Cross Asset Strategy

What if the mean reverts?

Global Quantitative and Derivatives Strategy

Thomas Salopek AC
(1-212) 834-5476
thomas.salopek@jpmorgan.com
J.P. Morgan Securities LLC

Federico Manicardi AC
(44-20) 7742-7008
federico.manicardi@jpmorgan.com
J.P. Morgan Securities plc

Srini Ramaswamy AC
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com
J.P. Morgan Securities LLC

Ipek Ozil AC
(1-212) 834-2305
ipek.ozil@jpmorgan.com
J.P. Morgan Securities LLC

We entered 2022 by warning that the 60/40 was in danger due to the imminent start of monetary normalization process (see *Rising Rates and the 60/40* from Jan 16th).

Since then, have largely left unchanged our large Equity vs Bonds/Credit OW which we still hedge with a large Commodity OW. Within Equities, we think now it makes sense shift from a Value vs Growth structure to a barbell portfolio of traditional Growth and traditional Value stocks that currently have favorable attributes across most factors.

In Fixed Income, the expectation is that the growth/inflation/liquidity regime of the next few quarters should still be conducive of higher yields but the combination of oversold risk markets and a series of frameworks suggesting limited upside in UST Bond yields justified reducing our UW Credit and effectively also our short duration exposure in early May.

Relatedly, it is the time to reduce exposure to the front-end trend-following systems we recommended in January. They have already done much better than usual but still could serve as hedges in case there is another round of hawkish central banks. We also think is sensible to diversify exposure to non-US regions given more room for surprises.

We are sympathetic with the view that implied volatility across asset classes might move lower from current levels but some caveats keep us neutral on outright exposures. We prefer some more asymmetric Macro RV structures. We hold the 1Y FX vs Equity vol trade we entered in March. The entry level has deteriorated somewhat but betas to growth and yields still support the macro rationale.

MBS investors have likely been forced into being short MBS – and long convexity – due to QE driven scarcity. While long gamma positions have been profitable year-to-date that is likely to change as the hiking cycle matures. Additionally, long gamma positions will likely come under pressure if the vol surface normalizes as we expect it to. Therefore, we recommend overlays of delta hedged short straddle positions for such investors. We also recommend investors to systematically underweight volatility in the upper left sector of swaptions market, versus longer expiries.

See page 12 for analyst certification and important disclosures.

Thomas Salopek
(1-212) 834-5476
thomas.salopek@jpmorgan.com

Srini Ramaswamy
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com

Federico Manicardi
(44-20) 7742-7008
federico.manicardi@jpmorgan.com

Ipek Ozil
(1-212) 834-2305
ipek.ozil@jpmorgan.com

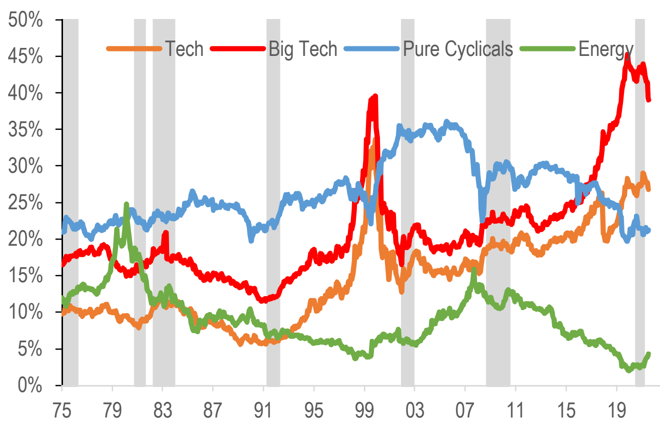
Reduced Fixed Income UWs but with front-end hedges

We entered 2022 by warning that the 60/40 was in danger due to the imminent start of monetary normalization process (see *Rising Rates and the 60/40* from Jan 16th). Our assessment was that multi-asset investors were going to face headwinds on both their Fixed Income and Equity allocations as central banks were facing pressure to combat rising inflation.

In Equities, the combination of expensive valuations on high-duration/growth sectors and large weight of these in main Equity indices is what created a vulnerability. Notably, for US benchmarks the weights of high-duration sectors such as Tech and Communication Services has come down but still remains close to record-high and at the expense of traditional Cyclical sectors (Industrial, Materials and Financials) and Energy (Chart 1). Relatedly, last year, we also highlighted how this backdrop could affect ESG focused investors in Equities given their structural UW in Energy and OW in Tech. From a strategy perspective the decision was to run large Equity OW against Fixed Income UWs to position for monetary normalization and a large Commodities OW to protect against geopolitics and inflation.

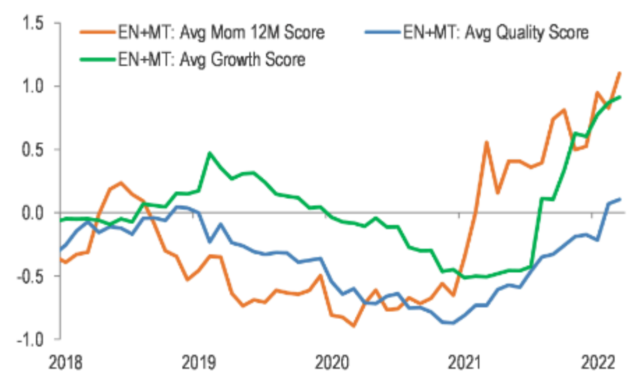
Chart 1: The weights on high-duration sectors was near record-high levels in January

US sector weight. Big Tech is the sum of Tech, Comm Services and Amazon. Pure Cyclicals include Financials, Industrials and Materials



Source: J.P. Morgan

Chart 2: Quantitative (factor) attractiveness of Energy and Materials is improving significantly; while these stocks remain 'value' their scoring to growth, momentum and quality has improved significantly



Source: J.P. Morgan

Within Equities, it is time to shift from a pure Value vs Growth bias to a barbell portfolio. We entered 2022 with a preference for Value vs Growth and Cyclical sectors against high-duration and Growth sectors. However, after the year-to-date large repricing we think one should move from a Value vs Growth to a barbell portfolio of traditional Growth and traditional Value stocks that currently have favorable attributes across most factors (see MVC Apr 19th). There are Growth stocks that sold off sufficiently (e.g. most international and US growth stocks and China Tech), and there are Value stocks that are now also Growth. For instance, Energy and Metals and Mining stocks were value for the last decade (or Value traps). These stocks are still Value (rank cheaply by various price and earnings metrics across the universe), but as they are growing earnings they are also Growth stocks. Furthermore, as they have improving balance sheets, they also rank favorably on Quality, and their positive price performance ranks them highly on Momentum

Thomas Salopek
(1-212) 834-5476
thomas.salopek@jpmorgan.com

Srini Ramaswamy
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com

Federico Manicardi
(44-20) 7742-7008
federico.manicardi@jpmorgan.com

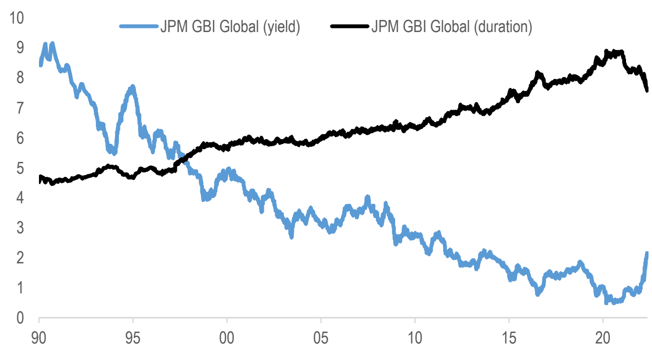
Ipek Ozil
(1-212) 834-2305
ipek.ozil@jpmorgan.com

scores (Chart 2) and are correspondingly moving from short- to long-quant allocations.

Similarly, in Fixed Income, record-high duration and record-low carry for main benchmarks (Chart 3) **created an unhelpful combination** at the start of a wave of monetary normalization globally. In January, our choice was to run large UWs in both Bonds and Credit in our multi-asset long-only portfolios which we have kept until earlier this week.

However, we now think the time to add some risk to Credit has come. In our May GAA we noted how this year's selloff has shifted both Equities and Bonds into more oversold levels and, at an asset class level, the most attractive way of fading the recent surge in risk aversion/volatility is by increasing the Credit allocation in our long only portfolio. Indeed the current level of credit spreads and yields look rather elevated, especially for US HG credit, the yield of which stands at its highest level since 2018 (Chart 4) and within US HG, the 3-5y maturity bucket appears to provide the most attractive entry point. As a result, we increased the corporate bond allocation in our long only portfolio by 4% and fund this increase by equal reductions in allocations to cash and government bonds.

Chart 3: In Fixed Income, record-high duration and record-low carry created an unhelpful combination



Source: J.P. Morgan

Chart 4: The yield on US HG Credit stands at its highest level since 2018

Source: J.P. Morgan

Most importantly, we refrained from duration hedging this Credit allocation, effectively also reducing our large duration UW. The feeling is that the growth/inflation/liquidity regime of the next few quarters will still be conducive of higher rates and so it is wise to remain UW duration but we think that the time for start reducing large duration UWs has come, especially for investors with more strategic horizons. After all, we are in a backdrop of oversold bonds, and 2022 is already (by far) the worst year for the J.P. Morgan GBI World index in at least 30 years (Chart 5).

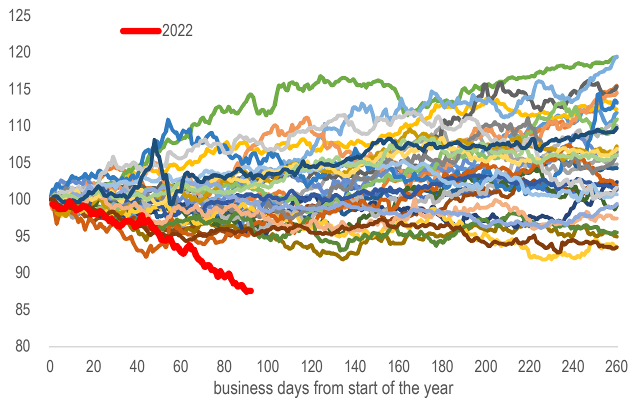
Thomas Salopek
(1-212) 834-5476
thomas.salopek@jpmorgan.com

Federico Manicardi
(44-20) 7742-7008
federico.manicardi@jpmorgan.com

Srini Ramaswamy
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com

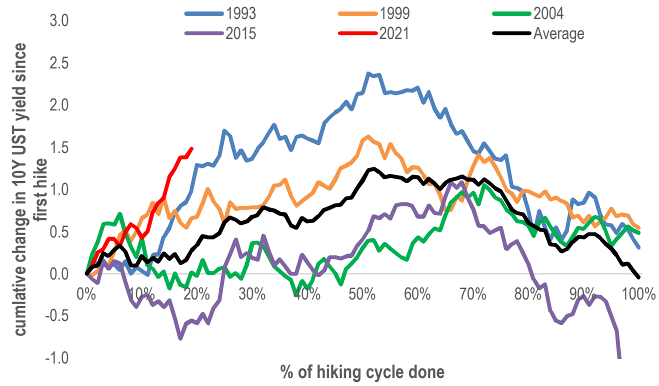
Ipek Ozil
(1-212) 834-2305
ipek.ozil@jpmorgan.com

Chart 5: 2022 is already (by far) the worst year for the J.P. Morgan GBI World index in at least 30 years



Source: J.P. Morgan

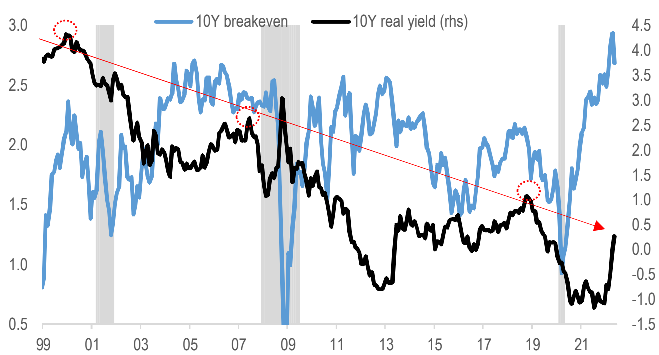
Chart 6: 10Y UST yields usually peak when cycle is 50%-75% done



Source: J.P. Morgan

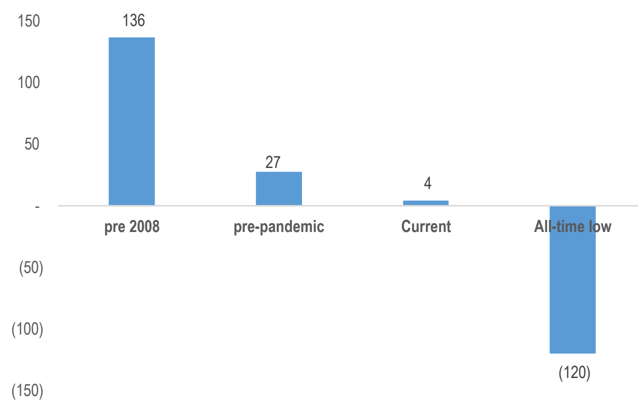
Furthermore, three frameworks suggest a peak in UST yields might not be too far, although with the current elevated levels of volatility, being precise is difficult: 1) Usually, 10Y UST yields don't peak until the hiking cycle is 50%-75% done and with this cycle being relatively fast a peak in UST yields could be a matter of months/quarters (Chart 6); 2) breakevens have likely peaked already, leaving marginal increases in 10Y nominal yields coming mainly from higher real yields, which at 0.25% might have limited room to move substantially higher (Chart 7); 3) terminal rates pricing is now above the FOMC's estimate of neutral, and our fair value model of ACM term premium suggests this is not too far from where it should be in a world where COVID-19 monetary stimulus has been fully reversed (Chart 8)

Chart 7: Breakevens have likely peaked while at 0.25% there could be limited room for real yields to move meaningfully higher



Source: J.P. Morgan

Chart 8: ACM term premium is not far from where it should be in a world where COVID-19 QE has been fully reversed



Source: J.P. Morgan

We also think it is the time to reduce exposure to the trend-following systems we recommended in January. They have already done much better than usual but still could serve as hedges if there is another round of hawkish central bank surprises. These frameworks historically have done a good job too, and they, so far, have done extremely well (Chart 9). Further, current pricing for Fed Fund rates now exceeds the FOMC estimate of neutral and has stabilized since early April. Hence, it

Thomas Salopek
(1-212) 834-5476
thomas.salopek@jpmorgan.com

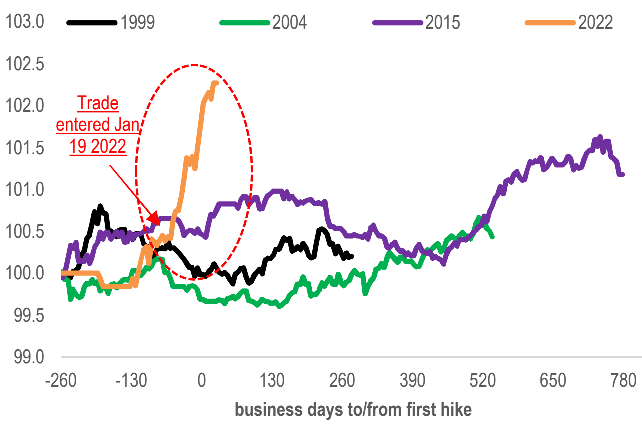
Federico Manicardi
(44-20) 7742-7008
federico.manicardi@jpmorgan.com

Srini Ramaswamy
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com

Ipek Ozil
(1-212) 834-2305
ipek.ozil@jpmorgan.com

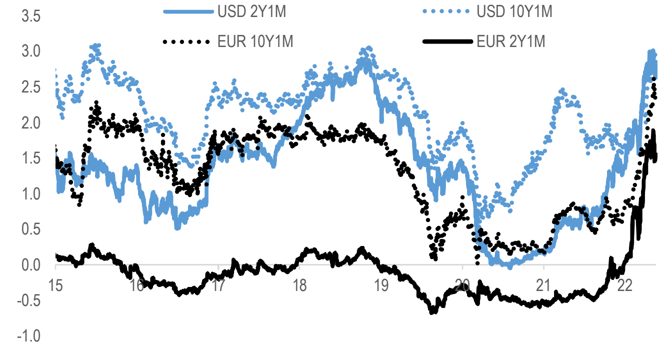
is sensible to take some profits on this trade, but we think it is worth maintaining some exposure to these systems given their potential for hedging if monetary policy expectations make another leg higher. In addition, it could also be wise to diversify exposure to non-US regions where there could be more room for upside surprises. For example, in the Euro area, near term expectations (0-3Y) expectations are below market-implied terminal rate for the ECB (Chart 10).

Chart 9: It is the time to reduce exposure to our front-end trend following system



Source: J.P. Morgan

Chart 10: There could be more room for surprises outside of the US



Source: J.P. Morgan

Macro RV offers a better risk reward

We are sympathetic with the idea that implied volatility should move lower. The year-to-date selloff in risk markets has not only made Stocks and Bonds oversold but has caused a spike in cross-asset volatility which usually is a mean reverting series. From a fair value perspective, our simple two factor model of average 3M implied volatility suggests that the spike in cross-asset volatility is largely justified (Chart 11). At the same time, our baseline sees some re-acceleration in global growth and a peak in inflation rates occurring at a time where investors have largely deleveraged already. Hence, we are sympathetic with the view that implied volatility might move lower from current levels.

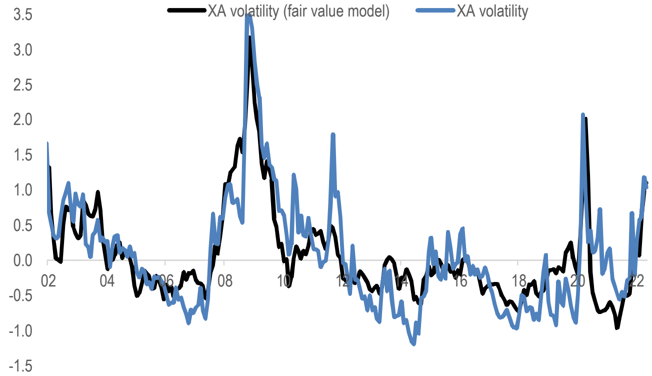
Thomas Salopek
(1-212) 834-5476
thomas.salopek@jpmorgan.com

Federico Manicardi
(44-20) 7742-7008
federico.manicardi@jpmorgan.com

Srini Ramaswamy
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com

Ipek Ozil
(1-212) 834-2305
ipek.ozil@jpmorgan.com

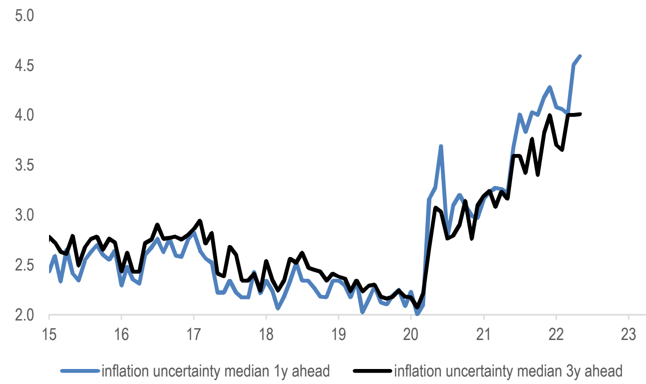
Chart 11: Our simple two factor model suggest cross asset volatility is looking fair



Source: J.P. Morgan

Chart 12: Inflation uncertainty is record high

Monthly survey of inflation expectations conducted by the Fed of New York



Source: J.P. Morgan

That said, some caveats still keep us more neutral on outright directional vol exposure. First, cross-asset volatility is close to its implied value from our fair value model so confidence from valuations is not extremely high. Second, while two sources of uncertainty this year (i.e. the conflict in Ukraine and Omicron wave in Asia) might eventually be somewhat more short-lived, uncertainty around inflation and central banks remain high. Indeed, even if expected inflation has come down from its all-time highs and market expectations of front-end rates have stabilized, households' uncertainty on inflation remains high (Chart 12). Third, a macro world with higher inflation, higher yields and less QE could bring back higher average levels of volatility especially for Fixed Income and Currencies. These have tended to undershoot the complex for the last few years (Chart 13). Equity vol should be somewhat more immune to this force and therefore a better candidate to mean reversion trades. Fourth, our TAA already reflect a positive baseline so it might not be wise to short one of the few effective 60/40 hedges if we are wrong on our baseline. One of the main questions that remains open is at what level will inflation stabilize and Taylor rule already suggest short term rates should substantially higher that what's currently expected. With the gap between what's expected and what's implied being already record high, the risk if inflation does not normalize is that central banks have to deliver more hawkish surprises.

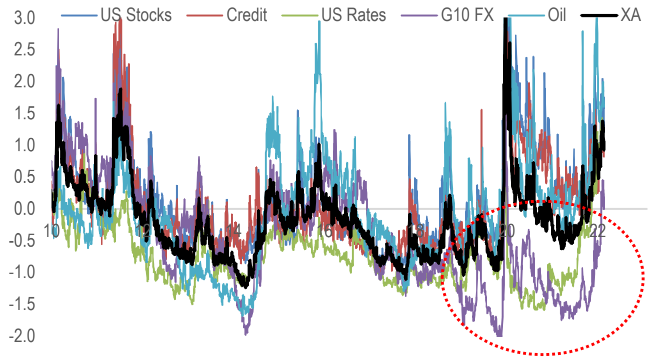
Thomas Salopek
(1-212) 834-5476
thomas.salopek@jpmorgan.com

Federico Manicardi
(44-20) 7742-7008
federico.manicardi@jpmorgan.com

Srini Ramaswamy
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com

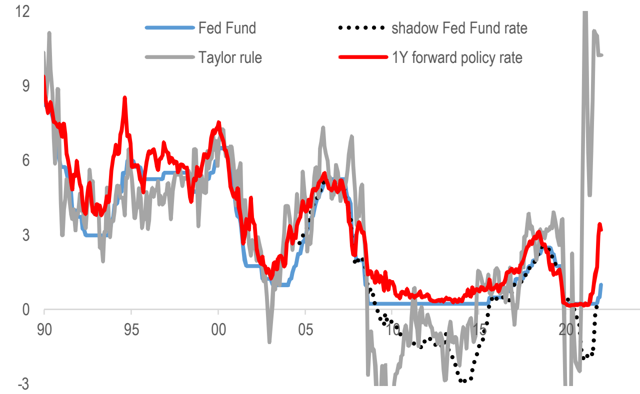
Ipek Ozil
(1-212) 834-2305
ipek.ozil@jpmorgan.com

Chart 13: Mean reversion



Source: J.P. Morgan

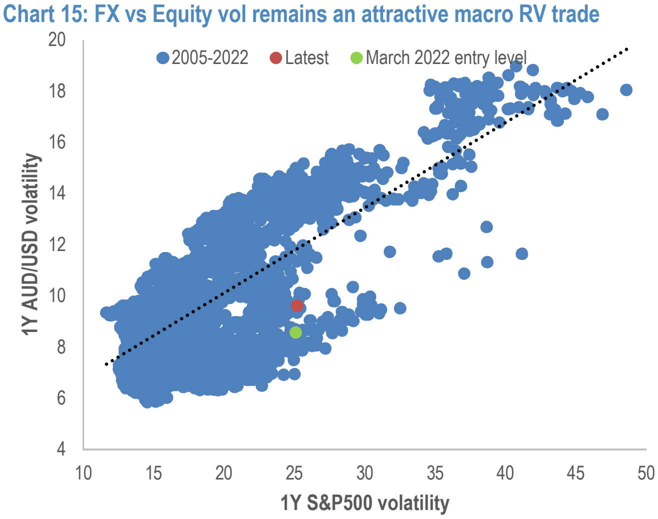
Chart 14: The gap between Taylor rule and market expectations is record high



Source: J.P. Morgan

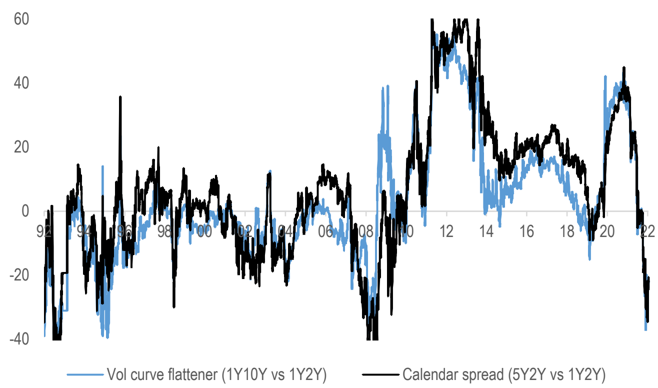
Macro RV could offer a better risk-reward for multi-asset investors looking to position for some moderation in volatility. For example, the latest selloff has created an opportunity to sell equity volatility which relative to other asset classes has exhibited more mean reversion this year and should be also less impacted by the implications of a macro regime change. In mid-March we recommended one macro RV structure that could be used to play this (Chart 13). Even if the entry level for this structure has weakened there remains an attractive set of exposures to growth and bond yields. Hence, we keep this trades on. For those looking at macro RV ways to fade pricing in Rates Vol space, i.e. the segment that has more dramatically repriced this year, we flag attractive pricing on Calendar spreads and Vol curve flatteners (Chart 16). These trades are mean reverting and are both currently in bottom 5%ile. While they have a positive directionality with overall rates volatility the risk-reward could be more asymmetric compared purely directional bets.

Chart 15: FX vs Equity vol remains an attractive macro RV trade



Source: J.P. Morgan

Chart 16: The risk-reward could be more asymmetric compared with pure directional bets



Source: J.P. Morgan

Thomas Salopek
(1-212) 834-5476
thomas.salopek@jpmorgan.com

Federico Manicardi
(44-20) 7742-7008
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Srini Ramaswamy
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com

Ipek Ozil
(1-212) 834-2305
ipek.ozil@jpmorgan.com

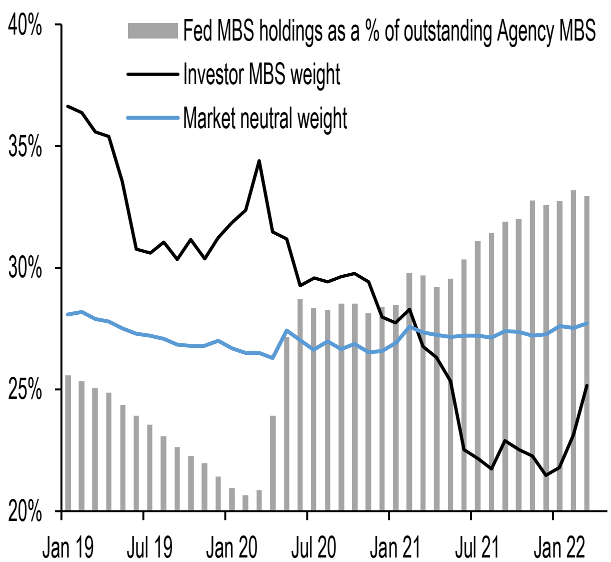
There are still reasons to be short gamma

When looking at strategies focused on monetizing the implied minus realized premium, our assessment for multi-asset investors is not too dissimilar to what we just argued. Across asset classes, high implied volatility and decent implied to realized ratios suggest a short-gamma bias but with uncertainty remaining so elevated there is some sense that it might be too early to add risk in this space materially. That said, years (and USD trillions) of QE operations could give some more structural reasons to increase short-gamma exposure.

One of the defining characteristics of the period following the onset of the pandemic was the Quantitative Easing (QE) by the Fed and its purchase of USTs and Agency MBS. The Fed's balance sheet has more than doubled since before the pandemic and holdings of Agency MBS has grown by over $1Tn in this time frame (Chart 17). The normalization of this is about to begin next month, but is likely to be slow and gradual.

Chart 17: As the Fed balance sheet grew post-pandemic, so did the Agency MBS holdings on their balance sheet, resulting in investors to be underweight Agency MBS relative to the market

Fed Agency MBS holdings, market neutral weight and investor MBS weight*, Jan 2019 - April 2022; %



*Investor MBS weights are based on top 14 money managers

Source: JPMorgan, Federal Reserve, Morningstar, Ginnie Mae, Freddie Mac, Fannie Mae

Chart 18: Short straddles, along with rates, are an important driver of the aggregate bond fund returns, however, with the Fed Agency MBS holdings increasing, a typical bond fund investor has become short Agency MBS, making them longer convexity and longer duration relative to the benchmark

Regression statistics of hypothetical quarterly aggregate bond fund portfolio returns for pre- and post- pandemic investor positions* against their drivers: quarterly changes in 10Y swap rates and quarterly returns from 3Mx5Y short straddles**, May 2020- current

	Pre-pandemic*		Post-pandemic*	
	Coeff	T-stat	Coeff	T-stat
10Y swap rate (%)	-3.74	-34.3	-3.99	-38.3
3Mx5Y short straddle returns (% of notional)	**2.47**	26.7	**2.36**	26.7
Intercept	0.47	11.8	0.50	12.9
R-squared	89%		91%	

*Benchmark bond aggregate portfolio is assumed to be composed of 40% USTs, 35% Agency MBS and 25% Credit. Pre-pandemic, an investor is assumed to be 10% overweight Agency MBS (resulting in 36.5% UST, 38.5% Agency MBS, 25% Credit) ad post-pandemic an investor is assumed to be 10% underweight Agency MBS (resulting in 43.5% UST, 31.5% Agency MBS and 25% Credit)

**Assumes daily delta hedging and no transaction costs. Options re-struck at the start of each month

Source: JPMorgan

What does this mean for a bond fund investor? Aggregate bond fund portfolios derive their return from duration risk as well as convexity-driven carry, because of inclusion of Agency MBS in the Index (Chart 18). With the Fed becoming a much larger holder of Agency MBS securities and related Agency MBS scarcity, a typical bond fund investor has become relatively short Agency MBS (Chart 17). As a result, these investors have become long convexity. Chart 18 evidences this, as a smaller coefficient with respect to the short options in the investor's portfolio indicates a relatively longer convexity position (long gamma) with to their pre-pandemic positions.

Thomas Salopek
(1-212) 834-5476
thomas.salopek@jpmorgan.com

Srini Ramaswamy
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com

Federico Manicardi
(44-20) 7742-7008
federico.manicardi@jpmorgan.com

Ipek Ozil
(1-212) 834-2305
ipek.ozil@jpmorgan.com

In the recent months, being long convexity had been good for the bond fund investor as the uncertainty around the path of the Fed kept pushing the implied volatility levels to historic highs. In What I tell you three times is true, we highlighted one of the possible explanations for this. To summarize, implied volatility has been well correlated to the slope of the constant maturity 1st/5th Eurodollar curve, and even as we entered into the hiking cycle, the uncertainty around the hiking cycle has keep this curve volatile and elevated, which has likely pushed the implied higher, benefiting buying volatility positions (Chart 19).

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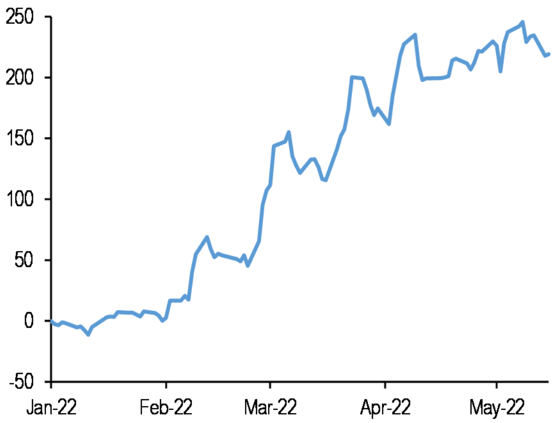
Chart 19: As the uncertainty around the Fed persisted for the first few months of 2022, long gamma exposure has been profitable

Cumulative returns from long 6Mx10Y straddles*, (bp of notional)



*Assumes daily delta hedging and no transaction costs. Options re-struck at the start of each month

Source: J.P. Morgan

Chart 20: Tightening regimes have historically been best suited for selling short expiry straddles

Statistics pertaining to rolling monthly delta hedged short 6Mx10Y straddle returns* (bp of notional), grouped by the monetary policy regime at trade inception, Mar 2000 - Mar 2022)

Regime	# days	% period in regime	Avg. monthly return	Std. dev of return	Inf. ratio
Ease	1244	23%	-19.7	69.4	-28%
Hold	2756	50%	5.3	56.8	9%
Tighten	1482	27%	9.3	28.0	33%

*Assumes daily delta hedging and no transaction costs. Options re-struck at the start of each month

Source: JPMorgan

But, will this pattern continue? The experience in the 2004 hiking cycle suggests otherwise as tightening cycle began to set in, short gamma positions began to outperform. Indeed, short gamma positions have been profitable during the past hiking cycles (Chart 20). It seems that we have started to turn the corner in this current cycle as we started to get more stability around the path of the Fed, and while there is still some volatility, more of the Fed tightening has been priced in (Chart 21). And even as the Eurodollar curve flattened from its mid-April peak levels, in line with the experience in the 2004 hiking cycle, short expiry implied volatility is yet to follow suit (Chart 22). Thus, **we expect short implied volatility levels to decrease further from current levels in the near term**.

Thomas Salopek
(1-212) 834-5476
thomas.salopek@jpmorgan.com

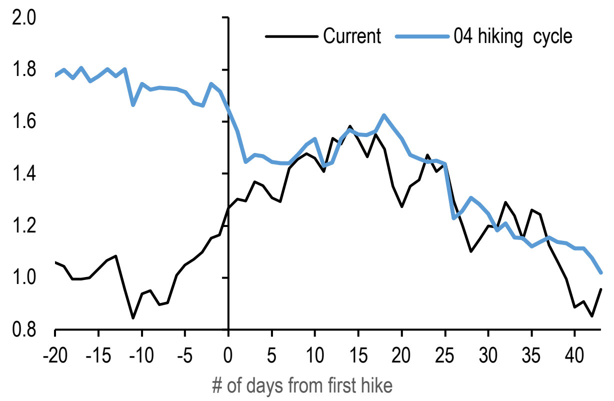
Srini Ramaswamy
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com

Federico Manicardi
(44-20) 7742-7008
federico.manicardi@jpmorgan.com

Ipek Ozil
(1-212) 834-2305
ipek.ozil@jpmorgan.com

Chart 21: Eurodollar curve has started to flatten, indicating that more tightening expectations have been priced in…

Constant maturity 1st/5th Eurodollar curve* around the first hike of the 2004 hiking cycle and the current hiking cycle, %

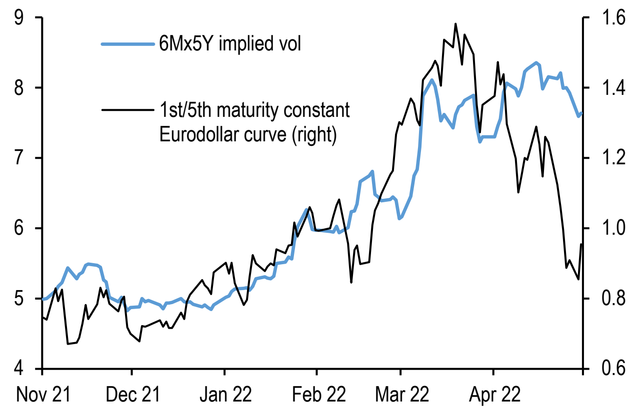


*Defined as the difference between the 5th and the 1st interpolated constant maturity Eurodollar yields during the previous cycle. Defined as the 3Mx3M / 15Mx3M SOFR swap yield curve slope for the current cycle

Source: JPMorgan

Chart 22: …, however, short-expiry implied volatility, which has been well-correlated to the Eurodollar curve, is yet to follow suit

6Mx5Y swaption implied volatility (left, bp/day) and the 1st / 5th constant maturity Eurodollar curve* (right, %); Nov 2021 – present



Source: J.P. Morgan

What could this mean for investors who find themselves short Agency MBS, and therefore long convexity, with respect to the benchmark? With the implied volatility likely to go down from current levels, **an attractive way to position for this is to sell gamma systematically in order to get closer to the benchmark**. As and when MBS runoff from the Fed's balance sheet allows for bond fund managers to cover their MBS shorts, such systematic selling of gamma can be steadily reduced and unwound.

We also note that the implied volatility surface is considerably distorted currently, relative to historic norms (Chart 23). This is most strikingly evident when one examines expiry curves between short and long expiries on short tails (Chart 24). We have discussed our outlook for this expiry curve at length elsewhere (see Curve, Volatility and Curve Volatility for a detailed discussion of our framework). To summarize, we expect this expiry curve to decline to 1bp/day over the medium term, which is considerably below spot levels. **Therefore, we also recommend that investors systematically underweight volatility in the upper left (i.e., short expiry and short tails) sector of the swaptions market, versus longer expiries.**

Thomas Salopek
(1-212) 834-5476
thomas.salopek@jpmorgan.com

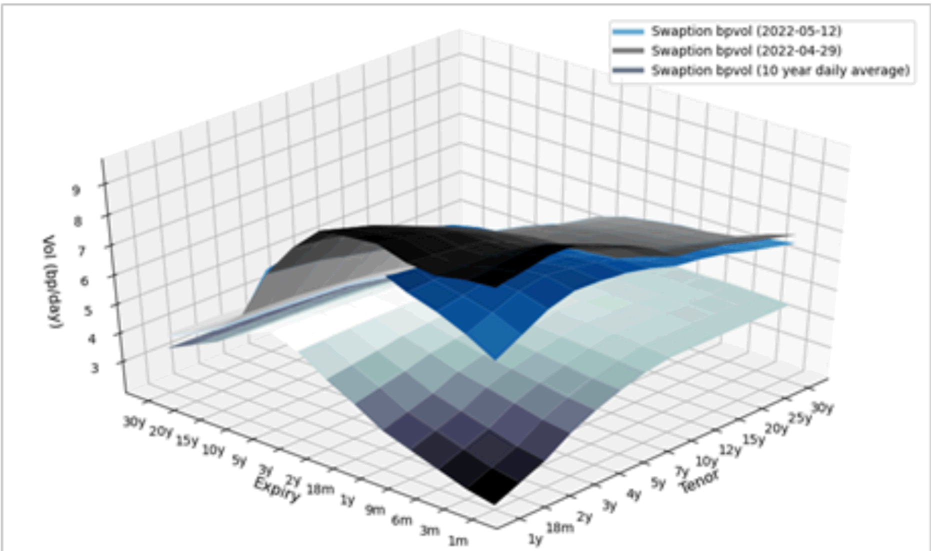
Srini Ramaswamy
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com

Federico Manicardi
(44-20) 7742-7008
federico.manicardi@jpmorgan.com

Ipek Ozil
(1-212) 834-2305
ipek.ozil@jpmorgan.com

Chart 23: Volatility surface has been considerably distorted from its long-run average, and has begun normalizing in the past two weeks

Implied volatility surface as of 5/12/2022 (blue), versus implied volatility surface as of 4/29/2012 (black), versus 10 year average swaption bp vol (teal) surface; bp/day



Source: J.P. Morgan

Chart 24: Expiry curve, one way to summarize the volatility surface, has been at historically high levels and we project it will decline to 1-1.5bp/day from its current levels of 3bp/day

1Yx1Y minus 10Yx1Y expiry curve, May 2017 - May 2022; bp/day

Source: JPMorgan

Thomas Salopek
(1-212) 834-5476
thomas.salopek@jpmorgan.com

Federico Manicardi
(44-20) 7742-7008
federico.manicardi@jpmorgan.com

Srini Ramaswamy
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com

Ipek Ozil
(1-212) 834-2305
ipek.ozil@jpmorgan.com

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Thomas Salopek
(1-212) 834-5476
thomas.salopek@jpmorgan.com

Srini Ramaswamy
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com

Federico Manicardi
(44-20) 7742-7008
federico.manicardi@jpmorgan.com

Ipek Ozil
(1-212) 834-2305
ipek.ozil@jpmorgan.com

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Thomas Salopek
(1-212) 834-5476
thomas.salopek@jpmorgan.com

Srini Ramaswamy
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com

Federico Manicardi
(44-20) 7742-7008
federico.manicardi@jpmorgan.com

Ipek Ozil
(1-212) 834-2305
ipek.ozil@jpmorgan.com

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Thomas Salopek
(1-212) 834-5476
thomas.salopek@jpmorgan.com

Federico Manicardi
(44-20) 7742-7008
federico.manicardi@jpmorgan.com

Srini Ramaswamy
(1-415) 315-8117
Srini.Ramaswamy@jpmorgan.com

Ipek Ozil
(1-212) 834-2305
ipek.ozil@jpmorgan.com

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