FX Viewpoint

FX vol looks beyond recent US data

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G10 FX Strategy
Global

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FX vol market is not chasing after the USD rally

Recent positive US data surprises have led to a +1% rally for the USD and a c.30 bps selloff for 10y US real yield. However, we find FX vol market has had little appetite to chase after the move. The lack of follow-through from the FX options market suggests that expectations for broad near/medium-term macro dynamic have not changed materially. Our economists' outlook for '24 (a late-cycle dynamic with the Fed expected to start cutting rates in 1H) should support a balance of risks that eventually tilts to the downside for real yields, despite some near-term headwinds.

Rates implications: medium term risks tilted to downside

We recommend patience on adding to 10y duration. We have higher conviction at c.4.5% (see US rates between push and pull drivers). The threshold to reach mid '23 levels of bullish expectations for the economy seems high. At the peak of the '23 summer bounce we saw fundamental fair values reaching c.4.3-4.4% for 10y nominals and c.2.15-2.2% for 10y real yields. These ranges are likely a decent gauge for where yields start to trade on the cheap side of forward-looking fundamentals in the current context. Scope for real yields to become sticky above c.2.15-2.2% fair value and a medium-term balance of risks skewed to the downside on baseline soft landing expectations should weigh on USD.

USD implications: we stay bearish dollar for the year

USD correlation to US real yield is currently sitting close to a two-decade high. The rise in USD-US real yield correlation is expected at this point of the cycle, and causality of real yields on FX tends to rise amid Fed policy pivots. The recent USD rally after FOMC and February data may lose steam with USD bears becoming reinvigorated, should lower real yield materialize. We stick with our broadly bearish USD year-end forecasts.

FX vol implications: more vol on eventual trend breakouts

Realized volatilities for both the USD and US real yield have been contained due to lack of directional trend convictions. Given negative spot-to-vol correlation between USD and FX vol since 4Q423, we expect demand for FX vol to pick up as USD spot and US real yield downtrends take shape. This would be a reversal of the typically positive spot-to-vol correlation for USD and what we have seen for the past two years.

FX factor implications: more trend, less carry

Considering trend, value, and carry factors for FX, we expect higher vol backdrop in '24 to create a rotation out of carry factor and into trend factor, and to a lesser extent, also value factor. This dynamic would coincide with our bearish USD view for the year, as the USD currently is one of the highest yielding currencies in G10 and a trend breakout would be in the direction of lower USD. We continue to like owning long-dated USD put as the expression for our macro view. Risk would be inflation accelerating, forcing central banks to keep rates on hold for longer than our economists currently forecast.

DXY: US Dollar Index

SMA: simple moving average

OTMF: out-of-money forward

ATMF: at-the-money forward

NFP: non-farm payrolls

CPI: consumer price index

ADX: average directional index

Refer to important disclosures on page 9 to 10. **12661548**

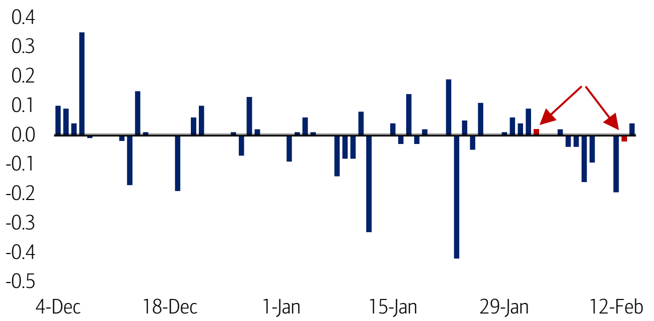
Timestamp: 21 February 2024 12:30AM EST

FX options investors are not chasing after the USD rally

The USD has rallied by more than 1% this month, driven by stronger than expected jobs and inflation data. UST yields pushed higher, with 10y real yield up c.25-30bp & slightly more for nominals. However, the lack of follow-through from FX options investors is also notable to us. The broad FX vol index saw little change post payrolls and CPI (Exhibit 1). Short-dated skews have also not moved broadly for USD calls despite the USD spot rally (Exhibit 2). In the week between payrolls and CPI (5 Feb to 9 Feb), our quantitative signals also showed high volume of short flows for OTM EURUSD puts (FX Quant Insight, from 12 Fed '24), as investors likely looked to monetize the post-NFP USD peak.

Exhibit 1: FX vol index little changed after stronger than expected NFP and CPI data releases

Daily CVIX index change with 2 Feb (NFP) and 13 Feb (CPI) highlighted in red



Source: BofA Global Research, Bloomberg

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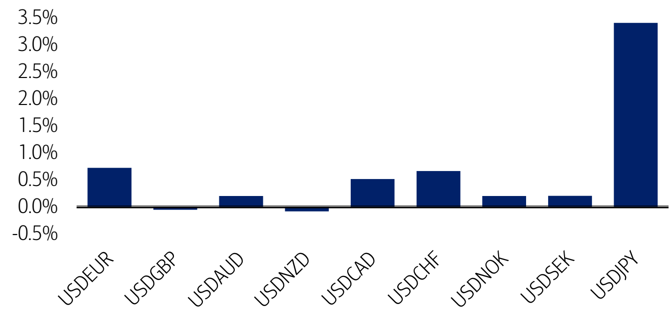
Exhibit 2: Market saw very little rise in USD call skews except for USDJPY after latest US CPI

1m USD/G10 skew change post CPI



Source: BofA Global Research, Bloomberg

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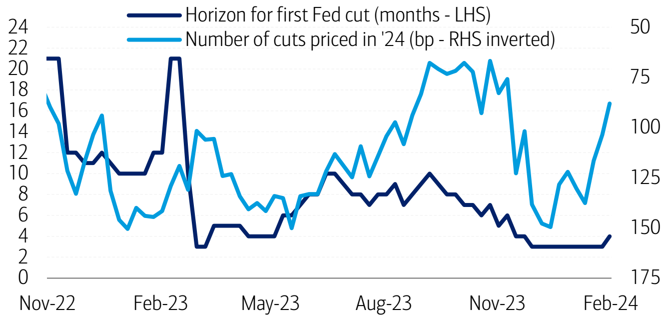
Data surprises so far insufficient to change big picture

To the extent that options incorporate market's forward-looking expectations and the distributions of risks around forwards, the lack of FX vol moves suggests that expectations for broad near/medium-term macro dynamic have not changed materially. Our economists' outlook for '24 (a late-cycle dynamic with the Fed expected to start cutting rates in 1H – Exhibit 3) continues to support a balance of risks that eventually tilts to the downside for nominal and real yields. Our technical strategy outlook has flagged shorter term headwinds to this view. However, they frame this as countertrend and over the medium term suspect a turn lower, too. (Rates Technical Advantage, from 12 Feb '24).

The consensus around a downside balance of risks in yields has been reflected in dip-buying flows in the recent dynamic of yields. We are more conservative in the ranges where we see dip-buying attractive, but agree broadly with the stance (we favor 10y nominal c.4.5%, around the midpoint between the 4-4.25% levels that are consistent with soft landing scenarios & the 5-5.25% levels that are consistent with scenarios of steady resilience – see 10yT expectations for near term dynamic, from 18 Dec '23).

Exhibit 3: Policy trajectory currently priced for the Fed
Cuts expected in c.4m and c.90bp worth of cuts priced in for '24



Source: BofA Global Research, Bloomberg

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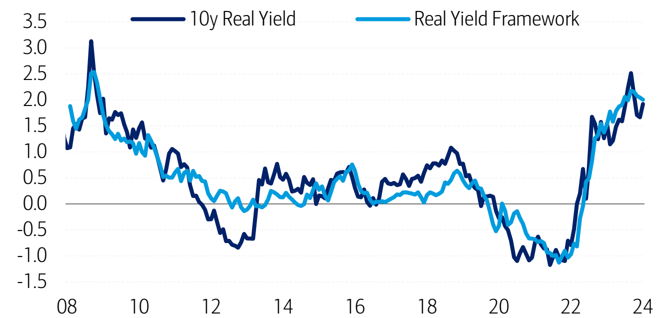
Exhibit 4: US 10y real yield framework
10y real yields trades fair to marginally rich (< 10bp) to fundamentals



Source: BofA Global Research

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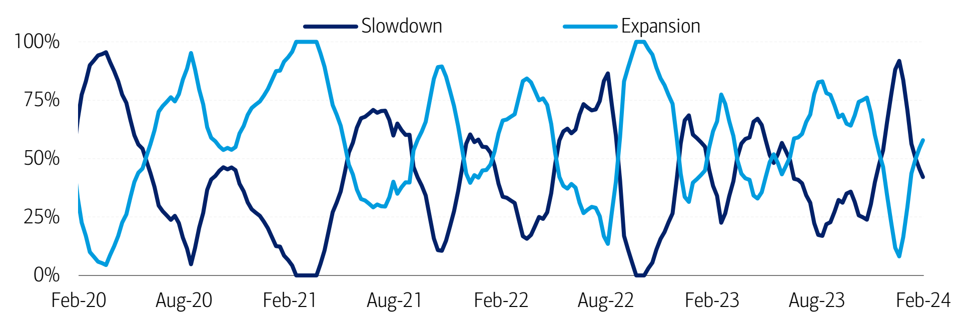
Significantly, also, at the peak of the '23 summer bounce we saw fundamental fair values reaching c.4.3-4.4% for 10y nominals (see Monthly rates models, from 5 Feb '24), and c.2.15-2.2% for 10y real yields (Exhibit 4). Real and nominal yields reached significant levels of cheapness vs fundamentals at the peak of the '23 selloff in Oct, also but recoupled relatively quickly back to fundamentals by mid-Dec '23.

We think the threshold to reach the level of bullish expectations for the economy seen over the '23 selloff is relatively high (see Exhibit 5) and see those peaks for 10y fundamental fair values reached in '23 (4.3-4.4% for nominal yields and 2.15-2.2% for real yields) as likely a decent gauge for where yields start to trade on the cheap side of fundamentals in the current context.

Exhibit 5: Likelihood of expansion and slowdown scenarios implied by the dynamic of 10y breakevens
Likelihood of expansion scenarios (expressed by bear widening moves in 10y breakevens) c.55-60% vs the likelihood of slowdown scenarios (expressed by bull tightening moves) c.40-45%



Source: BofA Global Research

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The scope for support for the nominal and real yields dynamic beyond fundamental fair values and the potential for reversal for US real yields on baseline soft landing expectations should weigh on USD.

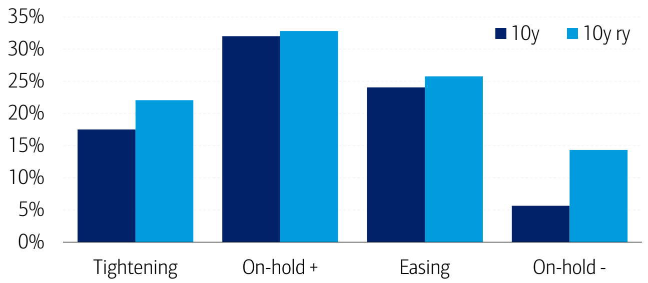
Significantly, also, we expect USD to stay positively correlated with real yields as the Fed easing cycle approaches (although correlations may slightly fade from recent highs), while the USD - FX vol correlation is likely to stay negative, with vol to rise when USD downtrend starts forming. In addition, we believe the trend and value factors should outperform the carry factor, amid rising volatility.

USD implications: we stick with bearish forecast for '24

Between 10y nominal vs real yield, Exhibit 6 shows real yield tends to have higher correlations with the dollar across various Fed regimes. DXY correlations with real yields would also slightly increase as the duration decreases (Exhibit 7).

Exhibit 6: Average correlations of DXY with 10y real & nominal yields over different cycle stages for Fed policy

USD correlations vs real yields higher than vs nominals



Source: BofA Global Research; 'Tightening' and 'Easing' refers to the Fed hiking and cutting, rates. 'On-hold +/-' refers to the Fed on-hold at the end of rightening/easing periods.

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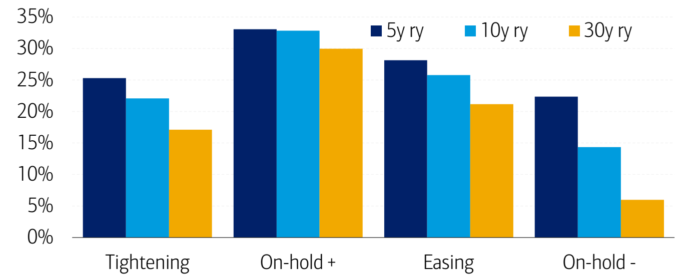
Exhibit 7: DXY correlation with real yields over the cycle vs the duration of the real yield tenors

DXY correlation with real yields increases as maturity decreases



Source: BofA Global Research; 'Tightening' and 'Easing' refers to the Fed hiking and cutting, rates. 'On-hold +/-' refers to the Fed on-hold at the end of rightening/easing periods.

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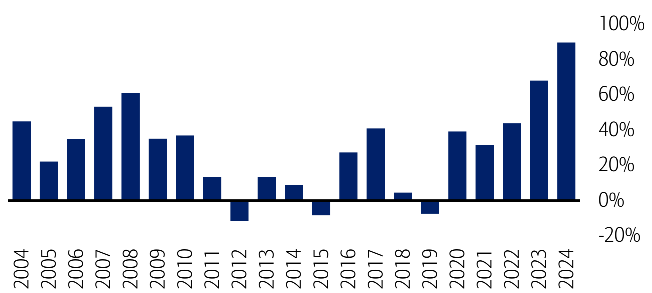
In principle that favors 2y and 5y vs 10y, but different tenors have different levels of macro significance: 2y correlations overweight the significance to monetary policy shifts to the DXY dynamic, while 10y correlations overweight macro fundamentals. The correlation to 5y real yields is likely to reflect a balance of monetary policy and the evolution of macro fundamentals to the DXY dynamic. Where we stand in the cycle, with a data dependent Fed likely needing a shift in macro data to cut rates, 5y or 10y real yields seem be a more appropriate choice and we favor the latter.

USD should also weaken with lower US 10y real yield on strong correlation

Once the reversal in 10y real yield takes shape, we would expect the USD rally to also lose steam and USD bears to become reinvigorated. Since the Fed hiking cycle started in '22, USD's correlation to the level of US real yield has continued to rise, reaching a two-decades high in '24 (Exhibit 8). Over the past year, 10y real yield alone had c.50% R^2 to the DXY index (Exhibit 9).

Exhibit 8: Correlation between level of US real yield and the USD since '23 has reached a two-decade high

Yearly averages of 3m rolling correlation between 10y real yield and DXY



Source: BofA Global Research, Bloomberg

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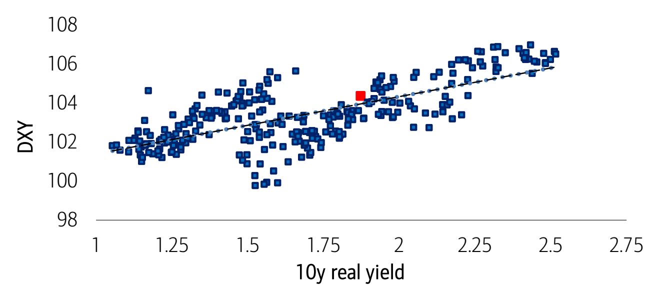
Exhibit 9: Falling real yield may lead to a lower USD in a context where recent correlation hold

Distribution of 10y real yield vs DXY index since '23



Source: BofA Global Research, Bloomberg

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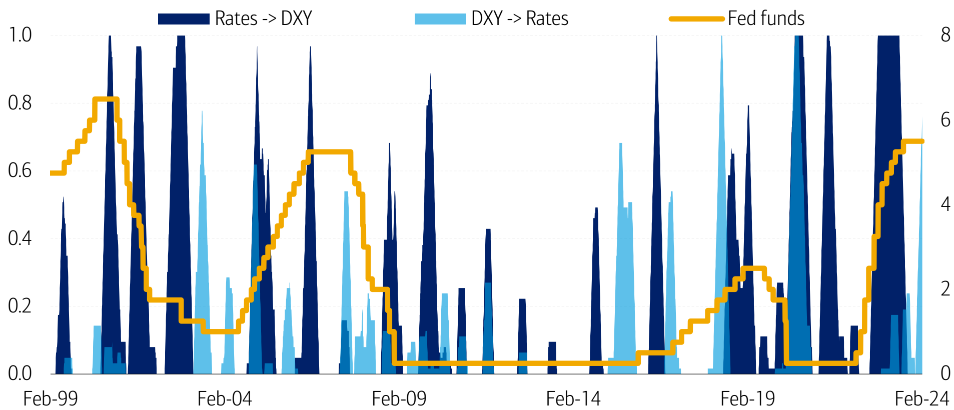
Causality may help…

While average correlations between real yields and DXY tend to decrease broadly as Fed policy shifts from on-hold at the peak at the cycle (hold + in Exhibit 7), measures of causality in this dynamic seem to pick up over shifts in policy communication (see Exhibit 10). Historical periods of higher causality of real yields on DXY have led to above-average correlations near-term.

Exhibit 10: Causality between 10y real rates and DXY
Causality in the dynamic of rates and DXY tends to pick up over shifts in Fed policy, and periods of higher causality tend to sustain slightly higher correlations.



Source: BofA Global Research

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We expect more backloaded USD depreciation in 2024

Despite the recent upward momentum for the USD, we continue to maintain our bearish USD forecast for the year (World at a Glance, from 24 Jan '24). The aggregate of our pair-wise USD/G10 forecasts would be equivalent to the DXY index falling to a 98-handle by year-end, vs current consensus forecast of 100. More material USD depreciation is likely later this year, in our view, particularly after the Fed cutting cycle begins (USD Year Ahead, from 25 Jan '24). These expectations are supported by a balance of risks on real yields tilted to the downside, and expectations for the persistence of relatively high correlations between the dynamic of real yields and the DXY (even if perhaps lower than the levels seen over '23).

FX vol implications: more vol on eventual trend breakouts

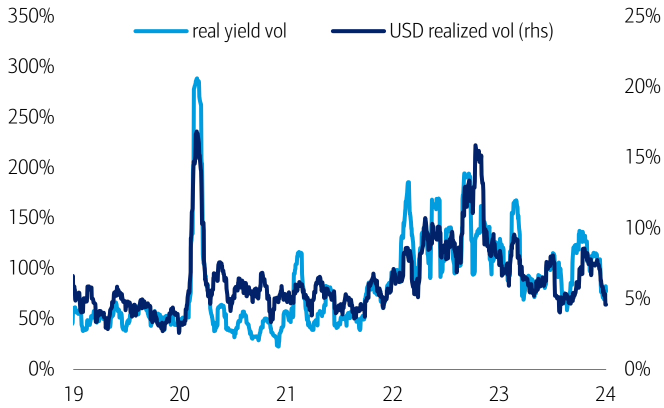
FX realized vol has been compressed due to lack of USD trend formation

Throughout '23, short-dated realized vols for both the USD and 10y real yield have been trending lower (Exhibit 11). The fall from elevated risk premium levels over '22 partly contributed to lower FX and real rate realized vols for '23, but we believe the lack of conviction on trend breakouts has been the main reason why realized vols have been subdued.

The ADX (average directional index) is a technical indicator that can be used to gauge spot price trend strength (Trading FX with DMI and ADX signals, from 25 Apr '22). Higher ADX levels correspond to higher trend strength, and vice-versa. As rule of thumb, typically an ADX (calculated over 14 days) below 20 implies a range bound market, between 20-25 a transition may be underway and above 25 is trending.

In '23, the DXY index was relatively range bound, having only 85 trading days (33% of the time) with ADX above 25, the least it has had since 2019 (Exhibit 12). A falling ADX and range bound spot prices would drive FX volatility lower.

Exhibit 11: Both USD and real yield realized vols are compressed
1m USD realized vol vs 10y real yield realized vol



Source: BofA Global Research, Bloomberg

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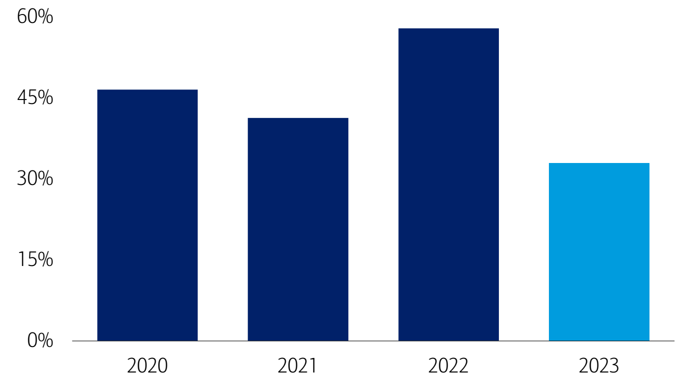
Exhibit 12: 2023 saw the least number of trending days for the USD since 2020
% of trading days with ADX above 25



Source: BofA Global Research, Bloomberg. An ADX (calculated over 14 days) below 20 implies a range bound market, between 20-25 a transition may be underway and above 25 is trending.

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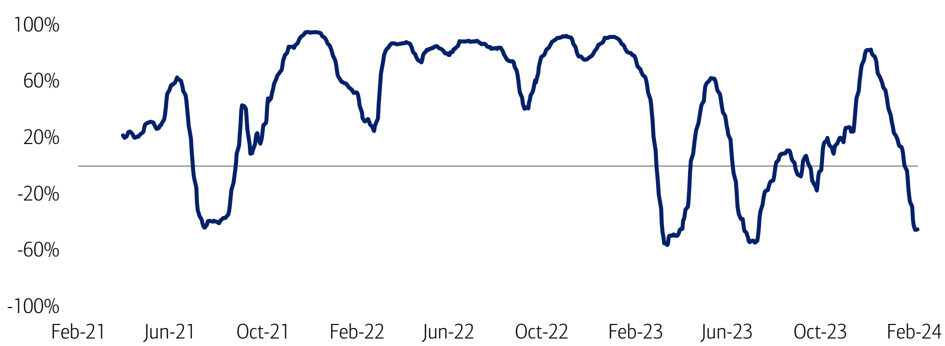
Demand for FX vol to pick-up as investors converge on USD downtrend

As we had discussed in the FX Quant/Vol Year Ahead, from 21 Nov '23, we expect FX volatility to pick-up in '24 from a low '23 base. We expect that a USD downtrend forming with spots converging toward our year-end forecasts on the back of lower real yield should serve as a catalyst for higher FX vol demand.

It is notable that USD spot-to-vol correlation was positive throughout '22. Into '24, the relationship has hovered between negative and positive regimes. The latest 3m spot-to-vol correlation for the USD and FX vol sits close to the most negative level it has been in this cycle (Exhibit 13).

Year-to-date, the USD spot has rallied by more than 2% but level of FX implied vols have in fact retraced slightly lower. This suggests to us FX volatility may pick up on trend breakouts once market converges to a USD downtrend view. This is also consistent with the long-dated implied risk reversals, as a percentage of ATM vol, in USD vs. high-beta FX (i.e., AUD, NZD) trending to flat. In our view, this means the market is already starting to price-in more volatility in case of USD depreciation, relative to history.

Exhibit 13: Current spot-to-vol correlation is negative for the USD
3m spot-to-vol correlation between USD and FX implied vol index



Source: BofA Global Research, Bloomberg

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FX factor implications: more trend, less carry

Trend factor should perform on higher FX volatility

Among FX trend, value, and carry factors, carry has been the best performing factor for the past two years (Exhibit 14). Falling volatility amid widened global rate differentials is a conducive environment for carry. With lack of directional trend convictions in '23, investors were also content to stay with carry trades.

Looking ahead, should FX volatility pick-up in '24, we would expect the FX factor performance to shift from carry to trend. Historically, FX volatility has had +50% correlation with the trend factor (Exhibit 15). At the opposite end, the carry factor is -63% correlated with FX volatility. To the extent that the trend would likely be in direction of a weaker USD, normalization of the USD from a still-broadly overvalued level (FX Viewpoint, from 15 Jan '24) should also, to a lesser extent, support value factor.

Exhibit 14 shows that over the past 2 decades '08, '14, and '20 have been the years where trend outperformed value, followed by least amount of return for carry factor. '08 and '20 were years of sharp Fed easing, while in the case of '14, the Fed was cautious to raising rates too soon. While the factor dynamics this year are likely to not turn out as extreme as in '08 and '20. In a year of moderate fed cutting cycle as we see for '23, we would still expect trend factor to outperform, and underperformance for carry factor should eventually take place.

Stay with long-dated USD puts on FX factor rotation from carry to trend

The potential rotation from carry to trend factor for FX market in '24 means investors should stick with owning long-dated USD puts, as we advocated in FX Quant/Vol Year Ahead, from 21 Nov '23. The USD is currently one of the most high-yielding currencies in G10, so any weakness for the carry factor would be bearish for the USD vs G10 peers. Eventual fall for US real yield coupled with negative spot-to-vol correlation for the USD points to more bearish than bullish USD trend breakouts. Lastly, value factor has also been calling for a weaker USD since '22. The risk to our view would be inflation accelerating, forcing central banks to keep rates on hold for longer than our economists currently forecast.

Exhibit 14: In years of higher FX vol, trend factor tends to perform best, followed by value factor

FX factor performance and annual FX vol change by year

	Trend	Value	Carry	FX vol
2004	6%	7%	9%	0.2
2005	0%	15%	15%	-1.4
2006	0%	-1%	2%	-1.9
2007	5%	4%	8%	3.1
2008	6%	4%	-19%	11.9
2009	1%	9%	25%	-8.4
2010	1%	-4%	2%	-0.4
2011	1%	-1%	-2%	-0.2
2012	-2%	-3%	5%	-4.6
2013	-2%	3%	-4%	0.3
2014	7%	6%	2%	1.2
2015	3%	7%	-5%	-0.1
2016	-3%	4%	14%	1.6
2017	0%	2%	-1%	-3.6
2018	0%	2%	0%	1.3
2019	-1%	3%	6%	-3
2020	1%	0%	-5%	1.5
2021	-4%	1%	0%	-1.1
2022	4%	-1%	8%	3.7
2023	-2%	-2%	4%	-2.2

Source: BofA Global Research, Bloomberg

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Exhibit 15: Trend factor is most positively correlated with FX vol; carry factor is most negatively correlated with FX vol

Correlation between Trend, Value, and Carry factors with FX vol since '04

	Trend	Value	Carry	FX vol
Trend	100%	25%	-16%	50%
Value		100%	35%	-3%
Carry			100%	-63%
FX vol				100%

Source: BofA Global Research, Bloomberg

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