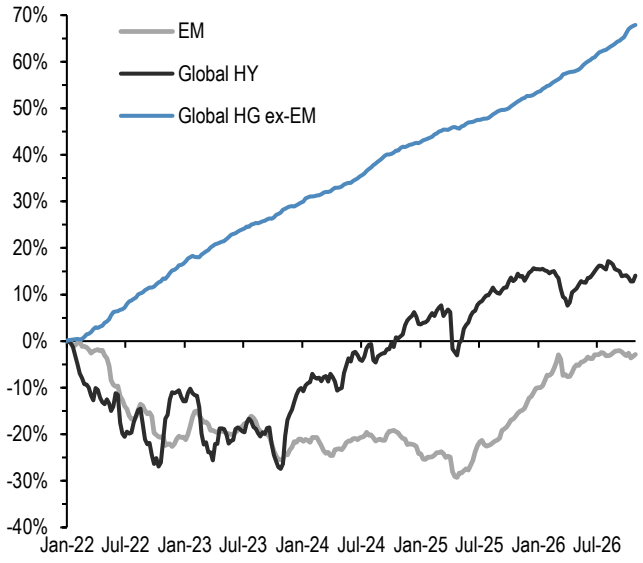
Cumulative flows into ETFs as a % of AUM



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

Chart A4: Bond ETF Flows

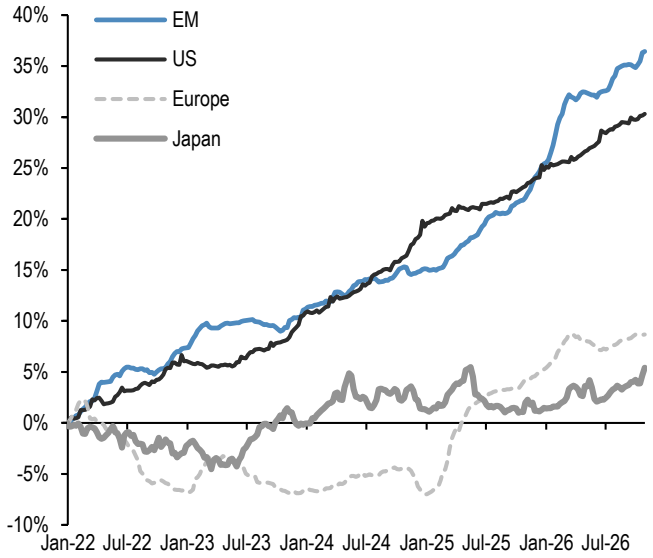
Cumulative flows into bond ETFs as a % of AUM



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

Chart A5: Global Equity ETF Flows

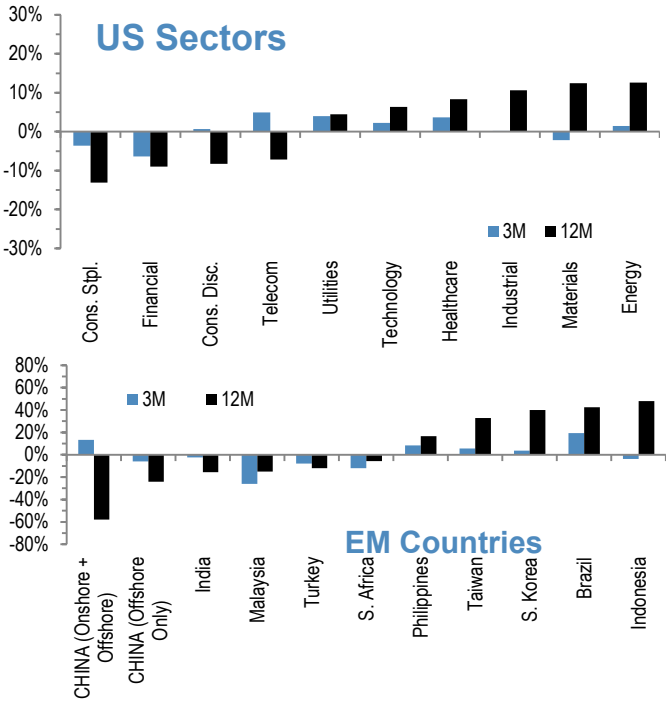
Cumulative flows into global equity ETFs as a % of AUM



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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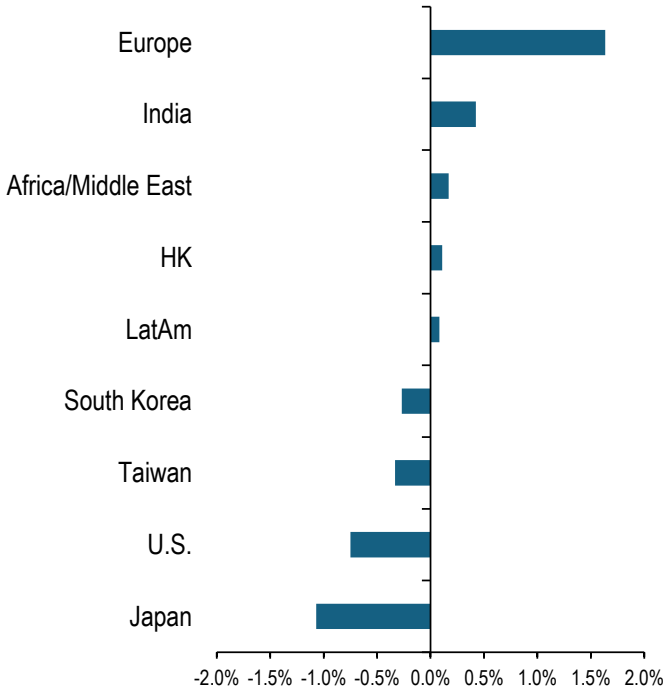
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Chart A6b: Regional Equity Allocation Monitor Implied by ETFs

In %.



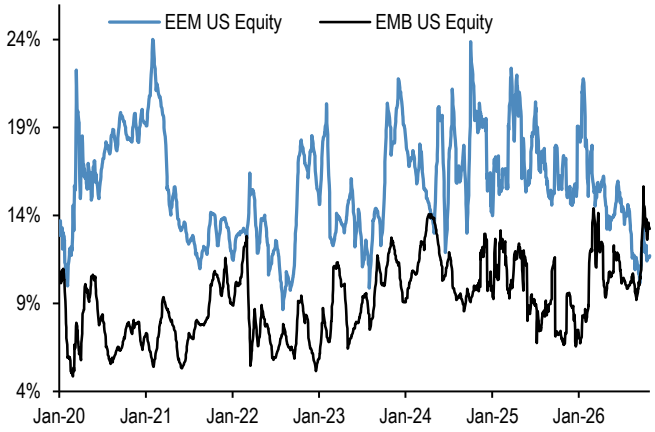
Source: Bloomberg Finance L.P., MSCI and J.P. Morgan Flows & Liquidity.
Note: Our regional equity allocation monitor implied by ETFs is based on a comparison of the share of each region in the equity ETF space relative to their corresponding shares in global equity indices.

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Short Interest Monitor

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

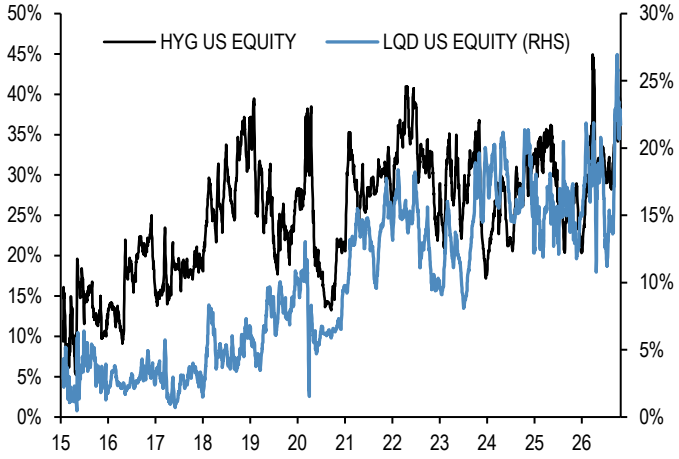
Short Interest as a % share of shares outstanding.



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

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

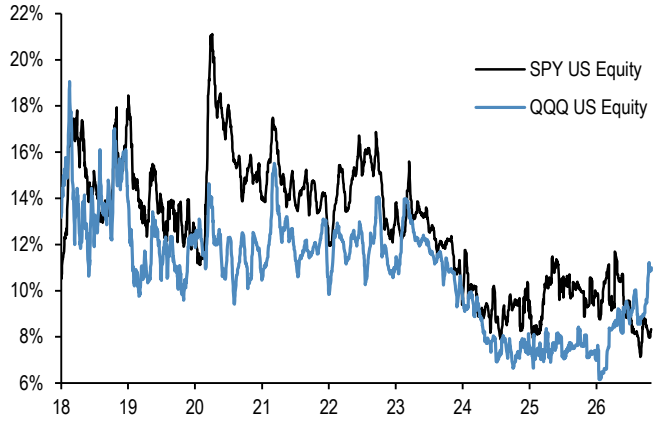
Short Interest as a % share of shares outstanding.



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

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

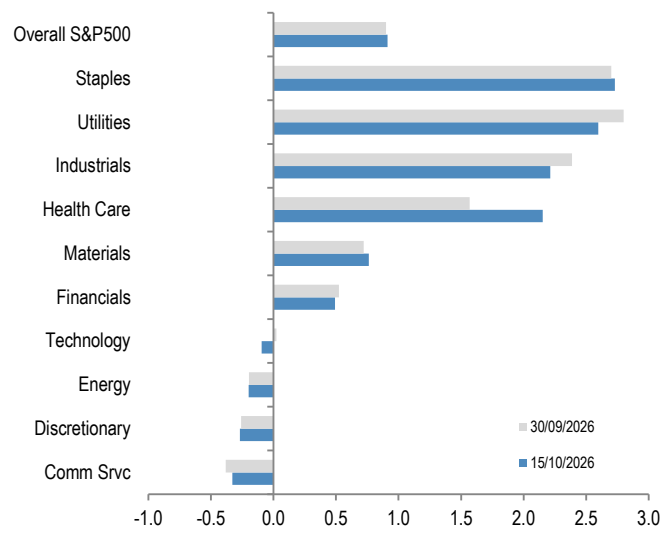
Short Interest as a % share of shares outstanding. Last obs is for 27th Oct 2026.



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 26th 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%	2%	1.47x
EuroSTOXX	17%	14%	05-Jan-26	26%	27-Mar-26		10%	3%	1.10x
Nikkei 225	28%	20%	25-Dec-25	33%	31-Mar-26		6%	8%	0.89x
Hang Seng	19%	17%	04-Sep-26	24%	26-Mar-26		5%	2%	0.96x
MSCI EM	25%	14%	09-Dec-25	38%	01-Jul-26		14%	10%	1.26x
Gold	20%	18%	07-Nov-25	33%	26-Mar-26		13%	2%	1.26x
Oil (brent)	57%	27%	11-Nov-25	89%	30-Mar-26		32%	31%	1.98x
Copper	18%	18%	13-Jul-26	37%	03-Feb-26		18%	1%	0.99x
BB commodity index	19%	13%	10-Dec-25	25%	30-Mar-26		7%	5%	2.59x
EUR/USD	6%	5%	15-Jun-26	8%	13-Mar-26		1%	1%	0.99x
USD/NOK	9%	8%	17-Dec-25	11%	30-Mar-26		3%	1%	1.67x
USD/JPY	8%	7%	16-Jul-26	10%	27-Mar-26		2%	1%	1.37x
GBP/USD	6%	6%	14-Aug-26	8%	27-Mar-26		2%	0%	0.97x
USD/CHF	7%	6%	29-May-26	9%	29-Jan-26		2%	1%	1.00x
10y US swaps	99%	62%	27-Jan-26	108%	05-Oct-26		9%	37%	1.21x
10y Eur swaps	92%	43%	26-Feb-26	99%	02-Oct-26		7%	50%	2.09x
CDX IG	46%	37%	22-Sep-26	62%	27-Mar-26		17%	9%	2.11x
CDX HY	45%	31%	09-Jan-26	57%	30-Mar-26		12%	14%	2.08x
iTraxx	51%	37%	09-Jan-26	70%	27-Mar-26		19%	13%	1.69x
iTraxx X/O	50%	38%	16-Jun-26	66%	27-Mar-26		16%	12%	1.61x

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.

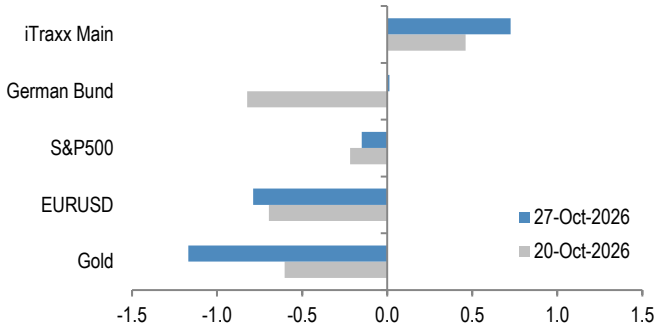
Definitions:

Current:	Latest available closing level (26-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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Chart A11b: Option skew monitor

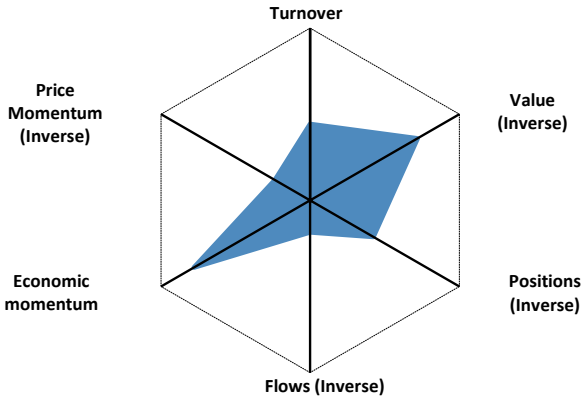
Skew is the difference between the implied volatility of out-of-the-money (OTM) call options and put options. A positive skew implies more demand for calls than puts and a negative skew, higher demand for puts than calls. It can therefore be seen as an indicator of risk perception in that a highly negative 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 23rd Oct.



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

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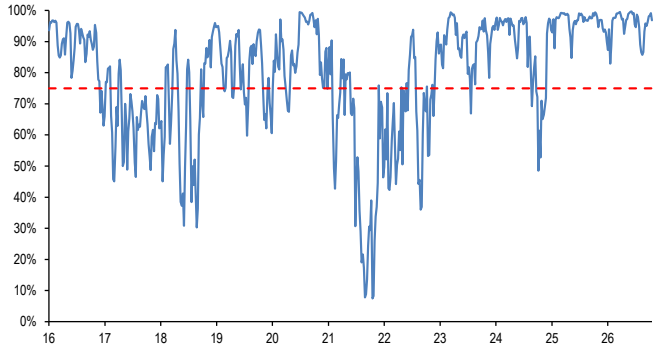
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Chart A11d: Implied probability of the S&P500 rising over the next six months with a cutoff set at 75%

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

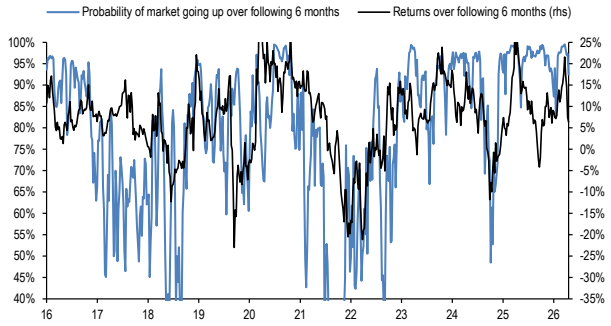
In %. Based on the methodology laid out in the F&L, 25th June 2025.

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



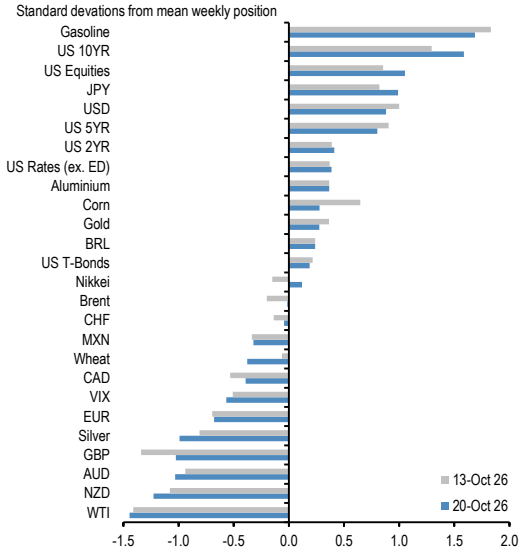
Source: J.P. Morgan Flows & Liquidity.

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Spec position monitor

Chart A12: Weekly Spec Position Monitor

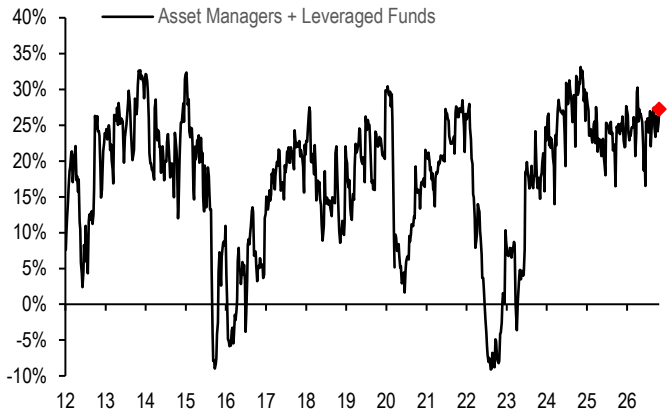
Net spec positions are proxied by the number of long contracts minus the number of short contracts using the speculative category of the Commitments of Traders reports (as reported by CFTC). To proxy for speculative investors for equity and US Treasury bond futures positions we use Asset managers and 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

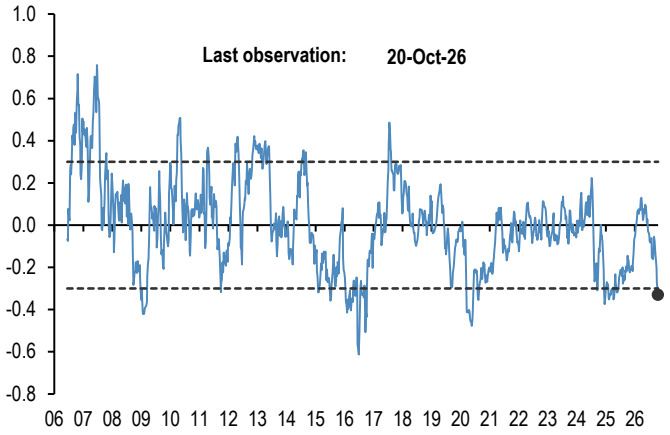
CFTC positions in US equity futures by Leveraged funds and Asset managers (as a % of open interest). It is an aggregate of the S&P500, DowJones, NASDAQ and their Mini futures contracts.



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

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

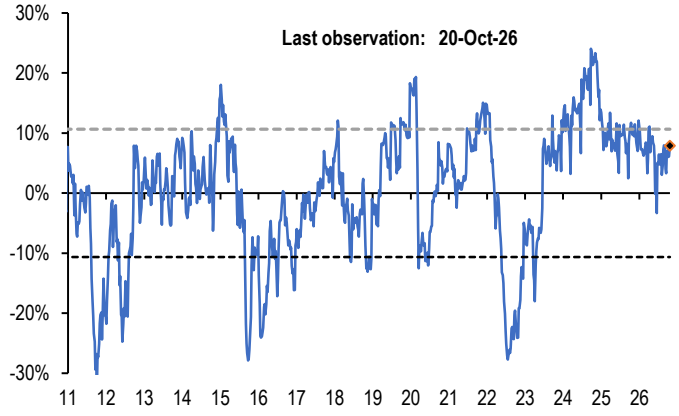
Difference between net spec positions on risky & safe currencies. Net spec position is calculated in USD across 5 'risky' and 3 'safe' currencies (safe currencies also include Gold). These positions are then scaled by open interest and we take an average of 'risky' and 'safe' assets to create two series. 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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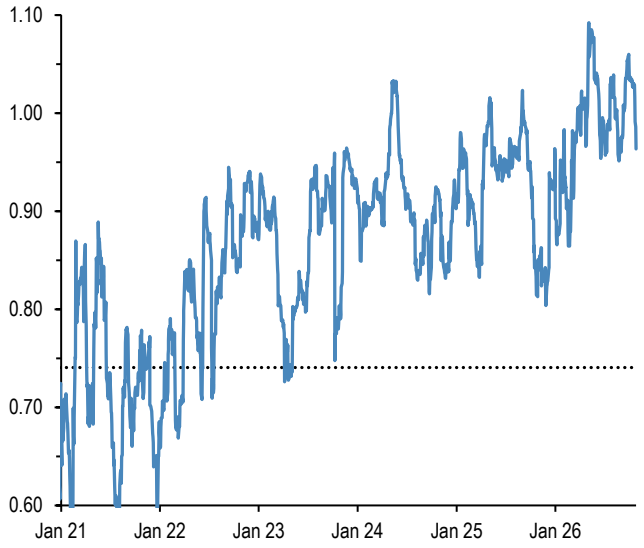
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Mutual fund and hedge fund betas

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

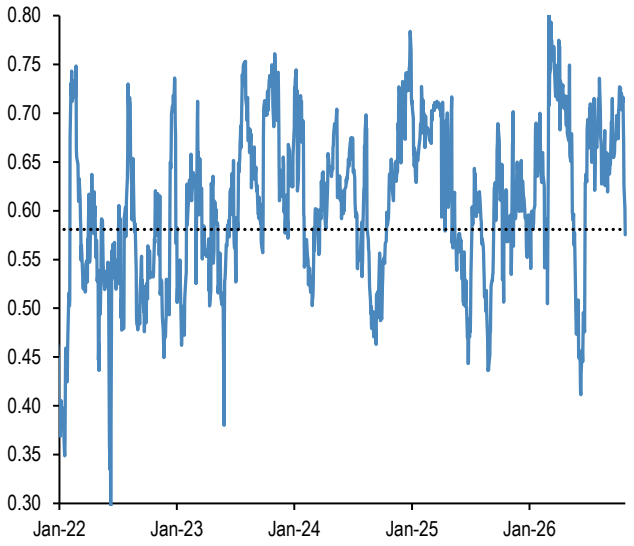
The dotted line shows the average beta since 2013.



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

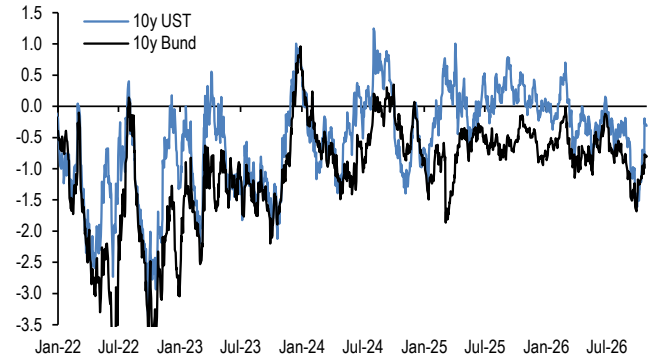
The table depicts the performance of various types of investors in % as of 27th Oct 2026.

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%	6.3%
US Balanced MFs	13.2%	14.4%	-13.0%	13.8%	11.4%	14.4%	7.8%
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%	0.0%
S&P Riskparity Vol 10	11.5%	12.8%	-16.2%	15.0%	5.4%	15.9%	15.9%
60 US Equity : 40 US Bonds	13.3%	14.8%	-15.4%	18.6%	16.4%	12.7%	8.3%

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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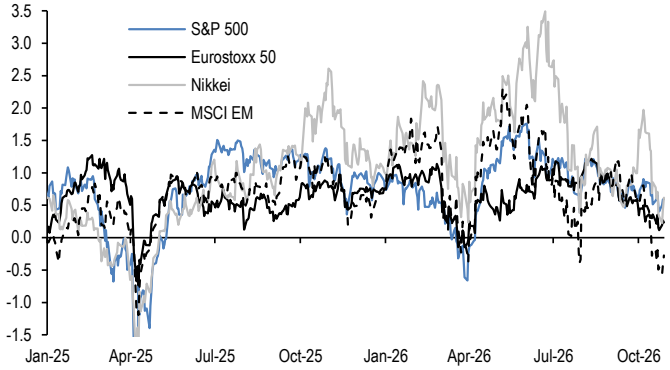
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Chart A20: Momentum signals for S&P500

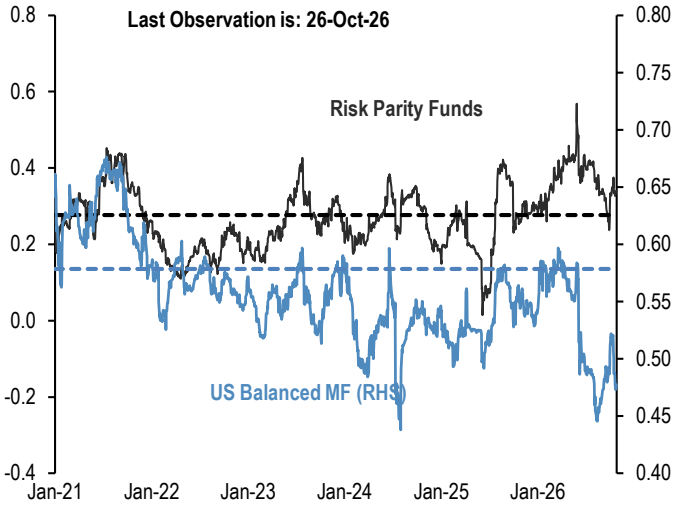
Average z-score of Short- and Long-term momentum signal in our Trend Following Strategy framework shown in Tables A3 and A4 below in the Appendix.



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

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

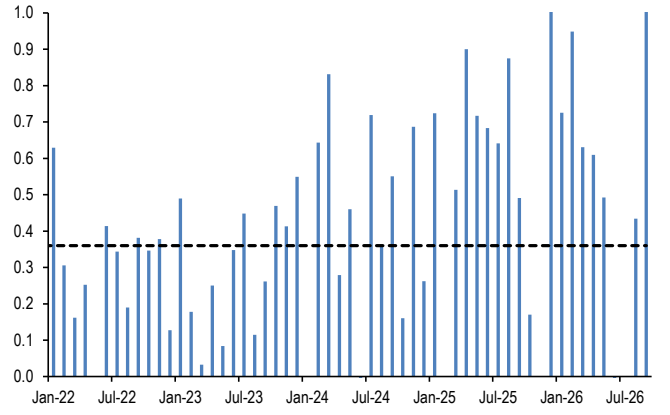
Rolling 42-day equity beta based on a bivariate regression of the daily returns of our Balanced Mutual fund and Risk Parity fund return indices to the daily returns of the S&P 500 and BarCap US Agg indices. Given that these funds invest in both equities and bonds we believe that the bivariate regression 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

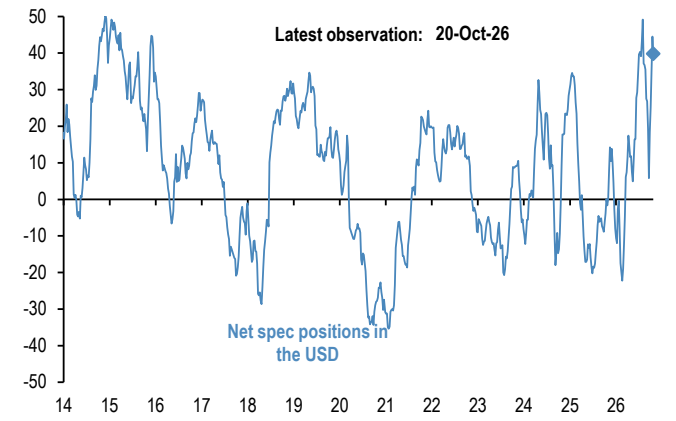
Proxied by the ratio of the monthly performance of Pivotal Path Asset-Weighted Equity Diversified hedge fund index divided by the monthly performance of MSCI AC World Index. Latest obs. is Sept. 26 based on provisional data.



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	2	1.2	7.6%
	long	462				0	41	2.2	64.8%
Brent	short	84	4.5	21.5	0.21	0	19	2.1	25.7%
	long	504				0	42	2.8	80.2%
Unleaded gas	short	105	4.1	23.3	0.18	1	17	0.9	12.9%
	long	483				0	87	2.4	66.5%
Heat Oil	short	63	4.7	22.1	0.21	1	13	0.7	7.5%
	long	483				0	171	3.2	103.5%
Gasoil	short	63	9.2	21.5	0.43	1	1	1.0	11.1%
	long	378				0	87	3.4	104.0%
Nat gas	short	105	13.5	35.7	0.38	-1	8	-0.6	-10.3%
	long	315				-1	192	-0.7	-20.6%
Emission allowances	short	42	11.1	28.7	0.39	1	5	0.3	2.8%
	long	483				1	100	0.3	13.1%
TTF	short	21	45.0	43.4	1.04	1	1	1.5	17.4%
	long	294				0	5	1.9	113.4%
Gold	short	21	3.1	10.7	0.29	-1	17	-0.6	-1.6%
	long	483				0	1	0.0	0.0%
Silver	short	10	6.1	19.7	0.31	-1	2	-1.1	-3.8%
	long	462				-1	4	-0.2	-5.9%
Palladium	short	42	11.8	23.2	0.51	0	6	-2.0	-16.3%
	long	273				-1	116	-1.4	-32.3%
Platinum	short	105	3.6	18.8	0.19	-1	25	-1.0	-9.7%
	long	273				-1	34	-1.2	-19.0%
Aluminium	short	105	5.6	15.1	0.37	-1	92	-0.4	-3.4%
	long	357				1	1	0.2	2.2%
Copper	short	147	7.5	17.2	0.44	1	184	0.4	5.1%
	long	399				1	190	0.9	20.8%
Lead	short	126	0.8	19.1	0.04	-1	102	-0.1	-0.6%
	long	357				-1	203	-0.3	-6.1%
Nickel	short	42	11.8	22.9	0.52	-1	4	-0.4	-3.3%
	long	336				-1	34	-0.3	-8.5%
Zinc	short	126	8.2	19.6	0.42	1	152	0.5	5.9%
	long	399				1	282	1.0	21.8%
Wheat	short	168	3.9	23.3	0.17	-1	7	-0.6	-7.8%
	long	294				-1	2	-0.1	-2.3%
Kansas wheat	short	147	8.3	20.9	0.40	-1	8	-0.7	-8.6%
	long	483				0	2	0.0	0.1%
Corn	short	63	7.5	16.6	0.45	-1	14	-1.3	-9.9%
	long	399				-1	13	-0.5	-9.1%
Soybeans	short	42	4.9	14.5	0.34	-1	11	-0.8	-4.4%
	long	231				1	55	0.2	2.9%
Cotton	short	168	5.2	18.5	0.28	-1	3	-0.3	-3.8%
	long	483				0	2	0.0	-0.1%
Sugar	short	63	6.7	21.6	0.31	1	7	0.3	2.6%
	long	252				1	8	0.9	17.0%
Coffee	short	63	7.6	24.0	0.32	-1	1	-0.5	-4.6%
	long	273				-1	0	-0.1	-2.4%
Cocoa		10	4.9	31.5	0.15	-1	4	-1.1	-4.1%

* 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	7.7	12.3	0.63	1	2	0.3	1.3%
	long	315				1	96	0.9	9.7%
Nasdaq 100	short	84	9.2	16.2	0.57	1	1	0.1	0.5%
	long	462				1	85	1.0	19.1%
Nikkei	short	63	3.4	13.3	0.26	-1	9	-0.4	-2.1%
	long	420				0	0	1.6	24.6%
FTSE 100	short	168	5.3	12.0	0.44	1	13	0.3	2.0%
	long	504				1	7	1.3	14.4%
Eurostoxx 50	short	168	4.7	16.6	0.29	1	2	0.1	1.0%
	long	294				1	152	0.4	4.2%
MSCI EM	short	42	12.5	11.5	1.09	-1	12	-1.0	-5.3%
	long	357				1	77	0.5	7.8%
LQD credit return	short	168	0.4	3.4	0.12	-1	24	-0.1	-0.3%
	long	273				-1	24	-0.1	-0.5%
HYG credit return	short	10	2.4	6.5	0.38	1	1	0.4	0.4%
	long	189				-1	41	-0.3	-1.7%
2Y USTs	short	252	0.9	1.1	0.80	-1	19	-1.1	-1.3%
	long	462				-1	170	-0.9	-1.7%
5Y USTs	short	252	1.6	2.8	0.56	-1	11	-1.1	-2.8%
	long	420				-1	136	-0.9	-3.3%
10Y USTs	short	42	2.0	3.6	0.57	1	4	0.2	0.3%
	long	441				-1	136	-0.8	-3.9%
2Y Schatz	short	189	0.6	0.8	0.81	0	2	-1.6	-1.4%
	long	504				0	169	-1.9	-3.4%
5y Bobl	short	63	1.4	1.9	0.76	-1	19	-0.4	-0.4%
	long	483				-1	19	-1.3	-4.5%
10y Bund	short	105	2.3	3.4	0.67	-1	19	-0.6	-1.4%
	long	462				-1	771	-1.0	-5.0%
10Y JGB	short	126	0.9	2.3	0.38	-1	0	-0.2	-0.2%
	long	273				-1	3	-1.3	-2.1%
10Y Gilts	short	42	2.5	4.1	0.60	0	2	0.0	0.0%
	long	399				-1	5	-1.4	-7.3%
10y OAT vs Bund	short	189	0.5	1.5	0.32	0	29	-5.6	-5.2%
	long	294				0	26	-5.1	-5.3%
10y BTP vs. Bund	short	84	2.3	6.2	0.37	-1	35	-0.7	-1.8%
	long	273				-1	29	-0.5	-2.3%
Euro	short	42	3.4	6.4	0.52	-1	11	-1.1	-2.5%
	long	273				-1	180	-1.2	-6.6%
Yen	short	21	3.5	6.3	0.55	-1	1	-0.2	-0.2%
	long	462				-1	64	-1.1	-9.1%
Sterling	short	168	1.6	7.1	0.23	-1	43	-0.5	-2.1%
	long	294				-1	174	-0.6	-3.0%
AUD	short	42	3.7	7.8	0.47	-1	26	-0.2	-0.6%
	long	420				1	6	0.1	0.9%
CAD	short	168	1.5	5.9	0.25	-1	127	-0.7	-2.6%
	long	504				-1	409	-0.9	-6.2%
G10 FX	short	42	2.1	5.1	0.41	1	30	0.7	1.1%
	long	189				1	32	0.7	2.4%
EMCI	short	42	2.5	4.9	0.51	-1	26	-0.5	-0.8%
	long	189				-1	24	-0.3	-1.1%

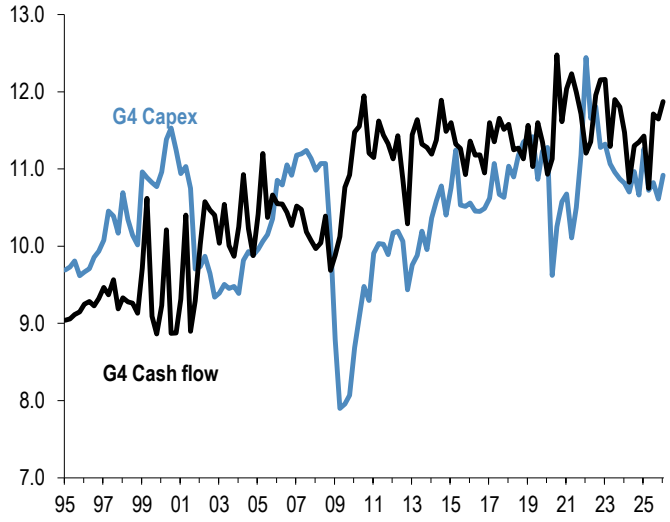
Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

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Corporate Activity

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

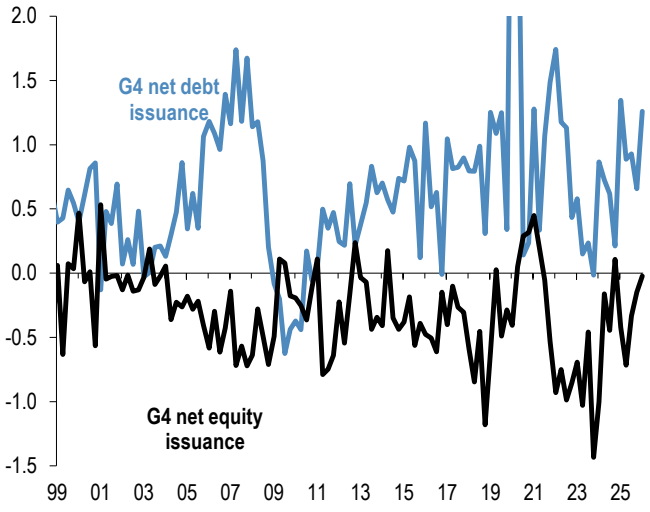
% of GDP, G4 includes the US, the UK, the Euro area and Japan. Last observation as of Q1 2026.



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

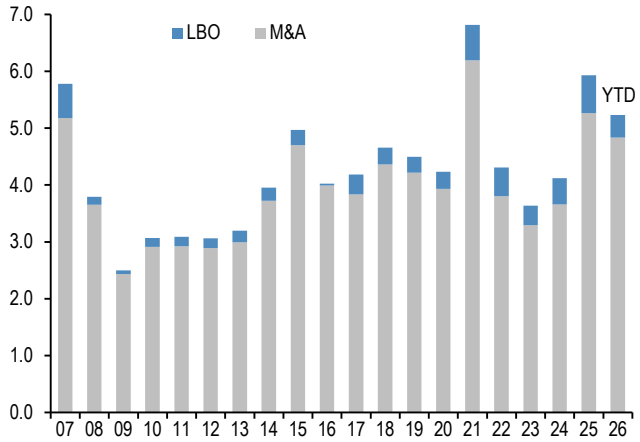
$tr per quarter, G4 includes the US, the UK, the Euro area and Japan. Last observation as of Q1 2026.



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

Chart A26: Global M&A and LBO

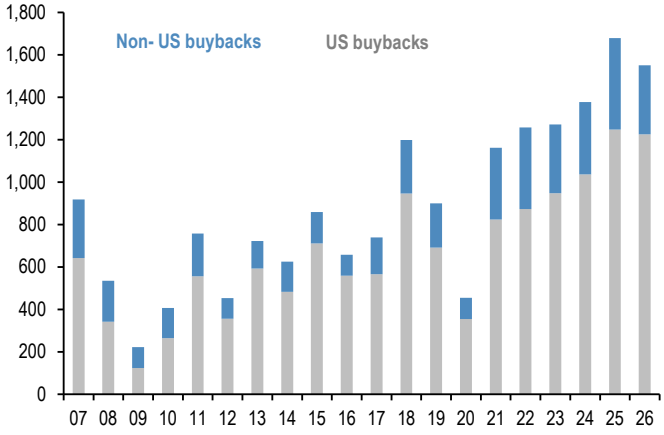
$tr. M&A and LBOs are announced.



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.

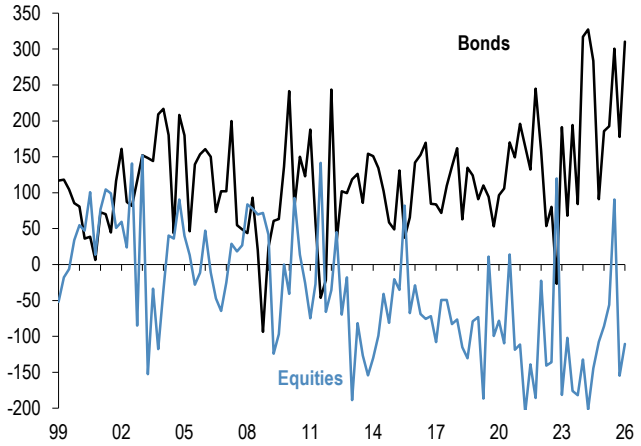
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Pension fund and insurance company flows

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

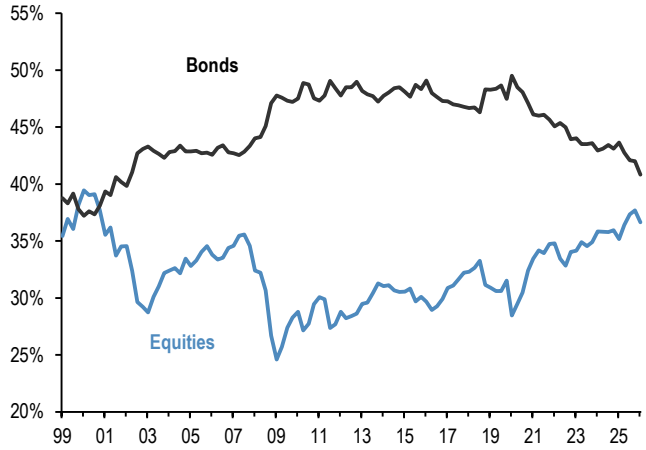
Equity and bond buying in $bn per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q1 2026.



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

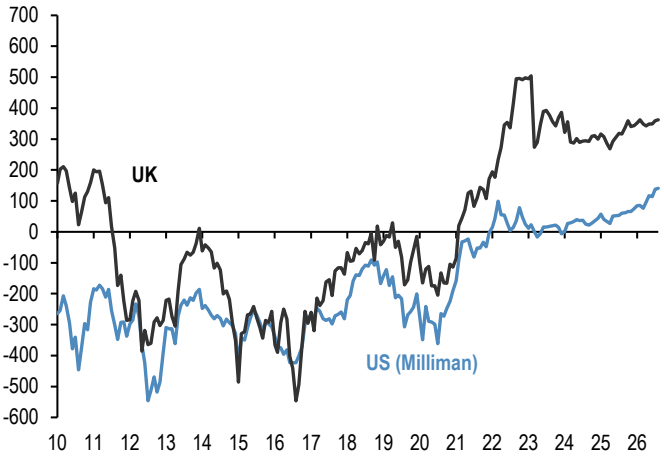
Equity and bond as % of total assets per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q1 2026.



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

Chart A30: Pension fund deficits

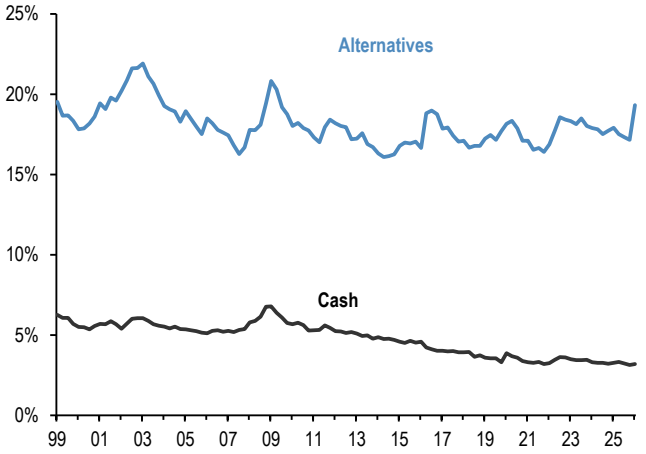
US$bn. For US, funded status of the 100 largest corporate defined benefit pension plans, from Milliman. For UK, funded status of the defined benefit schemes eligible for entry to the Pension Protection Fund, converted to US$ at today's exchange rates. Last obs. is August'26 for US & UK.



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.



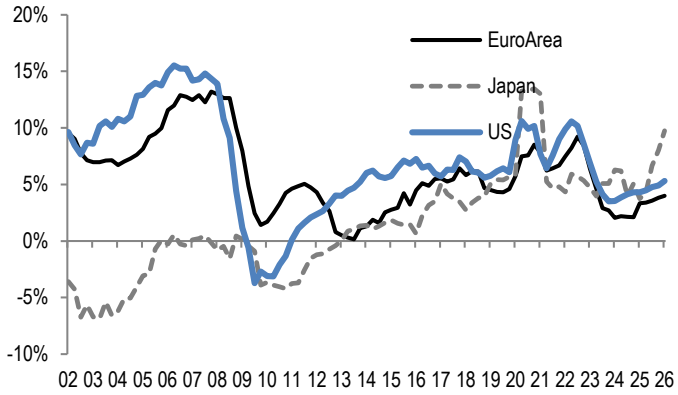
Source: ECB, BOJ, BOE, Federal Reserve flow of funds, J.P. Morgan Flows & Liquidity.

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Credit Creation

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

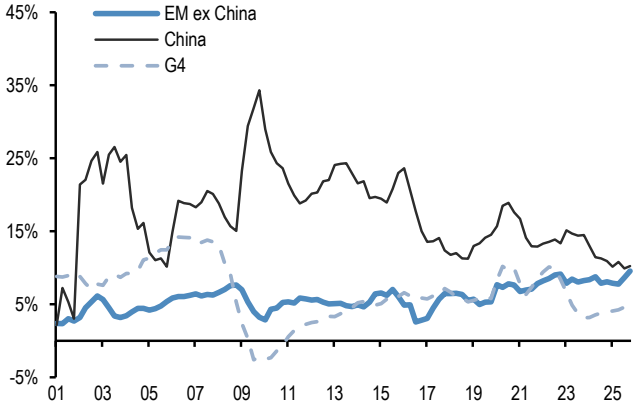
Rolling sum of 4-quarter credit creation as % of GDP. Credit creation includes both bank loans as well as net debt issuance by non-financial corporations and households. Last obs. is Q1'26 for Japan, Euro Area and US.



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

Chart A33: Credit creation in EM

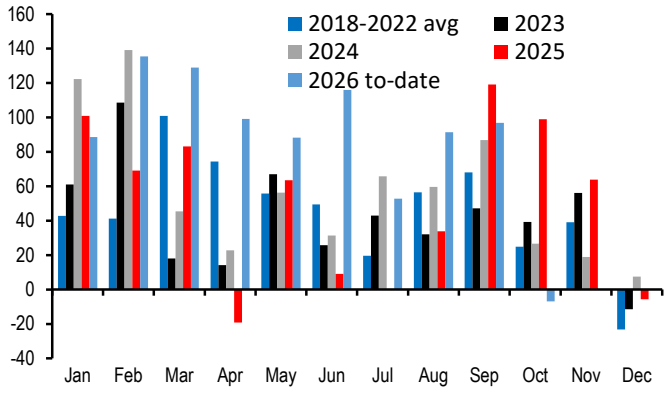
Rolling sum of 4-quarter credit creation as % of GDP. Credit creation includes both bank loans as well as net debt issuance by non-financial corporations and households. The chart uses the FX rates as of the latest observation to calculate the credit creation at constant exchange rates. Last obs. is 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 22nd.



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	16-Oct	4 wk avg	13 wk avg	y/y chng
Global IPOs	0.4	2.7	2.8	107%
Secondary Offerings	1.8	5.8	10.8	37%
Corporate announcements				
M&A - Global	31.6	83.2	100.1	30%
- US Target	15.6	41.3	46.7	41%
- Non-US Target	16.0	41.8	53.3	20%
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.

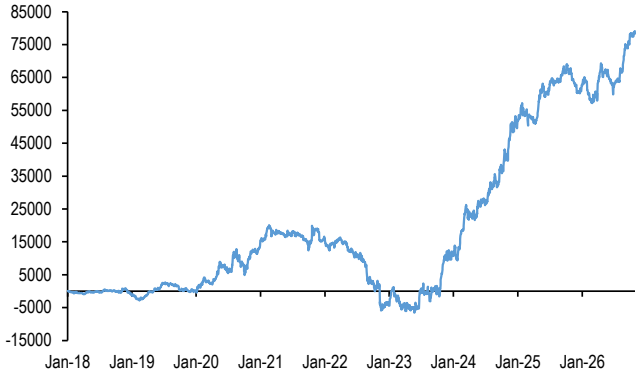
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Bitcoin monitor

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

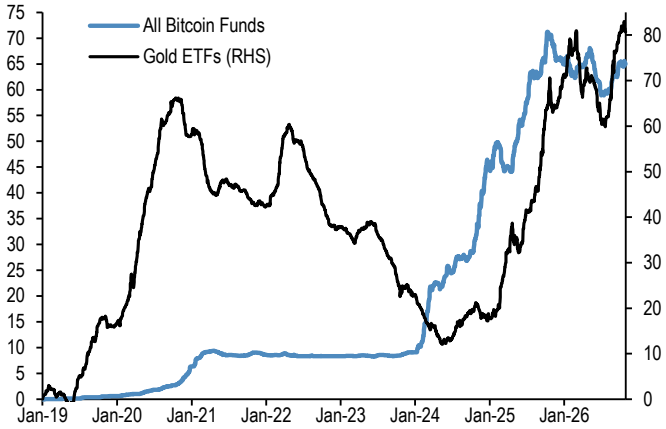
In number of contracts. Last obs. for 27th Oct 2026



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

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

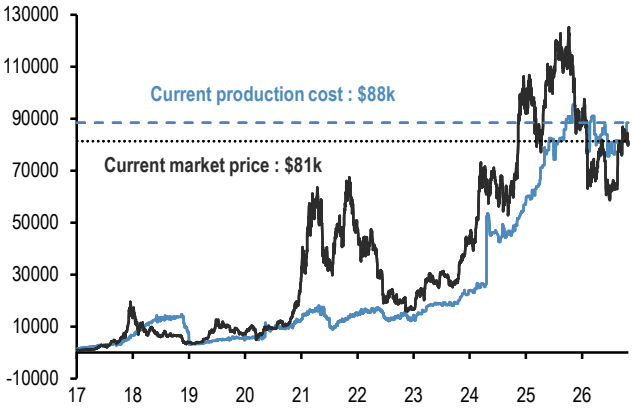
Both the y-axis in $bn.



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

Chart A37: Ratio of bitcoin market price to production cost

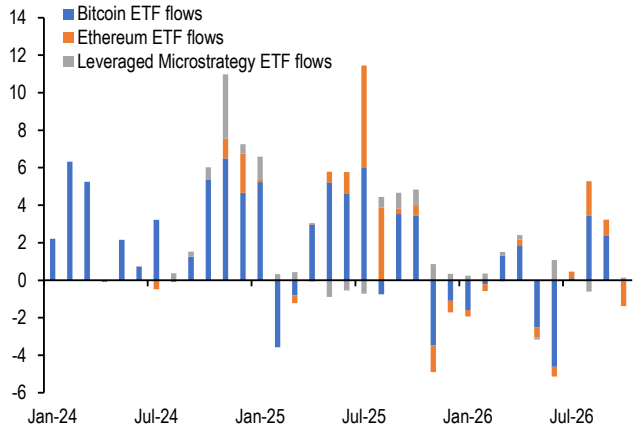
Based on the cost of production approach following Hayes (2018).



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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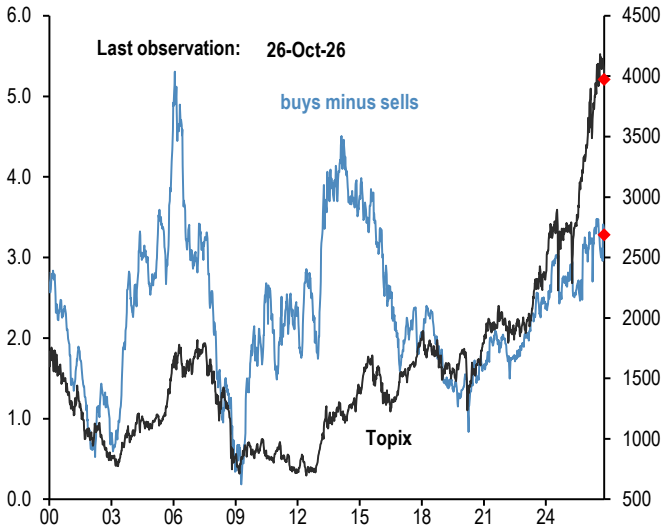
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Japanese flows and positions

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

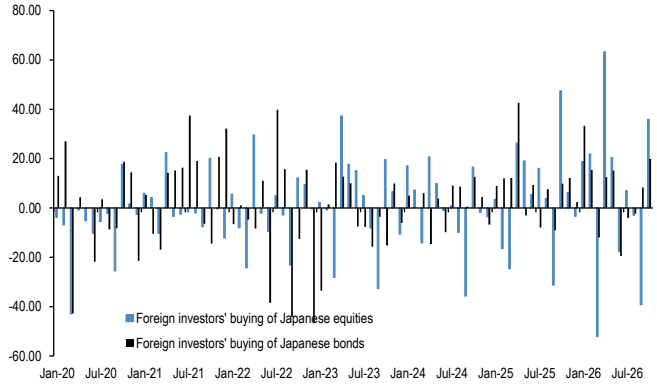
In bn of shares. Topix on right axis.



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

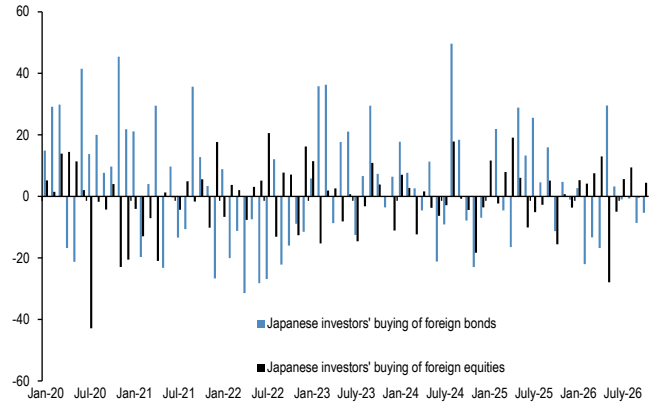
$bn, Last weekly obs. is for 16th Oct' 26.



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

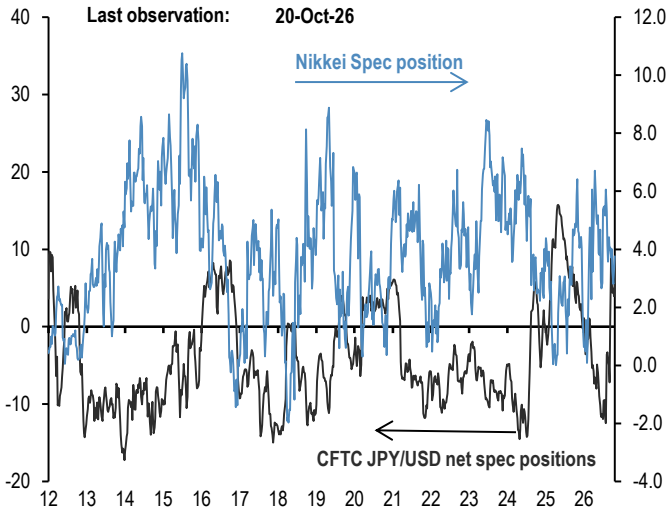
$bn, Last weekly obs. is for 16th Oct' 26.



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.

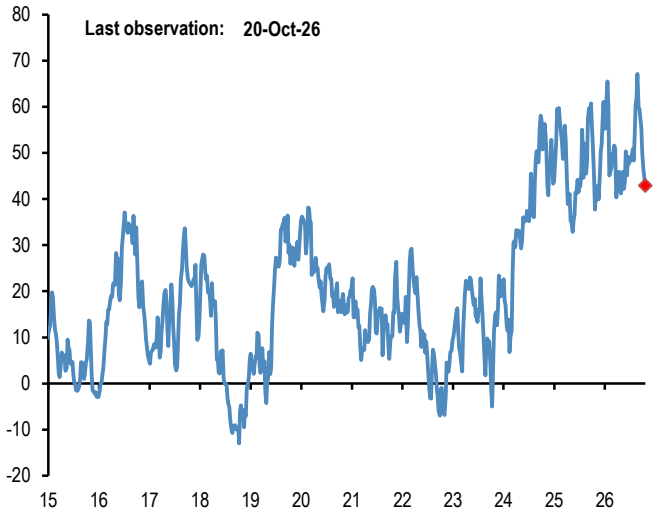
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Commodity flows and positions

Chart A43: Gold spec positions

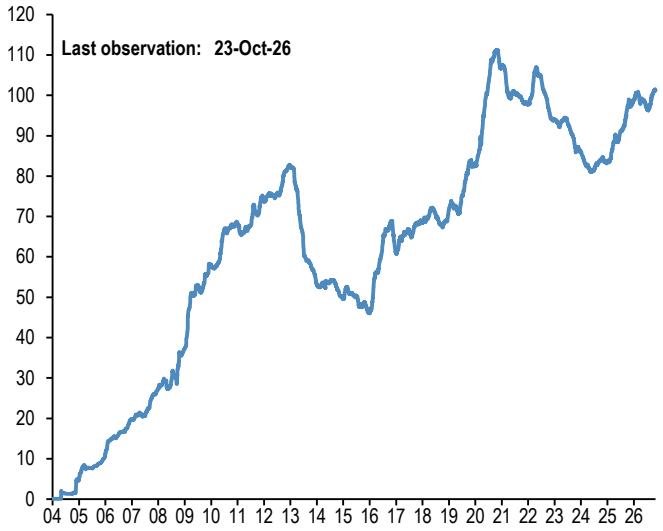
$bn. CFTC net long minus short position in futures for the Managed Money category.



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

Chart A44: Gold ETFs

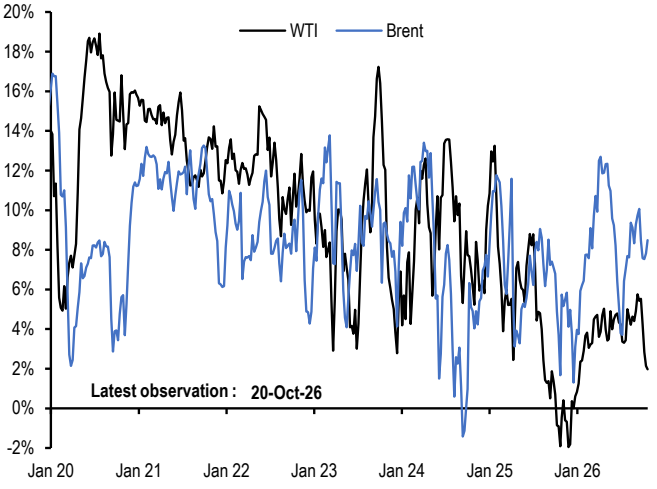
Mn troy oz. Physical gold held by all gold ETFs globally.



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

Chart A45: Oil spec positions

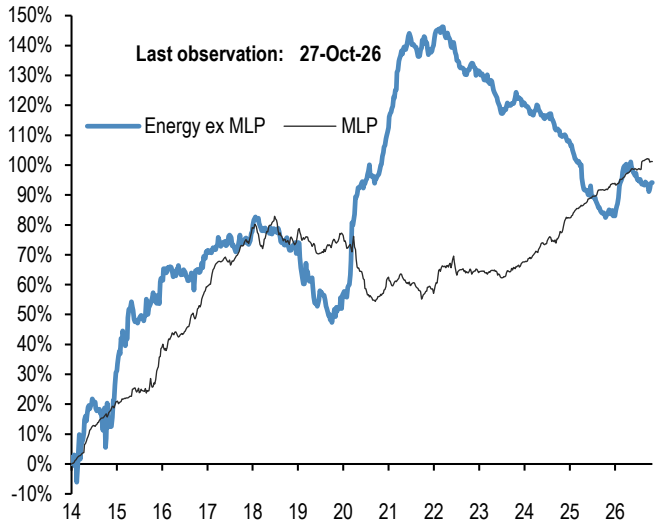
Net spec positions divided by open interest. CFTC futures positions for WTI and Brent are net long minus short for the Managed Money category.



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.



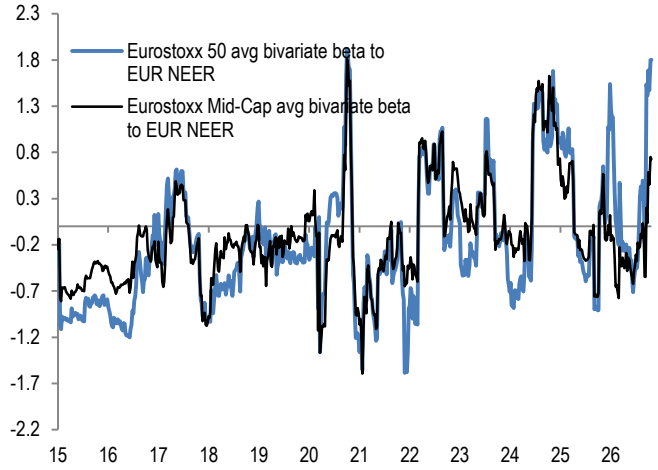
Source: CFTC, Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

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Corporate FX hedging proxies

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

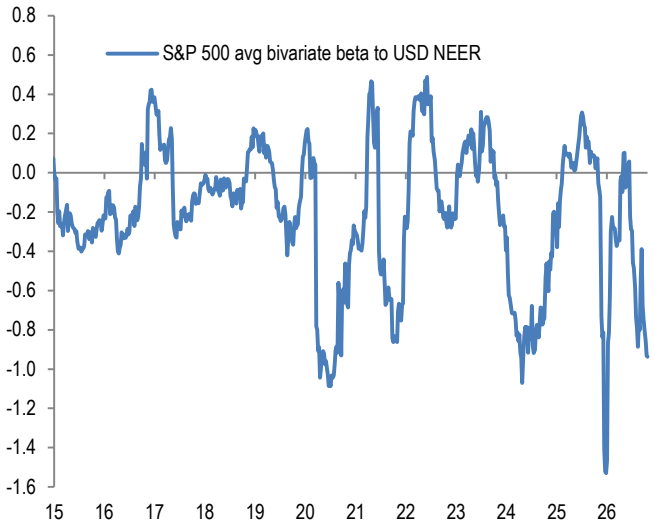
Rolling 26 weeks average betas based on a bivariate regression of the weekly returns of individual stocks in the Eurostoxx 50 index to the weekly returns of the MSCI AC World and JPM EUR Nominal broad effective exchange rate (NEER).



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

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

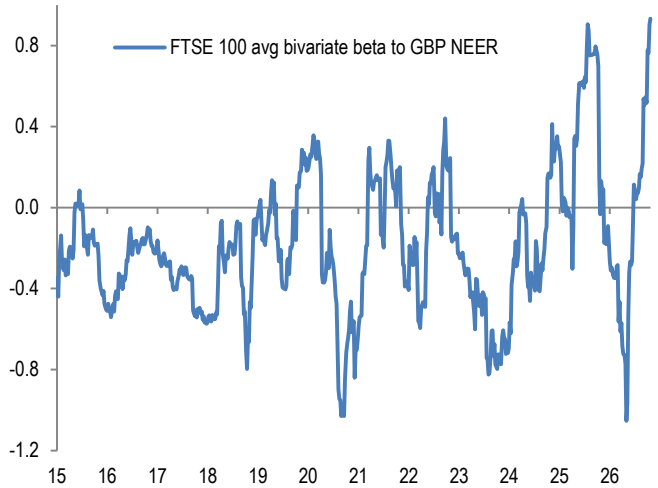
Rolling 26 weeks average betas based on a bivariate regression of the weekly returns of stocks in the S&P500 index to the weekly returns of the MSCI AC World and JPM USD Nominal broad effective exchange rate(NEER).



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

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

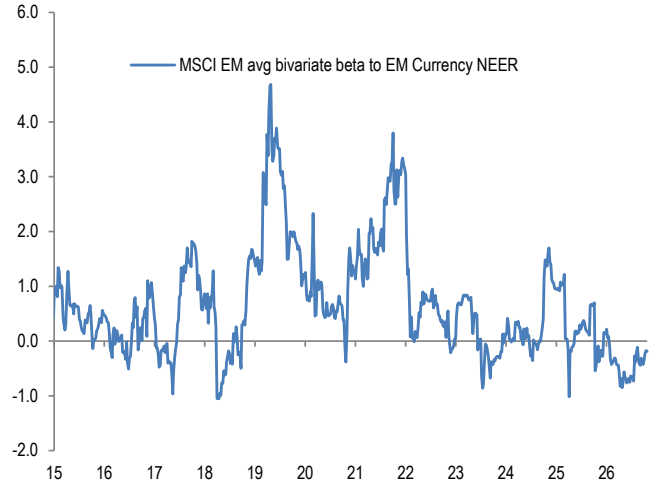
Rolling 26 weeks average betas based on a bivariate regression of the weekly returns of individual stocks in the FTSE 100 index to the weekly returns of the MSCI AC World and JPM GBP Nominal broad effective exchange rate (NEER).



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.

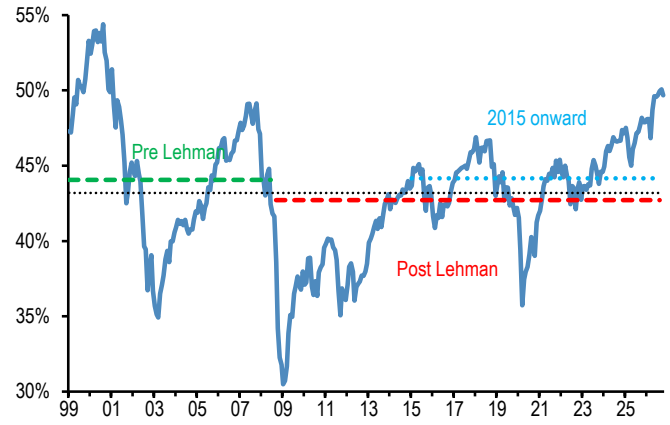
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Non-Bank investors' implied allocations

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

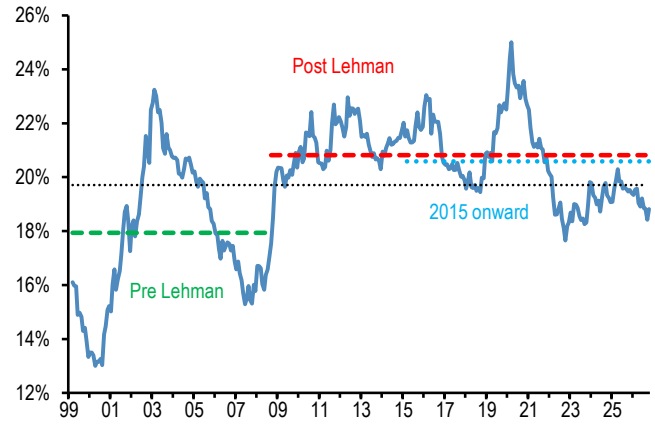
Global equities as % total holdings of equities/bonds/M2 by non-bank investors/ Commodities including gold held by private investors. Dotted lines are averages.



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

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

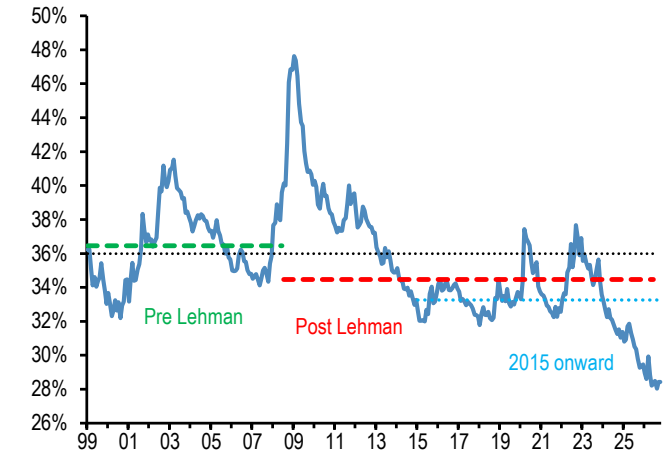
Global bonds as % total holdings of equities/bonds/M2 by non-bank investors/ Commodities including gold held by private investors. Dotted lines are averages.



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

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

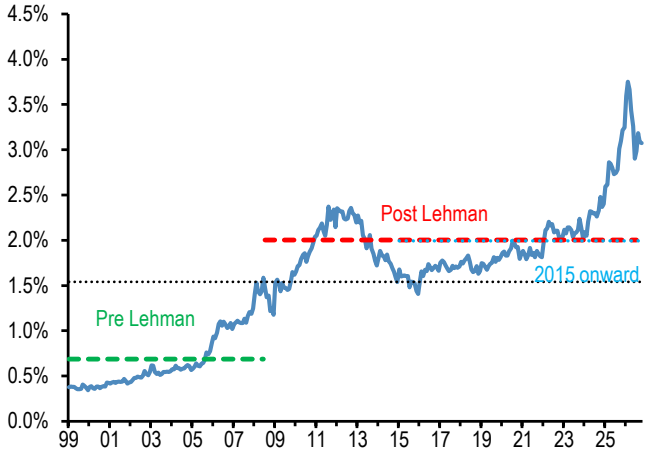
Global cash held by non-bank investors as % total holdings of equities/bonds/M2 by non-bank investors/Commodities including gold held by private investors. Dotted lines are averages.



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.

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