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Flows & Liquidity

TMT Equity Sector and Multi Strat hedge funds at the center of July's deleveraging

- **Preliminary data from Pivotal Path suggest that TMT Equity Sector hedge funds lost an unprecedented 10% in July excluding the Situational Awareness loss. Multi Strat funds lost 2.3% in July, the fourth largest monthly loss in their history.**
- **The severe loss in July makes it likely that the capacity of TMT Equity Sector and Multi Strat hedge funds to hold tech exposures would be structurally more limited going forward.**
- **If this assessment proves correct and the capacity of hedge funds to hold tech exposures is structurally reduced, the tech trade would become over the longer-term even more dependent on retail investors and thus more susceptible to the swings emanating from leveraged ETFs, retail option buying and retail margin accounts.**
- **Covering of yen shorts post fx intervention in a similar fashion to end-April/early-May.**
- **Room for policy uncertainty to push UST term premia higher.**
- **The flows into hyperliquid ETFs stalled in July and August after surging in May and June.**
- ***Flows & Liquidity will not be published next week due to holidays. The next issue will be published on August 19th.***

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 29th July 26.

MF & ETF Flows	Min	Max	4 wk avg ($bn)	2025 avg ($bn)
All Equities			25.9	8.1
All Bonds			13.7	11.3
US Equities			9.0	3.5
US Bonds			5.9	4.3
Non-US Equities			16.8	4.6
Non-US Bonds			7.7	7.0
US HG Bonds			9.4	3.4
US HY Bonds			-0.1	0.4
US Lev. Loans *			0.3	0.0
US MMFs			0.9	4.0
EM Equities			4.3	0.9
EM Bonds			0.81	0.50
Japan Equities			2.1	-0.1
China Equities			-0.60	-0.15
Europe				
Europe Equities			0.8	0.9
Europe Bonds			5.0	4.3
Europe HG Bonds			0.5	0.9
Europe HY Bonds			0.15	0.17
Europe MMFs			-0.2	3.8
Other Equities			9.73	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 04-Aug-26	MIN	MAX	Current percentile
Equities			0.66
Govt Bonds			0.64
Credit			0.32
Dollar			0.66
Commodities ex Gold			0.66
Gold			0.61
Bitcoin			0.56
EM Equities			0.65
EM Bonds/FX			0.24
Japan Equities			0.69
Europe Equities			0.88
US Equity Sectors:			
Energy			0.68
Materials			0.54
Industrials			0.57
Discretionary			0.63
Staples			0.31
Health Care			0.39
Financials			0.25
Technology			0.67
Communication Services			0.42
Utilities			0.35

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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- Preliminary hedge fund performance data by Pivotal Path revealed that TMT Equity Sector and Multi Strat hedge funds have been at the center of hedge fund deleveraging and forced tech position liquidations in July. The former lost 10.2% in July while the latter lost 2.3%.
- Given their more diversified equity exposure, Equity Long/Short hedge funds were flat in July helped by a flat MSCI AC World index on the month. Similarly, Discretionary Macro hedge funds were slightly up in July given their more diversified exposure across equity indices and across asset classes.
- It is worth emphasizing that the 10% loss for TMT Equity Sector excludes Situational Awareness, which reportedly saw its assets collapsing from \$45bn to \$10bn. This makes the 10% loss look even more striking and suggests that, like Situational Awareness, several other TMT Equity Sector hedge funds suffered from forced liquidations of semiconductor/memory stock exposures. Indeed, Figure 2 shows that the July loss would be the most extreme ever for this hedge fund category if it proves representative as further funds report performance.

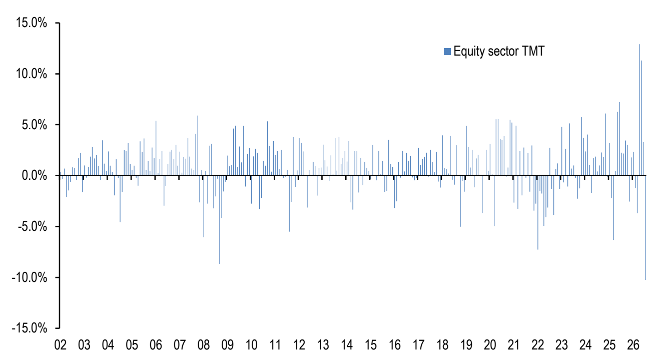
Figure 1: Hedge fund performance from January to July 2026

	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Jan - Jul 26
ALL HFs	1.99%	1.16%	-2.62%	4.45%	2.09%	0.88%	-1.35%	6.62%
Equity L/S	2.15%	1.21%	-4.52%	6.28%	2.62%	1.15%	0.01%	8.91%
Macro	3.13%	1.81%	-2.64%	2.05%	0.44%	-0.26%	0.64%	5.18%
Managed Futures/CTAs	3.71%	3.13%	-0.86%	2.13%	-0.27%	-0.85%	-0.66%	6.38%
Multi Strat	1.93%	1.07%	-1.37%	2.56%	1.28%	0.86%	-2.27%	4.04%
Credit	1.03%	0.22%	-0.51%	1.45%	0.82%	0.43%	0.11%	3.59%
Equity sector	1.39%	1.00%	-2.53%	7.67%	4.83%	3.15%	-5.38%	9.96%
Event Driven	1.48%	0.84%	-2.48%	4.60%	2.63%	0.91%	-2.46%	5.45%
Equity Quant	-0.72%	0.80%	0.61%	1.10%	-0.83%	0.73%	2.03%	3.75%
Volatility	1.30%	1.29%	1.26%	-0.15%	0.27%	-0.08%	0.49%	4.45%
Equity sector TMT	2.34%	-1.23%	-3.71%	12.90%	11.31%	3.28%	-10.24%	13.39%

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

Figure 2: Monthly performance of TMT Equity Sector hedge funds

In %.

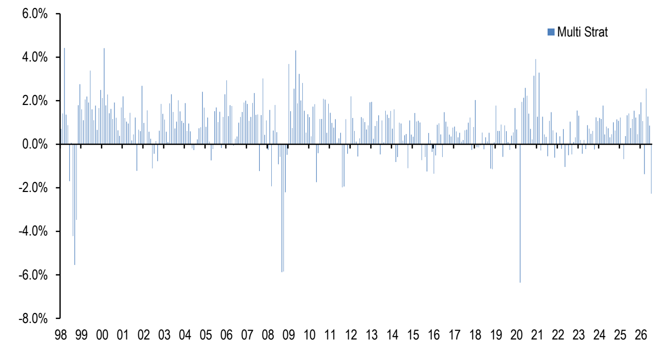


Source: Pivotal Path, J.P. Morgan Flows & Liquidity.

- This is also true with Multi Strat funds, where their 2.3% loss in July would be the fourth largest in their history, as shown in Figure 3. One needs to go back to the pandemic crisis of March 2020, or the Lehman crisis of 2008, or the collapse of the dot com bubble in 2000 to see larger losses for Multi Strat funds.

Figure 3: Monthly performance of Multi Strat hedge funds

In %.



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

- The extremity of the July loss in the preliminary figures raises questions about the risk management frameworks of both TMT Equity Sector and Multi Strat hedge funds given that it appears they failed to prevent concentrated positions in semiconductor/memory stocks from building up excessively in recent months. Was concentration risk underestimated? Was volatility/correlation risk embedded in option positions mishandled? Did stop-loss / risk-budget discipline fail or was it overridden? Were financing / margin /liquidity dynamics not properly stress-tested?
- Going forward, the AUM decline of these two hedge fund categories in July means that their risk budgets are mechanically shrunk. If they also apply more stringent risk management frameworks and concentration limits and if prime brokers reduce balance sheet space allocated to these strategies, then the capacity of TMT Equity Sector and Multi Strat hedge funds to hold tech exposures would be structurally more limited going forward.
- If this assessment proves correct and the capacity of hedge funds to hold tech exposures is structurally reduced, the tech trade would become over the longer-term even more dependent on retail investors and thus more susceptible to the swings emanating from leveraged ETFs, retail option buying and retail margin accounts.

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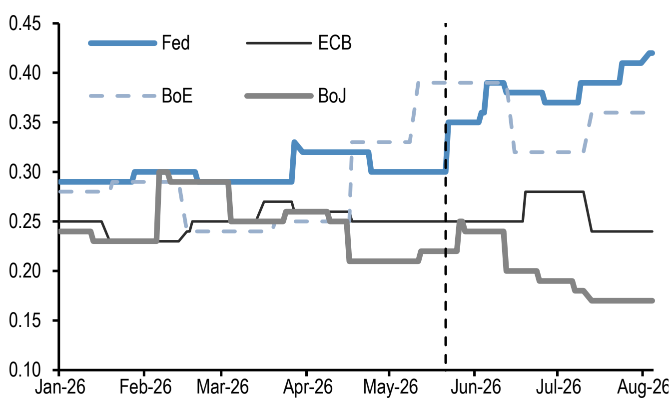
Room for policy uncertainty to push term premia higher

- The FOMC meeting injected volatility into bond markets, with 10y UST yields initially rising by around 13bp from the previous day's close into Friday, before retracing much of that move this week. However, the curve remains steeper. In principle, the three dissents in favour of a hike were a hawkish surprise. But the subsequent comments by Chair Warsh have fuelled concerns of greater uncertainty over policy rates and questions over Fed credibility. Indeed, as our colleagues in US rates strategy pointed out (UST Market Daily, Jul 29th), a suggestion that policy rates might not need to do the heavy lifting raises the risks of more active attempts at shrinking the balance sheet, and Chair Warsh paid only lip service to the Fed's 2% PCE inflation mandate, raising the risk that he may look at a wider array of measures to determine the future path of monetary policy and also rely on the inflation task force's findings to ratify his world view.
- This in turn has raised questions in our conversations over the potential impact on term premia from an increase in policy uncertainty. One way to look at policy uncertainty is to look at the dispersion of economists' forecasts for central bank policy rates. This is shown in Figure 4, which shows the standard deviation of policy rate forecasts from economists polled by Bloomberg for 4Q27 for the Federal Reserve as well as the ECB, BoJ and BoE for comparison. It suggests that the period after Warsh took over as Fed Chair has coincided with an increase in the standard deviation of Fed policy rate forecasts relative to other G4 central banks.

Figure 4: Fed, ECB, BoE and BoJ policy rate forecast standard deviation for 4Q27

Standard deviation in %. Vertical dashed line represents the day before Fed Chair Warsh took office as chairman of the Board of Governors.



Source: Federal Reserve, BoE, ECB, BoJ, J.P. Morgan Flows & Liquidity.

- What about term premia? Measuring term premia, or the compensation investors require for holding long-term fixed income instruments rather than rolling over a series of short-term bonds, is clearly not straightforward, given that they are not directly observable and must instead be inferred by trying to separate out term premia from expectations of the path of future short-term rates. This can be done, for example, by using surveys to estimate expectations about future interest rates and to infer term premia. Another way is the literature around term structure models. Survey-based methods and term structure models have their benefits and drawbacks. Using survey-based estimates of future short rates is in principle simpler, though the downside is that they tend to get updated less frequently and the expectations of survey respondents may differ from those of market participants. Term structure models, by contrast, are available at higher frequency, but are also computationally more complex, subject to parameter uncertainty, and the resulting estimates of term premia can be very sensitive to model specification. These estimates can also change over time as model parameters are updated. For a fuller discussion on term premia, please see our previous F&L from Oct 2023 and In the eye of the beholder, Sep 2023.
- With these caveats in mind, Figure 5 shows survey-based measures of term premia from the Blue Chip and NY Fed surveys, as well as three model-based estimates published by Federal Reserve researchers. These are the ACM model from the NY Fed, the Kim-Wright model from Federal Reserve Board staff, and the Christensen-Rudebusch model published by the San Francisco Fed (for details on the differences between the models, please see the FEDS Note: The Treasury Tantrum of 2023, Sep 3rd 2024). The different measures have shown relative stability since early 2025 after a significant normalisation from close to or below zero before the 2022 bond market sell-off. More recently, all three term structure models point to a rise in term premia since 10y UST yields troughed in late June, consistent with the view that elevated policy uncertainty could be contributing to the recent backup in yields.

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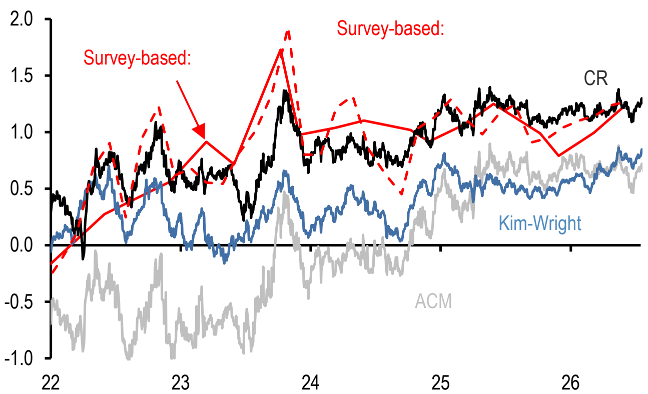
Figure 5: Estimates of term premia in 10y USTs

In %.

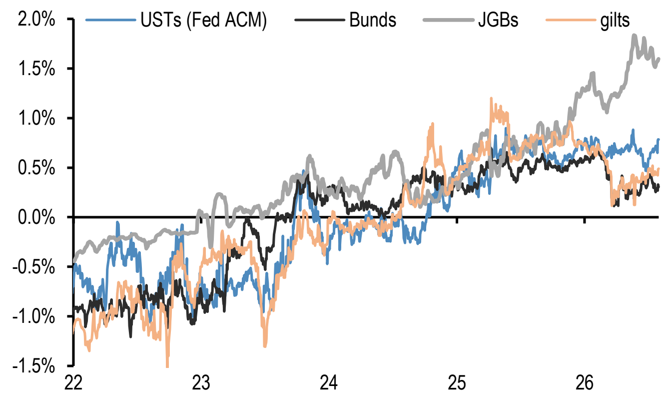


Source: Federal Reserve, Bloomberg Finance L.P., Blue Chip, J.P. Morgan Flows & Liquidity. See Adrian, Crump and Moench (2013), 'Pricing the Term Structure with Linear Regressions' Kim and Wright (2005), 'An Arbitrage-Free Three-Factor Term Structure Model and the Recent Behavior of Long-Term Yields and Distant-Horizon Forward Rates', and Christensen and Rudebusch (2012) "The response of interest rates to US and UK quantitative easing."

- How does this compare with term premia in other major DM bond markets? To compare term premia across major bond markets, we revisit our earlier work (F&L, Sep 10th 2025) on applying an ACM framework for German, Japanese and UK 10y yields. These estimates, along with the ACM measure published by the Fed for 10y USTs, are shown in Figure 6 below. The level of term premia in 10y USTs remains above those in Bunds and gilts, with the rise since late June widening the gap somewhat. Relative to 10y JGBs, however, the levels are more modest, which taken at face value stands at odds with the picture for the dispersion of policy rate forecasts in Figure 4. This likely reflects offsetting factors from a combination of uncertainty over the extent of additional fiscal support by the Japanese government in the aftermath of the election earlier this year, as well as ongoing BoJ QT that exceeds net issuance by a significant margin (Japan FIMS, Jun 19th).

Figure 6: 10y term premia for USTs, Bunds, JGBs and gilts since 2022

In %.

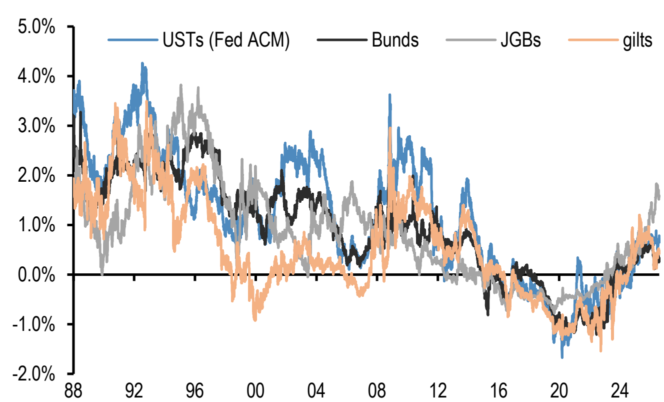


Source: Federal Reserve, J.P. Morgan Flows & Liquidity.

- Figure 7 shows the term premium metrics for G4 bond markets over a longer horizon since 1988. Relative to their historical ranges, term premia in 10y USTs at 0.8% are around 0.3 standard deviations below their long-term average of around 1.2%, compared to 0.6 standard deviations below their averages for Bunds, close to the historical average for gilts and 0.7 standard deviations above their average for JGBs. This suggests that while there has been a significant normalisation in recent years, there is still room for term premia to rise further against a backdrop of rising concerns over Fed credibility – indeed, our colleagues in US rates strategy revised their 10y yield forecasts higher and added 2s/10s curve steepeners in the aftermath of the FOMC meeting on both rising inflation expectations and higher term premia (US FIMS, Jul 31st).

Figure 7: 10y term premia for USTs, Bunds, JGBs and gilts since 1988

In %.



Source: Federal Reserve, J.P. Morgan Flows & Liquidity.

- To what extent could this repricing be amplified by positioning? Starting with broader metrics, our Cross Asset Position Monitor on the front page, which aggregates

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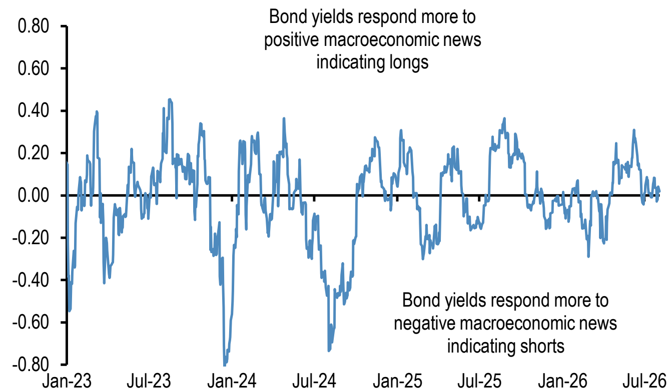
across a number of position indicators for government bonds, places duration positioning at the 64th percentile suggesting some vulnerability.

- Figure 8 shows a complementary market-implied indicator that gauges broader bond market positioning by examining the response of bond markets to economic news, where 'news' are surprises relative to expectations. In an idealized world, an environment where bond investors are short duration should see bond markets respond more to negative news than to positive news. By contrast, in an environment where investors are long duration, the opposite should be happening, i.e. bond markets should be less responsive to negative macroeconomic news and more responsive to positive news.
- To construct this position indicator, we take as our starting point the economic releases incorporated in our USD and EUR EASI indices, complement them with inflation releases, and calculate for each release the z-score of surprises (actual – survey median) / (std. dev. of past surprises) and the z-score of changes in UST and Bund yields for that day. We calculate separately the average beta (or the ratio of the z-score of UST and Bund yield changes over the z-score of economic surprises) for positive and negative news over rolling two-month windows, and take the difference between the two. An exponential-weighted scheme is used in order to attach a higher weight to more recent observations. This indicator represents an indirect positioning metric, and positive (negative) values suggest bond investors have found themselves longer (shorter) duration than desired given the surprises in the economic data flow, rather than necessarily long (short) relative to a benchmark. Figure 8 shows this metric, pointing to more extended longs from late April to late June. While it has moderated since, it continues to suggest investors have been positioned longer than desired given the economic data flow.

Figure 8: Difference in the beta of the average of 10y UST and 10y Bund yields to positive US and Euro area economic news minus beta to negative news (including inflation news)

42 day exponential weighted moving average (lambda = 0.98)



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

- There has been some differentiation below the surface. Indicators of real money investors' positioning point to duration longs. This is evident for example in the total duration betas of active US and Euro bond mutual funds to the US Agg and EuroAgg indices (see Chart A16 and A17 in the Appendix). Our US Treasury Client Survey also suggests positions are on the long side, though not yet at levels that suggest a heightened risk of imminent repricing (see Survey says, Jul 21st 2023 for further detail). At the same time, hedge fund position indicators included in our Cross Asset Positioning Monitor lean short. These include our positioning framework for momentum-based investors (Figure 9) as well as the bond beta of risk parity funds (Figure 10). Overall, with positioning at the aggregate level still looking modestly long, there is some scope for an unwind of these duration positions to contribute to at least a modest rise in term premia.

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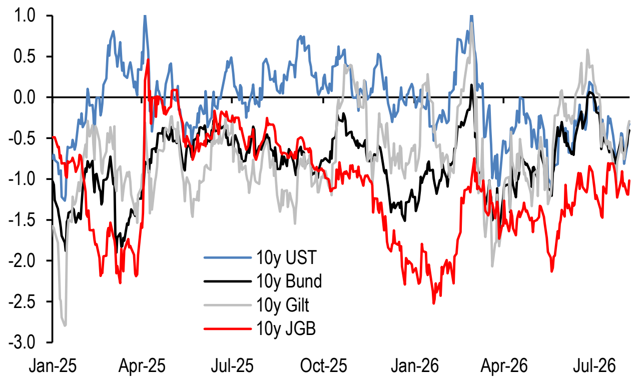
Figure 9: Momentum signals for 10Y UST, Bunds, gilts and JGBs

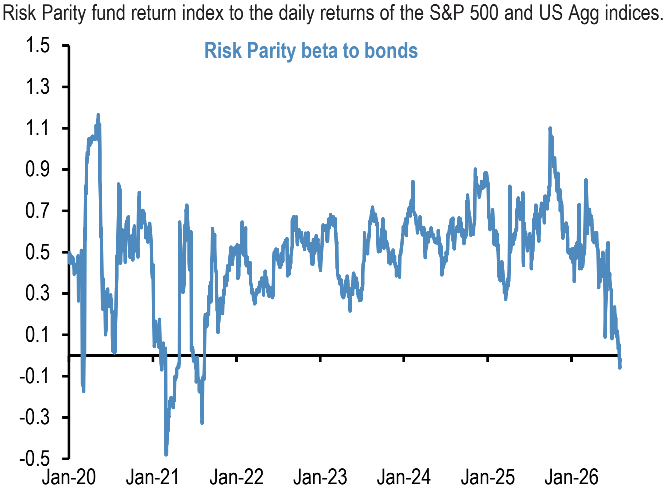
Average of the z scores of our short and long lookback period Momentum Signals in our Trend Following Strategy framework shown in Tables A5 and A6 in the Appendix, adjusted for the ratio of volatilities of the past 10 years and the past 6 months.



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

Figure 10: Bond beta of risk parity funds

Rolling 42-day bond beta based on a bivariate regression of the daily returns of our Risk Parity fund return index to the daily returns of the S&P 500 and US Agg indices.



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

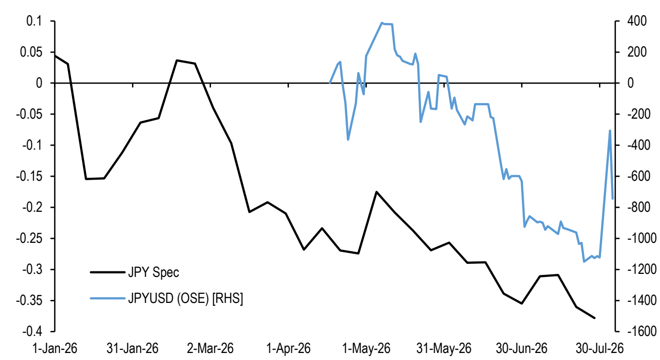
- In all, there is room for term premia to rise further as concerns over Fed credibility gained traction in the aftermath of the July FOMC meeting. With term premia still running modestly below their long-run averages since the late 1980s, there is space for further normalisation. An unwind of modestly long duration positions highlighted above could add to such a move.

Likely similar covering of yen shorts to the previous yen intervention of end-April/early-May

- The recent yen intervention is raising questions about the shift to yen positioning. The net spec position implied by CFTC data on CME is not yet available and will be released on Friday this week. That said, our futures positioning proxy based on Osaka Stock Exchange JPY futures points to similar unwinding of yen shorts as the one seen during the previous yen intervention at the end of April/beginning of May. This is shown by the blue line in Figure 11 which depicts our futures positioning proxy for the newly introduced JPY futures traded on the Osaka Stock Exchange. This proxy is based on the changes in the daily open interest multiplied by the sign of the price change each day. Although the OSE JPY futures contract is new and thus its open interest is much smaller than the JPY futures contract traded at CME, we find the evolution of its open interest more intuitive as depicted along with the CFTC spec positions in CME.

Figure 11: Spec positions in JPY futures as reported by CFTC as % of open interest vs futures positioning proxy based on OSE JPY futures

LHS in % and RHS in '000s of contracts.



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

- Our momentum signals are sending a similar picture where yen shorts have been covered during both intervention episodes.

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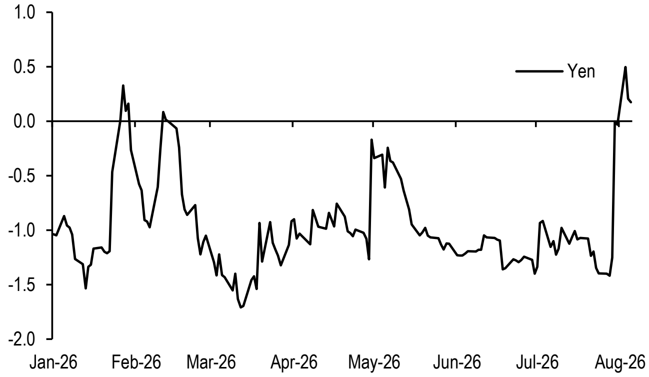
Figure 12: Momentum signals for Yen futures

Average z-score of shorter- and longer-term momentum signals in our Trend Following Strategy framework shown in Tables A3 and A4 in the Appendix).



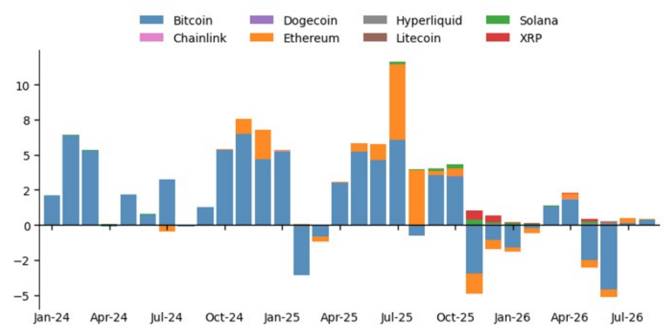
Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

The flows into hyperliquid ETFs stalled in July and August after surging in May and June

- After heavy outflows in May and June, crypto ETFs saw small inflows in July and August MTD (Figure 13). Beyond bitcoin and ethereum which account for the bulk of crypto ETF AUM (with $77bn and $10bn of AUM respectively), there is around $2bn-$3bn of AUM in other crypto, predominantly Solana, XRP and Hyperliquid.

Figure 13: Monthly flows in $bn into spot crypto ETFs

In $bn.

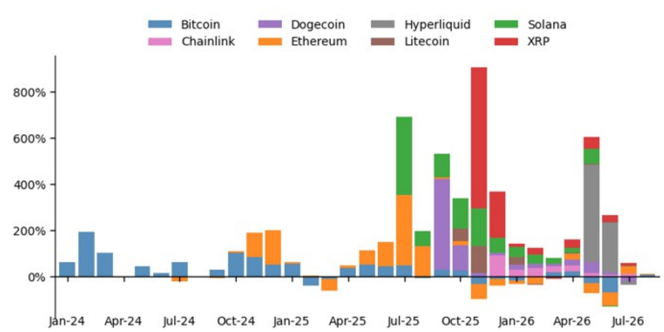


Source: Bloomberg Finance L.P., J.P. Morgan Flows & Liquidity.

- Indeed, if one looks at monthly ETF flows as % of AUM (Figure 14), hyperliquid is the one that stands out with the largest inflow as % of AUM during May and June. This year's rise in hyperliquid is also seen in total corporate crypto treasury holdings, within which hyperliquid is the fourth largest after bitcoin, ethereum and solana (Figure 15).

Figure 14: Monthly flows as % of AUM into spot crypto ETFs

In %.



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

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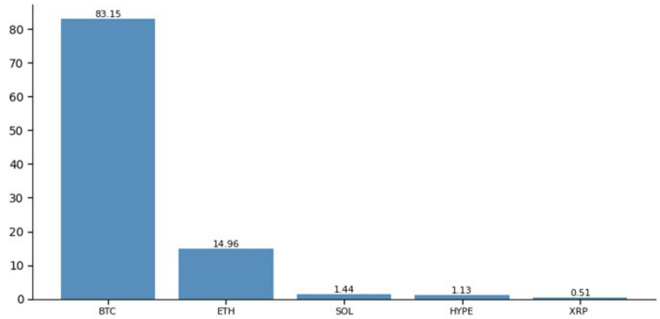
Figure 15: Total corporate crypto treasury holdings by underlying token

In $bn.



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

- Whether hyperliquid eventually surpasses in market cap other tokens such as Solana and XRP remains to be seen. Hyperliquid's value proposition is closely tied to platform activity, in particular transaction fees from perpetual futures trading. To broaden activity further, hyperliquid is expanding into prediction-style markets.
- That said, we see significant challenges to the market share of decentralized platforms such as hyperliquid. First, competition from onshore centralized platforms is increasing, as offshore decentralized venues are still exposed to concerns around unlicensed derivatives activity, limited KYC/AML controls, manipulation/attacks/oracle failures and weaker consumer-protection safeguards. The launch of U.S.-regulated crypto perpetual futures products could accelerate a shift in liquidity away from offshore and decentralized venues to onshore venues. Second, competition from existing and new entrants in prediction markets remains intense.
- Perhaps these challenges are one reason the flows into hyperliquid ETFs stalled in July and August, as shown in Figure 14. Tracking these ETF flows along with its market share in trading/prediction markets would be key to hyperliquid's outlook going forward.

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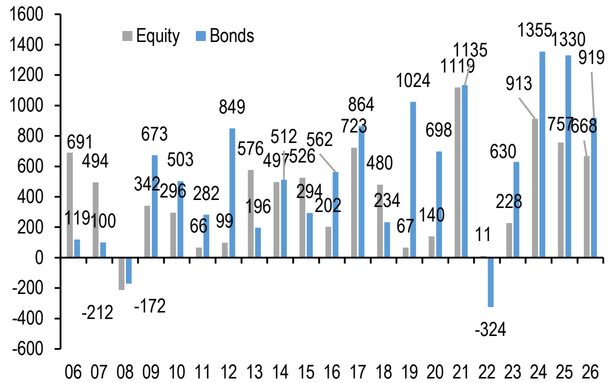
Appendix

Chart A1a: Global equity & bond fund flows

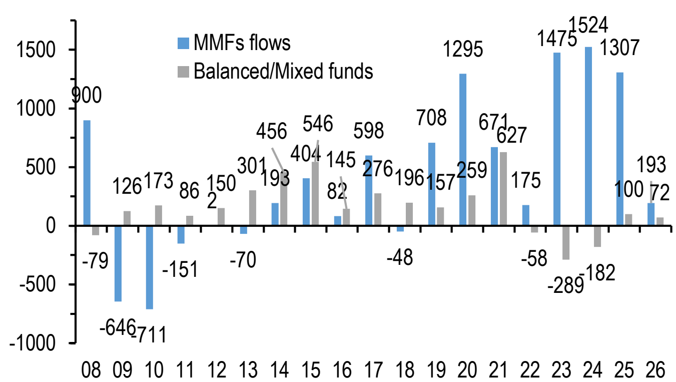
$bn per year of Net Sales, i.e. includes net new sales + reinvested dividends for Mutual Funds and ETFs globally, i.e. for funds domiciled both inside and outside the US. Flows come from ICI (worldwide data up to Q1'26). Data since then are a combination of monthly and weekly data from Lipper and Bloomberg.



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

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

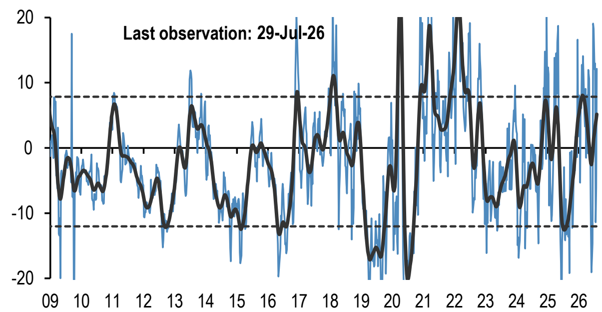
$bn per quarter of Net Sales, i.e. includes net new sales + reinvested dividends for Mutual Funds and ETFs globally, i.e. for funds domiciled both inside and outside the US. Data come from ICI (worldwide data) and are till Q1'26.



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 Jun-26	MIN	MAX	Turnover ratio	Vol (tr)	y/y chng
Equities					
EM Equity			1.4	$2.1	135%
DM Equity			1.4	$16.2	44%
Govt Bonds					
UST cash			12.3	$17.7	5%
UST futures			0.8	$14.9	8%
JGBs			49.1	¥5,035	11%
Bund futures			1.5	€10.1	18%
Credit					
US HG			1.1	$0.8	15%
US HY			0.5	$0.1	-1%
US Convertibles			3.6	$0.04	15%
Commodities					
Gold			52.4	$1.4	39%
Oil			80.1	$2.3	0%
Copper			1.9	$0.7	70%
Digital Assets					
CME Bitcoin			115.0	$0.061	-34%
CME Ethereum			134.8	$0.023	25%

* 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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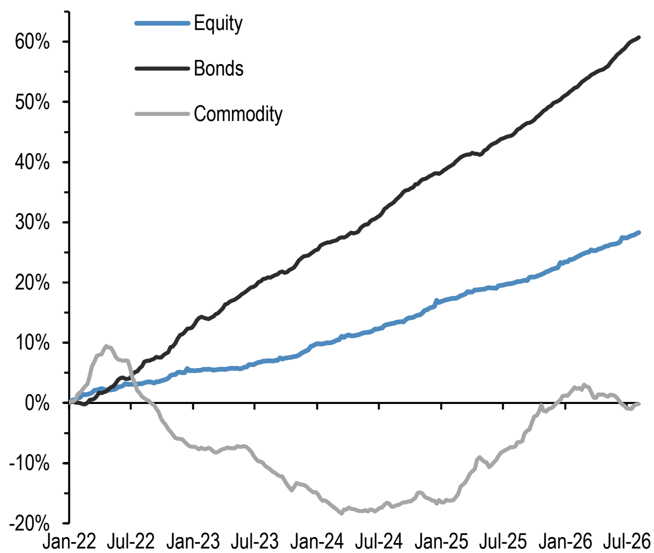
ETF Flow Monitor (as of 5th August)

Chart A3: Global Cross Asset ETF Flows

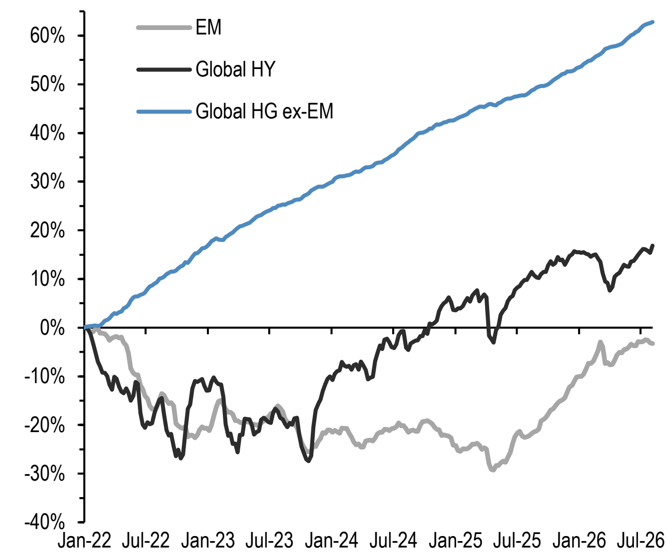
Cumulative flows into ETFs as a % of AUM



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

Chart A4: Bond ETF Flows

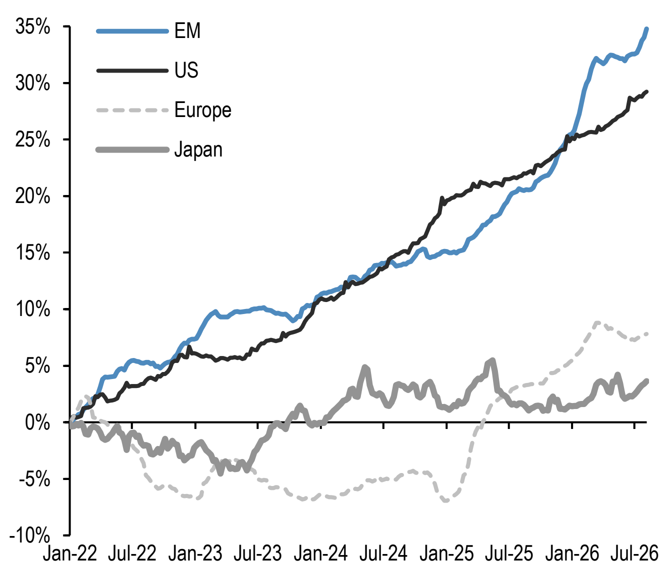
Cumulative flows into bond ETFs as a % of AUM



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

Chart A5: Global Equity ETF Flows

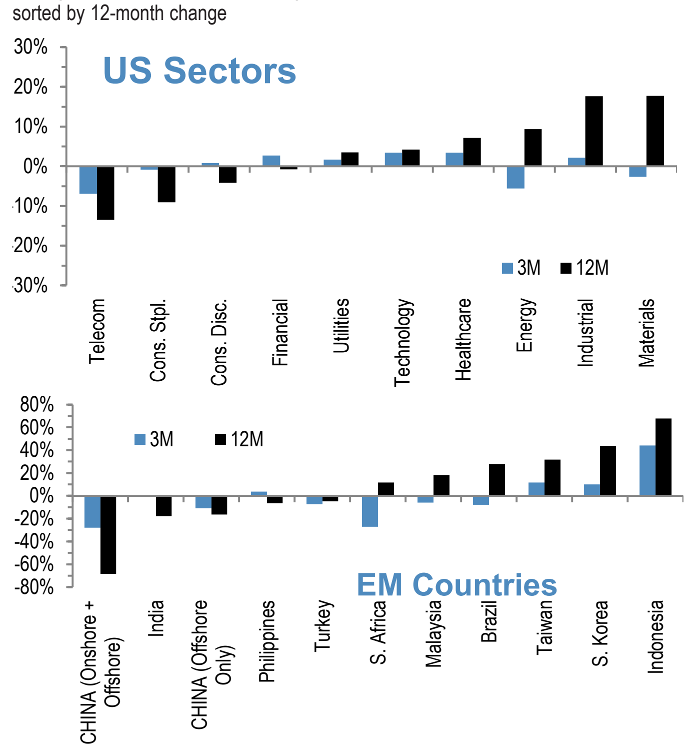
Cumulative flows into global equity ETFs as a % of AUM



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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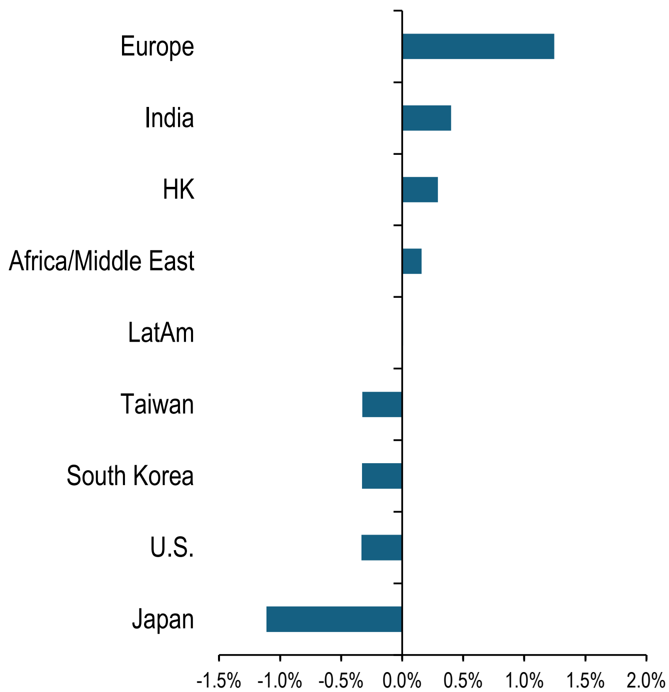
Chart A6b: Regional Equity Allocation Monitor Implied by ETFs

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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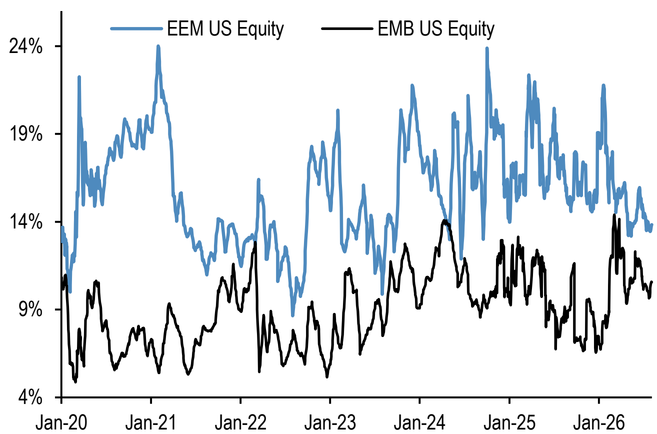
Short Interest Monitor

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

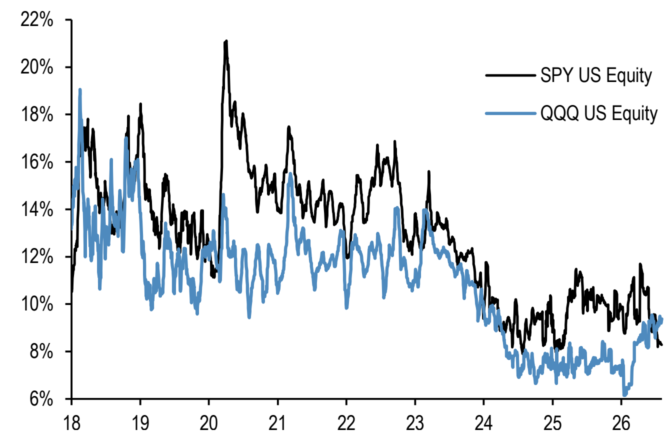
Short Interest as a % share of shares outstanding.



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

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

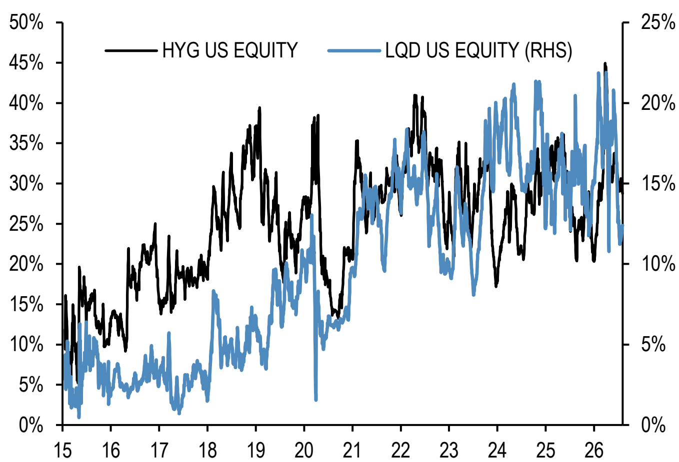
Short Interest as a % share of shares outstanding. Last obs is for 3rd Aug 2026.



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

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

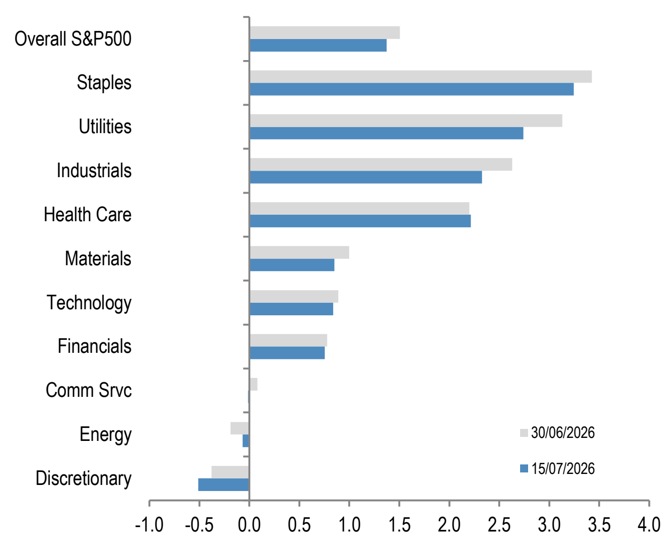
Short Interest as a % share of shares outstanding.



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

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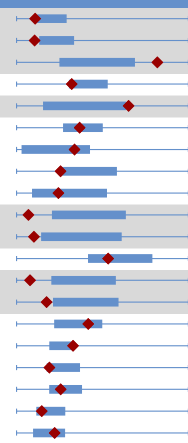
Chart A11a: Cross Asset Volatility Monitor 3m ATM Implied Volatility (1y history), as of 3rd Aug-2026

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	14%	13%	28-Aug-25	24%	27-Mar-26	10%	1%	1.05x
EuroSTOXX	15%	13%	18-Sep-25	26%	27-Mar-26	12%	1%	0.99x
Nikkei 225	31%	19%	29-Aug-25	33%	31-Mar-26	3%	12%	0.84x
Hang Seng	20%	17%	23-Dec-25	24%	26-Mar-26	5%	2%	1.02x
MSCI EM	29%	12%	15-Aug-25	38%	01-Jul-26	9%	17%	0.97x
Gold	21%	14%	19-Aug-25	33%	26-Mar-26	12%	7%	0.94x
Oil (brent)	48%	27%	19-Sep-25	89%	30-Mar-26	42%	21%	0.60x
Copper	20%	14%	18-Aug-25	37%	03-Feb-26	17%	6%	0.79x
BB commodity index	16%	13%	10-Dec-25	25%	30-Mar-26	9%	3%	0.93x
EUR/USD	5%	5%	15-Jun-26	8%	07-Aug-25	3%	0%	1.12x
USD/NOK	8%	8%	17-Dec-25	11%	30-Mar-26	3%	0%	1.06x
USD/JPY	9%	7%	16-Jul-26	10%	27-Mar-26	2%	2%	0.77x
GBP/USD	6%	6%	10-Jul-26	8%	27-Mar-26	2%	0%	1.16x
USD/CHF	7%	6%	29-May-26	9%	29-Jan-26	2%	0%	0.92x
10y US swaps	76%	62%	27-Jan-26	96%	27-Mar-26	20%	14%	11.47x
10y Eur swaps	60%	43%	26-Feb-26	97%	27-Mar-26	36%	18%	1.00x
CDX IG	42%	37%	29-May-26	62%	27-Mar-26	21%	5%	1.87x
CDX HY	38%	31%	09-Jan-26	57%	30-Mar-26	19%	7%	1.48x
iTraxx	42%	37%	09-Jan-26	70%	27-Mar-26	28%	5%	1.61x
iTraxx X/O	44%	38%	16-Jun-26	66%	27-Mar-26	22%	6%	1.67x



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 (03-Aug-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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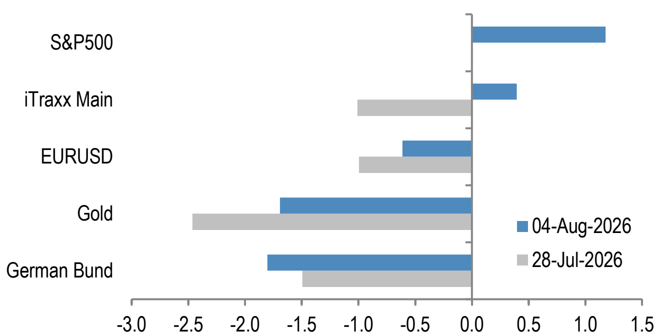
Chart A11b: Option skew monitor

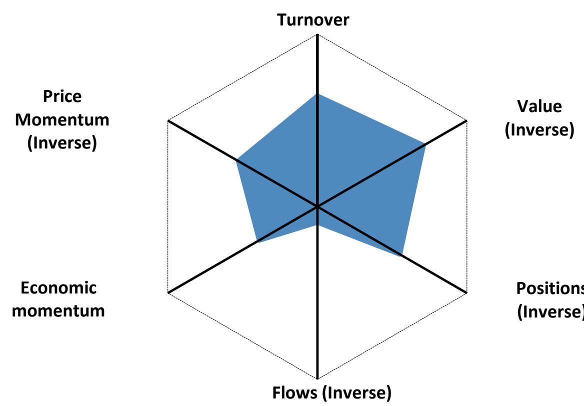
Skew is the difference between the implied volatility of out-of-the-money (OTM) call options and put options. A positive skew implies more demand for calls than puts and a negative skew, higher demand for puts than calls. It can therefore be seen as an indicator of risk perception in that a highly negative 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 31st July.



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

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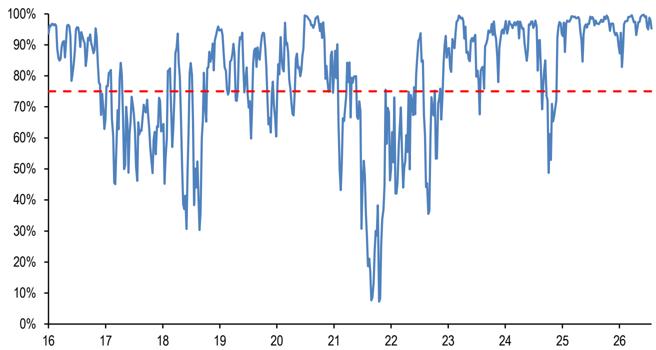
Chart A11d: Implied probability of the S&P500 rising over the next six months with a cutoff set at 75%



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

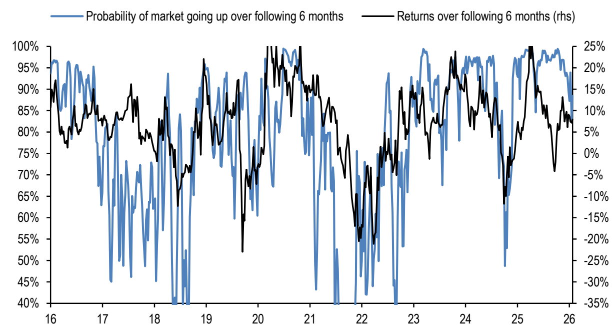
In %.

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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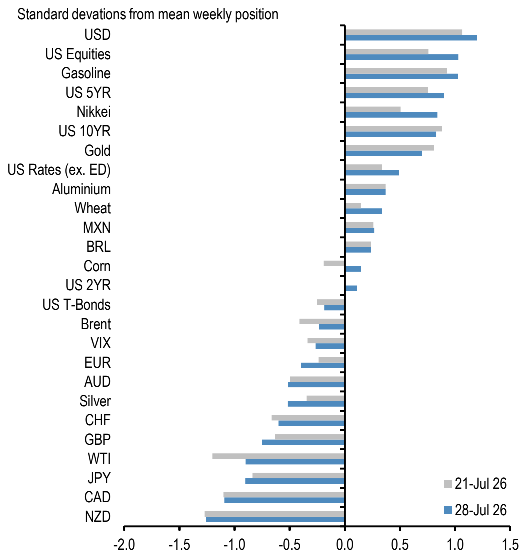
Spec position monitor

Chart A12: Weekly Spec Position Monitor

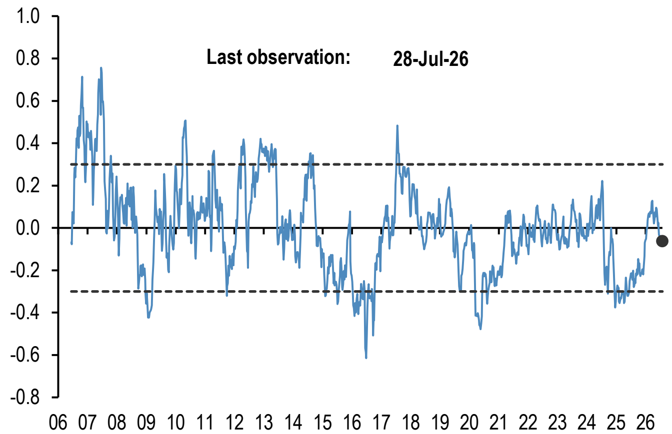
Net spec positions are proxied by the number of long contracts minus the number of short contracts using the speculative category of the Commitments of Traders reports (as reported by CFTC). To proxy for speculative investors for equity and US Treasury bond futures positions we use Asset managers and 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 A14: Spec position indicator on Risky vs. Safe currencies

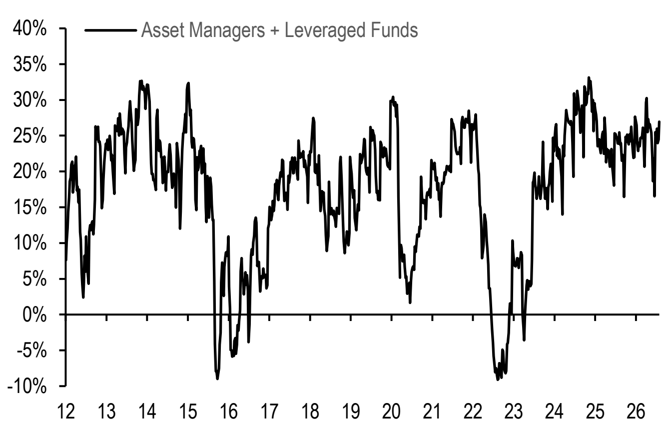
Difference between net spec positions on risky & safe currencies. Net spec position is calculated in USD across 5 'risky' and 3 'safe' currencies (safe currencies also include Gold). These positions are then scaled by open interest and we take an average of 'risky' and 'safe' assets to create two series. 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 A13: Positions in US equity futures by Asset managers and Leveraged funds

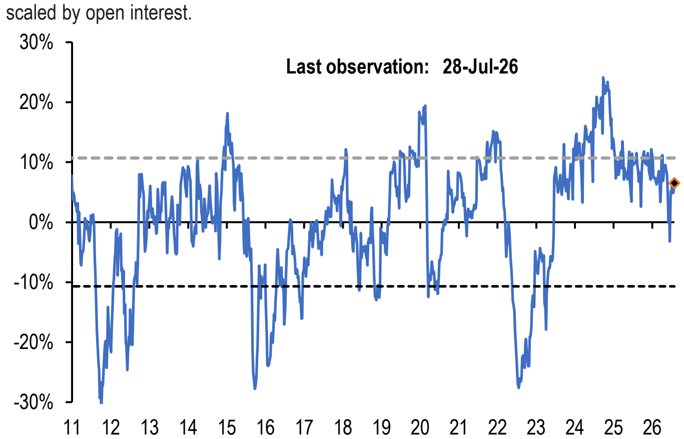
CFTC positions in US equity futures by Leveraged funds and Asset managers (as a % of open interest). It is an aggregate of the S&P500, DowJones, NASDAQ and their Mini futures contracts.



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

Chart 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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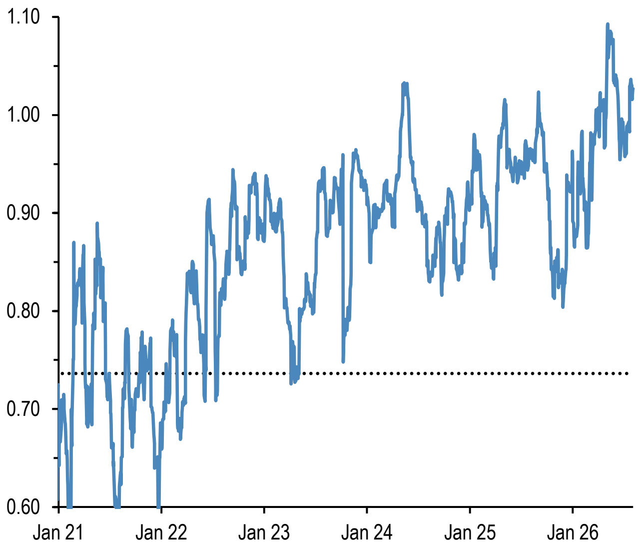
Mutual fund and hedge fund betas

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

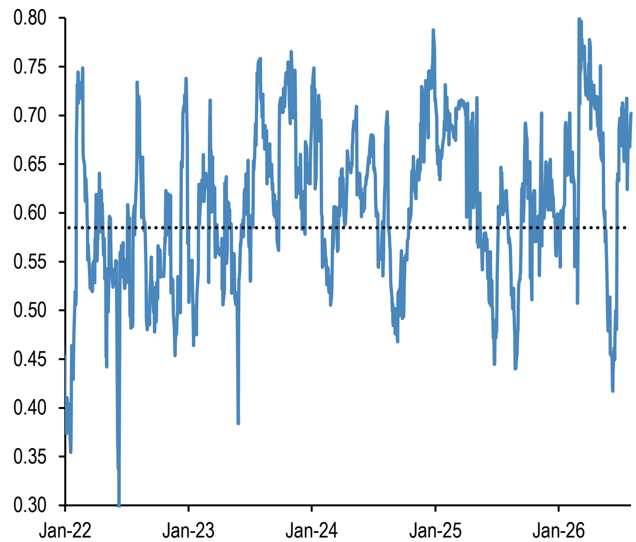
The dotted line shows the average beta since 2013.



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

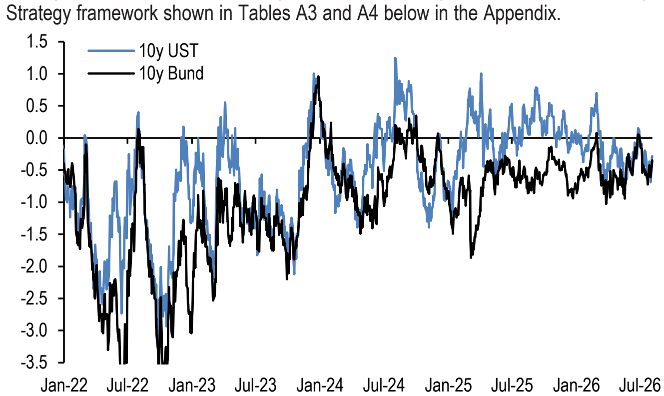
The table depicts the performance of various types of investors in % as of 3rd Aug 2026.

Date	2020	2021	2022	2023	2024	2025	2026
Investors							
Equity L/S	13.4%	9.3%	-7.0%	11.3%	13.0%	15.5%	8.9%
Macro ex-CTAs	4.9%	4.3%	11.5%	1.3%	6.0%	10.2%	5.2%
CTAs	1.2%	8.8%	14.7%	-2.5%	2.9%	-1.1%	6.4%
Risk Parity Funds	3.5%	4.7%	-18.6%	6.0%	5.0%	17.3%	7.0%
US Balanced MFs	13.2%	14.4%	-13.0%	13.8%	11.4%	14.4%	8.8%
Benchmark							
MSCI AC World	16.3%	16.4%	-18.4%	22.2%	17.5%	22.3%	13.8%
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%	14.1%
60 US Equity : 40 US Bonds	13.3%	14.8%	-15.4%	18.6%	16.4%	12.7%	8.4%

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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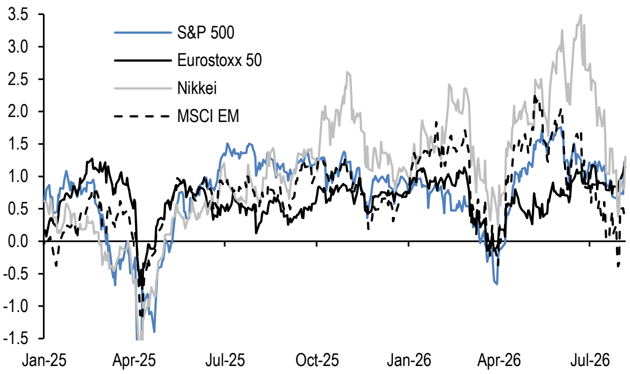
Chart A20: Momentum signals for S&P500

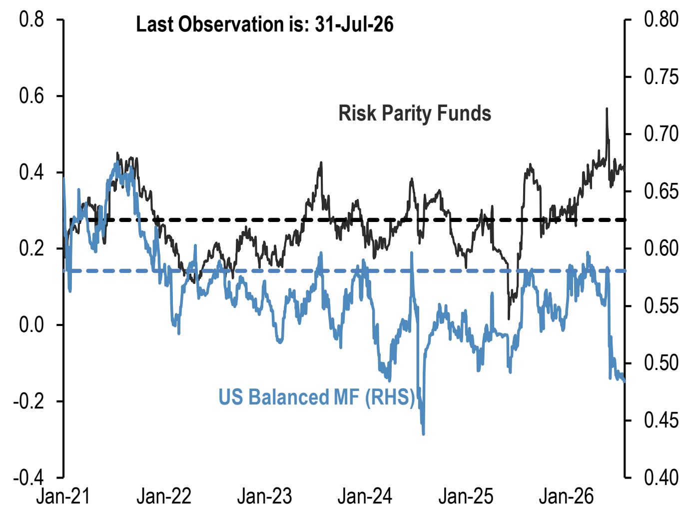
Average z-score of Short- and Long-term momentum signal in our Trend Following Strategy framework shown in Tables A3 and A4 below in the Appendix.



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

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

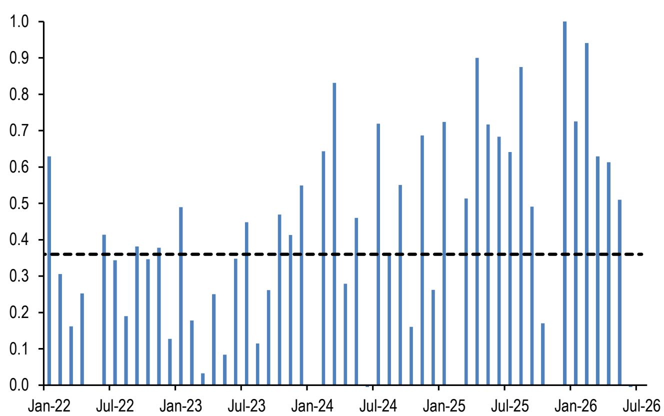
Rolling 42-day equity beta based on a bivariate regression of the daily returns of our Balanced Mutual fund and Risk Parity fund return indices to the daily returns of the S&P 500 and BarCap US Agg indices. Given that these funds invest in both equities and bonds we believe that the bivariate regression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

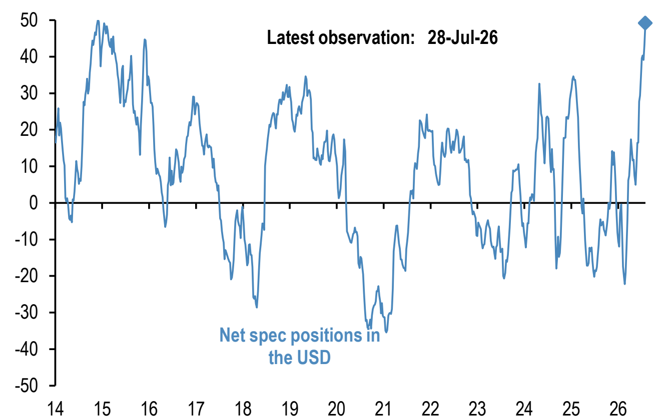
Proxied by the ratio of the monthly performance of Pivotal Path Asset-Weighted Equity Diversified hedge fund index divided by the monthly performance of MSCI AC World Index. Latest obs. is July 26 based on provisional data.



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	6.2	22.7	0.27	1	1	0.5	3.0%
	long	462				1	1	1.1	32.0%
Brent	short	84	4.3	21.5	0.20	-1	1	-0.6	-7.3%
	long	504				1	1	1.2	33.0%
Unleaded gas	short	105	3.5	23.2	0.15	1	44	0.7	10.3%
	long	483				0	21	2.2	59.1%
Heat Oil	short	63	4.7	22.0	0.21	1	1	1.3	13.7%
	long	483				0	105	3.0	93.7%
Gasoil	short	63	8.2	21.2	0.39	1	0	1.4	14.8%
	long	378				0	105	3.1	90.4%
Nat gas	short	105	13.6	35.9	0.38	-1	14	-0.8	-14.1%
	long	315				-1	126	-0.8	-24.9%
EU emission allowances	short	42	10.2	28.8	0.35	1	6	0.2	2.1%
	long	483				1	34	0.2	7.5%
1m fwd TTF Nat gas	short	21	36.9	31.4	1.18	1	1	1.1	10.6%
	long	294				1	1	1.2	55.5%
Gold	short	21	3.1	10.6	0.29	-1	0	-0.3	-0.9%
	long	483				1	37	0.4	5.5%
Silver	short	10	6.1	19.7	0.31	-1	0	-0.3	-0.9%
	long	462				1	28	0.4	9.6%
Palladium	short	42	12.0	23.1	0.52	0	0	0.0	-0.4%
	long	273				-1	50	-0.6	-15.0%
Platinum	short	105	4.3	18.6	0.23	0	28	-1.6	-15.1%
	long	273				-1	28	-0.8	-12.3%
Aluminium	short	105	5.7	15.2	0.38	-1	26	-1.0	-7.8%
	long	357				1	31	0.6	8.0%
Copper	short	147	7.3	17.3	0.42	1	118	0.3	3.7%
	long	399				1	124	1.0	21.7%
Lead	short	126	0.8	19.2	0.04	-1	36	-0.4	-4.1%
	long	357				-1	137	-0.4	-9.0%
Nickel	short	42	11.8	23.0	0.51	-1	38	-0.3	-2.6%
	long	336				0	0	0.0	0.7%
Zinc	short	126	7.9	19.6	0.40	1	86	0.4	4.9%
	long	399				1	216	0.8	17.8%
Wheat	short	168	4.3	23.3	0.18	1	19	0.8	10.0%
	long	294				1	19	0.7	11.5%
Kansas wheat	short	147	8.6	20.8	0.41	1	2	1.2	13.8%
	long	483				1	16	0.7	14.3%
Corn	short	63	7.6	16.6	0.46	1	4	0.3	2.0%
	long	399				-1	60	-0.3	-5.5%
Soybeans	short	42	4.6	14.5	0.32	1	16	0.8	4.0%
	long	231				1	16	0.4	4.9%
Cotton	short	168	5.3	18.5	0.29	1	33	0.4	5.2%
	long	483				1	1	0.1	1.8%
Sugar	short	63	6.4	21.6	0.30	-1	4	-0.2	-2.0%
	long	252				-1	53	-0.3	-5.4%
Coffee	short	63	7.9	24.0	0.33	0	1	2.2	19.5%
	long	273				1	2	0.5	9.5%
Cocoa*		10	5.5	31.3	0.18	-1	8	-1.2	-4.7%

* 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	0	1.0	5.1%
	long	315				1	0	1.4	14.6%
Nasdaq 100	short	84	10.1	16.2	0.62	1	0	0.5	3.7%
	long	462				1	0	1.3	25.2%
Nikkei	short	63	3.8	13.3	0.28	-1	0	-0.5	-3.1%
	long	420				0	0	2.2	33.8%
FTSE 100	short	168	5.3	12.1	0.44	1	0	1.0	6.1%
	long	504				0	0	1.8	20.5%
Eurostoxx 50	short	168	5.0	16.6	0.30	1	0	1.1	9.6%
	long	294				1	0	1.2	14.2%
MSCI EM	short	42	12.7	11.5	1.11	-1	0	-0.4	-2.0%
	long	357				1	0	1.2	19.2%
HYG credit	short	168	0.4	3.4	0.12	-1	0	-0.3	-0.7%
	long	273				-1	0	-0.2	-0.7%
LQD credit	short	10	2.6	6.5	0.40	-1	0	-0.1	-0.1%
	long	189				-1	0	-0.2	-0.8%
2Y USTs	short	252	0.8	1.1	0.78	-1	0	-0.8	-1.0%
	long	462				-1	0	-0.6	-1.1%
5Y USTs	short	252	1.5	2.8	0.55	-1	0	-0.7	-1.8%
	long	420				-1	0	-0.5	-1.6%
10Y USTs	short	42	2.0	3.6	0.55	-1	0	-0.2	-0.3%
	long	441				-1	0	-0.4	-1.8%
2Y Schatz	short	189	0.6	0.8	0.81	-1	0	-0.6	-0.5%
	long	504				-1	0	-1.2	-2.1%
5y Bobl	short	63	1.3	1.9	0.70	-1	0	-0.2	-0.2%
	long	483				-1	0	-0.8	-2.6%
10y Bund	short	105	2.1	3.4	0.63	-1	0	-0.2	-0.4%
	long	462				-1	0	-0.6	-3.1%
10Y JGB	short	126	0.9	2.3	0.38	-1	0	-1.4	-1.4%
	long	273				0	0	-2.1	-3.2%
10Y Gilts	short	42	2.2	4.1	0.55	-1	0	-0.3	-0.4%
	long	399				-1	0	-0.7	-3.7%
10y OAT vs Bund	short	189	0.4	1.5	0.25	-1	0	-0.1	-0.1%
	long	294				1	0	0.3	0.3%
10y BTP vs. Bund	short	84	2.2	6.3	0.35	1	0	0.1	0.2%
	long	273				1	0	0.1	0.4%
Euro	short	42	3.3	6.4	0.52	1	0	0.1	0.3%
	long	273				-1	0	-0.7	-3.8%
Yen	short	21	3.6	6.3	0.58	0	0	1.5	2.4%
	long	462				-1	0	-1.1	-9.4%
Sterling	short	168	1.3	7.1	0.19	-1	0	-0.3	-1.1%
	long	294				-1	0	-0.4	-1.9%
AUD	short	42	3.8	7.8	0.49	1	0	0.2	0.7%
	long	420				1	0	0.3	2.7%
CAD	short	168	1.4	5.9	0.24	-1	0	-0.9	-3.5%
	long	504				-1	0	-1.0	-6.6%
G10 FX	short	42	2.1	5.2	0.41	-1	0	-0.5	-0.8%
	long	189				1	0	0.3	1.0%
EMCI	short	42	2.6	4.9	0.52	1	0	0.1	0.1%
	long	189				1	0	0.4	1.4%

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

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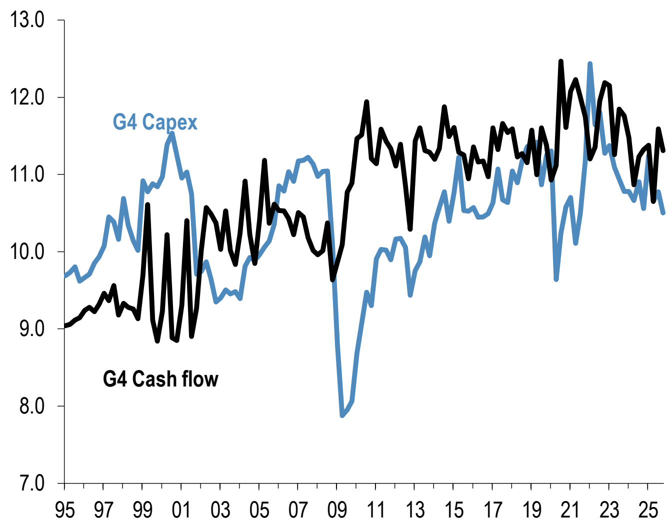
Corporate Activity

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

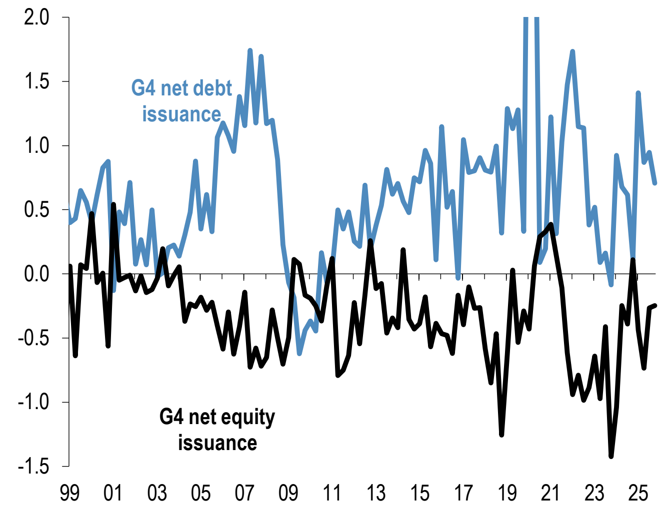
% of GDP, G4 includes the US, the UK, the Euro area and Japan. Last observation as of Q4 2025.



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

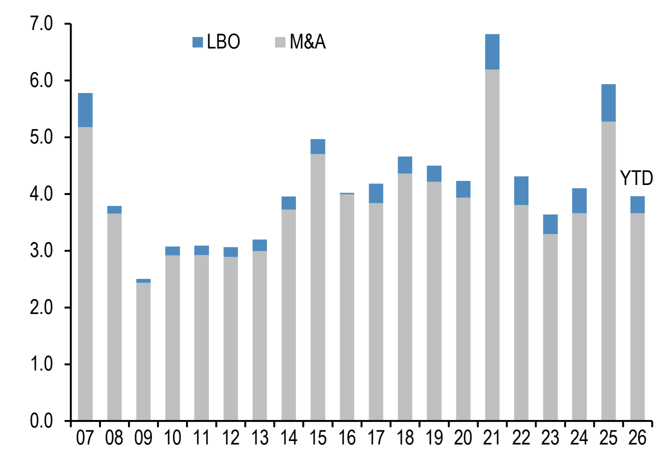
$tr per quarter, G4 includes the US, the UK, the Euro area and Japan. Last observation as of Q4 2025.



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

Chart A26: Global M&A and LBO

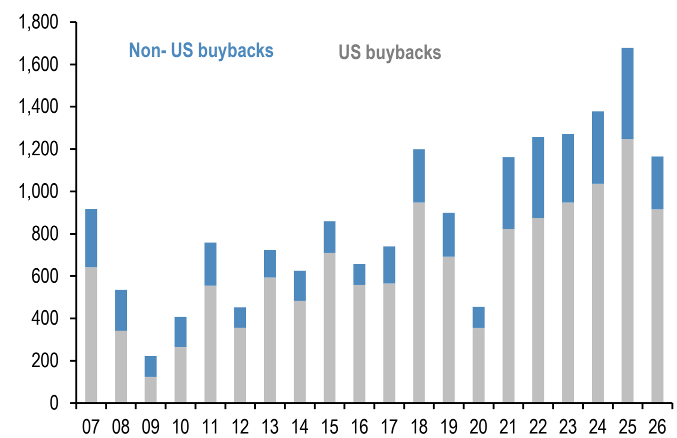
$tr. M&A and LBOs are announced.



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

Chart A27: US and non-US share buyback

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



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

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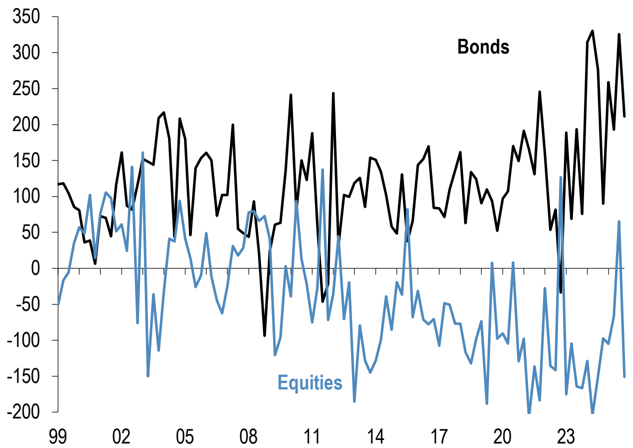
Pension fund and insurance company flows

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

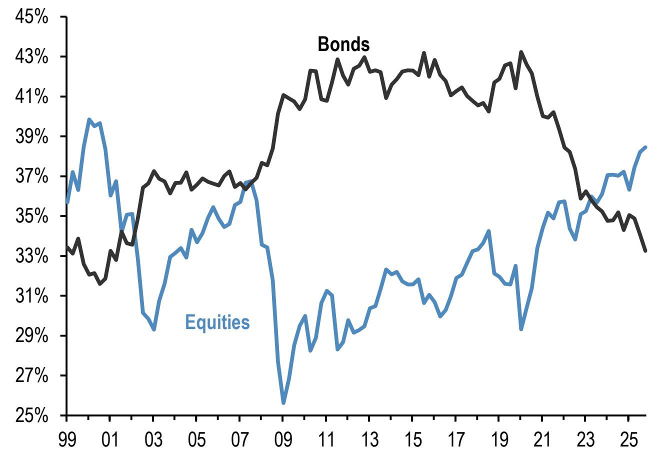
Equity and bond buying in $bn per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q4 2025.



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

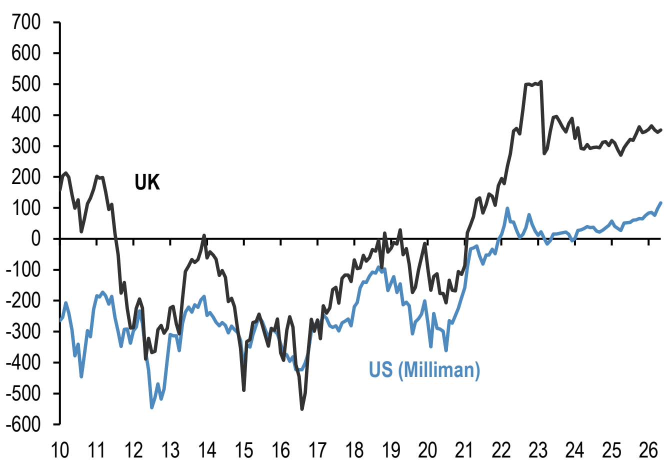
Equity and bond as % of total assets per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q4 2025.



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

Chart A30: Pension fund deficits

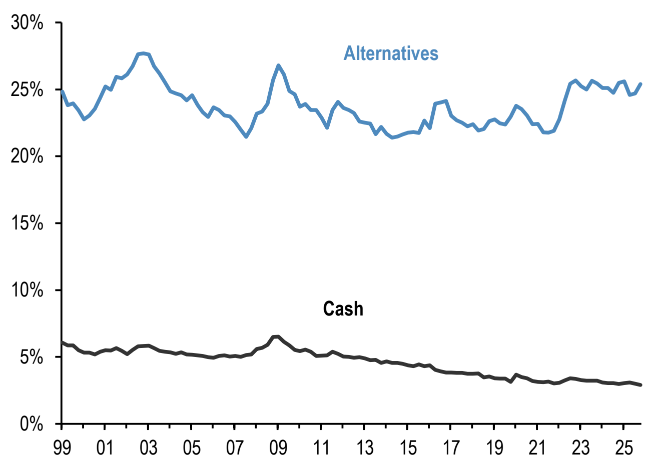
US$bn. For US, funded status of the 100 largest corporate defined benefit pension plans, from Milliman. For UK, funded status of the defined benefit schemes eligible for entry to the Pension Protection Fund, converted to US$ at today's exchange rates. Last obs. is May'26 for US & UK.



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 Q4 2025.



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

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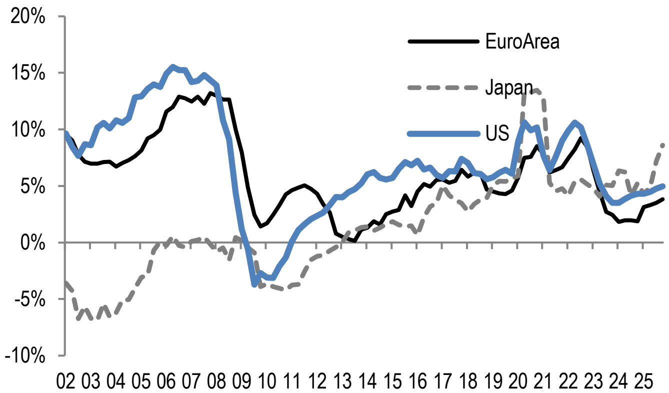
Credit Creation

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

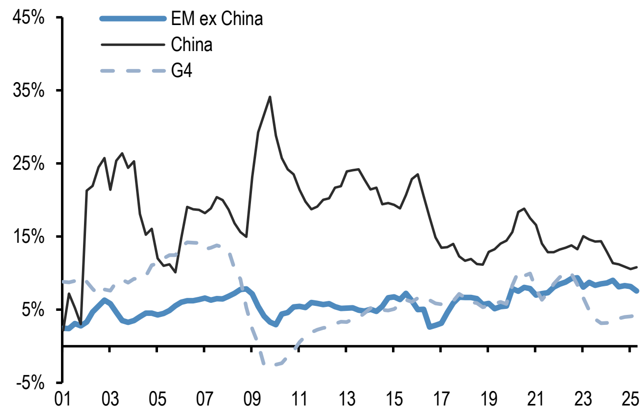
Rolling sum of 4-quarter credit creation as % of GDP. Credit creation includes both bank loans as well as net debt issuance by non-financial corporations and households. Last obs. is Q4'25 for Japan, Euro Area and US.



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

Chart A33: Credit creation in EM

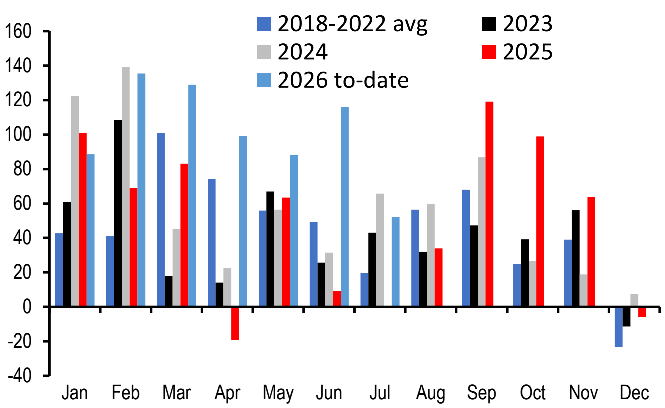
Rolling sum of 4-quarter credit creation as % of GDP. Credit creation includes both bank loans as well as net debt issuance by non-financial corporations and households. The chart uses the FX rates as of the latest observation to calculate the credit creation at constant exchange rates. Last obs. is for Q2'25.



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 July 30th.



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	24-Jul	4 wk avg	13 wk avg	y/y chng
Global IPOs	2.6	6.5	12.7	194%
Secondary Offerings	8.0	19.1	15.7	39%
Corporate announcements				
M&A - Global	109.8	99.2	143.3	45%
- US Target	48.9	44.1	79.3	74%
- Non-US Target	60.9	55.1	64.0	24%
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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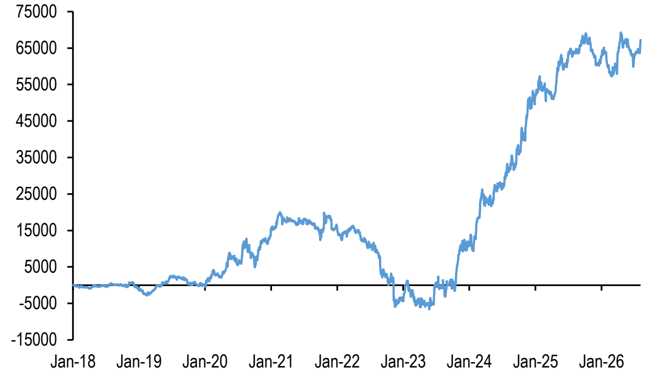
Bitcoin monitor

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

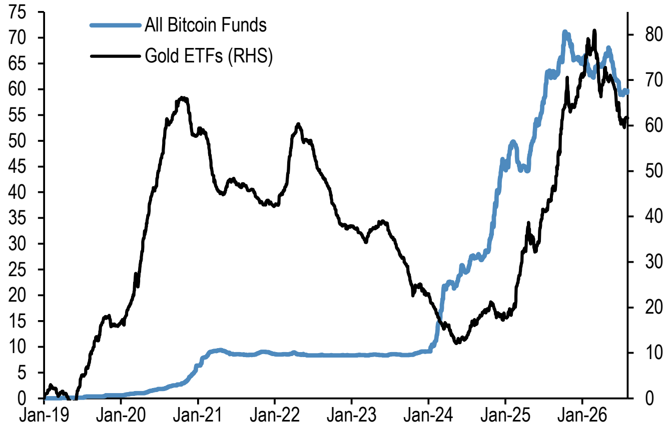
In number of contracts. Last obs. for 4th August 2026.



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

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

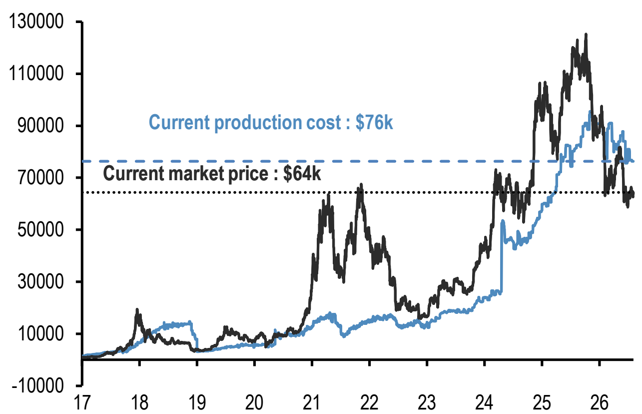
Both the y-axis in $bn.



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

Chart A37: Ratio of bitcoin market price to production cost

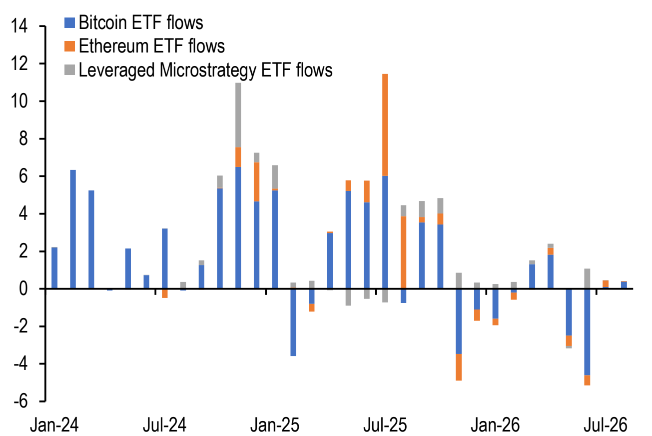
Based on the cost of production approach following Hayes (2018).



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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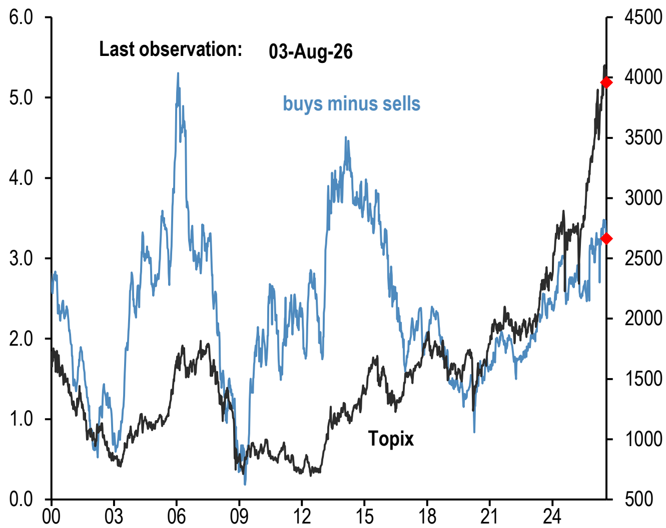
Japanese flows and positions

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

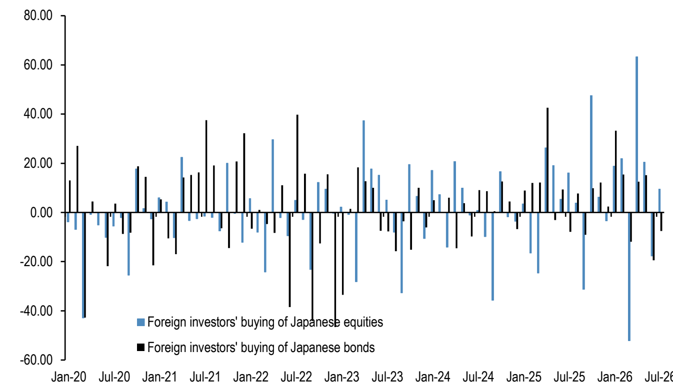
In bn of shares. Topix on right axis.



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

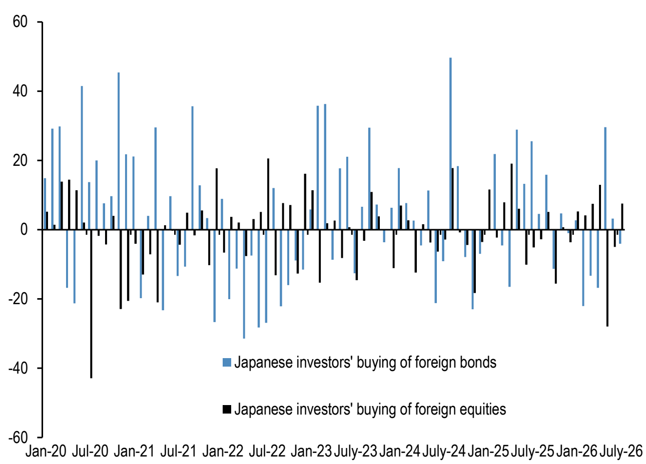
$bn, Last weekly obs. is for 24th July' 26.



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

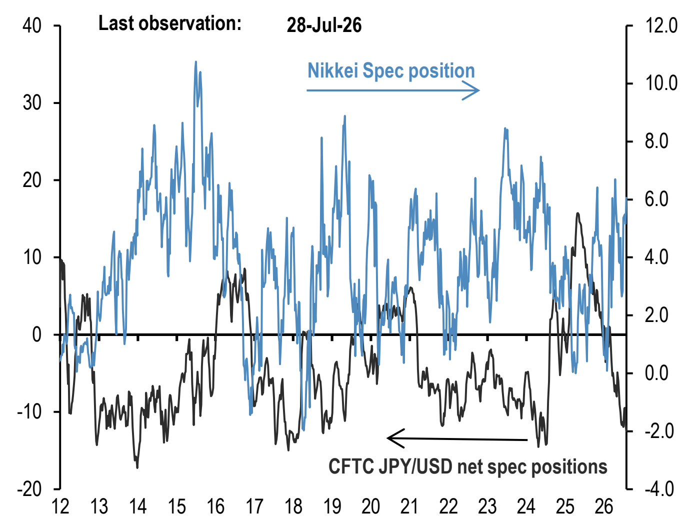
$bn, Last weekly obs. is for 24thJuly' 26.



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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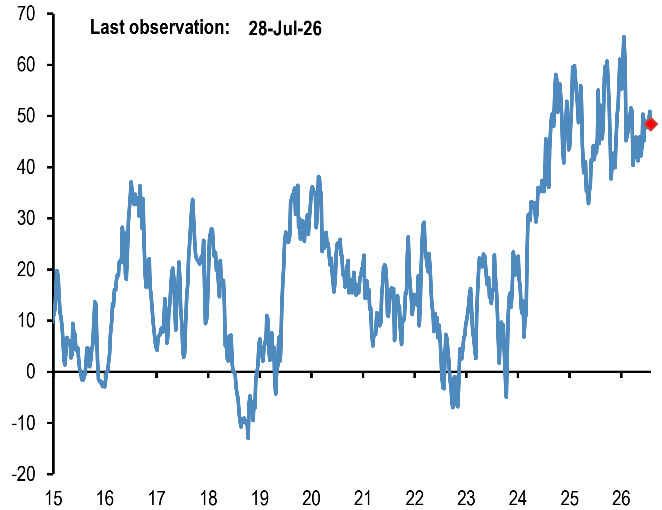
Commodity flows and positions

Chart A43: Gold spec positions

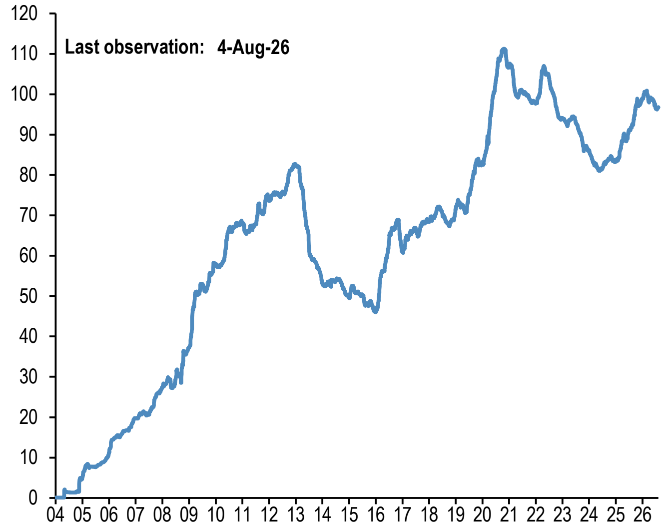
$bn. CFTC net long minus short position in futures for the Managed Money category.



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

Chart A44: Gold ETFs

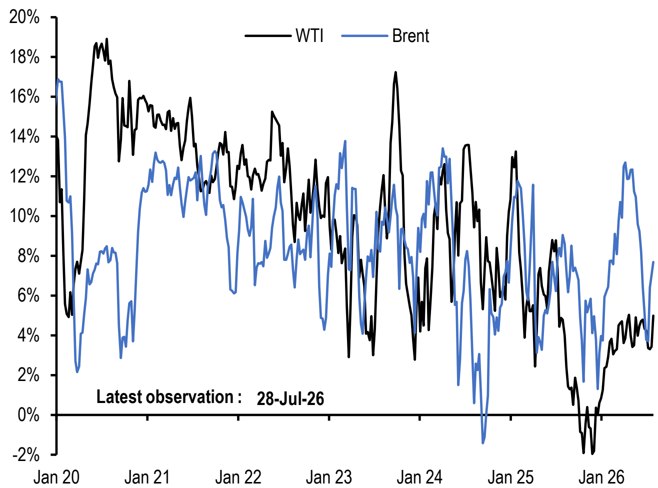
Mn troy oz. Physical gold held by all gold ETFs globally.



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

Chart A45: Oil spec positions

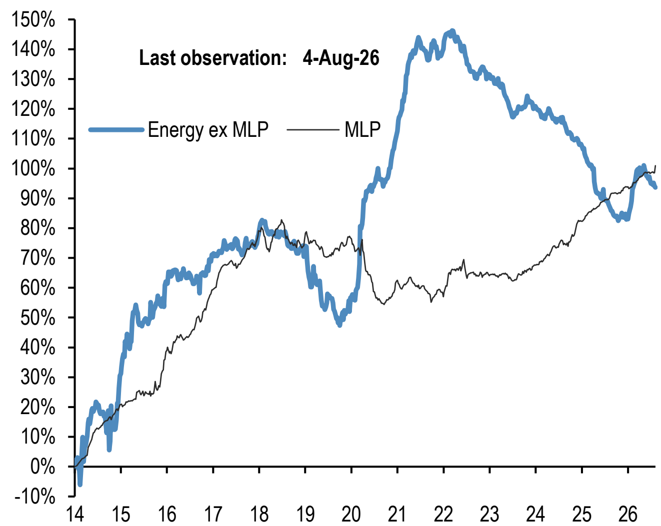
Net spec positions divided by open interest. CFTC futures positions for WTI and Brent are net long minus short for the Managed Money category.



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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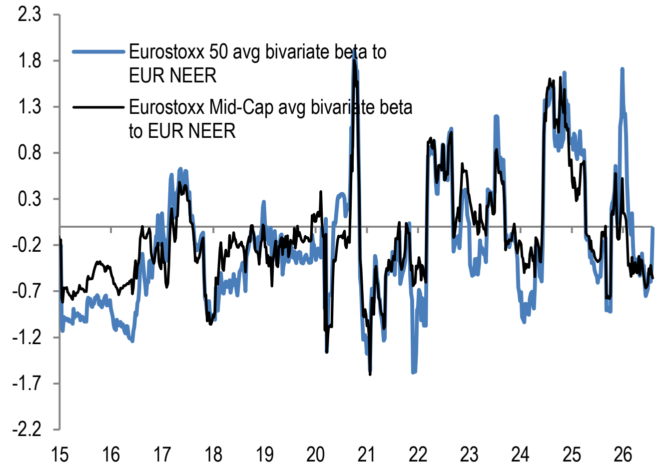
Corporate FX hedging proxies

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

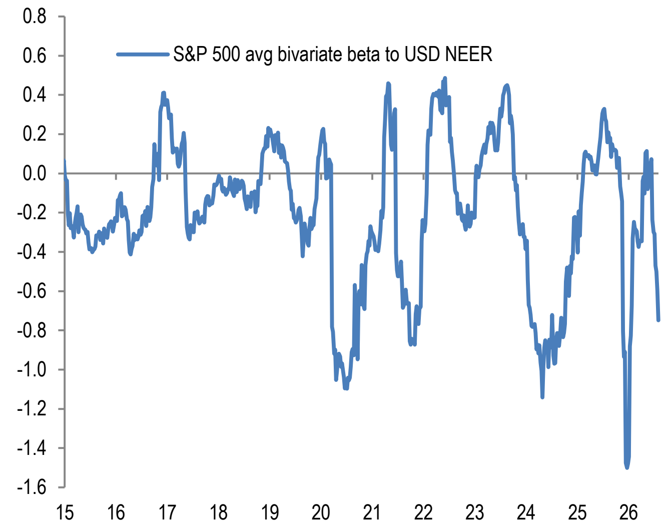
Rolling 26 weeks average betas based on a bivariate regression of the weekly returns of individual stocks in the Eurostoxx 50 index to the weekly returns of the MSCI AC World and JPM EUR Nominal broad effective exchange rate (NEER).



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

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

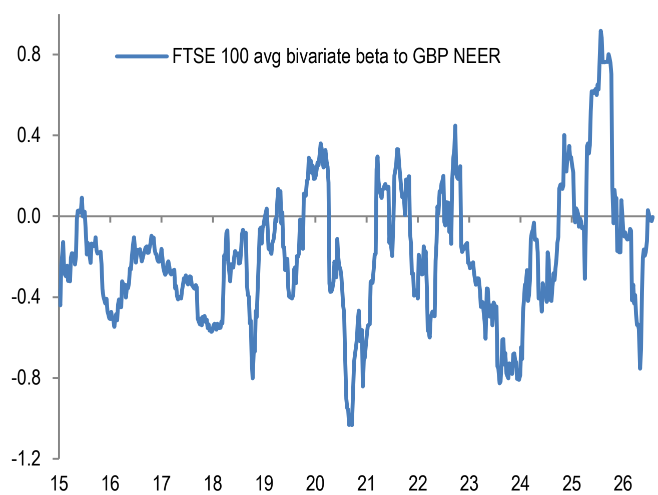
Rolling 26 weeks average betas based on a bivariate regression of the weekly returns of stocks in the S&P500 index to the weekly returns of the MSCI AC World and JPM USD Nominal broad effective exchange rate(NEER).



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

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

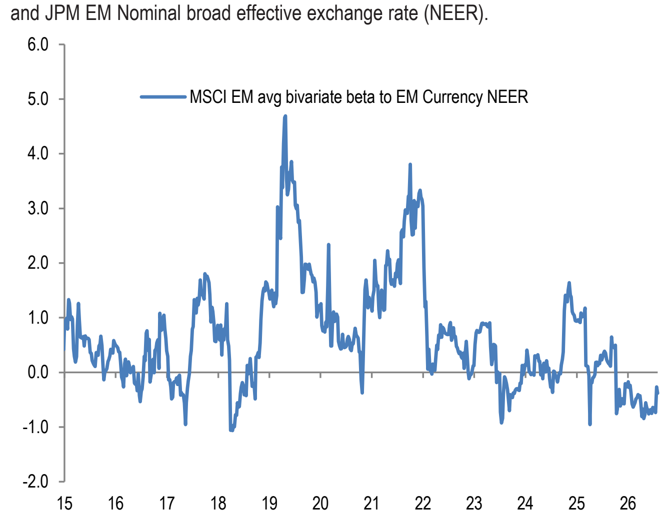
Rolling 26 weeks average betas based on a bivariate regression of the weekly returns of individual stocks in the FTSE 100 index to the weekly returns of the MSCI AC World and JPM GBP Nominal broad effective exchange rate (NEER).



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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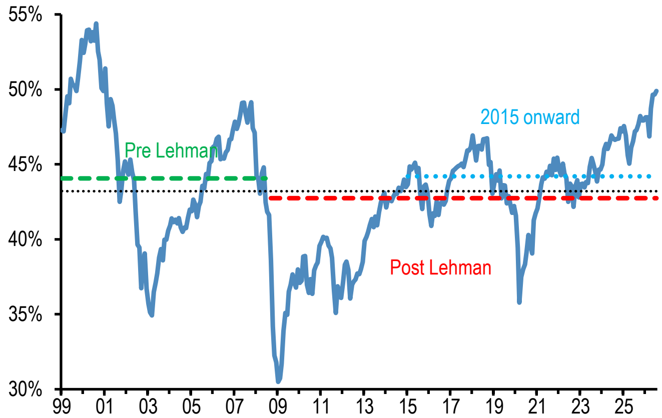
Non-Bank investors' implied allocations

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

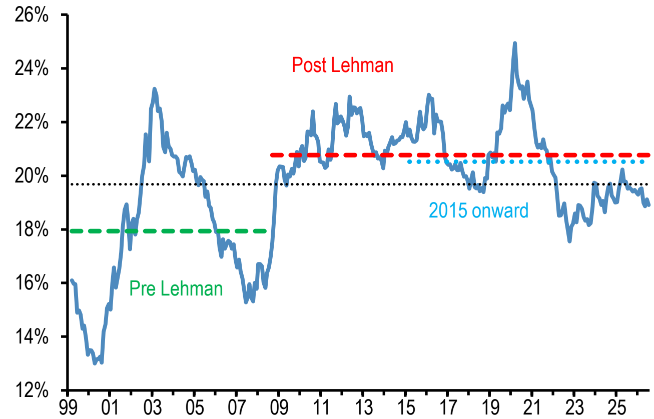
Global equities as % total holdings of equities/bonds/M2 by non-bank investors/ Commodities including gold held by private investors. Dotted lines are averages.



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

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

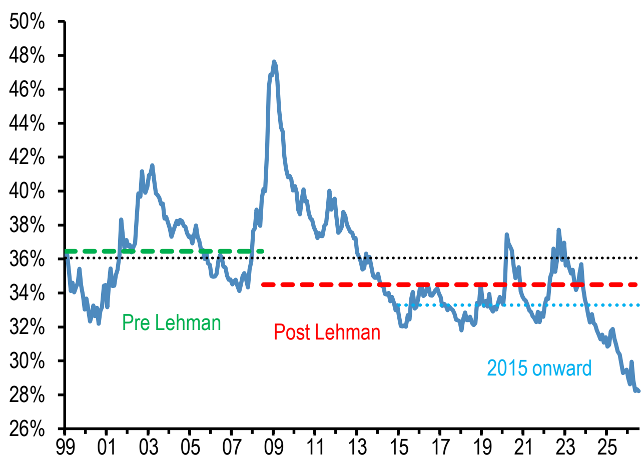
Global bonds as % total holdings of equities/bonds/M2 by non-bank investors/ Commodities including gold held by private investors. Dotted lines are averages.



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

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

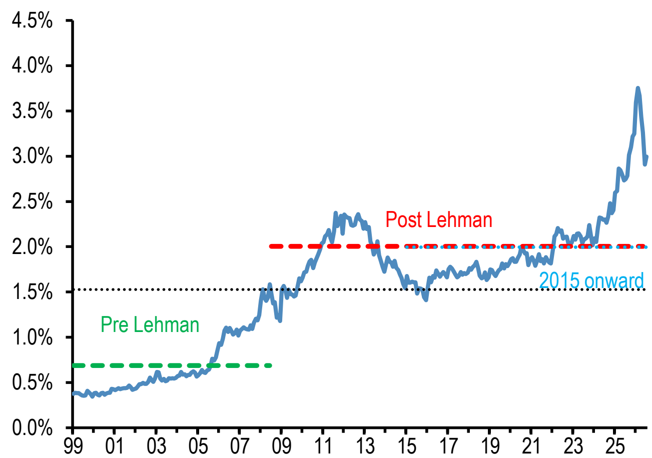
Global cash held by non-bank investors as % total holdings of equities/bonds/M2 by non-bank investors/Commodities including gold held by private investors. Dotted lines are averages.



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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