

Flows & Liquidity

Will the shift in bond-equity correlation persist?

- This year's shift in bond-equity correlation seems even more persistent than the one seen during the taper tantrum of 2013 and raises questions about whether the shift in bond-equity correlation in the current conjuncture is a temporary one, as it turned out to be in 2013, or a more structural shift.
- In our opinion the persistency of the current shift in the bond-equity correlation into positive territory would likely be a function of the persistency in inflation surprises, given the impact of the latter on market expectations concerning Fed policy.
- Given we see a high risk that positive inflation surprises continue, this shift in bond-equity correlation could also persist for much of the remainder of the year.
- A more persistent positive bond-equity correlation would reduce the diversification benefit of holding government bonds, which could push multi asset investors, including risk parity funds, balanced mutual funds and pension funds, to look at other more expensive ways of hedging equity risk, such as buying equity puts, perhaps inducing more elevated vol and skew premia in the equity option space.
- This month's bond market rally appears to have been driven by a combination of risk parity funds and macro hedge funds ex CTAs increasing duration exposure, as well as CTAs adding longs in 10y USTs and taking profit on bearish exposure in 10y Bunds.
- In our opinion the shift in Bitcoin futures into backwardation is a bearish signal echoing 2018.

- After shifting abruptly at the beginning of the year, the bond-equity correlation remains firmly in positive territory as shown in Figure 1. The shift in the 6-month rolling correlation in particular seems even more persistent than the one seen during the taper tantrum of 2013 and raises questions about whether the shift in bond-equity correlation in the current conjuncture is a temporary one, as it turned out to be in 2013, or a more structural shift. In our opinion, the persistence of the current shift in the bond-equity correlation to positive territory would likely be a function of the persistence in inflation surprises, given the impact of the latter on market expectations concerning Fed policy. As we highlighted in our monthly publication Global Asset Allocation earlier this week, we believe that inflation surprises are likely to be persistent over the medium term for three reasons: the strength in growth acceleration coupled with supply bottlenecks, the strong serial correlation seen historically in consensus inflation forecast revisions, and further upside in commodity prices. Therefore, our guess is that this shift in bond-equity correlation could also persist for much of the remainder of the year.

Global Markets Strategy Global Quantitative & Derivatives Strategy

Nikolaos Panigirtzoglou ^{AC}

(44-20) 7134-7815
nikolaos.panigirtzoglou@jpmorgan.com

Bloomberg JPMA FLOW <GO>

J.P. Morgan Securities plc

Mika Inkinen

(44-20) 7742 6565
mika.j.inkinen@jpmorgan.com

J.P. Morgan Securities plc

Nishant Poddar, CFA

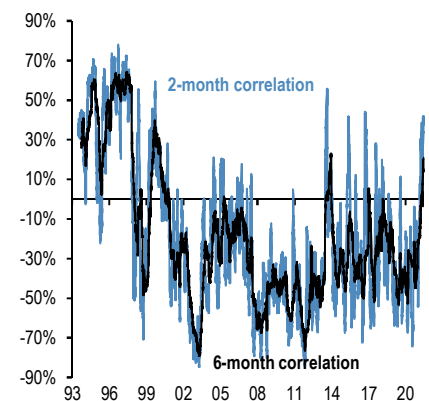
(91-22) 6157-3255
nishant.poddar@jpmchase.com
J.P. Morgan India Private Limited

Ekansh Agarwal

(91-22) 6157 3723
ekansh.agarwal@jpmchase.com
J.P. Morgan India Private Limited

Figure 1: Bond-equity correlation

2- and 6-month rolling correlation between daily returns of MSCI World Local vs. GBI Global hedged into USD indices



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

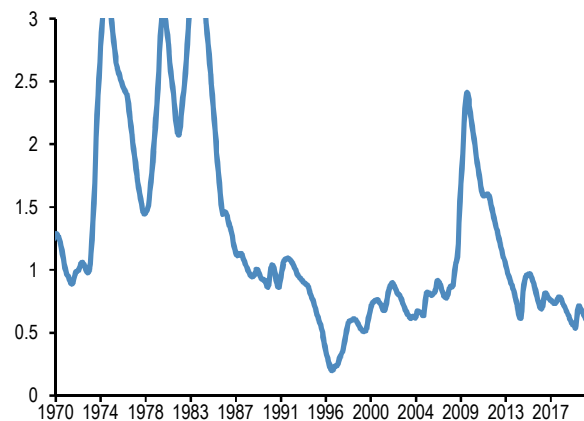
Click here to visit [Flows & Liquidity Library](#) on J.P. Morgan Markets.

See page 22 for analyst certification and important disclosures.

- A more prolonged shift in bond–equity correlation to positive territory would pose a significant challenge to multi asset investors, in particular risk parity strategies and balanced funds, such as 60:40 funds. These funds have been taking advantage of the negative bond–equity correlation over the past two decades to hedge equity risk via positive–carry long–government–bond–duration positions and to contain the volatility of their portfolios with little cost. Indeed, in the past three recessions, in 2001, 2008/09 and 2020, the correlation remained negative and bonds provided an effective hedge to equities. Prior to 2000, however, it was more typical for the stock–bond correlation to be positive.
- One potential structural explanation for the change in this relationship from the late 1990s onwards that is particularly relevant in the current conjuncture was the decline in uncertainty around, as well as the level of, inflation as central banks shifted to inflation targeting. We proxy the former in Figure 2 by the exponential weighted rolling 5y volatility in US inflation outturns, and the latter in Figure 3 by the steady decline in core PCE inflation targeted by the Fed towards 2% and even below for much of the past decade. That anchoring of inflation expectations arguably also gave central banks room for an implicit equity market backstop, e.g. the so-called “Greenspan put”, or at least a perception among market participants of such a put. The sharp rise in inflation currently, while undoubtedly partly transitory, could contribute to a persistence in inflation as well as policy uncertainty. An increase in inflation and/or policy uncertainty in turn would tend to put upward pressure on term premia, raising interest rates and putting upward pressure on equity discount rates through higher interest rates as well as potentially via higher equity risk premia. And how long this heightened uncertainty over inflation outturns and policy lasts could in turn influence how long the bond–equity correlation remains positive.

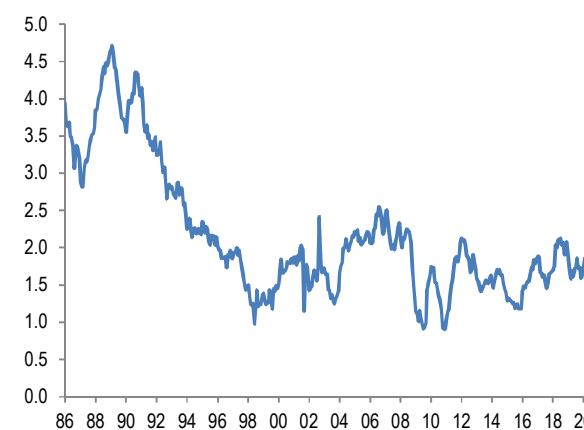
Figure 2: 5y volatility in US inflation

Exponential weighted rolling 5y volatility



Source: J.P. Morgan

Figure 3: PCE inflation



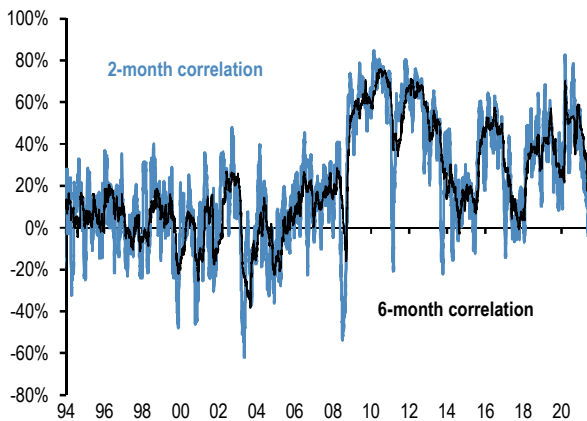
Source: Bloomberg Finance L.P., J.P. Morgan

- A more persistent positive bond–equity correlation would reduce the diversification benefit of holding government bonds, which could push multi asset investors including risk parity funds, balanced mutual funds and pension funds, to look at other more expensive ways of hedging equity risk, such as buying of equity puts, perhaps inducing more elevated vol and skew premia in equity option space.
- But it is not only the bond–equity correlation that experienced a big change this year. Commodity–equity and dollar–equity correlations declined sharply this year making these two asset classes more valuable in terms of portfolio diversification. As Figure 4 shows the commodity–equity correlation is approaching zero and Figure 5 shows that the dollar–equity correlation has declined to the very negative levels seen previously during the euro debt crisis.

This implies that commodities are not only useful as an inflation hedge but also as a portfolio diversifier. In addition, the dollar has become a valuable hedge given its deeply negative correlation with equities at the moment, especially now that government bonds have stopped acting as an effective equity hedge.

Figure 4: Commodity-equity correlation

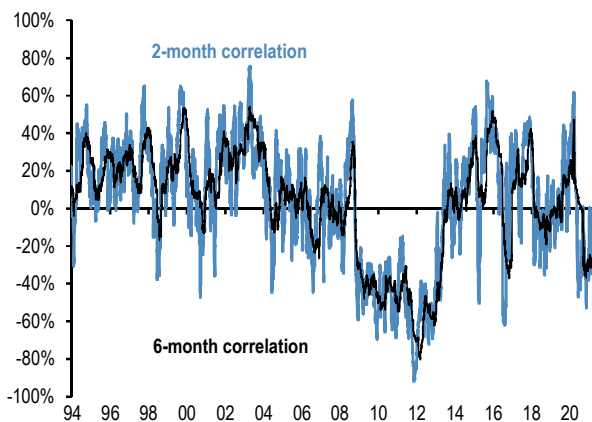
2- and 6-month rolling correlation between daily returns of MSCI World Local vs. GSCI spot index.



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

Figure 5: Dollar-equity correlation

2- and 6-month rolling correlation between daily returns of MSCI World Local vs. DXY Index.



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

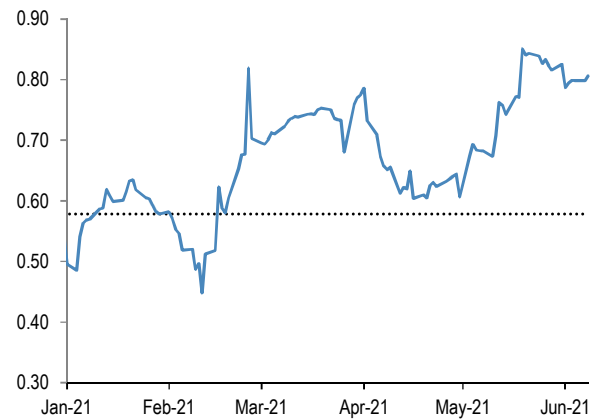
Who was behind the latest bond rally?

- While labor market indicators beyond the payrolls continue to suggest tightness, e.g. with JOLTS suggesting firms are having a hard time filling positions, and activity indicators such as PMIs remaining robust, bond yields have been grinding steadily lower. With the rally in yields seemingly not driven by economic data releases, which investor groups have been driving it?

- As we had argued previously, the US active bond mutual funds had likely increased their duration exposure already during the first half of May. This is shown in Figure 6, which shows the 21-day rolling beta of returns of the 20 largest US active bond mutual funds to US Agg index returns shown in Chart A16 in the Appendix since the start of 2021. Figure 7 depicts the same 21-day rolling beta of Euro active bond mutual funds' returns to the Euro Agg index since the start of the year, and shows they have increased their duration exposures in the second half of May but appear to have stabilised over the past week or so.

Figure 6: 21-day rolling beta of 20 biggest active US bond mutual fund managers with respect to the US Agg bond index

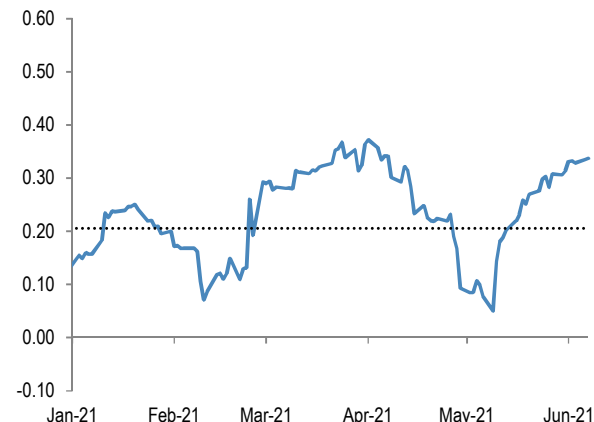
The dotted line shows the average beta since 2013.



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

Figure 7: 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.



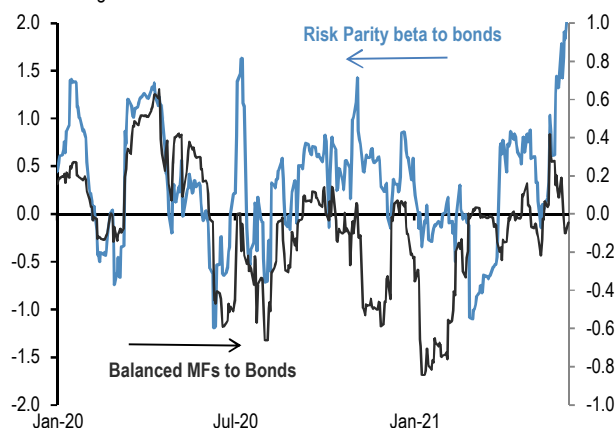
Source: Bloomberg Finance L.P., J.P. Morgan

- If active bond mutual funds were already long, who else could have prompted the rally? One candidate is

risk parity funds. Figure 8 shows the bond beta of risk parity funds, the complement to Chart A21 in the Appendix that depicts the equity betas. The bond betas have increased sharply over the past two weeks from a level close to their long-run average to well above it, suggesting they have played a role in the bond market rally. A second investor group that likely played a role in the rally is macro hedge funds excluding CTAs. Their bond betas, depicted in Figure 9, have turned from duration shorts in end-May to duration longs.

Figure 8: Bond beta of US Balanced Mutual funds and Risk Parity funds

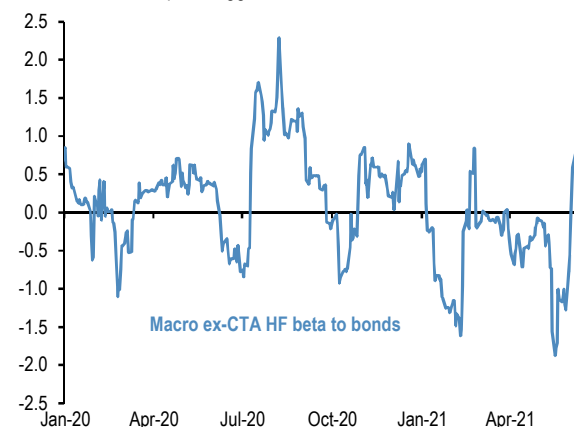
Rolling 21-day bond beta based on a bivariate regression of the daily returns of our Balanced Mutual fund and Risk Parity fund return indices to the daily returns of the S&P 500 and Barcap US Agg indices. Given that these funds invest in both equities and bonds we believe that the bivariate regression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



Source: J.P. Morgan

Figure 9: Macro HF excluding CTA beta to bond

Rolling 21-day bond beta based on a bivariate regression of the daily returns of Macro ex-CTA fund return indices to the daily returns of the S&P 500 and Barcap US Agg indices

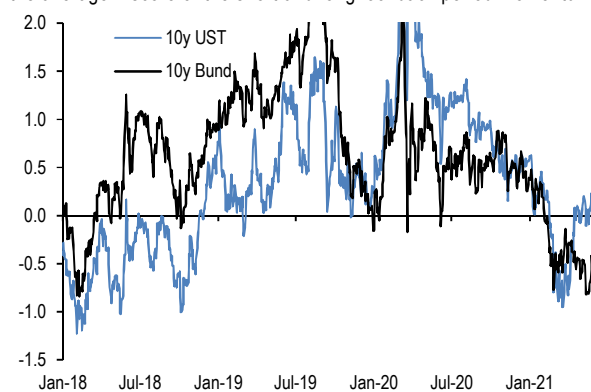


Source: J.P. Morgan.

- Finally, among our momentum signals, the average of the longer- and shorter term signals has shifted to positive territory again. Moreover, the longer-term signal, which until now had remained in bearish territory, is now shifting to positive territory, suggesting that CTAs adding to bullish duration signals may have been amplifying the moves. And for 10y Bunds, after the signals reaching their early 2018 bearish extremes, it appears that mean reversion or profit taking signals having been triggered have contributed to the rally since late May.

Figure 10: Momentum signals for 10Y USTs and 10y Bunds

z-score of the momentum signal in our Trend Following Strategy framework shown in Tables A5 and A6 in the Appendix. The lines show the average z-score of the short and long lookback period momentum.



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

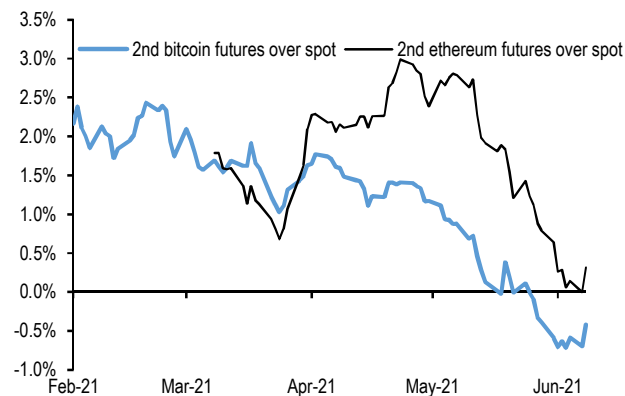
- In all, the bond market rally appears to have been driven by a combination of risk parity funds and macro hedge funds ex CTAs adding duration exposure, as well as CTAs adding longs in 10y USTs and taking profit on bearish exposure in 10y Bunds.

The shift in Bitcoin futures into backwardation is a bearish signal

- The past month's correction in crypto markets saw bitcoin futures shifting into backwardation for the first time since 2018. This is shown in Figure 11 and Figure 12, which show the 21-day rolling average of the 2nd CME Bitcoin and Ethereum futures spread over spot since the beginning of 2018. This is an unusual development and a reflection of how weak Bitcoin demand is at the moment from institutional investors that tend to use regulated CME futures contracts to gain exposure to Bitcoin.

Figure 11: 2nd CME Bitcoin and Ethereum futures spread over spot

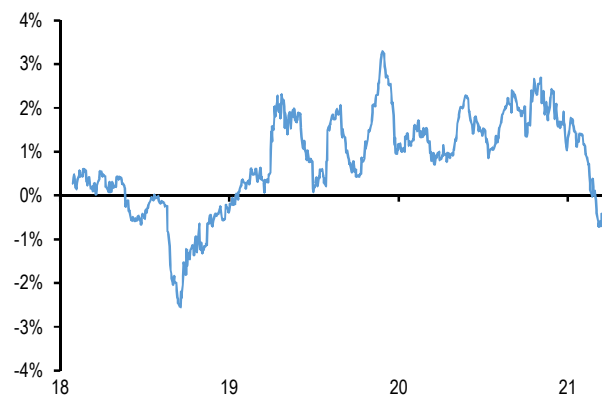
21-day rolling average



Source: J.P. Morgan

Figure 12: 2nd CME Bitcoin futures spread over spot

21-day rolling average



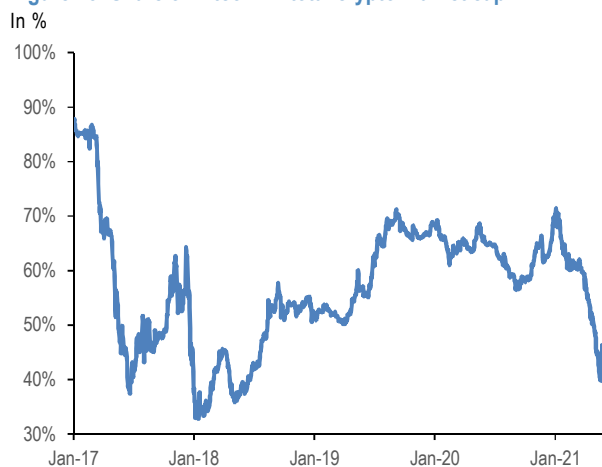
Source: J.P. Morgan

- In a normal environment when demand for Bitcoin futures is not particularly weak, Bitcoin futures trade at a positive spread over spot, i.e. the futures curve is in contango. As we explained before, the typically high (above 10% annualised) futures to spot spread is likely a function of the high “risk-free” rate or opportunity cost implicit in crypto markets. Lending USD in crypto markets typically attracts annual interest rates of 8-10% and this high “risk-free” rate is a common component in the futures vs. spot arbitrage trade across both Bitcoin and Ethereum futures. This high “risk-free” rate or opportunity cost is likely a reflection of how “crypto-rich” and “cash-poor” crypto markets still are. In the case of Bitcoin, neither the introduction of ETFs last February nor the greater institutional participation in the futures market had managed to change the “cash-poor” nature of crypto markets and cause a normalization of the futures to spot spread. Adding to this elevated “risk-

free” rate storage costs of around 2% per annum, as well as similarly high transaction costs given the fragmentation in crypto markets, one can easily see why futures to spot spreads of as high as 15% per annum could be justified in a normal market environment in Bitcoin or Ethereum futures.

- But when demand is particularly weak and price expectations turn bearish, the futures curve shifts into backwardation. This was the case for most of 2018 as shown in Figure 12 for CME Bitcoin futures. We believe that the return to backwardation in recent weeks has been a negative signal pointing to a bear market. We are thus reluctant to abandon our negative outlook before the metric in Figure 12 (i.e. the 21-day rolling average of the 2nd CME Bitcoin futures spread over spot) shifts back into positive territory.
- Another bearish signal is in our opinion the still low share of Bitcoin in crypto markets. We had argued previously in [F&L](#) of May 7th that the sharp decline in the Bitcoin share during April/May from around 60% towards 40% was a bearish signal carrying some echoes of the retail-investor-driven froth of December 2017 when the share of Bitcoin had fallen from around 55% to below 35%. We believe that the share of Bitcoin in the total crypto market would have to normalize and perhaps rise above 50% (as in 2018) to be more comfortable in arguing that the current bear market is behind us.

Figure 13: Share of Bitcoin in total crypto market cap



Source: J.P. Morgan

Table A1: Weekly flow monitor

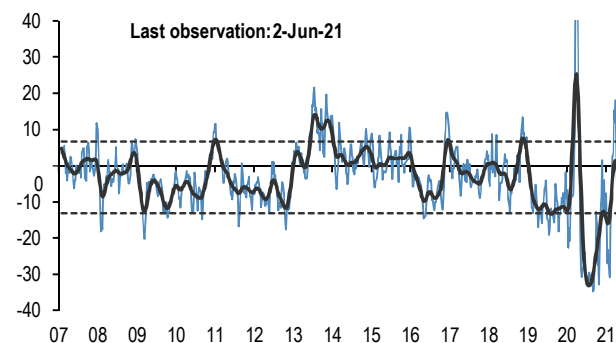
\$bn, Includes Global Mutual Fund flows from EPFR and globally domiciled ETF flows from Bloomberg Finance L.P.. US Equities includes US Domiciled MFs from ICI and ETF flows from Bloomberg Finance L.P.

MF & ETF Flows	2-Jun	4 wk avg	13 wk avg	2021 avg
All Equity	14.72	17.7	21.6	24.0
All Bond	11.78	7.9	9.3	10.8
US Equity	-2.86	2.6	5.8	0.8
Intl. Equity	13.80	14.7	16.8	21.19
Taxable Bonds	1.98	5.7	9.6	12.4
Municipal Bonds	1.36	1.5	1.9	2.2

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

Chart A1: Fund flow indicator

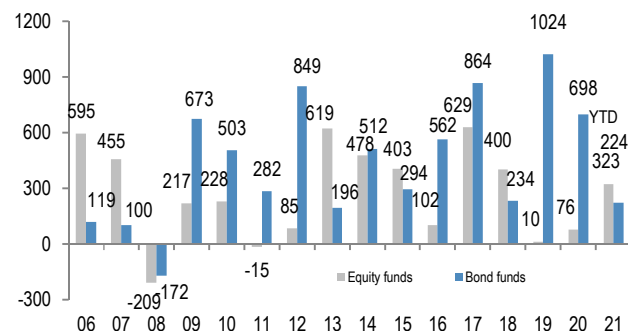
Difference between flows into Equity and Bond funds: \$bn per week. Flow includes US domiciled Mutual Fund and globally domiciled ETF flows. We exclude China On-shore funds from our analysis. The thin blue line shows the 4-week average of difference between Equity and Bond fund flows. Dotted lines depict ± 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: Bloomberg Finance L.P., ICI, 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 Q4'20). Data since then are a combination of monthly and weekly data from ICI, EPFR and ETF flows from Bloomberg Finance L.P.



Source: ICI, EPFR, EFAMA, 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	4-Jun	4 wk avg	13 wk avg	y/y chng
Global IPOs	1.4	6.9	10.2	428%
Secondary Offerings	4.5	11.9	14.6	63%
Corporate announcements				
M&A - Global	54.2	130.6	124.5	145%
- US Target	19.4	60.7	59.1	279%
- Non-US Target	34.8	70.0	65.4	80%
Net bond issuance				
USD	221	162	66	30%
Non-USD	110	18	35	5%

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 are 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 May-21	MIN	MAX	Turnover ratio	Vol (tr)	y/y chng
Equities					
EM Equity*			1.2	\$1.2	91%
DM Equity*			1.2	\$7.4	9%
Govt Bonds					
UST cash			10.1	\$11.8	-11%
UST futures			0.7	\$13.0	-9%
JGBs*			20.8	¥1,843	5%
Bund futures			0.9	€5.3	11%
Credit					
US HG			0.6	\$0.4	-8%
US HY			1.0	\$0.1	-24%
US Convertibles			1.6	\$0.0	-16%
Commodities					
Gold			48.6	\$1.2	-20%
Oil			67.5	\$1.9	-7%
Copper			2.6	\$0.6	117%

* 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.