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US Rates Viewpoint

2023 Volatility – Embracing the Pivot

Main '23 theme… recession, with implications for covariances and returns expectations across asset classes. But '23 is also the year of the pivot, and a shift in dynamic:

- From a first principal component type of dynamic across asset classes, which limits diversification benefits, pushes vols higher, and reduces most positions essentially to the same small set of views – a dynamic supported by a higher inflation context and the globally synchronized tightening process it implies…
- Into a context of higher dispersion in the dynamics of different asset classes, more orthodox correlations between risk and bonds, more two-way flow and lower volatility… where cash may come off the sideline and pounce on some of the glaring value, and opportunities for RV and carry increase.

We recommend embracing the twists and turns of 2023 though the volatility market and discuss the outlook for vol in the year ahead in this note.

Ahead of the pivot (3-6m horizons)

Our baseline is to see 10y yields move sideways into end-1Q23, while left vs right side vol converge gradually to flat levels around 110-120bp. However, we see risks at this horizon skewed to the upside for both rates and volatility, and favor hedging tail risks scenarios conditionally given volatility levels relatively fair/cheap currently, particularly scenarios where the Fed may need to reach higher than current expectations.
Trades: 3-6m expiry payers/payer spreads vs. receivers or longer expiry payers.

Beyond the shift (from c.6m and up to 1-2y)

Beyond the pivot, the market dynamic is likely to be dominated by: (1) higher recession probabilities; (2) lower inflation expectations; (3) lower volatility; and (4) a process of recoupling of 10yT to fundamentals which implies lower yields by year-end (3.25% for 10yT). The Curve dynamic is likely to be biased towards steepeners, on both bullish (more Fed cuts in harder landing scenarios) and bearish (in the cycle turn) dynamics.
Trades: receiver ladders, US vs EUR receivers in the belly, short left vs right side vol, 2s10s caps/cap spreads and right side forward vol proxies (long vega vs intermediates).

End-'23 levels across the grid

We see normal vol centered around 110bp for 1y10y in the year ahead (c.100-120bp, with levels skewed towards the low end of the range by year-end '23). The left side of the grid is likely to underperform vs the right side into flat levels by end-1Q23, and trade cheap to the right side by year end (around 100bp or lower for 1y1y). The term structure of volatility will steepen as the Fed pivot gets priced in, towards the 0-10bp range for 1y10y vs 1m10y by 1Q23, providing a more constructive context for short gamma. We continue to like structural long vega positions as a macro hedge for portfolios.

18 November 2022

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For a list of our open and closed trades over the past 12 months, please see our most recent Global Rates Weekly.

Timestamp: 21 November 2022 06:30AM EST

Embracing the Pivot

The year ahead contains the potential for at least one major structural change in the market dynamic, as the Fed shifts from a tightening to an on-hold stance. Significantly, there's is also the potential for a second shift later in 2023, from an on-hold to an easing stance, contingent on the degree of hard landing for the US economy. The potential for these policy shifts in 2023 implies a horizon split in the year ahead outlook around 3-6m, where we may see the first Fed pivot getting fully priced in.

Ahead of the full pivot

In Rates volatility and the Fed, we noted how the vol market has been biased towards overweighing expectations for a slower Fed pace vs. the potential for a higher terminal in the recent price action. That is evident both in the lower levels of implied volatility led by the left side of the grid and gamma (see Exhibit 1), and in the richening of left side receiver vs. payer skew (see Exhibit 2).

Exhibit 1: Volatility grid changes over the last month show left side and gamma leading underperformance…

Vol price action reflects a more balanced outlook

	1y	2y	3y	5y	7y	10y	30y
1m	-23	-25	-26	-25	-27	-29	-24
3m	-29	-24	-28	-27	-28	-28	-20
6m	-25	-24	-25	-26	-23	-22	-16
1y	-25	-25	-26	-25	-23	-20	-15
2y	-22	-23	-24	-20	-19	-18	-14
5y	-15	-14	-14	-12	-11	-11	-9
10y	-10	-10	-10	-9	-8	-8	-5

Source: BofA Global Research

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Exhibit 2: 3m Z-Scores for ratios of payer vs receiver skew (implied by costless ladders breakeven widths)

Payer skew cheap vs receiver on the left side

	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	-1.0	-1.0	-1.0	-1.1	-0.7	1.0	0.1
3M	-0.9	-0.8	-0.8	-1.2	-0.8	1.1	0.8
6M	-1.5	-1.3	-1.2	-1.2	-1.3	1.0	1.7
1Y	-1.6	-1.3	-1.2	-1.3	-1.2	0.1	1.5
2Y	-1.5	-1.6	-1.7	-1.7	-1.8	0.0	1.7
5Y	-1.5	-1.9	-1.6	-0.1	0.5	1.5	1.3
10Y	-1.5	0.9	1.5	1.1	1.0	0.9	0.4

Source: BofA Global Research

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The shift in volatility towards a more balanced outlook has likely been supported by: (1) the recent pricing of terminal rate levels that exhausted the range consistent with the current framework, whereby the Fed targets real policy rates near-term and is consistent with up to c.5-5.5% for the terminal; and (2) some reluctance from the market to price a further shift by the Fed towards Taylor Rule type levels without more significant surprises on the data front (see Exhibit 3). It is in this context that risks start look more balanced around c.5% terminal rates (see Exhibit 4), receivers find some support vs. payers skew, and the market starts to overweight Fed slowdown signs vs. the potential for a higher terminal. The October CPI print clearly helped consolidate this view.

Exhibit 3: Taylor rule scenarios contingent on Core PCE and U3

Green = range of scenarios covered by current fed funds level (3.75-4%)
Yellow = range of scenarios covered by terminal expectations (5.25-5.5%)
Red = level implied by our econ team core PCE and U3 view for end-'23

Core PCE (%) \ Unemployment (%)	1.5	2	2.5	3	3.5	4	4.5	5	5.5
3.15	6.7	6.2	5.7	5.2	4.7	4.2	3.7	3.2	2.7
3.65	7.5	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5
4.15	8.2	7.7	7.2	6.7	6.2	5.7	5.2	4.7	4.2
4.65	9.0	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0
5.15	9.7	9.2	8.7	8.2	7.7	7.2	6.7	6.2	5.7
5.65	10.5	10.0	9.5	9.0	8.5	8.0	7.5	7.0	6.5
6.15	11.2	10.7	10.2	9.7	9.2	8.7	8.2	7.7	7.2
6.65	12.0	11.5	11.0	10.5	10.0	9.5	9.0	8.5	8.0
7.15	12.7	12.2	11.7	11.2	10.7	10.2	9.7	9.2	8.7

Source: BofA Global Research

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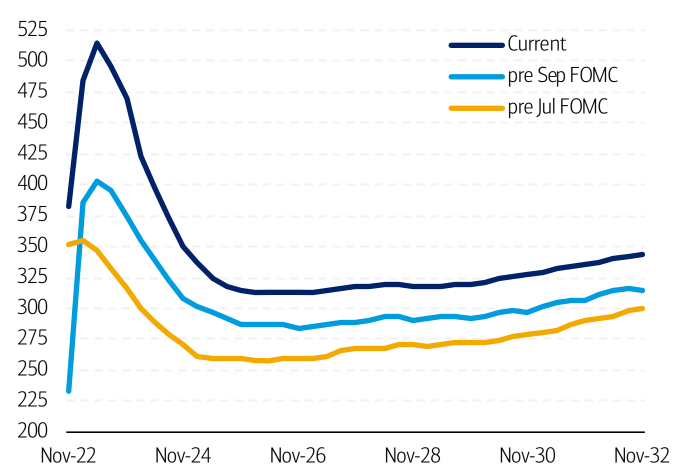
Exhibit 4: Current Fed policy path vs pre Sep and Jul meetings

Market pricing c.50bp worth of cuts from the peak by end-'23



Source: BofA Global Research

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There is, however, still a material gap between the soft pivot expectations which are becoming more consensual, and expectations for a hard pivot where we see the Fed shift towards an on-hold (see Exhibit 5). To see a more decisive shift in sentiment that pushes cash back from the sidelines (and drives investors to pounce on some of the glaring value across fixed income assets), we believe the market needs to see: (1) a hard confirmation of the downward trajectory on inflation; (2) a more significant crystallization of the view for the Fed terminal, (3) lower volatility, and (3) a recovery of USTs utility as a hedge and diversifier for portfolios (see Treasuries' existential crisis). The earliest that we see these factors starting to come together is in late-22/early-23. The question at this point is obviously whether the pricing of a soft pivot is enough to frontload this dynamic.

Exhibit 5: Full Fed pivot still priced at 5-6m horizon
Horizons sub c.3m likely provide more significant support for sentiment

Source: BofA Global Research

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Exhibit 6: 1y10y vol dynamic since the COVID recession
Expected range c.100-120bp for 1y10y in 2023

Source: BofA Global Research; Bloomberg

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We remain constructive but cautious. 10yT yields around 4% are attractive from a cycle perspective and represent c.100bp of value for investors in hard landing scenarios for the US economy in 2023. However, there is still a lot that needs to come together to justify a more aggressive stance. Ahead of the full pivot the dynamic of rates and volatility is likely to continue be marked by a relatively high data dispersion and a wide range of potential outcomes for the Fed. These are likely to continue to support volatility (although the cycle peak in vol is likely behind us - see Highest levels since the GFC) and still relatively high cash allocations in portfolios that reflect persistent uncertainty.

Our baseline is to see 10y yields moving sideways into end-1Q23, while left vs right side vol (1y1y vs 1y10y) converge gradually to flat levels at around 110-120bp (see Exhibit 6). In both rates and volatility, we do see risks at this horizon skewed to the upside. Significantly, the recent market dynamic creates opportunities in two orthogonal ways: (1) to nibble on some of the value out there, with a marginally higher degree of confidence; and (2) to hedge tail-risks scenarios conditionally given the lower volatility context, particularly scenarios where the Fed needs to reach higher than current expectations. Our trade recommendations shorter term are focused on the latter.

Trade recommendations

Our main trade recommendations at this horizon take advantage of relatively fair levels of left side volatility, and richness of receiver vs payer skew, to hedge scenarios where the Fed is forced to reach higher (see Lower Vol Helps Hedging of Fed Tail Risk):

- 3m2y 25bp out risk reversals – Buy 3m2y payers atm+25bp vs receivers atm-25bp, costless (indicative) with carry c.3bp/m. The trade is short delta, long payer vs receiver skew, and flat vega at inception. Risk is a rally beyond the receiver strike (c.4.1% SOFR strike) with potentially unlimited downside. By hedging some of the delta, investors may overweigh the skew dynamic in the mechanics of the trade (payer skew to richen vs receiver as more aggressive Fed scenarios get priced in) and limit the delta downside in rallies.

- 6m2y payers spreads vs receivers – Buy 6m2y payer spreads atm/atm+50bp vs receivers atm-45bp. The position is costless (indicative) and has positive c.16bp/3m carry. The trade is short delta (less so than the risk reversal by c.25% for the same notional) and slightly short vega at inception. Risk to the trade is a rally beyond the receiver strike (c.3.7% SOFR strike), with potentially unlimited downside.
- 6m2y payers vs 1y2y payers – Buy 6m2y payers atm financed by selling 1y2y payers, vega weighted, as a proxy for selling left-side vol forward. The position is costless (indicative) and has negative carry of c.11bp/3m of the long leg vega. The trade is short delta, flat vega at inception and short vol forward (in a proxy way). The risk on the trade is an extension of the tightening cycle beyond 6m, and/or fewer Fed cuts priced in over the next year with potentially unlimited downside (the market is pricing c.50bp worth of cuts from the peak by end-'23 - see Exhibit 4).

Exhibit 7: Optimal US portfolios contingent on a transition dynamic
Mean variance optimization on weekly returns over transition periods

	Min	Max	Risk Averse	Balanced	Risk Seeking
Equities	30%	70%	30%	50%	70%
Large Caps	10%	50%	23%	43%	50%
Small Caps	5%	35%	5%	5%	5%
Value	0%	25%	2%	2%	15%
Growth	0%	25%	0%	0%	0%
Bonds	5%	50%	26%	20%	5%
Sov	0%	45%	26%	15%	0%
Linkers	0%	5%	0%	5%	5%
Credit	0%	20%	9%	10%	10%
IG	0%	20%	0%	0%	0%
HY	0%	10%	9%	10%	10%
Cash	0%	15%	15%	0%	0%
US	0%	15%	15%	0%	0%
Alt	0%	20%	20%	20%	15%
Commodities	0%	15%	8%	15%	15%
Mortgages	0%	15%	12%	5%	0%

Source: BofA Global Research

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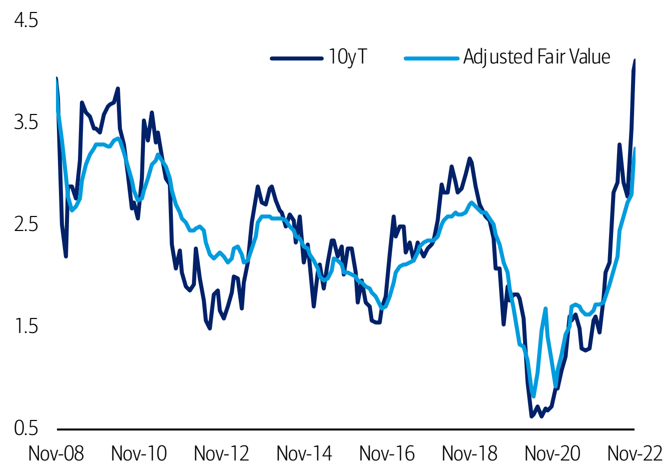
Exhibit 8: 10yT macro model framework
10yT fair value consistent with current fundamentals at c.3.25%



Source: BofA Global research; Bloomberg

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Beyond the shift

Beyond the pivot, at horizons c.6m to 1y, the market dynamic is likely to be dominated by: (1) the US recession and the potential for a broader global slowdown; (2) lower inflation expectations; (3) lower volatility; and (4) a process of recoupling of 10yT to fundamentals which implies lower yields by year-end.

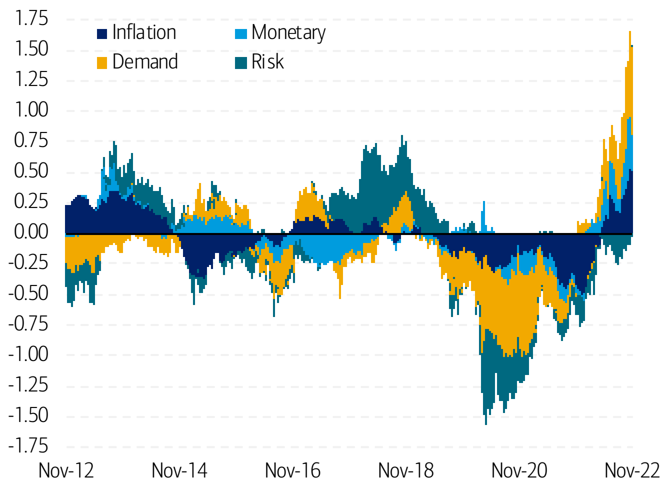
Significantly, the decrease in uncertainty and a context of lower volatility may drive a progressive deployment of the cash that has been pushed onto the sidelines in 2022, not only towards some of the glaring value in fixed income, but perhaps also across the spectrum of risk more broadly. The market had a recent taste of these pressures following the October CPI print. In this context, we find it likely that as investors look back at 2023 and at the delivered quarterly returns across asset classes, they find that the optimal asset allocations these would have implied look less like a typical recession portfolio (deep underweight risk and overweight fixed income) and more like transition portfolios with a more balanced allocation profile (see Exhibit 7 and our recent note on Asset Allocation & Duration Demand in '23).

Indeed, for USTs, while in a typical recession year we would generally be calling for at least for a recoupling to fundamentals and likely some material richening, our view for some market skepticism around a full recovery of USTs utility for portfolios caps these expectations. Our 10yT macro framework implies fair values consistent with current fundamentals c.3.25% (see Exhibit 8), and c.3.35% if we use our economists' end-'23 expectations for the macro inputs. We forecast 3.25% for 10yT at end-23.

This view is also supported by the potential we see for a reset of the 10yT steady state over the next cycle. The decomposition of the 10yT dynamic as a function of demand, inflation, monetary policy, and risk shocks (see Exhibit 9) has a steady state for 10yT over the last decade at around 2%, with a c.125bp band on either side of this steady state defining the last cycle range (c.75-3.25%). The recent bearish dynamic suggests a reset of this steady state higher, to c.2.75%. Together with the potential for a slightly wider band, of c.150bp, that is implied by a higher term premium and inflation risk premium priced into global sovereign curves recently (which we believe is unlikely to fade near/medium term), this higher steady state implies a reset of the 10yT cycle range to c.1.25-4.25%. Implicitly, we are arguing here for a slightly higher nominal neutral rate for the US economy.

Exhibit 9: Decomposition of the 10yT dynamic

Demand shock continues to dominate the bearish dynamic



Source: BofA Global Research

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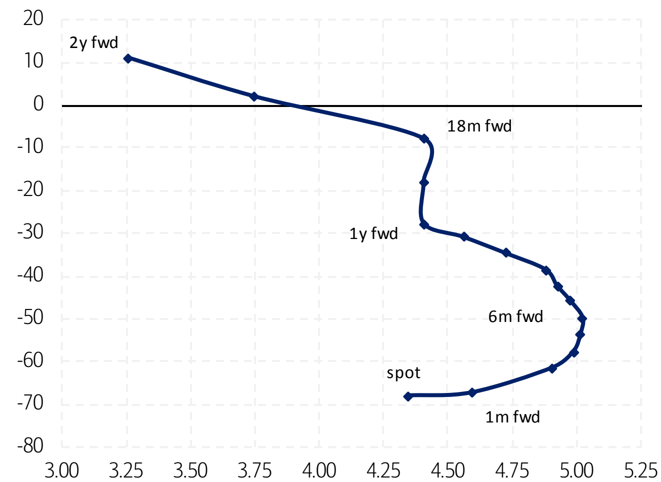
Exhibit 10: 2s10s UST fwds vs 3m OIS fwds

Pivot priced still at a 5-6m horizon, limited bull steepening potential



Source: BofA Global research

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On the curve, we think the bull steepening potential is underpriced at c.1y horizons, not only because the market may price more Fed easing (particularly if the inflation trajectory realizes the forwards), but also because the backend may stay more sticky in a reset of the steady state that we argued above. Beyond the 1y horizon, with the economy and the market shifting into an early cycle expansion dynamic, bear steepening moves are likely to dominate (that is generally the case as the Fed stays on hold and fundamentals improve). We therefore favor steepeners on the curve at horizons between 1-2y, in both bullish and bearish dynamics.

Trade recommendations

At horizons beyond 6m our trade recommendations reflect a baseline lower rates view, lower volatility led by the left side of the grid, and the potential for steeper curves:

- 1y2y Receiver ladders – costless (indicative) with downside breakeven on the positions c.115bp and carry of c.3bp/3m. The risk on the position is a rally beyond the downside breakeven (c2.15% SOFR) as rate cuts get frontloaded, with potentially unlimited downside.
- Long 1y10y US vs EUR receivers - fx weighted notionals (slightly short delta at inception) and costless (indicative) by striking EUR leg ATM-9bp. Risk an outperformance of EUR rates in a rally with potentially unlimited downside.
- Short 1y1y vs 1y10y vol – vega weighted straddles, receiving 23bp of vega on the position (indicative), with risk a higher uncertainty around the Fed trajectory and left side vol outperformance, with potentially unlimited downside.

- 1y 2s10s cap spreads and 2y 2s10s caps – which we recommended recently in our note UST curve nearing inflection with slowdown risks, and continue to find attractive. Costs 17bp and 43bp (indicative), respectively, with risks capped to the upfront premium.
- Long 5y30y vol vs 2y30y vol as a proxy for forward – stagflation scenarios contain tail risks around both an un-anchoring of inflation on the upside and growth on the downside. Between the two tails, we see risks are biased towards the former. We favor hedging this risk through long 5y30y vol vs 2y30y vol as a proxy for a forward volatility exposure, receiving 14bp of vega (indicative) with risk the underperformance of vega vs. intermediates, likely on a more bullish dynamic, with potentially unlimited downside.

Across the grid

It is relatively un-orthodox to look at lognormal volatility in rates space, but we find it instructive as volatility regimes are better defined in lognormal space. Exhibit 11 suggests a low lognormal vol regime in the 20-30/35% range (last seen at the peak of tightening in the last cycle as the Fed shifted to an on-hold stance), higher lognormal vol regime in the 30/35-50% range (seen in most of '21 and early/mid-'22), and a market stressed regime with lognormal vols >55% (seen at the peak of the COVID crisis in '20).

Exhibit 11: 1y10y log vol dynamic since 2016 (2w rolling average)
We expect '23 lognormal vol at the top end of the 20-35% low vol regime

Source: BofA Global Research; Bloomberg

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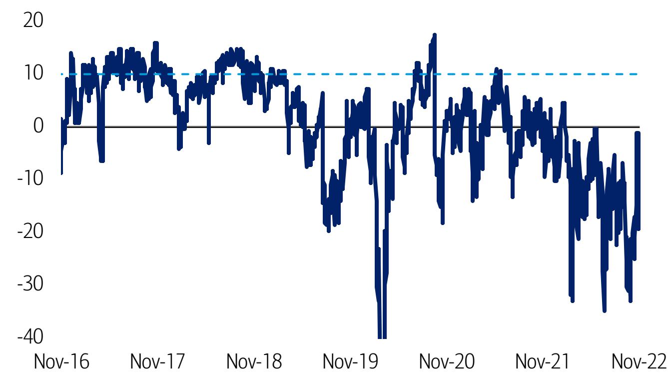
Exhibit 12: 1y10y vs 1m10y spread
Term structure of volatility will steepen to 0-10bp as Fed pivot is priced in



Source: BofA Global Research; Bloomberg

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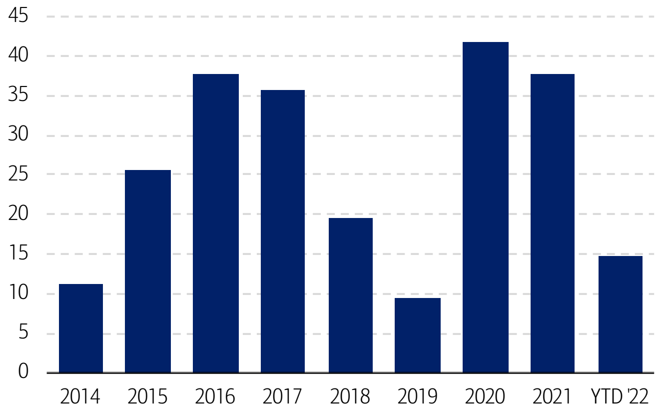
Our 2023 outlook calls for lower vol as the Fed transitions into an on-hold stance, but we see limited scope to revisit the 2018 lows. The Fed will shift towards an on-hold stance in a higher regime for rates, and with a higher degree of uncertainty still around inflation. Our expectation is for a steady state for lognormal vol at the top of the low vol regime, around c.30-35%. Along with 10y SOFR rates expectations in the 3-3.75% range in 2023 (at constant spreads), these correspond to normal vol centered around 110bp for 1y10y in the year ahead (likely 100-120bp as we noted in Exhibit 6).

As the Fed moves to an on-hold stance, the left side of the grid is likely to underperform vs the right side into flat levels by end-1Q23 (c.110bp target for 1y1y), and trade cheap to the right side by year end (around 100bp or lower for 1y1y). The term structure of volatility will also steepen as the Fed pivot gets priced in, towards the 0-10bp range for 1y10y vs 1m10y by 1Q23 (see Exhibit 12), providing a more constructive context for short gamma.

Formosa issuance is likely to stay relatively subdued in '23. There's a risk of substitution issuance from a heavy early '18 vintage, but that implies a more significant rally from current levels. Outside of that, we expect an average run rate for Formosa issuance of c.2-2.5bn in 2023 (8-10bn for the year), between the c.1.5bn run rate for the last couple of quarters, and the c.3.5bn run rate for 2022 ytd (see Exhibit 13). This is also in line with a relatively subdued AUM trend for Taiwanese lifers over the last year (c.1.1%).

Exhibit 13: Trends in Formosa issuance since 2014 ($bn)
Expectations of 8-10bn Formosa issuance for 2023



Source: BofA Global Research

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Exhibit 14: 5y30 volatility - long vega exposures worked as a decent macro hedge in 2023
We continue to like structural long vega exposures in portfolios

Source: Bloomberg

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We continue to see long vega exposures as attractive for portfolios in a context where: (1) the market is likely to continue to price a higher term premium and inflation risk premium on global curves; and (2) tail risk scenarios continue to be skewed towards the persistence of a higher for longer inflation context. These positions benefit from a relatively attractive vol rollup on the grid, and we believe are subjected to relatively capped headwinds from Formosa issuance. We see levels in the low 70 range for 5y30y as attractive to add to structural long vega exposures.

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