Juan Duran-Vara AC (44-20) 3493-7685
juan.duran-vara@jpmorgan.com
J.P. Morgan Securities plc

Arindam Sandilya (65) 6882-7759
arindam.x.sandilya@jpmorgan.com
JPMorgan Chase Bank, N.A., Singapore Branch

Ladislav Jankovic (1-212) 834-9618
ladislav.jankovic@jpmchase.com
J.P. Morgan Securities LLC

Lorenzo Ravagli, PhD (44-20) 7742-7947
lorenzo.ravagli@jpmorgan.com
J.P. Morgan Securities plc

FX Derivatives

When at a crossroads, play RVs

- **After a week packed with major macro events, we find ourselves at a crossroads. We continue to see more disinflationary data lowering the overall risk premia, while there remains uncertainty around the CB policy and the possibility of a recession.**
- **In FXO, the VXY GL index peaked last fall, and has since then dropped significantly, driven by a moderation in the inflation risk. This move is more in line with the volatility on the long-end of the US rates curve than with the volatility in the short-end of the same curve, which remains elevated.**
- **We thus run a sensitivity analysis of FX vols on US long-end rates vol. We find that there is a good relationship.**
- **As US long-end-end rates vol moved lower, some FX vols have overshot the move (HUF, CLP), while others have undershot the move (NOK, ILS). We combine these findings together with our mean-reversion model in order to propose buying NZD vol vs NOK vol.**
- **We also propose a protection RV against a crowded carry trade: long MXN/JPY 1y vol vs USD/JPY 1y vol via FVAs.**

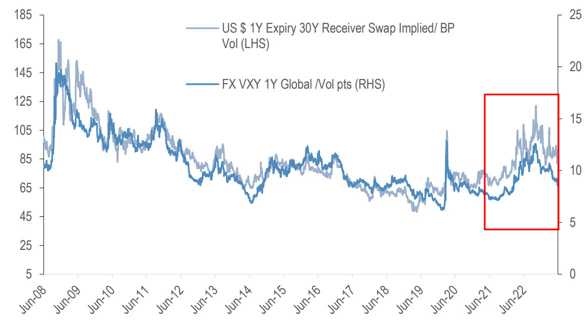
After a week packed with major central bank meetings and important data releases, we find ourselves at a crossroads. On the one hand we continue to see more disinflationary data coming out of the major economies (see U.S. claims, Empire this week), driving overall risk premia down, while at the same time there remains uncertainty around the central bank policy in the short term. Further, there is also questions around whether or not the final destination of the hiking cycle is a recession, and if it finally happens, how deep that recession will be (our JPM house view is for a US recession at the end of this year / start or next year, see here).

This dichotomy can be observed in the US rates vol market. There the vol in the long-end of the curve (take the 1Yx30Y swaptions for instance) - which is more driven by long-term inflation expectations - has come down significantly since last fall, while the vol in the shorter end of the curve (take the 1Yx2Y swaptions) remains close to the 2022 highs, driven partly by this uncertainty in the terminal rate in the US.

In the FX options world the JPM 1Y VXY Global index peaked at 12.5 vol pts in late October 2022 (Figure 1). Since then, we have seen this index drop by around 4 vol pts to around 8.5 vol pts. This has been mainly driven by a moderation in inflation in the world's major economies as discussed earlier. Hence, it can be said that over the past 6 to 8 months the JPM 1Y VXY index has moved more in line with the volatility on the long-end of the US rates curve than with the volatility in the short-end of the same curve.

Figure 1: The VXY-1Y Global index has moved in line with long-end US rates vol (1Yx30Y swaptions) over the last 6 months

15 year time-series of VXY-Global 1y index and that of the US $ 1y Expiry 30Y Receiver Swap Implied BP Vol



Source: J.P. Morgan.

Rates vol sensitivity + mean-reversion RV

Nonetheless, the drop in implied volatility across the currencies that we monitor has not been completely even. Indeed some currencies have overshoot this drop in overall volatility levels, while others have undershot this move. In order to assess possible discrepancies , we linearly regress the changes in 1y ATM FX vols on the changes on the US $ 1Y Expiry 30Y Receiver Swap's Implied Vol (BPs). We choose this underlying US rate because the long-end of the US rates curve is driven more by long-term inflation expectations than the front end of the curve. Thus it can be taken as a proxy of the inflation risk. The choice of the expiry of the swaption was chosen to match that of the FX volatility (i.e. 1Y), so that the gamma profile of both is comparable. For this exercise we take 15 years of data and we use 6m changes to normalize.

Ravagli and Jankovic (see here) introduced a framework in 2019 that links FX vol to rates differential volatility, the model is tracked on a regular basis here. The difference between the two frameworks is that the one introduced in this note looks at the US rates vol sensitivity exclusively rather than that to the rates differential volatility, it also concentrates on the volatility of the long-end of the US rate curve rather than shorter tenors, and it tracks the changes in volatility versus the changes in US rates vol rather than the outright value.

In Figure 2 we can see that , over the past 15 years there has been a reasonable beta and R-squared between US 30Y rates

Juan Duran-Vara AC (44-20) 3493-7685
juan.duran-vara@jpmorgan.com
J.P. Morgan Securities plc
Arindam Sandilya (65) 6882-7759
arindam.x.sandilya@jpmorgan.com
JPMorgan Chase Bank, N.A., Singapore Branch
Ladislav Jankovic (1-212) 834-9618
ladislav.jankovic@jpmchase.com
J.P. Morgan Securities LLC
Lorenzo Ravagli, PhD (44-20) 7742-7947
lorenzo.ravagli@jpmorgan.com
J.P. Morgan Securities plc

volatility changes and those of 1Y ATM FX vols. In particular the R-squared is highest in G10 high-beta currencies as well as in EM high yielders. In terms of beta the highest values go to EM high-beta currencies as well as precious metals.

In the last 6-months we have seen a 18 bps vol drop in the US rates swaptions implied vol (from a level of 100 bps vol to 82 bps). ILS and NOK are the ones that have undershoot the move the most, their standard residual are at +1.7 and +1.1 respectively, meaning that they are +1.7 and +1.8 vols above where they should be given the move in the swaptions. Both volatilities have a reasonable R-squared (39% and 49% respectively) to US swaptions. The beta however is 0.12 for NOK while that of ILS is just 0.06.

Figure 2: There is a good relationship between changes in back-end (30Y) US rates vol and those of 1y FX vols

Statistics obtained when linearly regressing different currencies 1y ATM vols on US $ 1Y Expiry 30Y Receiver Swap Implied BP Vol (6m changes in both cases, 15yr of data)

ccy	R-squared (%)	Std. Residual	Absolute Residual (vol pts)	Beta
SEK	56	0.5	0.8	0.13
NZD	54	0.3	0.5	0.13
AUD	54	0.4	0.8	0.15
CAD	51	0.6	0.8	0.11
NOK	49	1.1	1.8	0.12
HUF	47	-0.8	-2.2	0.20
SGD	46	0.7	0.9	0.08
PLN	46	0.5	1.7	0.21
EUR	45	0.5	0.8	0.10
CHF	44	0.7	1.0	0.09
MXN	43	1.0	3.7	0.23
COP	43	-0.4	-0.8	0.14
BRL	43	-0.5	-1.4	0.19
KRW	39	0.9	3.1	0.20
ILS	39	1.7	1.7	0.06
JPY	38	0.3	0.4	0.08
CZK	38	0.3	0.7	0.13
IDR	37	0.9	4.0	0.26
GBP	37	0.1	0.2	0.11
XAU	36	0.5	1.7	0.20
CLP	33	-1.0	-2.9	0.14
ZAR	33	0.7	1.8	0.13
XAG	32	0.3	1.3	0.26
INR	29	0.4	1.1	0.12
MYR	25	0.9	1.6	0.07
PHP	23	1.0	1.7	0.06
CNY	18	0.3	0.6	0.06
TRY	12	3.1	13.9	0.12
THB	8	-0.2	-0.2	0.03
TWD	5	-0.1	-0.1	0.02

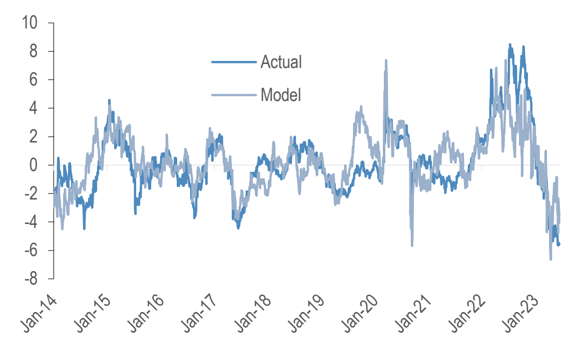
Source: J.P. Morgan.

Looking at the other side of the spectrum, CLP and HUF vols are overshooting the move. Their standard residuals are at -1.0 and -0.8 respectively, meaning that they are 2.9 and 2.2 vols below where they should be given the move in the swaptions. Both volatilities have a reasonable r-squared (33% and 47% respectively) to US swaptions. The beta is 0.14 for CLP while that of HUF is 0.2.

Although ILS has the largest dislocation in terms of standardized residual, this is due to a recent political idiosyncratic story in the country, which means that the risk premium is unlikely to fade in the short term. HUF and CLP, the other dislocated candidates are overshooting the drop in vols because they also overshoot on the way up, when US rates vol increased dramatically last fall (see Figure 3, for reference HUF). Thus showing some negative auto-correlation in the residual of the model for these two currencies.

Figure 3: HUF vol overshoot the US rates vol moves both on the way up and down in 2022 and 2023

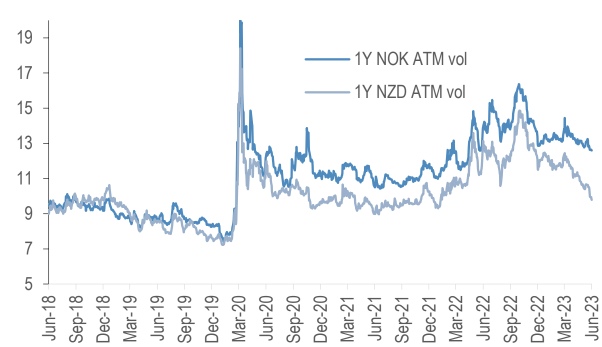
Model obtained from the regression of 6m changes of HUF 1Y ATM vol on 6m changes of US $ 1Y Expiry 30Y Receiver Swap Implied BP Vol vs the actual HUF 1Y ATM vol (Vol pts)



Source: J.P. Morgan

Figure 4: NOK-NZD 1y ATM vol spread has dislocated significantly in the last few months

1y NZD and NOK ATM vol (Vol pts)



Source: J.P. Morgan.

However, 1y NOK vol does seem a good candidate to sell, given that it did not overshoot US rates vol on the way up in the fall of 2022, nor is the volatility in the currency driven by purely idiosyncratic factors. One option is to pair it with some

Juan Duran-Vara AC (44-20) 3493-7685
juan.duran-vara@jpmorgan.com
J.P. Morgan Securities plc

Arindam Sandilya (65) 6882-7759
arindam.x.sandilya@jpmorgan.com
JPMorgan Chase Bank, N.A., Singapore Branch

Ladislav Jankovic (1-212) 834-9618
ladislav.jankovic@jpmchase.com
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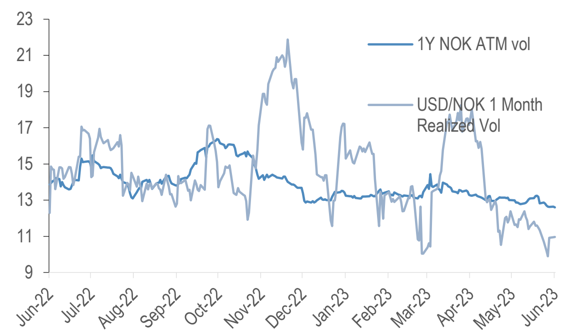
J.P. Morgan Securities plc

other high-beta G10 currency that shares a similar sensitivity to US rates vol, and if possible a currency that has moved in line with rates vol on the recent leg lower. We find the perfect candidate in NZD. Not only that but we also find that the mean-reversion model (see here), is also in favor of playing an RV in the NZD-NOK vol spread. This is so because the spread is almost at a historical high (except a brief period in 2020), and the the vol carry is rather in favor of going long NZD vol vs NOK vol (See Figure 5-6). Further, this is one of the most mean reverting spreads, with a half life of only 46 trading days, out of the pairs that we monitor (see here).

Figure 5: NOK vol carry is +1.7 vol pts

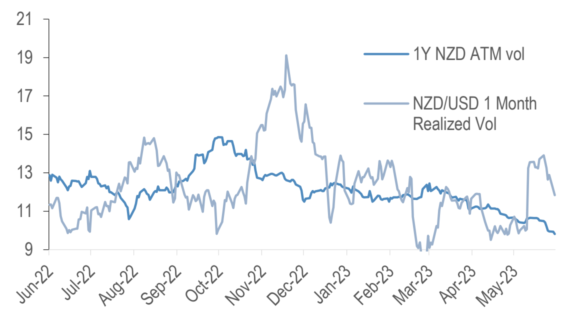
1y NOK ATM vol and 1m NOK realized vol (vol pts)



Source: J.P. Morgan

Figure 6: NZD vol carry is -2 vol pts

1y NZD ATM vol and 1m NZD realized vol (vol pts)



Source: J.P. Morgan.

- *Buy a 1y ATM vol swap in NZD/USD, sell in USD/NOK for 2.2 vol pts (received), mid at 2.6 vol pts.*
- *Buy a 1y ATM straddle in NZD/USD, sell in USD/NOK for 2.25 vol pts (received), keep delta-hedged, mid at 2.6 vol pts.*

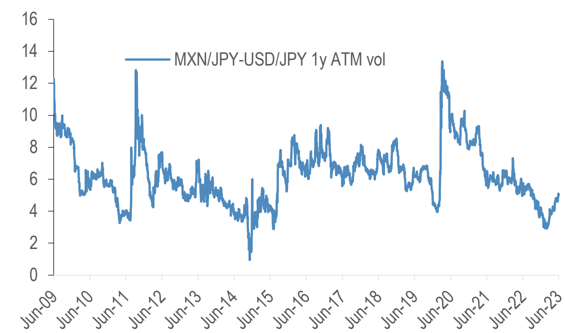
Protection RV against a crowded carry trade

In total return terms MXN/JPY is up 69% since January 1st 2022, a staggering run for the Latam currency. This number just highlights what all FX market participants know: that carry has been and continues to be the star strategy in FX since the start of the latest US hiking cycle, that MXN is the poster child of such strategy, and MXN/JPY is one of, if not the most , popular crosses in the said strategy.

Carry might continue to perform in the near to medium term, indeed our EM strategists continue to overweight MXN in the EM portfolio (see here). Nonetheless, the Mexican currency is showing signs of being already screeched. On this fair value BEER model is screening 14% overvalued, the second highest among the major EM currencies, while in a comparable metric JPY is looking 23% cheap. This just reflects the winners and losers of this kind of trade. The positioning implications can also be observed in this IMM report (see here), where it can be observed the crowding in both MXN longs and JPY shorts. As a matter of fact, the trade is so popular, that liquidity is drying up for structures in which a Latam or EMEA high yielder are funded by an Asian low yielder, as it is currently a one way street.

Figure 7: The MXN/JPY-USD/JPY 1y ATM spread is looking historically low

1y ATM vol spread between MXN/JPY and USD/JPY



Source: J.P. Morgan.

Further, MXN/JPY suffered sharp depreciations after previous strong rallies in 2002/3, 2007/8 and 2015. For that reason, and the ones highlighted above it looks like a good opportunity to buy MXN/JPY 1y vol and sell the USD/JPY 1y ATM vol. The spread performed very well in these depreciation episodes, it is very mean reverting (see Figure 7) and is 2-4 vol pts below its historical (post- GFC) average.

Besides, the spread is also realizing (i.e the vol carry is around 0.5 to 1.0 vol pts in favor of the trade, depending on the realized tenor), and the roll down of the curve is not very punitive, around .4 vol pts in the 1y-6m space. For all these reasons, if the wind changes for MXN, be it because of a US recession, a second Trump term, or the Mexican election next

Juan Duran-Vara [AC] (44-20) 3493-7685
juan.duran-vara@jpmorgan.com
J.P. Morgan Securities plc

Arindam Sandilya (65) 6882-7759
arindam.x.sandilya@jpmorgan.com
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Ladislav Jankovic (1-212) 834-9618
ladislav.jankovic@jpmchase.com
J.P. Morgan Securities LLC

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J.P. Morgan Securities plc

year going awry, this spread is a good one to have in the book. But even if the spread does not blow up but just mean reverts to its GFC average or the values pre 2022, this could be worth 2-4 vol pts

- *Buy a 6M6M FVA in MXN/JPY, sell in USD/JPY for 5.6 vol pts, (mid at 4.8 vol pts)*

Model Portfolio Update

1. Buy a 1y ATM vol swap in NZD/USD, sell in USD/NOK for 2.2 vol pts (received), mid at 2.6 vol pts.

2. Take -16% loss on long 12-wk expiry 123 strike USD put/JPY digital.

3. Take -1.1 vol pts loss on long USD/PLN vs. short EUR/PLN 2M ATM straddle spread, equal vega.

Current trade recommendations and P/L

	Description	Entry date	Entry	Current mid	P/L	P/L units	Remarks
New	Buy a 1y ATM vol swap in NZD/USD, sell in USD/NOK	16-Jun-23	-2.2	-2.6	-0.4	vol pts	Mean-reversion + rates sensitivity
	Buy 1Y 150 strike USD call/JPY put, live	02-Jun-23	54	47	-7	bps	New trade: low delta/premium, carry-positive
	Buy EUR/USD 1M ATM straddle vs. Sell 1M 25D USD put/CHF call. Delta Hedged	02-Jun-23	0.4	-0.8	-1.2	vol pts	New trade: De-pricing debt-ceiling risk premium
	3M dual-digi EUR/USD Put 2% OTMS, USD/CNH Call 1.5% OTMS	19-May-23	12.5	7.0	-5.5	%	Play long-USD via the corr market
	Buy 3M vs sell 9M GBP/USD atm, in 1*0.5 vega notionals, delta-hedged	05-May-23	3.8	3.4	-0.4	vol pts	Gamma long, weighted vol calendar
	Buy 4M EUR/USD 35d call vs sell USD/TWD 35d put, live	05-May-23	27.0	2.4	-24.6	bps	Debt ceiling long / short vanilla
	Open a long USD/PLN vs. short EUR/PLN 2M ATM straddle spread, equal vega. Both legs require active delta-hedging	21-Apr-23	5.1	4.0	-1.1	vol pts	Expiring - take loss
	Buy 12-wk expiry 123 strike USD put/JPY	24-Mar-23	14.0	-16.1	-16.1	%	Take loss
	Buy 3M [USDJPY < 2% OTMS && SPX < 5% OTMS] dual digital 17-Mar-23	17-Mar-23	13.7	3.5	-10.2	%	Tail hedge

Trades marked to market at 2:00pm BST Friday.

For delta-hedged straddles and vol products, P/L is in vol points; for directional trades, bp of notional; negative entry price indicates a net credit at inception

Source: J.P. Morgan.

J.P. Morgan Securities plc
Juan Duran-Vara [AC]
(44-20) 3493-7685
juan.duran-vara@jpmorgan.com

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Juan Duran-Vara AC
(44-20) 3493-7685
juan.duran-vara@jpmorgan.com

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