

Flows & Liquidity

A repeat of 2018/2019?

- The usage of the Fed's (Bank Term Funding Program) BTFP is likely to be big. For example, by just looking at the uninsured deposits of the six US banks with the highest ratio of uninsured deposits over total deposits (all six are US regional banks), we come up with \$460bn.
- The max usage we envisage for BTFP is around \$2tr which is the par amount of bonds held by US banks outside of the five largest banks.
- The higher the usage of BTFP, the higher the injection of reserves by the Fed and the greater the liquidity relief for the US banking system.
- There are signs of reserve scarcity in the US, where unsecured borrowing rates in the Fed funds market for the most distressed borrowers have risen well above the Fed's policy rate raising similarities to 2018/2019. Another manifestation is in the collapse of SVB, as depositors sought to move deposits to other banks there were insufficient reserves to settle these transactions forcing it to sell debt securities and crystallize losses.
- The tightening of liquidity conditions in the US banking system has not only been the result of the Fed's QT program, but also the result of the Fed's rate hikes, as those rate hikes have already induced a large \$400bn shift from bank deposits to Money Market Funds over the past year.
- It is important here to emphasize that the liquidity tightening or reserve scarcity of the banking system should not be confused with the liquidity outside the banking system, i.e. the money supply held by non-bank investors, which on our models should continue to provide a source of support for financial assets.
- The average duration of US banks' bond holdings has increased significantly over the past few years, consistent with the now large unrealised losses on their balance sheets. By contrast, while some individual banks may have higher exposures, Euro area banks overall appear to have much more modest duration exposures in their bond portfolios.
- CTAs suffered a steep loss of around 7% from March 8th to March 13th. The previous extreme short positions by momentum traders such as CTAs in core government bond futures and the yen are largely covered. The previous equity long positions are also largely unwound.
- The US banking crisis of the past week has induced large shifts in US bank deposits. The FDIC announced full protection for both insured and uninsured depositors but only for the depositors of SVB and Signature Bank. In turn, other regional/mid-size banks with high share of uninsured deposits have reportedly been losing those deposits to bigger banks or to money market funds.

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See page 24 for analyst certification and important disclosures, including non-US analyst disclosures.

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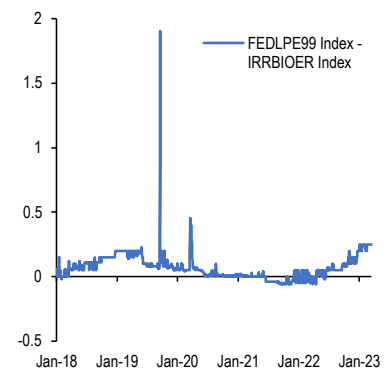
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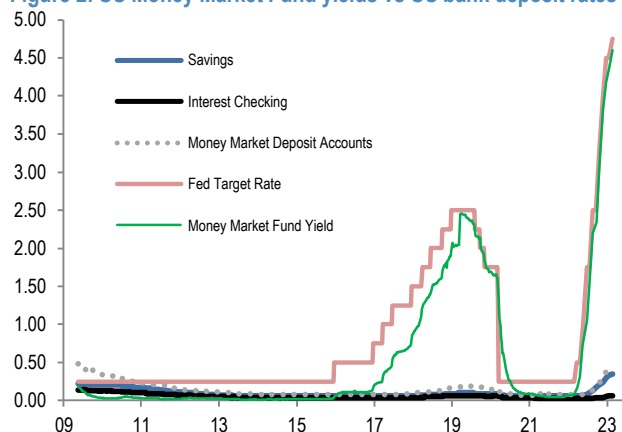
Figure 1: Fed funds 99th percentile rate vs Interest On Excess Reserves (IOER) In %



Source: Bloomberg Finance L.P., J.P. Morgan.

- To buy time and prevent a repeat of SVB's collapse, the Fed has introduced a new lending facility, the Bank Term Funding Program (BTFP). This lending facility is designed to avoid banks that are facing deposit outflows from being forced to sell their bond holdings at a loss. This is achieved by the Fed accepting eligible collateral at par, which at the same time maximizes the capacity of banks to borrow from this lending facility.
- How high could the usage of new lending facility be? The Fed will report the usage of this facility on a weekly basis via its H4.1 statistical release without mentioning individual banks to reduce the risk of the usage of this facility being stigmatized. Fed officials have reportedly said that "the BTFP is big enough to cover all uninsured deposits in the US". Of the close to \$18tr of domestic deposits, around \$7tr are uninsured. With the largest banks unlikely to tap this facility, we believe the max usage envisaged for this facility stands closer to \$2tr which is the par amount of bonds held by US banks outside the five largest. It is worth noting that there no limit on the amount an individual bank can obtain; i.e. any individual depository institution may borrow up to the par value of eligible collateral. In addition, while the US Treasury will backstop the BTFP with \$25bn from the Exchange Stabilization Fund, this does not necessarily limit the potential size of this program as it can be levered multiple times. Moreover, the Fed said it does not expect to tap these funds because the loans under the program have recourse beyond the pledged collateral.
- Taking all the above into account, we believe the potential usage of BTFP could be rather high. For example, by just looking at the uninsured deposits of the six US banks with the highest ratio of uninsured deposits over total deposits (all six are regional banks), we come up with \$460bn. In turn, a potentially high usage of the BTFP would inject liquidity, i.e. reserves, into the banking system at a time when there are signs that reserves are becoming scarcer. While there are still \$3tr of reserves in the US banking system, these reserves are not uniformly distributed as there is significant concentration among large US banks. For example, the top five US banks account for almost half of all reserves. A manifestation of this scarcity is in the Fed Funds interbank market, where the Fed Funds rate for the 99th percentile, i.e. the unsecured borrowing rate of the most distressed borrowers, has been rising to levels well-above the Fed's policy rate in a similar fashion to 2018/19 (Figure 1). At the time, the liquidity in the US banking system became too tight forcing the Fed to change its policy course in 2019. Another manifestation is in the collapse of SVB and deposit flight from other banks – as depositors sought to move their deposits to other banks, there were insufficient reserves to settle the transactions with other banks and they had to sell debt securities and crystallise losses.
- In the current juncture of scarce banking sector liquidity, the BTFP provides some relief. The usage of the BTFP, which is going to be determined by banks rather than the Fed, should be big enough to inject enough reserves into the banking system to reduce reserve scarcity and reverse the tightening of the past year. As a reminder, the US banking system lost \$1.3tr of reserves since the end of 2012. In other words, the higher the usage of BTFP, the higher the injection of reserves by the Fed and the greater the liquidity relief for the US banking system.
- The need by the Fed to inject more liquidity into the banking system could become more pressing if the banking system keeps losing deposits to Government Money Market Funds. This is because Government Money Market Funds do not generally invest in bank liabilities such as certificates of deposits or bank commercial paper, but their investments are rather confined to Tbills and Fed's Reverse Repos. In other words, when deposits shift into Money Market Funds, the banking system loses liquidity (i.e. reserves) which are converted into reverse repos. The tightening of liquidity conditions in the US banking system has not only been the result of the Fed's QT program but also the result of the Fed's rate hikes as those rate hikes have already induced a large \$400bn shift from bank deposits to Money Market Funds over the past year. This is because banks are typically slower in raising their deposit rates relative to Money Market Funds as shown in Figure 2 and this gap would rise further if the Fed keeps hiking interest rates. While it seems inevitable that bank deposits rates will rise faster over the coming months to compete with Money Market Funds, the events of the past days are raising the risk that more depositors (in particular large institutional depositors) will seek the safety of Government Money Market Funds in the current juncture. In turn, this would mean further loss of reserves being converted into reverse repos, putting even more pressure on US banks to use the BTFP, forcing the Fed to expand its balance sheet so that the lost reserves are replaced.

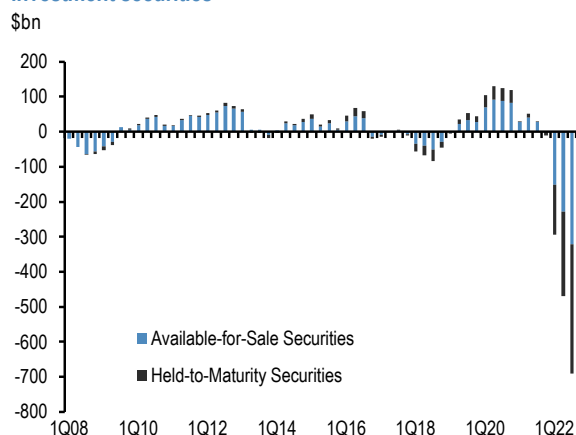
Figure 2: US Money Market Fund yields vs US bank deposit rates



Source: Bloomberg Finance L.P., J.P. Morgan

- It is important here to emphasize that the liquidity tightening or reserve scarcity of the banking system should not be confused with the liquidity outside the banking system, i.e. the money supply held by non-bank investors which on our models should continue to provide a source of support for financial assets (See recent [F&L](#) “Why have equities and credit been so resilient? March 1st 2023).
- The collapse of SVB and the official response has also seen an intense focus on unrealised losses of US banks on their bond holdings. And, more broadly, it has also raised questions about unrealised losses on European banks’ bond holdings. Our colleagues in US and European bank research have looked at individual banks’ exposures in detail (e.g. US Banks: Bold Moves from Regulators, and Now We Wait and Read across from SVB Financial for European Banks from Mar 13th). We focus here on the exposures at the aggregate level and attempt to quantify banks’ duration exposure.
- The widely cited FDIC data on US banks’ unrealised losses on their holdings of bonds in Available-for-Sale (Afs) and Held-to-Maturity (HtM) portfolios certainly point to significant unrealised losses. As Figure 3 shows, total unrealised losses stood at around \$620bn in 4Q22, with \$280bn in Afs and \$340bn in HtM portfolios. The latter are also significant, since losses on the HtM portfolios are not marked to market in financial statements.

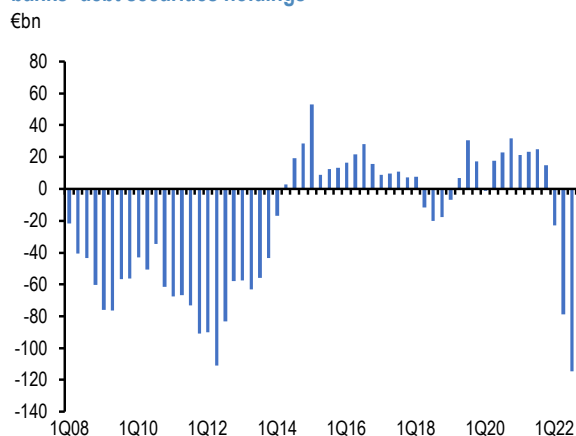
Figure 3: FDIC-insured institutions’ unrealised gains (losses) on investment securities



Source: FDIC.

- What about Euro area banks? The ECB’s MFI statistics are useful in quantifying this, as they report bank holdings of bonds at market value as well as flows and revaluation adjustments due to unrealised gains or losses on these bond holdings. Figure 4 below shows the cumulative revaluation adjustments on a quarterly basis over the same period as Figure 3 above, and suggest that the cumulative losses on both Afs and HtM portfolios were around €115bn in 4Q22.

Figure 4: Cumulative revaluation adjustments on Euro area banks’ debt securities holdings

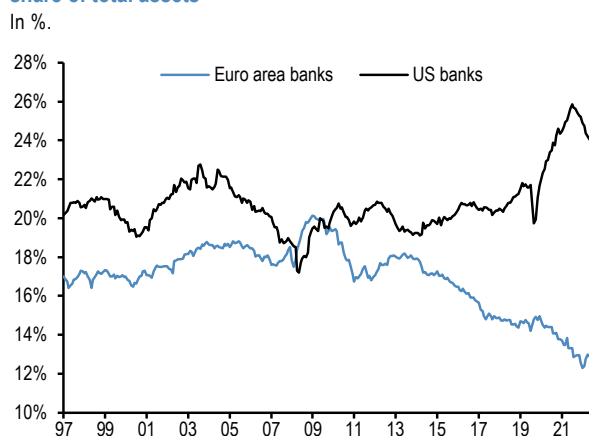


Source: ECB, J.P. Morgan.

- This difference in scale of unrealised losses, despite the fact that Euro area bonds saw even larger drawdowns in 2022 compared to US bonds, might seem surprising at face value. Indeed, EuroAgg total return in 2022 was nearly -17% compared to -12% for the US Agg total return after a more marked 4Q22 rally in the latter. But this reflects in part the very

different scale of bond holdings relative to banks' total assets. Indeed, as we have noted previously, the holdings of debt securities by US banks as a share of their total assets reached a high of nearly 26% in early 2022 as their bond holdings expanded rapidly during the post-pandemic recovery (Figure 5). By contrast, Euro area banks' bond holdings as a share of total assets have been steadily declining since the ECB started QE in 2015.

Figure 5: US and Euro area banks' debt securities holdings as a share of total assets

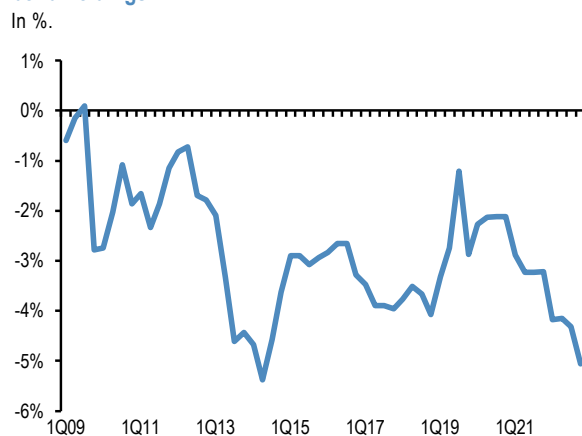


Source: ECB, Federal Reserve, J.P. Morgan.

- However, this only tells us about notional exposures. What about duration? One way to estimate duration exposure is to take the changes in net unrealized gains and regress them against changes yields on the Aggregate bond indices. When this metric is very negative it implies banks have elevated duration positions, and when it is only modestly negative it implies short duration positions. Moreover, if we scale this sensitivity of changes in net unrealized gains to changes in interest rates to the size of banks' bond holdings, we can estimate a duration exposure. For the US, we take changes in the quarterly FDIC series on US banks' net unrealized gains regressed against quarterly changes in US Agg yields in 1y rolling regressions, and then divide this by the debt security holdings of US banks. For Euro area banks, we take monthly revaluation adjustments from the ECB's MFI balance sheet statistics regressed against monthly changes in EuroAgg yields in 1y rolling regressions, and then divide this sensitivity by their debt security holdings.
- Figure 6 suggests that US banks' duration exposures have increased sharply since the pandemic, while Figure 7 suggests that Euro area banks' duration exposures have been relatively steady since 2020 and if anything declined since late 2021. Effectively, a

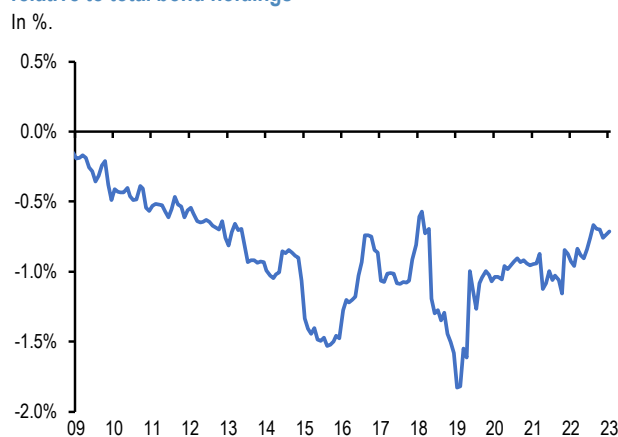
1% sensitivity for euro area banks to a 100bp change in yield suggests an average duration of around a year, well below the average 2y duration in the 1-3y bucket of the EuroAgg bond index, suggesting the bulk of their bond holdings are in very short dated bonds. By contrast, a sensitivity of just over 5% for US banks is more consistent with the average duration of 5.3 years of bonds in the 5-7y bucket of the US Agg bond index, suggesting significantly longer average duration of US banks' bond holdings. This appears consistent with the fact that some US banks have been cited as having quite high shares of 15y+ bonds on their balance sheets.

Figure 6: Sensitivity of changes in US banks' net unrealized gains (losses) to a 100bp change in the US Agg index relative to total bond holdings



Source: Bloomberg, Federal Reserve, J.P. Morgan.

Figure 7: Sensitivity of Euro area banks' bond revaluation adjustments to a 100bp change in yield on the EuroAgg index relative to total bond holdings



Source: Bloomberg, ECB, J.P. Morgan.

- This suggest that the average duration of US banks' bond holdings has increased significantly over the past few years, consistent with the now large unrealised losses on their balance sheets. By contrast,

while some individual banks may have higher exposures, Euro area banks overall appear to have much more modest duration exposures in their bond portfolios.

- For euro area banks, perhaps a greater source of concern comes from the funding side as around €720bn of TLTRO funding is set to expire in 2023, with the bulk in June. The stock of Euro area banks' long-term borrowings from the ECB, which are largely TLTROs given outstanding 3-month LTROs stand at less than €3bn, has already declined from €2.1tr in October to €1.2tr currently after the ECB changed its TLTRO terms from Nov22 onwards, increasing the cost of TLTRO funding. Relative to the stock of deposits of Euro area banks excluding other banks and general government deposits, which stood at around €15tr in January, the remaining TLTROs represent around 8% of which around two-thirds are set to mature this year.
- However, the net impact ultimately depends on the share of TLTRO funding that was used to fund lending rather than bonds effectively in carry trades. To the extent the funding was used for the former, banks would need to find alternative funding. For the share of funding used for the latter, given the relatively short duration of Euro area banks' bond holdings implied by Figure 7 above, these carry trades could likely be unwound with relatively little impact. Looking at the €830bn decline in euro area banks' borrowings from the ECB from end-Oct22 to end-Jan23, largely from voluntary repayments of TLTROs, around €180bn, or around a fifth, was substituted by funding via debt security issuance. Assuming a similar ratio for the TLTROs scheduled to mature in 2023, this would imply around €150bn of additional funding needs. Given the current uncertainty with press reports of greater focus on counterparty risk, this could become more challenging. The TLTRO operation maturing in Jun23 with nearly €550bn outstanding is the largest single maturity, meaning there is some time remaining to replace the funding. But clearly the longer the current uncertainty remains, the more challenging this could become.
- Going forward, in terms of gauging the impact on the broader economy a key metric to monitor is obviously credit creation. In the case of the US, two-thirds of the stock of loans were extended by banks outside the five largest, meaning the flow of uninsured deposits to the largest banks and the pressure to increase deposit rates to compete with

money market funds could have implications for credit creation more broadly.

Previous extreme short positions by momentum traders such as CTAs in core government bond futures and the yen are largely covered. Previous equity long positions are also largely unwound

- Last week in our publication we had updated our momentum signal framework to gauge the positioning of momentum traders such as CTAs which we estimate after leverage command around \$1.2tr of assets across rates, equities, currencies and commodities. This framework was introduced six years ago in [F&L](#), Mar 17, 2017. At the time, we implemented the signals in a two-step process. First, we found the optimal lookback period for each contract/asset using a pure momentum signal that maximised the information ratio of the signal. Second, we overlaid this pure momentum strategy with a mean reversion signal that would turn the signals neutral when momentum became extreme, defined as an absolute signal z-score of 1.5. We tested various thresholds ranging from 1.5 to 3, and found that across most assets a z-score of 1.5 tended to work best. In addition, we also defined a lower absolute threshold of 0.05 to signal very weak momentum to avoid overtrading when the z-score is very close to zero ([F&L](#), Jun 16, 2017).
- A week ago we had found signs of extremity in momentum traders' short positioning in core government bond futures and the yen. The banking crisis has induced a sharp reversal over the past week with CTAs suffering a steep loss as they were forced to cover those previous short positions in rates and the yen. This steep loss of almost 7% from March 8th to March 13th is depicted in Figure 8 which shows the total return index of the universe of daily reporting CTAs (those behind the HFRX Macro Systematic Diversified CTA Index).

Figure 8: HFRX Macro Systematic Diversified CTA Total Return Index

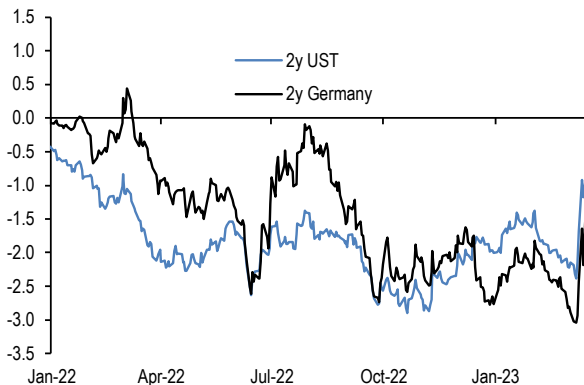


Source: Bloomberg Finance L.P., J.P. Morgan

- The size of the short covering in rates is shown by our momentum signals in Figure 9 to Figure 11. The average z score increased by 1.4stdev since March 8th implying around \$210bn of short covering since then. Similarly, the previous Japanese yen shorts saw sharp unwinding and are now largely covered (Figure 12). The previous net long position across equity indices is now largely unwound, implying risk reduction of around \$75bn by CTAs in the equity space (Figure 13). The position reduction has been more modest in commodities ex Gold (Figure 14 and Figure 15). However, Gold momentum signals saw a sharp increase approaching overbought territory (Figure 16).

Figure 9: Momentum Signals for 2y UST and 2y Germany

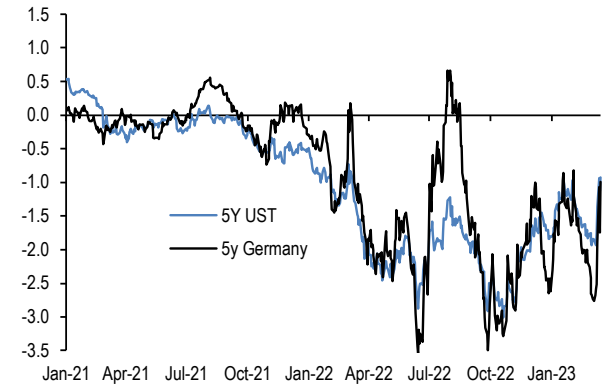
Average of the z scores of our short and long lookback period Momentum Signals in our Trend Following Strategy framework shown in Tables A5 and A6 in the Appendix.



Source: Bloomberg Finance L.P., J.P. Morgan.

Figure 10: Momentum Signals for 5y UST and 5y Germany

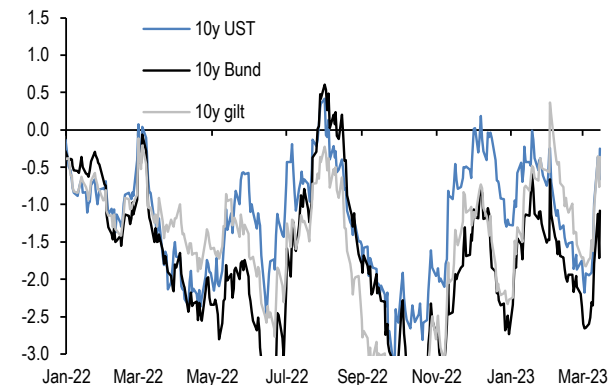
Average of the z scores of our short and long lookback period Momentum Signals in our Trend Following Strategy framework shown in Tables A5 and A6 in the Appendix.



Source: Bloomberg Finance L.P., J.P. Morgan.

Figure 11: Momentum Signals for 10y UST, Bund and Gilt

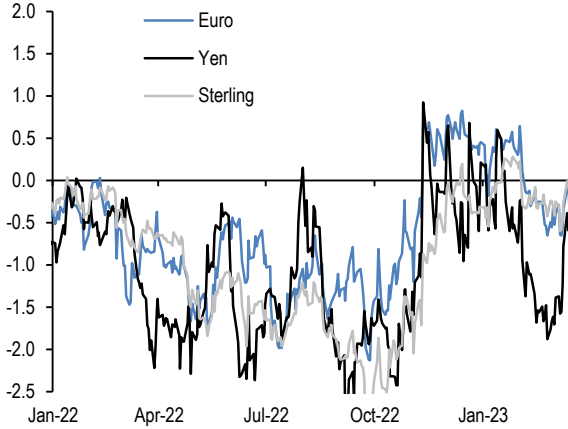
Average of the z scores of our short and long lookback period Momentum Signals in our Trend Following Strategy framework shown in Tables A5 and A6 in the Appendix.



Source: Bloomberg Finance L.P., J.P. Morgan.

Figure 12: Momentum Signals for Euro, Yen and Sterling

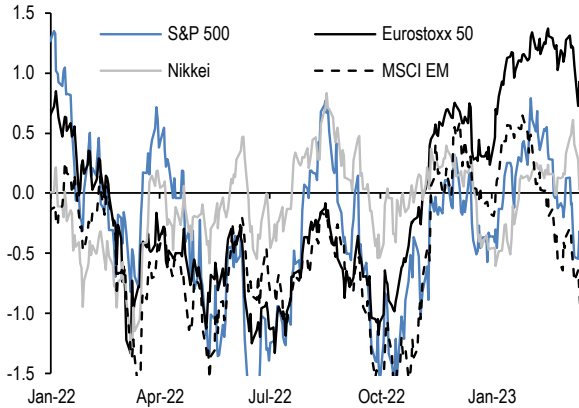
Average of the z scores of our short and long lookback period Momentum Signals in our Trend Following Strategy framework shown in Tables A5 and A6 in the Appendix.



Source: Bloomberg Finance L.P., J.P. Morgan.

Figure 13: Momentum Signals for S&P500, Eurostoxx50, Nikkei and MSCI EM

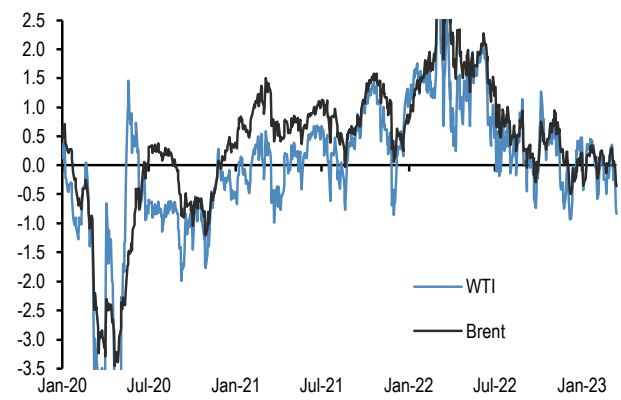
Average of the z scores of our short and long lookback period Momentum Signals in our Trend Following Strategy framework shown in Tables A5 and A6 in the Appendix.



Source: Bloomberg Finance L.P., J.P. Morgan.

Figure 14: Momentum Signals for WTI and Brent

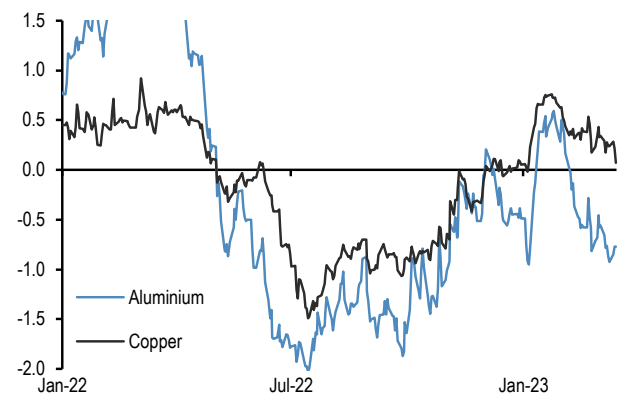
Average of the z scores of our short and long lookback period Momentum Signals in our Trend Following Strategy framework shown in Tables A5 and A6 in the Appendix.



Source: Bloomberg Finance L.P., J.P. Morgan.

Figure 15: Momentum Signals for Aluminium and Copper

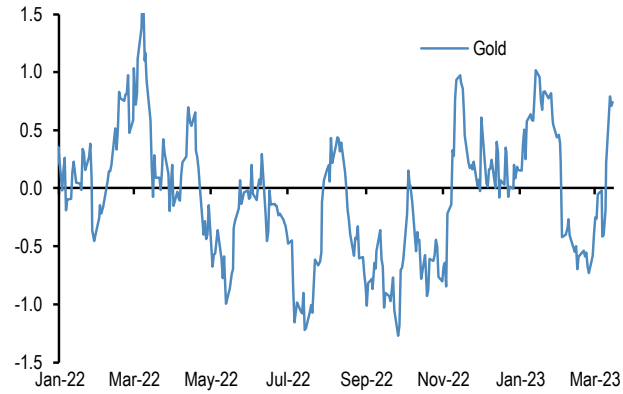
Average of the z scores of our short and long lookback period Momentum Signals in our Trend Following Strategy framework shown in Tables A5 and A6 in the Appendix.



Source: Bloomberg Finance L.P., J.P. Morgan.

Figure 16: Momentum Signals for gold

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.



Source: Bloomberg Finance L.P., J.P. Morgan.

- In all, momentum traders, such as CTAs, suffered a steep loss of around 7% from March 8th to March 13th. Previous extreme short positions in core government bond futures and the yen are largely covered. Previous equity long positions are also largely unwound.

Table A1: Weekly flow monitor

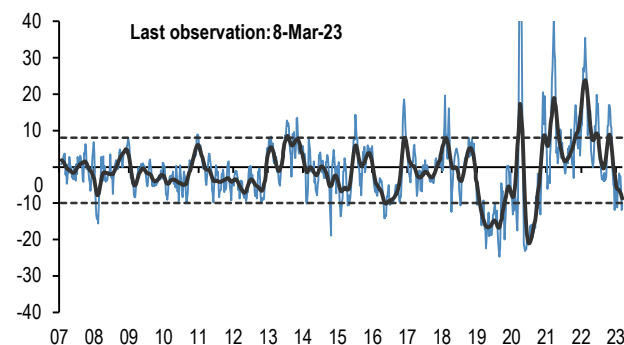
\$bn, Includes Global Mutual Fund and ETF flows from EPFR.. US Equities, International Equities, Taxable bonds and Municipal bonds includes US Domiciled MFs from ICI and ETF flows from Bloomberg Finance L.P.

MF & ETF Flows	8-Mar	4 wk avg	13 wk avg	2023 avg
All Equity	-0.52	-3.7	0.2	1.6
All Bond	8.22	6.7	6.5	8.4
US Equity	4.02	-3.4	-6.6	-4.4
Intl. Equity	0.00	0.6	8.0	7.76
Taxable Bonds	5.63	3.0	1.2	3.1
Municipal Bonds	0.12	-0.1	-1.1	-0.4

Source: EPFR, Bloomberg Finance L.P., ICI, J.P. Morgan.

Chart A1: Fund flow indicator

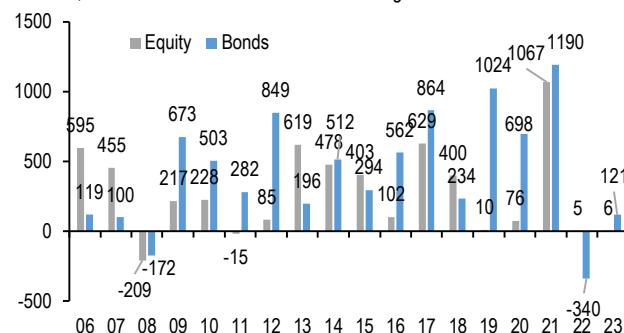
Difference between flows into Equity and Bond funds: \$bn per week. Flow includes global mutual funds and ETF flows. The thin blue line shows the 4-week average of difference between Equity and Bond fund flows. Dotted lines depict ± 1 StDev of the blue line. The thick black line shows a smoothed version of the same series. The smoothing is done using a Hodrick-Prescott filter with a Lambda parameter of 100.



Source: EPFR, J.P. Morgan.

Chart A2: Global equity & bond fund flows

\$bn per year of Net Sales, i.e. includes net new sales + reinvested dividends for MF and ETFs. Flows are from ICI (worldwide data up to Q3'22). Data since then are a combination of monthly and weekly data from ICI, EPFR and ETF flows from Bloomberg Finance L.P.



Source: ICI, Lipper, EPFR, , Bloomberg Finance L.P. J.P. Morgan.

Table A2: 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. More details on net bond issuances in Chart A40.

Equity Supply	10-Mar	4 wk avg	13 wk avg	y/y chng
Global IPOs	1.7	2.3	1.8	-71%
Secondary Offerings	4.9	6.6	5.3	-23%
Corporate announcements				
M&A - Global	32.7	31.2	47.9	-58%
- US Target	28.4	15.9	22.4	-61%
- Non-US Target	4.4	15.4	25.5	-54%
Net bond issuance				
USD	-81	-54	61	-10%
Non-USD	-11	3	30	-4%

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

Table A3: Trading turnover monitor

Volumes are monthly and Turnover ratio is annualized (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 Dec-22	MIN	MAX	Turnover ratio	Vol (tr)	y/y chng
Equities					
EM Equity*			0.7	\$0.7	-38%
DM Equity*			1.2	\$6.8	-1%
Govt Bonds					
UST cash			8.4	\$10.1	-2%
UST futures			0.5	\$8.4	-2%
JGBs*			35.5	¥3,294	59%
Bund futures			0.3	€1.3	-12%
Credit					
US HG			0.7	\$0.4	10%
US HY			0.6	\$0.1	-13%
US Convertibles			2.2	\$0.0	26%
Commodities					
Gold			25.6	\$0.6	-7%
Oil			74.3	\$1.7	-3%
Copper			3.2	\$0.3	-23%
Digital Assets					
CME Bitcoin			89.7	\$0.010	-38%
CME Ethereum			119.2	\$0.004	42%

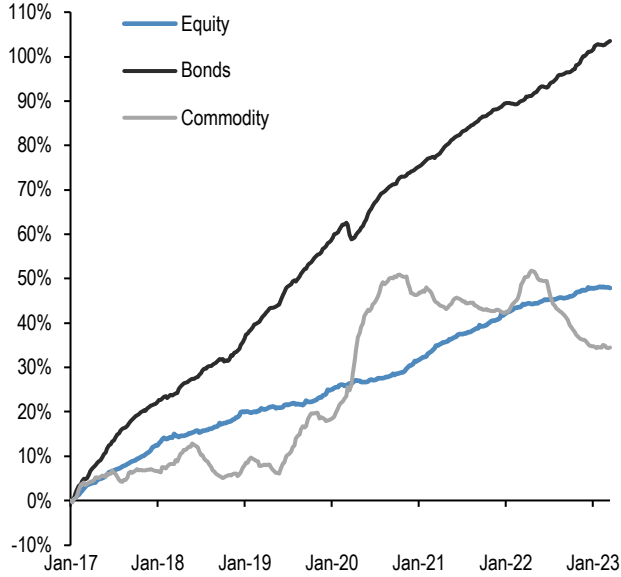
* Data with one month lag

Source: Bloomberg Finance L.P., Federal Reserve, Trace, Japan Securities Dealer Association, WFE, J.P. Morgan. * Data with one month lag.

ETF Flow Monitor (as of Mar 15th)

Chart A3: Global Cross Asset ETF Flows

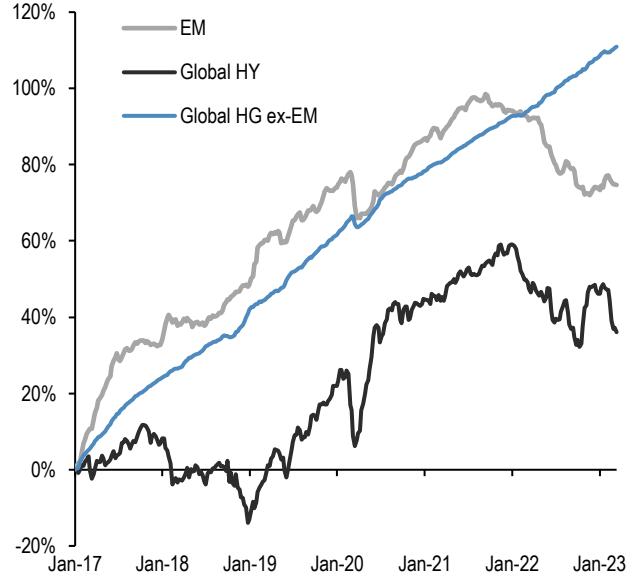
Cumulative flow into ETFs as a % of AUM



Source: J.P. Morgan. Bloomberg Finance L.P.

Chart A4: Bond ETF Flows

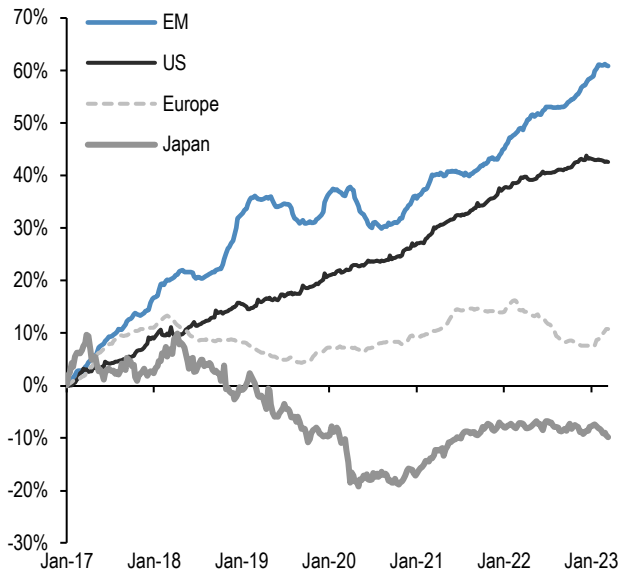
Cumulative flow into bond ETFs as a % of AUM



Source: J.P. Morgan. Bloomberg Finance L.P.

Chart A5: Global Equity ETF Flows

Cumulative flow into global equity ETFs as a % of AUM

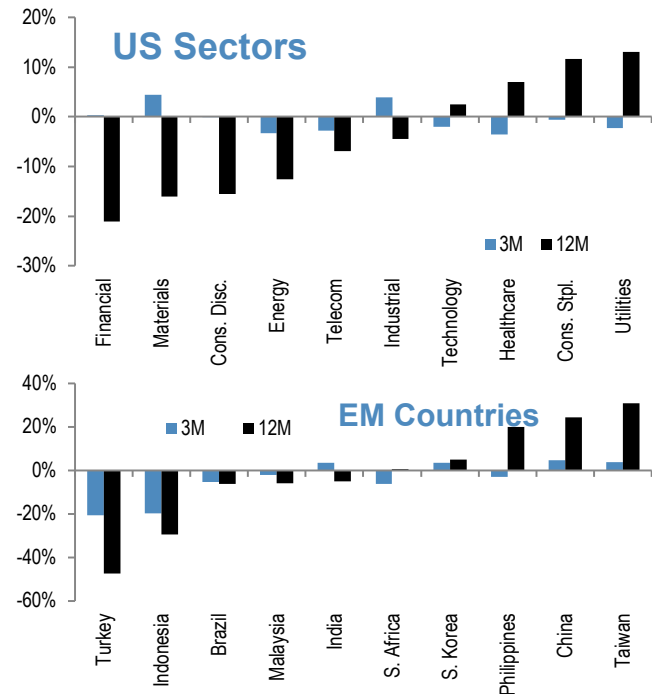


Source: J.P. Morgan. Bloomberg Finance L.P.

Note: We include ETFs with AUM > \$200mn in all the flow monitor charts. Chart A5 exclude China On-shore (A-share) ETFs from EM and in Japan we subtract the BoJ buying of ETFs.

Chart A6: 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

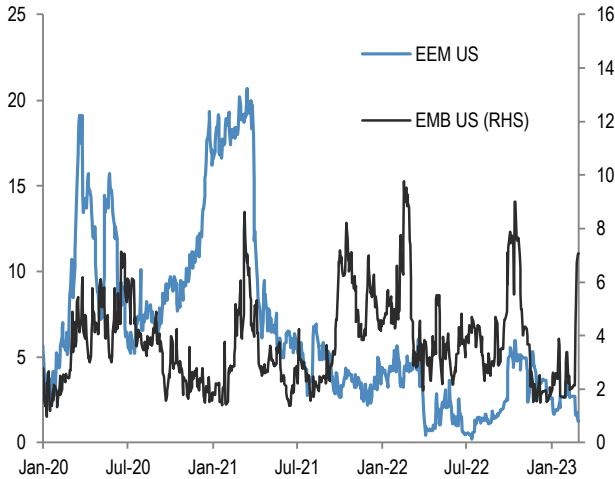


Source: J.P. Morgan. Bloomberg Finance L.P.

Short Interest Monitor

Chart A7: Quantity-On-Loan on the EEM and EMB US ETF

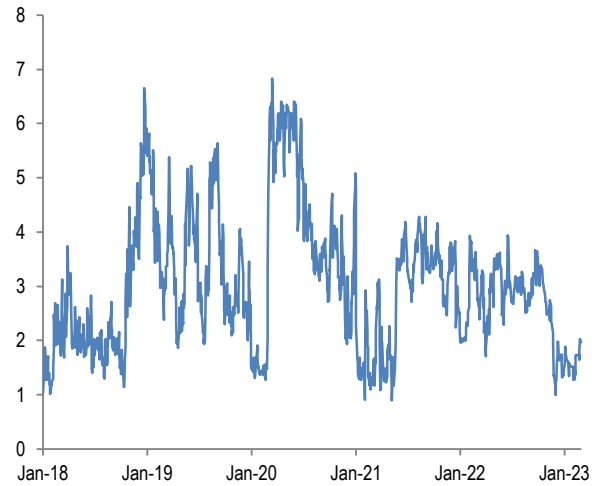
On loan quantity as a % share of share outstanding



Source: Datalend, J.P. Morgan

Chart A9: Quantity-On-Loan on the SPY US ETF

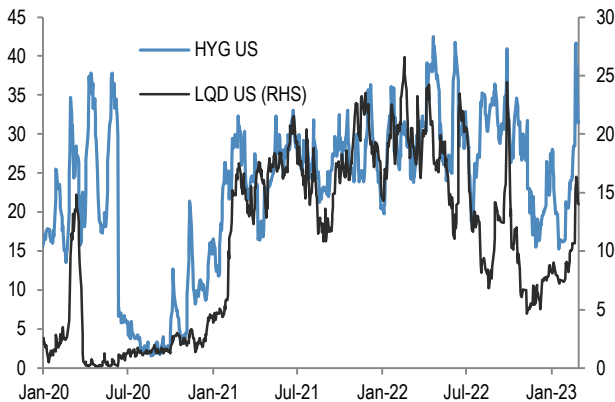
On loan quantity as a % share of share outstanding. Last obs is for 27th Feb 2023.



Source: Datalend, J.P. Morgan

Chart A8: Quantity-On-Loan on the LQD and HYG US ETF

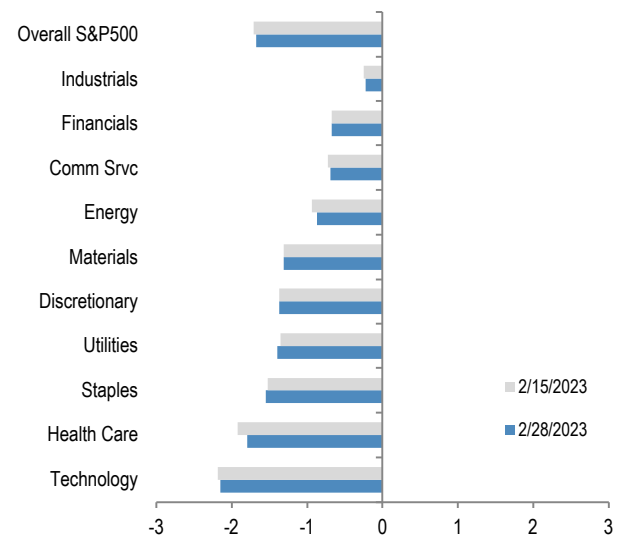
On loan quantity as a % share of share outstanding



Source: Datalend, J.P. Morgan

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, J.P. Morgan

Chart A11a: Cross Asset Volatility Monitor 3m ATM Implied Volatility (1y history) as of 07th Feb-2023

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

Asset	Current	Low	Low date	High	High date	Upside	Downside	Implied/realized volatility
S&P 500	17%	17%	2-Feb-23	28%	13-Jun-22	11%	0%	1.0x
EuroSTOXX	16%	14%	2-Feb-23	39%	4-Mar-22	23%	2%	1.3x
Nikkei 225	16%	16%	7-Feb-23	27%	9-Mar-22	12%	0%	1.0x
Hang Seng	22%	19%	9-Feb-22	39%	15-Mar-22	17%	3%	1.0x
MSCI EM	19%	15%	13-Apr-22	41%	11-Mar-22	22%	4%	1.2x
Gold	14%	14%	10-Feb-22	27%	8-Mar-22	13%	1%	1.0x
Oil (brent)	39%	38%	31-Jan-23	73%	23-Mar-22	34%	1%	1.4x
Copper	26%	24%	8-Jun-22	35%	15-Jul-22	10%	1%	1.6x
BB commodity index	20%	17%	10-Feb-22	30%	26-Jul-22	10%	3%	1.3x
EUR/USD	9%	7%	10-Feb-22	13%	28-Sep-22	4%	2%	1.1x
USD/NOK	15%	12%	10-Feb-22	18%	12-Oct-22	3%	3%	1.1x
USD/JPY	13%	6%	9-Feb-22	14%	16-Jan-23	1%	7%	0.9x
GBP/USD	10%	7%	9-Feb-22	19%	28-Sep-22	8%	4%	1.1x
USD/CHF	9%	6%	23-Feb-22	11%	28-Sep-22	2%	2%	0.9x
10y US swaps	107	82	9-Feb-22	156	21-Oct-22	49	24	0.9x
10y Eur swaps	106	67	9-Feb-22	170	29-Sep-22	64	39	0.9x
CDX IG	47%	45%	2-Feb-23	76%	7-Mar-22	29%	2%	1.5x
CDX HY	45%	43%	2-Feb-23	68%	7-Mar-22	23%	2%	1.6x
iTraxx	52%	49%	3-Feb-23	86%	7-Mar-22	34%	3%	1.2x
iTraxx X/O	47%	45%	3-Feb-23	85%	7-Mar-22	37%	2%	1.2x

Source: J.P. Morgan.

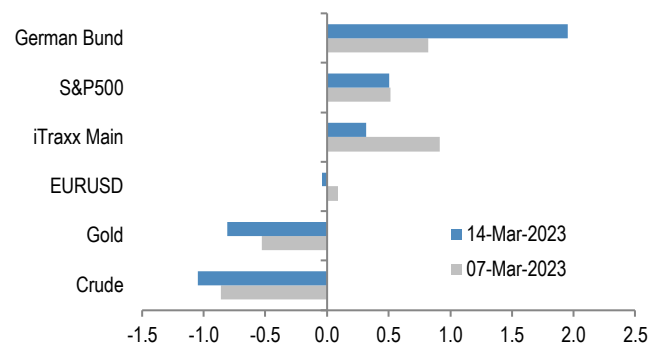
Note: Swaps volatility is 3m 10y payer ATM implied annualized BP vol and credit volatility is 3m 5y on-the-run ATM spread volatility. MSCI EM, Gold, Oil, Copper, BB Commodity Index and Treasury futures are 3m implied vol from Bloomberg.

Definitions:

Current:	Latest available closing level (07-Feb-23)
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

Chart A11b: Option skew monitors

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 favor buying protection, i.e. a short risk position. A positive skew for the Bund reflects a long duration view, also a short risk position.

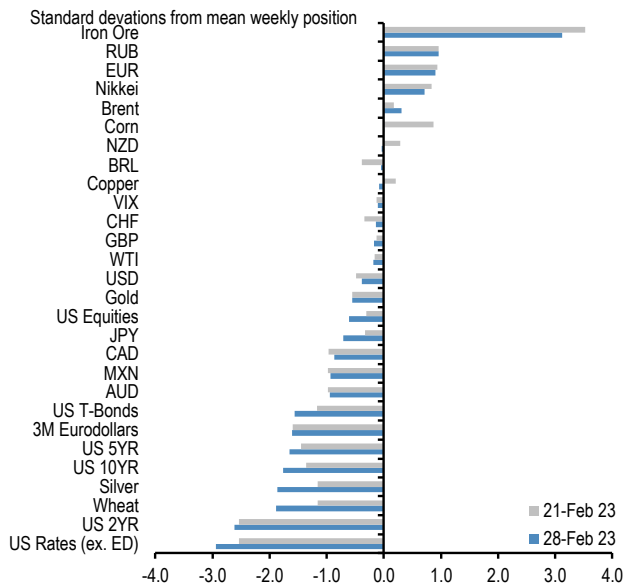


Source: J.P. Morgan

Spec position monitors

Chart A12: Weekly Spec Position Monitor

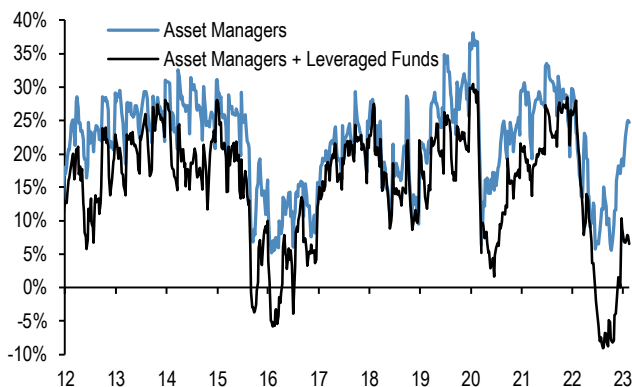
Net spec positions are proxied by the number of long contracts minus the number of short contracts using the speculative category of the Commitments of Traders reports (as reported by CFTC). To proxy for speculative investors for equity futures positions we use Asset managers (see Chart A16), whereas 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

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, Dow Jones, NASDAQ and their Mini futures contracts.

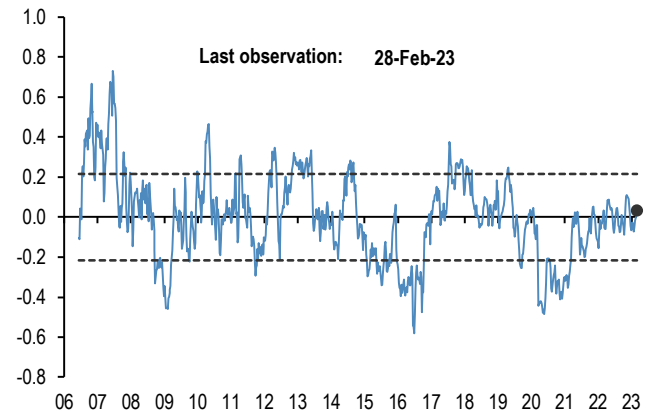


Source: CFTC, Bloomberg Finance L.P. and J.P. Morgan

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, RUB, MXN and BRL. The safe currencies are: JPY, CHF and Gold.

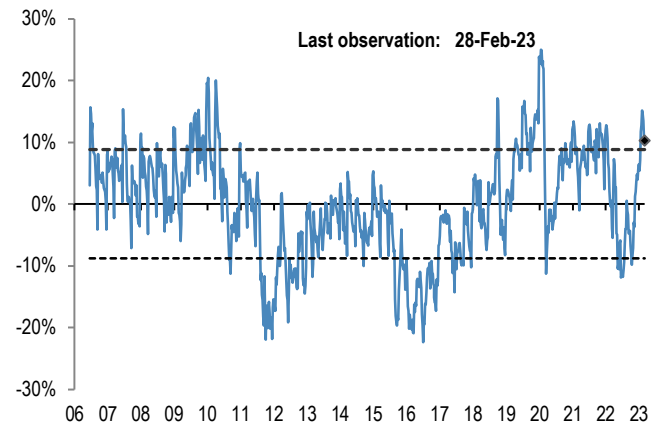


Source: CFTC, J.P. Morgan

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 (Chart A16) scaled by open interest minus the non-commercial category 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.

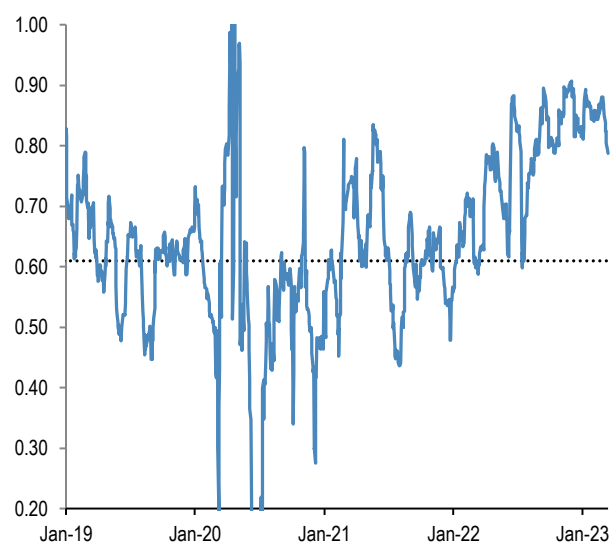


Source: CFTC, Bloomberg Finance L.P. and J.P. Morgan

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

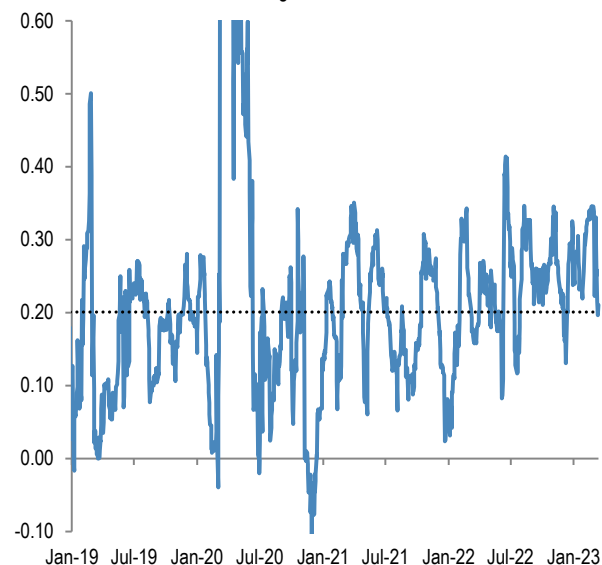
The dotted line shows the average beta since 2013.



Source: Bloomberg Finance L.P., J.P. Morgan

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.

Chart A18: Performance of various type of investors

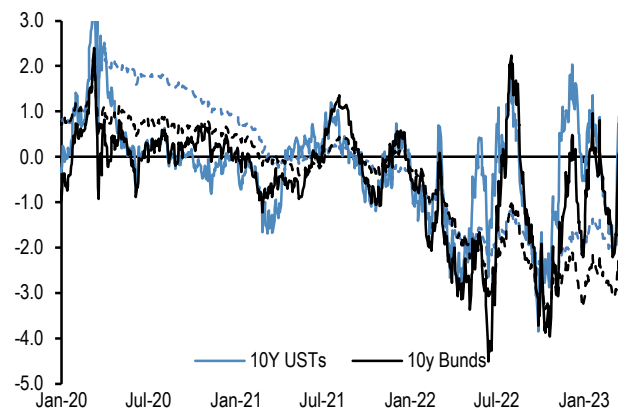
The table depicts the performance of various types of investors in % as of 13th Mar 2023.

Date	2017	2018	2019	2020	2021	2022	2023
Investors							
Equity L/S	11.8%	-5.9%	12.8%	8.7%	6.6%	-8.7%	0.6%
Macro ex-CTAs	5.6%	9.8%	2.9%	7.8%	7.2%	6.2%	1.4%
CTAs	2.2%	-8.1%	9.2%	6.3%	10.9%	27.3%	-5.3%
Risk Parity Funds	13.5%	-6.5%	18.4%	3.5%	4.7%	-18.6%	2.3%
US Balanced MFs	14.0%	-4.9%	20.1%	13.2%	14.4%	-13.0%	0.5%
Benchmark							
MSCI AC World	24.0%	-9.4%	26.6%	16.3%	16.4%	-18.4%	1.7%
Barclays Global Agg	3.0%	1.8%	8.2%	5.6%	-2.5%	-11.2%	2.4%
60 US Equity : 40 US Bonds	14.3%	-1.9%	22.2%	13.3%	14.8%	-15.4%	1.5%
S&P Riskparity Vol 10	10.4%	-4.3%	22.8%	11.5%	12.8%	-16.2%	5.0%

Source: Bloomberg Finance L.P., HFR, SG CTA Index, J.P. Morgan.

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

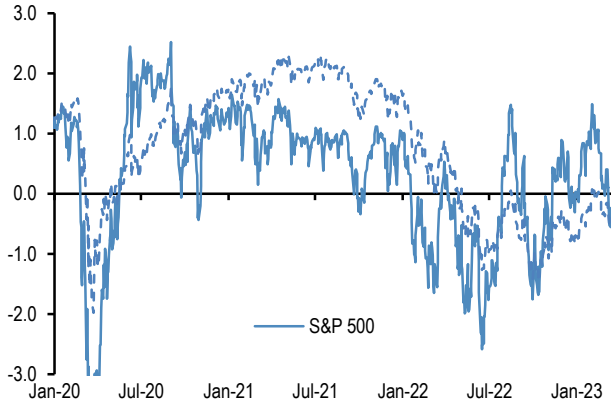
z-score of the momentum signal in our Trend Following Strategy framework shown in Tables A5 and A6 in the Appendix. Solid lines are for the shorter term and dotted lines for longer-term momentum.



Source: Bloomberg Finance L.P., J.P. Morgan.

Chart A20: Momentum signals for S&P 500

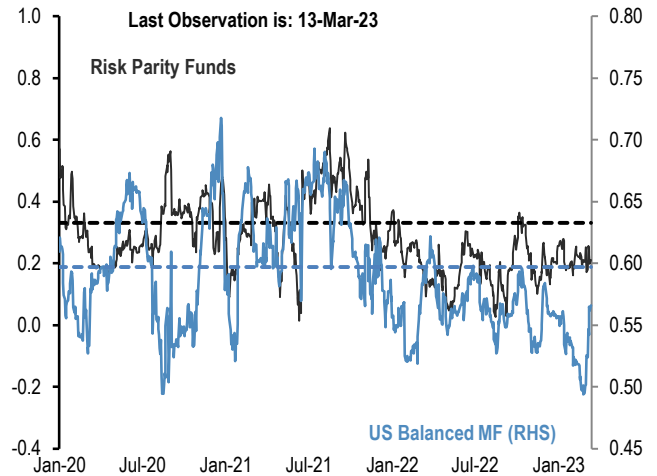
z-score of the momentum signal in our Trend Following Strategy framework shown in Tables A5 and A6 in the Appendix. Solid lines are for the shorter term and dotted lines for longer-term momentum.



Source: Bloomberg Finance L.P., J.P. Morgan.

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

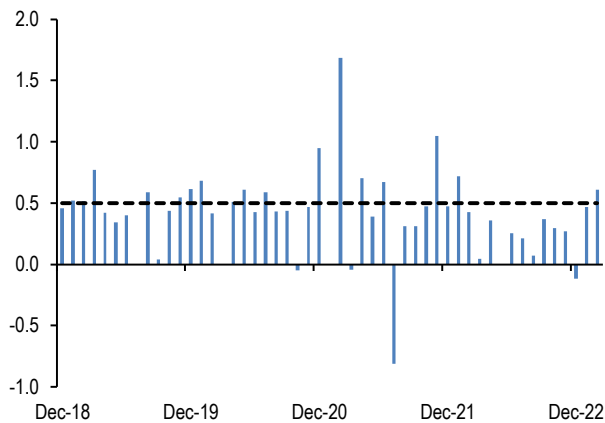
Rolling 21-day equity beta based on a bivariate regression of the daily returns of our Balanced Mutual fund and Risk Parity fund return indices to the daily returns of the S&P 500 and Barcap US Agg indices. Given that these funds invest in both equities and bonds we believe that the bivariate regression will be more suitable for these funds. Our risk parity index consists of 25 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.

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

Proxied by the ratio of the monthly performance of HFRI Asset-Weighted Equity Hedge fund index divided by the monthly performance of MSCI AC World index



Source: Bloomberg Finance L.P., HFR, J.P. Morgan

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.

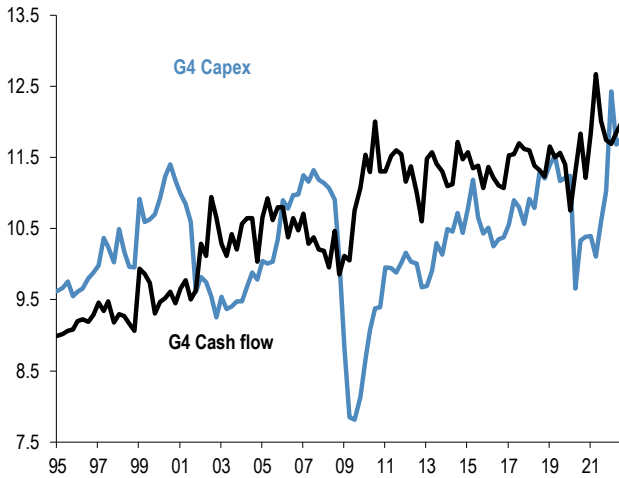


Source: CFTC, Barclay, Datastream, Bloomberg Finance L.P., J.P. Morgan.

Corporate activity

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

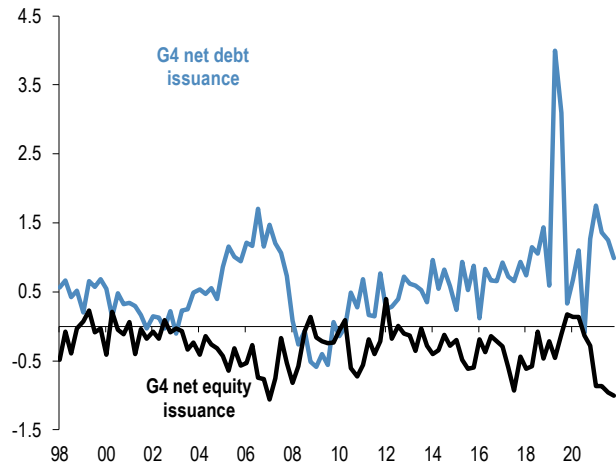
% of GDP, G4 includes the US, the UK, the Euro area and Japan. Last observation as of Q3 2022.



Source: ECB, BOJ, BOE, Federal Reserve flow of funds.

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

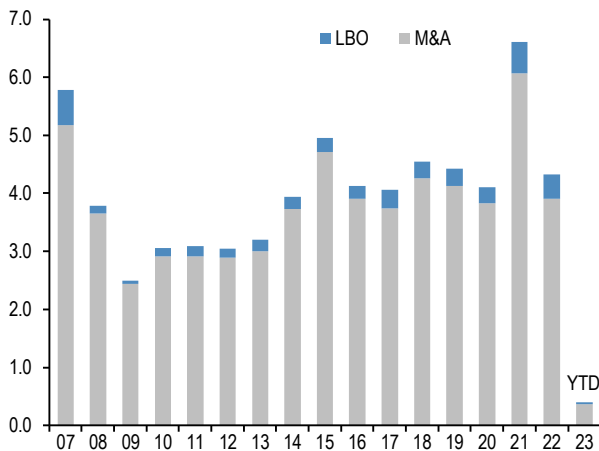
\$tr per quarter, G4 includes the US, the UK, the Euro area and Japan. Last observation as of Q3 2022.



Source: ECB, BOJ, BOE, Federal Reserve flow of funds.

Chart A26: Global M&A and LBO

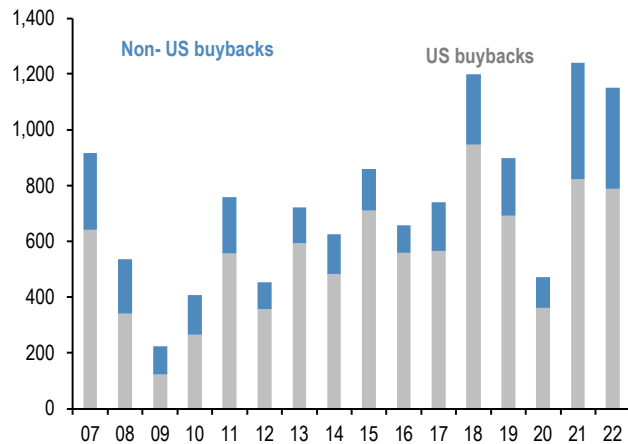
\$tr. YTD 2023 as of 08th Mar 23. M&A and LBOs are announced.



Source: Dealogic, J.P. Morgan.

Chart A27: US and non-US share buyback

\$bn, 2022 are as of Dec'22. Buybacks are announced.

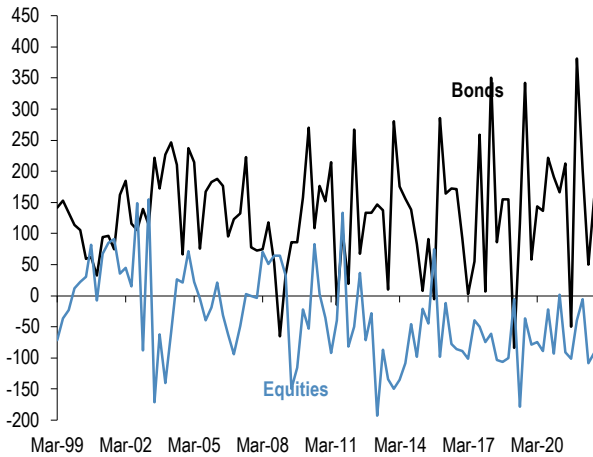


Source: Bloomberg Finance L.P., Thomson Reuters, J.P. Morgan

Pension fund and insurance company flows

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

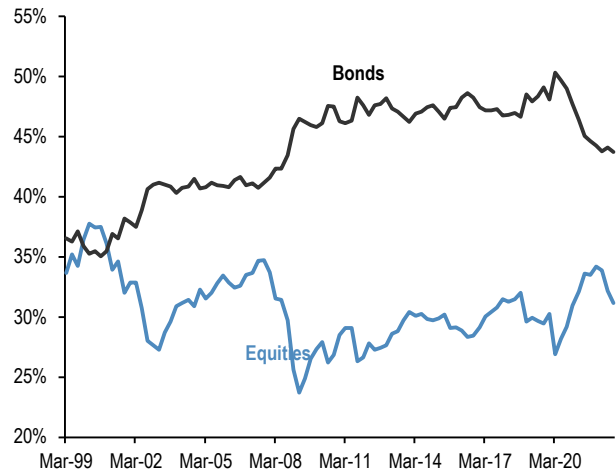
Equity and bond buying in \$bn per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q3 2022



Source: ECB, BOJ, BOE, Federal Reserve flow of funds.

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

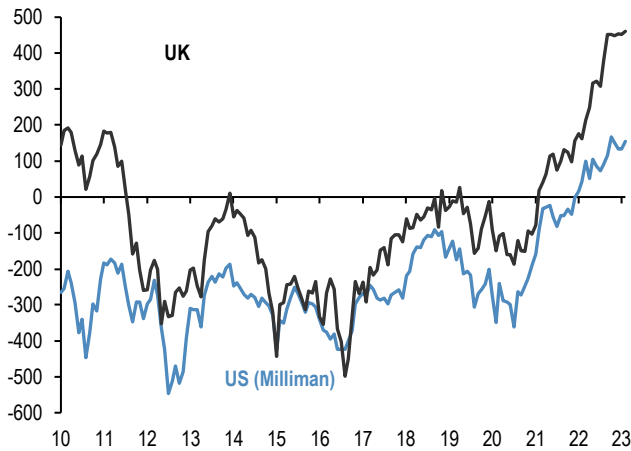
Equity and bond as % of total assets per quarter. G4 includes the US, the UK, Euro area and Japan. Last observation is Q3 2022.



Source: ECB, BOJ, BOE, Federal Reserve flow of funds

Chart A30: Pension fund deficits

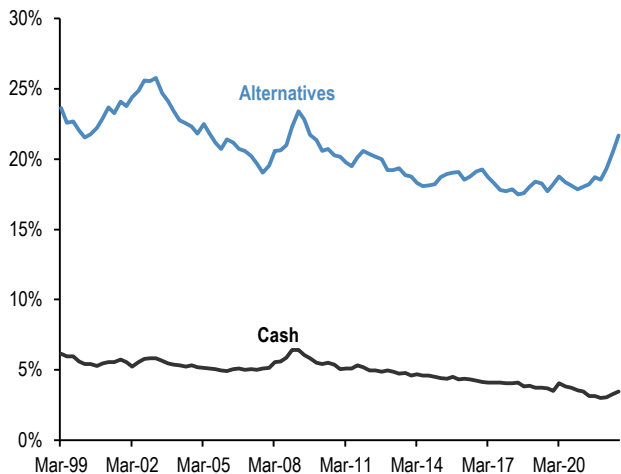
US\$bn. For US, funded status of the 100 largest corporate defined benefit pension plans, from Milliman. For UK, funded status of the defined benefit schemes eligible for entry to the Pension Protection Fund, converted to US\$ at today's exchange rates. Last obs. is Feb'23.



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

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 Q3 2022.

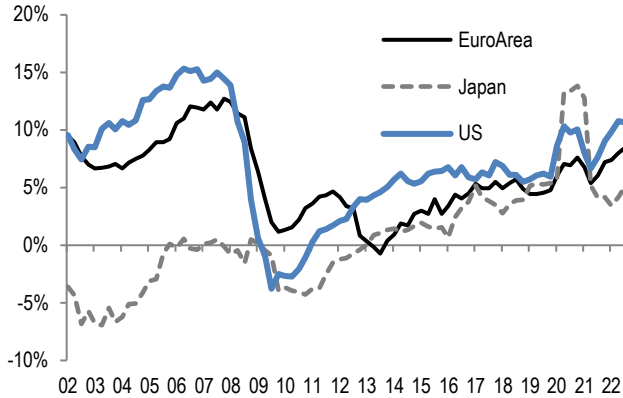


Source: ECB, BOJ, BOE, Federal Reserve flow of funds

Credit Creation

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

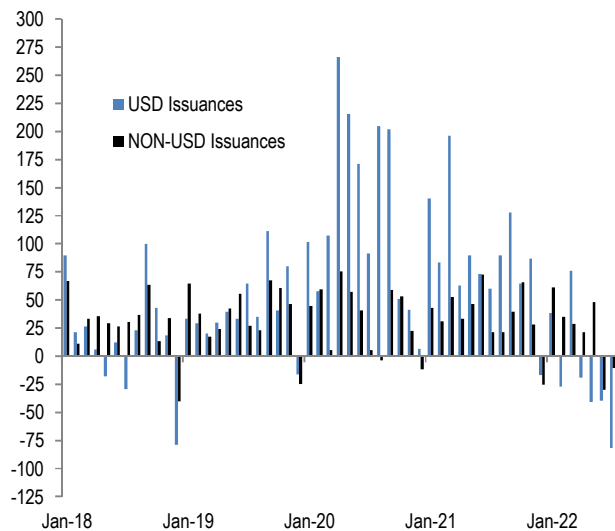
Rolling sum of 4 quarter credit creation as % of GDP. Credit creation includes both bank loans as well as net debt issuance by non-financial corporations and households. Last obs. is for Q3'22.



Source: Fed, ECB, BoJ, Bloomberg Finance L.P. and J.P. Morgan calculations.

Chart A34: USD and Non-USD net bond issuances

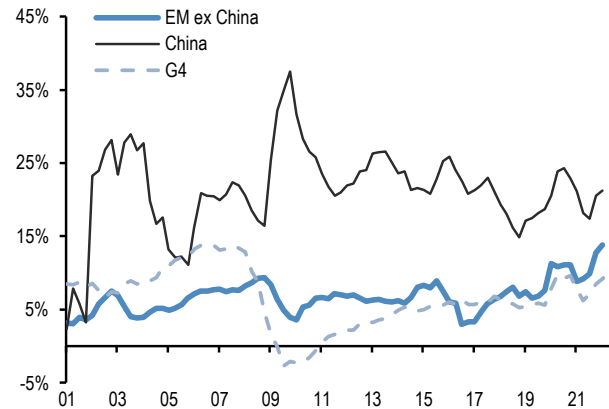
Gross issuance minus redemptions in \$bn per month. Non-USD issuance includes bonds issued in EUR, GBP and JPY. Non-USD bond issuance is converted to USD at today's exchange rate through the full historical period. In this way net bond issuance fluctuations are unaffected by currency changes. Our bond issuance figures include only Non-Government bonds issued globally, excluding short-term debt (maturity less than 1-year) and self-funded issuance (where the issuing bank is the only book runner). Last observation is Jul 2022.



Source: Dealogic, J.P. Morgan

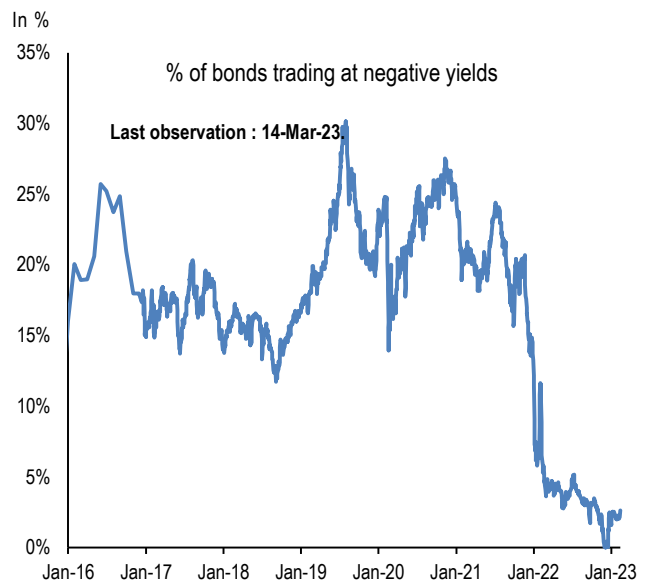
Chart A33: Credit creation in EM

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. Last obs. is for Q2'22.



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

Chart A35: Market value of negative yield bonds as a % of total outstanding in Bloomberg Barclays Global Agg Index

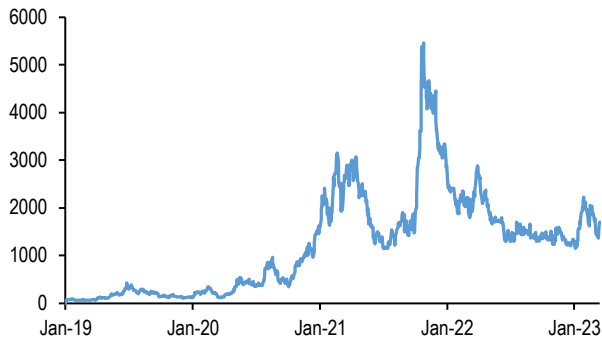


Source: J.P. Morgan

Bitcoin monitor

Chart A36: Open interest in CME Bitcoin futures contracts

\$mn. Last obs. for 14 Mar 2023.



Source: CME, J.P. Morgan.

Chart A37: Our Bitcoin position proxy based on open interest in CME Bitcoin futures contracts

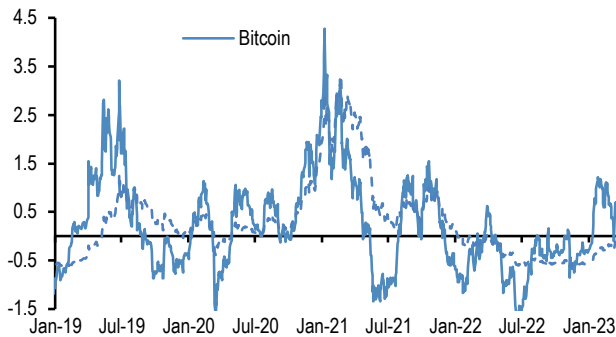
In number of contracts. Last obs. for 14 Mar 2023.



Source: J.P. Morgan

Chart A38: Momentum signals for Bitcoin

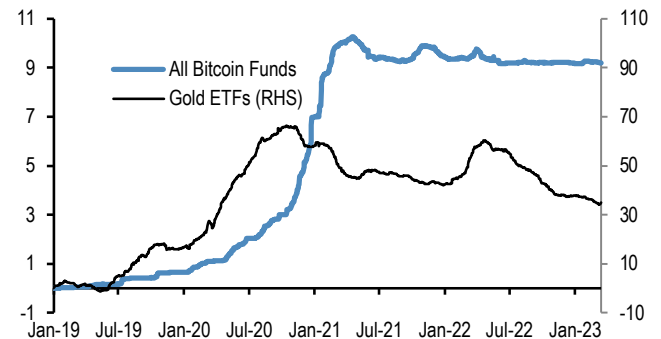
z-score of the momentum signal in our Trend Following Strategy framework shown in Tables A5 and A6 in the Appendix. Solid lines are for the shorter term and dotted lines for longer-term momentum.



Source: Bloomberg Finance L.P., J.P. Morgan.

Chart A39: Cumulative Flows in all Bitcoin funds and Gold ETF holdings

Both the y-axis in \$bn



Source: Bloomberg Finance L.P., J.P. Morgan.

Chart A40: Ratio of Bitcoin market price to production cost

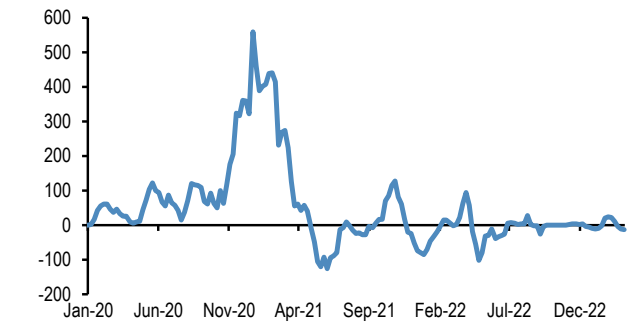
Based on the cost of production approach following Hayes (2018).



Source: J.P. Morgan

Chart A41: Flow pace into publicly listed Bitcoin funds including Bitcoin ETFs

\$mm per week, 4-week rolling average flow

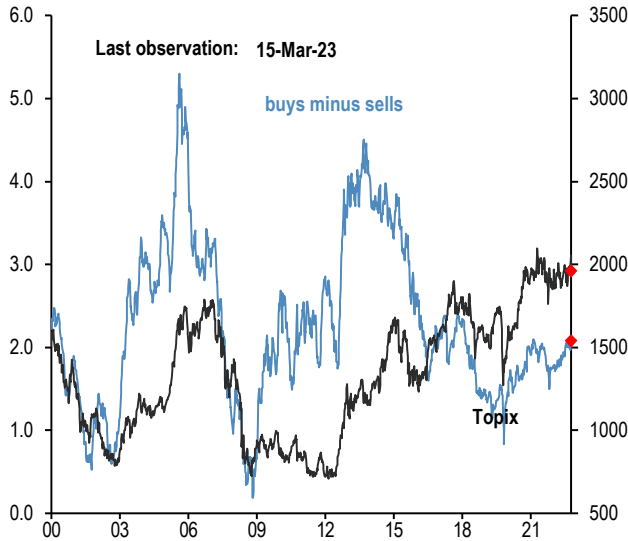


Source: Bloomberg Finance L.P., J.P. Morgan

Japanese flows and positions

Chart A42: Tokyo Stock Exchange margin trading: total buys minus total sells

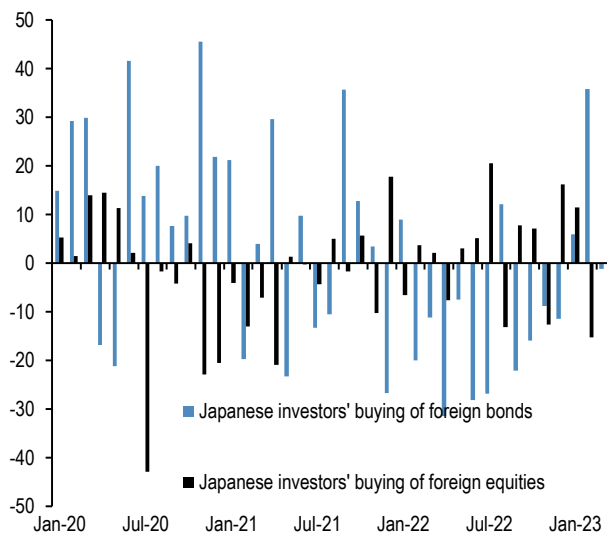
In bn of shares. Topix on right axis.



Source: Tokyo Stock Exchange, J.P. Morgan.

Chart A44: Monthly net purchases of foreign bonds and foreign equities by Japanese residents

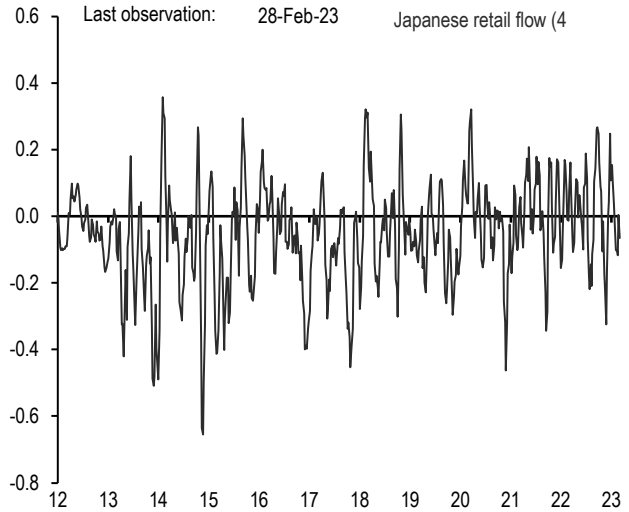
\$bn, Last weekly obs. is for 03rd Mar'23.



Source: Japan MoF, J.P. Morgan.

Chart A43: Domestic retail flows

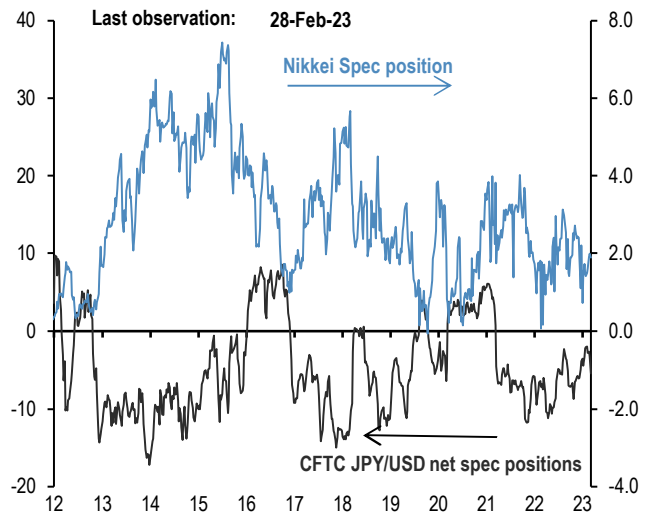
In JPY tr. Retail flows are from Tokyo stock exchange.



Source: TSE, J.P. Morgan calculations.

Chart A45: 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.

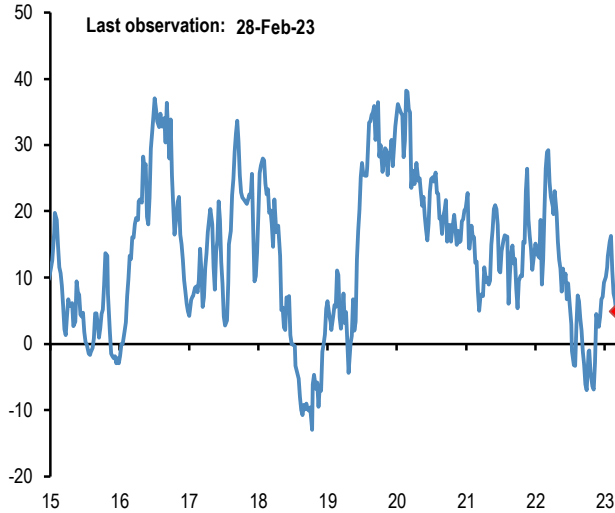


Source: Bloomberg Finance L.P., CFTC, J.P. Morgan calculations.

Commodity flows and positions

Chart A46: Gold spec positions

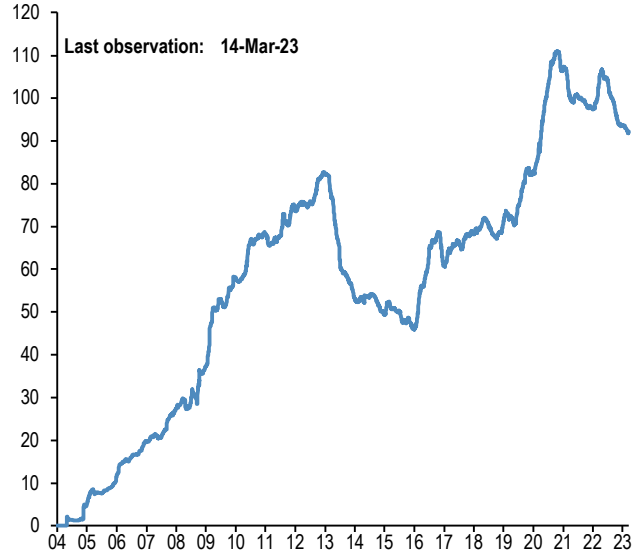
\$bn. CFTC net long minus short position in futures for the Managed Money category.



Source: CFTC, Bloomberg Finance L.P., J.P. Morgan.

Chart A47: Gold ETFs

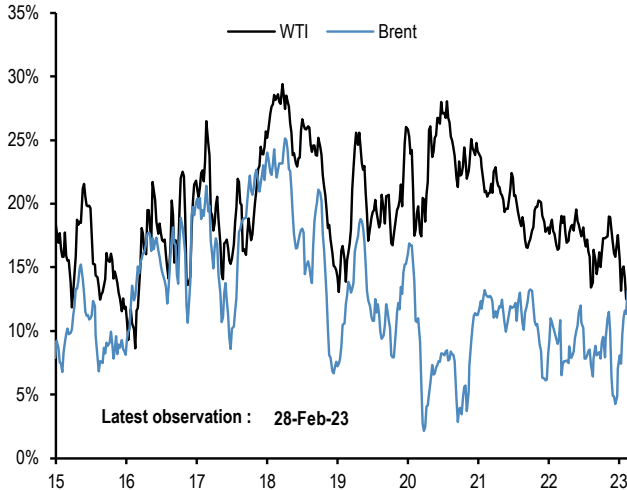
Mn troy oz. Physical gold held by all gold ETFs globally.



Source: Bloomberg Finance L.P., J.P. Morgan.

Chart A48: Oil spec positions

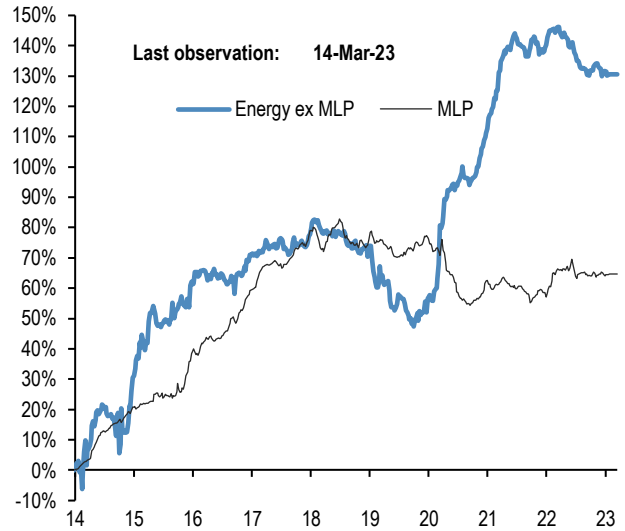
Net spec positions divided by open interest. CFTC futures positions for WTI and Brent are net long minus short for the Managed Money category.



Source: CFTC, Bloomberg Finance L.P., J.P. Morgan.

Chart A49: Energy ETF flows

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

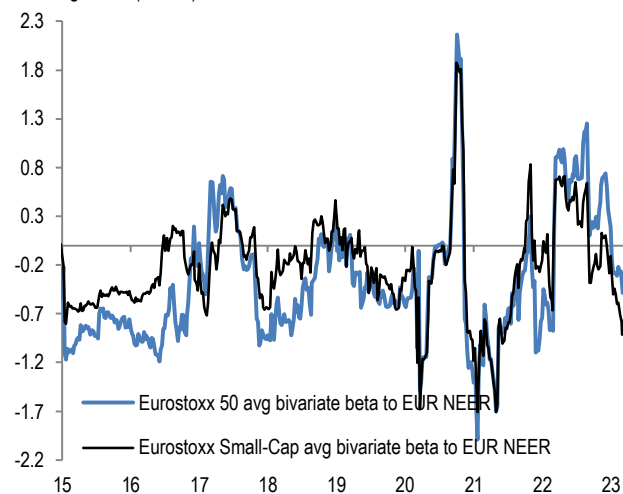


Source: CFTC, Bloomberg Finance L.P., J.P. Morgan.

Corporate FX hedging proxies

Chart A50: Average beta of Eurostoxx 50 companies and Eurostoxx Small-Cap to trade weighted EUR

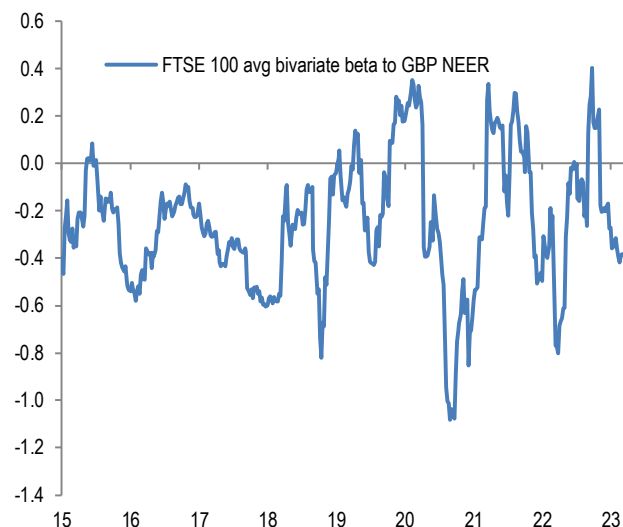
Rolling 26 weeks average betas based on a bivariate regression of the weekly returns of individual stocks in the Eurostoxx 50 index to the weekly returns of the MSCI AC World and JPM EUR Nominal broad effective exchange rate (NEER).



Source: Bloomberg Finance L.P., J.P. Morgan

Chart A51: Average beta of FTSE 100 companies to trade weighted GBP

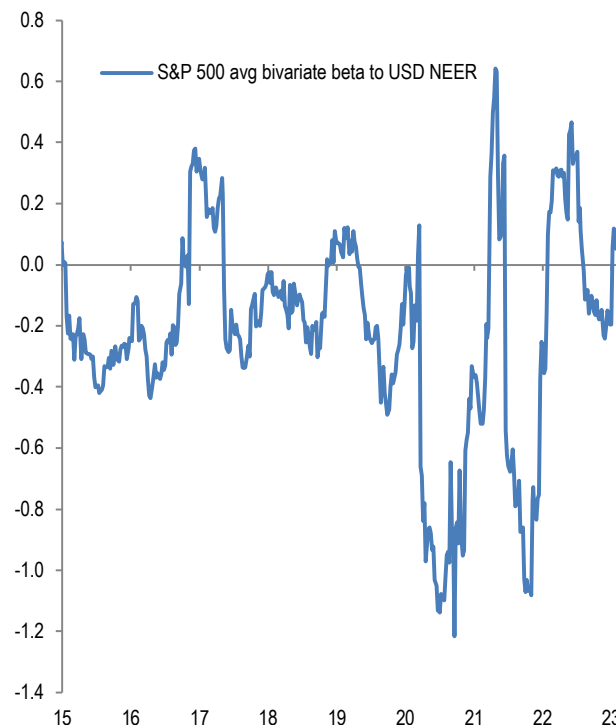
Rolling 26 weeks average betas based on a bivariate regression of the weekly returns of individual stocks in the FTSE 100 index to the weekly returns of the MSCI AC World and JPM GBP Nominal broad effective exchange rate (NEER).



Source: Bloomberg Finance L.P., J.P. Morgan

Chart A52: 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

CTAs – Trend following investors’ momentum indicators

Table A4: Simple return momentum trading rules across various commodities

Optimal lookback 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. Lookbacks, current signals and z-scores are shown for shorter-term and longer-term momentum separately, along with performance of a combined signal. Annualized return, volatility and information ratio of the signal; current signal; and z-score of the current return over the relevant lookback 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				-1	4	-1.2	-7.3%
	long	462	10.0	22.7	0.44	-1	4	-0.3	-9.1%
Brent	short	84				-1	5	-0.6	-7.1%
	long	504	8.5	21.7	0.39	0	0	0.0	0.3%
Unleaded gas	short	105				-1	1	-0.2	-2.7%
	long	483	6.5	24.0	0.27	1	91	0.4	11.6%
Heat Oil	short	63				-1	29	-0.9	-9.3%
	long	483	7.4	22.0	0.34	1	32	0.5	16.0%
Gasoil	short	63				-1	6	-0.6	-6.0%
	long	378	10.6	20.7	0.51	1	89	0.1	3.6%
Nat gas	short	105				0	60	-2.3	-41.7%
	long	315	18.8	35.5	0.53	0	42	-1.9	-57.3%
Gold	short	21				1	2	1.2	3.3%
	long	483	3.2	10.5	0.30	1	1	0.2	2.5%
Silver	short	10				0	1	1.6	5.2%
	long	462	5.8	18.9	0.31	-1	27	-0.2	-5.4%
Palladium	short	42				-1	1	-0.4	-3.1%
	long	273	14.1	22.0	0.64	-1	107	-1.1	-25.7%
Platinum	short	105				0	1	0.0	-0.4%
	long	273	7.0	18.1	0.39	1	1	0.2	3.6%
Aluminium	short	105				-1	14	-0.5	-4.2%
	long	357	5.3	15.2	0.35	-1	103	-1.0	-14.7%
Copper	short	147				1	74	0.5	6.2%
	long	399	9.1	17.6	0.52	-1	0	-0.1	-1.2%
Lead	short	126				-1	3	-0.1	-0.9%
	long	357	3.3	20.2	0.16	-1	30	-0.2	-3.5%
Nickel	short	42				0	3	-1.6	-13.9%
	long	336	13.5	23.6	0.57	-1	13	-0.5	-12.6%
Zinc	short	126				-1	6	-0.4	-4.5%
	long	399	10.4	20.0	0.52	-1	27	-0.5	-11.6%
Wheat	short	168				-1	2	-1.2	-14.8%
	long	294	3.3	23.5	0.14	0	7	-1.6	-25.1%
Kansas wheat	short	147				-1	14	-0.6	-7.3%
	long	483	8.4	20.8	0.40	-1	12	-0.3	-5.6%
Corn	short	63				-1	13	-0.8	-6.2%
	long	399	8.2	16.9	0.49	-1	4	-0.1	-2.8%
Soybeans	short	42				-1	2	-0.3	-1.4%
	long	231	6.4	14.7	0.43	1	47	0.2	2.1%
Cotton	short	168				-1	93	-0.6	-7.9%
	long	483	6.1	18.9	0.32	-1	32	-0.4	-9.8%
Sugar	short	63				1	45	0.7	6.3%
	long	252	7.5	21.9	0.34	1	92	0.8	15.5%
Coffee	short	63				1	12	0.3	2.5%
	long	273	5.8	23.4	0.25	-1	42	-0.6	-11.3%
Cocoa*		10	0.6	28.0	0.02	-1	5	-1.0	-3.2%

* 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 calculations

Table A5: Simple return momentum trading rules across international equity indices, bond futures and FX

Optimal lookback 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. Lookbacks, current signals and z-scores are shown for shorter-term and longer-term momentum separately, along with performance of a combined signal. Annualized return, volatility and information ratio of the signal; current signal; and z-score of the current return over the relevant lookback 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				-1	3	-0.2	-1.2%
	long	357	6.9	12.1	0.57	-1	18	-0.4	-4.6%
Nasdaq 100	short	84				1	27	0.5	4.0%
	long	462	6.9	15.0	0.46	-1	232	-0.4	-8.8%
Nikkei	short	84				0	0	0.0	-0.2%
	long	294	2.9	14.6	0.20	1	13	0.1	1.1%
FTSE 100	short	168				1	92	0.5	3.5%
	long	462	4.5	12.4	0.37	1	101	0.7	7.3%
Eurostoxx 50	short	168				1	5	1.0	9.6%
	long	315	4.4	15.9	0.28	1	51	0.8	10.2%
MSCI EM	short	42				-1	17	-1.2	-6.2%
	long	336	14.0	11.5	1.21	-1	26	-0.5	-7.8%
2Y USTs	short	252				-1	2	-0.8	-1.0%
	long	420	1.0	1.0	0.97	0	0	-1.5	-2.7%
5Y USTs	short	252				-1	3	-0.7	-1.8%
	long	420	2.0	2.9	0.68	0	0	-1.5	-5.2%
10Y USTs	short	42				1	1	0.2	0.3%
	long	504	2.2	3.6	0.59	0	0	-1.6	-7.8%
2Y Schatz	short	189				0	0	-1.9	-1.4%
	long	504	0.5	0.8	0.58	0	130	-2.5	-3.0%
5y Bobl	short	84				-1	0	-0.9	-1.0%
	long	483	1.5	2.0	0.75	0	147	-2.6	-7.3%
10y Bund	short	84				-1	0	-0.8	-1.5%
	long	483	2.8	3.6	0.78	0	149	-2.6	-12.1%
10Y JGB	short	126				0	0	1.6	1.6%
	long	273	1.1	2.1	0.53	1	1	1.0	1.3%
10Y Gilts	short	105				1	1	0.3	0.8%
	long	399	1.7	4.3	0.40	0	27	-1.8	-8.6%
Euro	short	42				-1	26	-0.2	-0.4%
	long	273	3.5	6.3	0.55	0	1	0.0	0.2%
Yen	short	21				1	1	0.2	0.3%
	long	462	2.7	6.4	0.42	-1	2	-1.4	-11.0%
Sterling	short	168				1	2	0.3	1.4%
	long	294	2.5	7.2	0.35	-1	88	-0.4	-2.3%
AUD	short	42				-1	1	-1.2	-3.3%
	long	420	4.3	7.7	0.56	-1	106	-0.7	-6.7%
CAD	short	168				-1	92	-0.8	-3.2%
	long	504	0.8	6.0	0.14	-1	196	-1.1	-7.4%

Source: Bloomberg Finance L.P. and J.P. Morgan

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