JPM FX - Derivatives Chartpack Notes

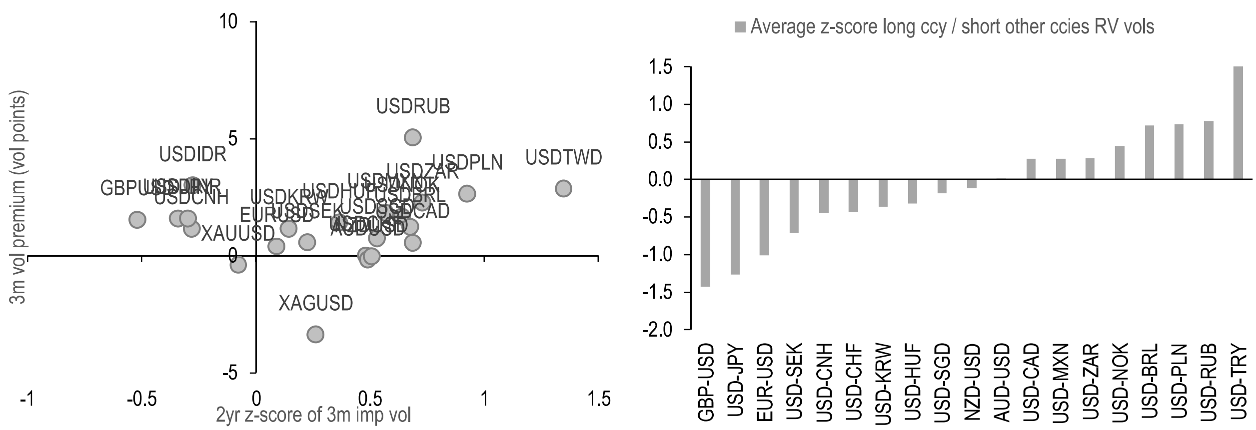
A criterion for selling vol via DNTs & mean-reversion play on EUR/CHF riskies

- Wide vol premia and high-frequency spot mean-reversion properties are supportive of opportunistic Double-No-Touch plays on USD/RUB and USD/MXN.

- Short 1M 30 delta put vs. long 2M 15 delta put on EUR/CHF, kept delta-hedged, allows playing a mean reversion CHF riskies pricing, that recently flipped the bid for CHF put against both USD and EUR.

A new criterion for spotting short-vol plays via DNTs

Exhibit 1. EMFX vols display wider vol premia and dislocations relative to G10 vols



Source: J.P. Morgan

Cross-asset vol risk premia tightened over the past week despite several risk-factors flashing warning signals (drop in Equity and Oil prices, increased risk of COVID-related restrictions, EU/UK tensions on vaccines etc.). Within the FX space, putting aside the main outlier which is TRY (after the removal of the Central Banks's governor over the past weekend), EM vols are generally displaying wider premia than G10 vols (Exhibit 1 – LHS; TRY is removed from the chart), yet recent cash action has been more supportive. The relative richness of EMFX vols vs. G10 ones appears more evident if measuring the average dislocation of a vol vs. other vols (Exhibit 1, RHS): TRY, RUB, PLN, BRL vols top the list here, followed by NOK.

Exhibit 2. EM flies are trading at a discount vs. G10 ones (data since Jan 2004)

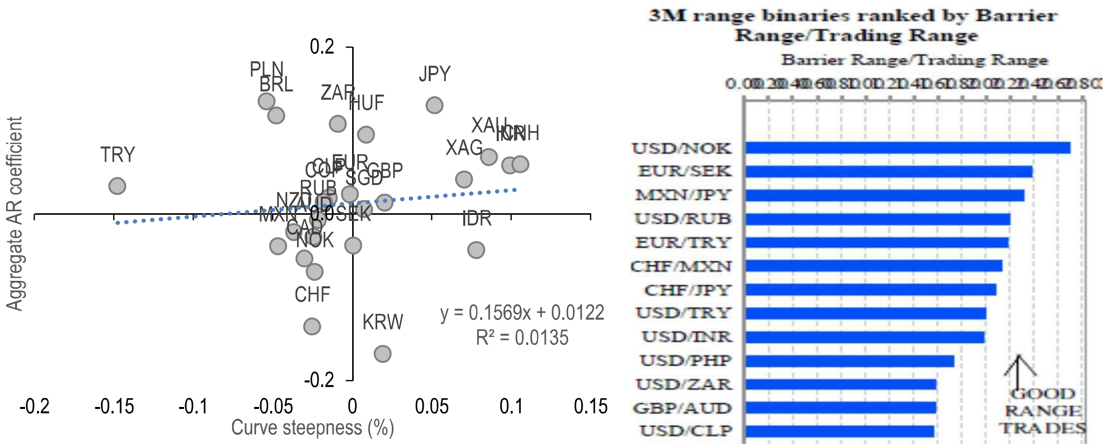
	EUR-USD	GBP-USD	USD-JPY	USD-CHF	USD-CAD	USD-NOK	USD-SEK	AUD-USD	NZD-USD	USD-BRL	USD-MXN	USD-TRY	USD-ZAR	USD-PLN	USD-HUF	USD-RUB	USD-SGD	USD-KRW	USD-CNH
Current	5.1%	5.0%	4.6%	5.0%	4.4%	4.7%	4.7%	4.5%	4.4%	2.6%	3.9%	9.4%	4.3%	5.5%	5.2%	6.2%	5.6%	5.3%	5.8%
Min	1.5%	1.6%	1.9%	1.3%	1.7%	1.1%	1.1%	1.8%	1.5%	2.6%	2.1%	0.0%	2.8%	0.0%	3.6%	0.0%	3.1%	3.5%	2.1%
Bottom 25%	3.4%	3.4%	4.0%	3.5%	3.2%	2.7%	2.8%	3.7%	3.6%	3.8%	4.2%	5.9%	4.6%	4.2%	5.1%	6.3%	4.8%	5.1%	6.1%
Average	3.9%	3.9%	4.7%	4.1%	3.9%	3.1%	3.1%	4.1%	3.9%	5.1%	5.0%	7.4%	5.8%	5.0%	5.7%	8.1%	5.9%	6.6%	9.0%
Median	4.0%	4.1%	4.6%	4.2%	3.9%	3.3%	3.2%	4.2%	4.0%	5.0%	4.8%	7.3%	5.7%	5.1%	5.8%	8.3%	5.6%	6.1%	7.5%
Top 75%	4.5%	4.6%	5.4%	4.9%	4.7%	3.5%	3.5%	4.9%	4.7%	6.1%	5.9%	8.8%	6.8%	5.6%	6.3%	9.5%	7.0%	8.0%	10.7%
Max	11.6%	10.2%	10.0%	13.1%	12.0%	5.9%	6.0%	8.4%	8.4%	11.5%	8.2%	12.3%	11.5%	8.5%	10.0%	15.8%	10.9%	12.9%	26.7%

Source: J.P. Morgan

We look at structures for harvesting FX vol premia in a risk-controlled fashion, i.e. where downside risk is well specified at inception. Current pricing setup points to the relative cheapness of EMFX flies over G10 ones (Exhibit 2). This observation, coupled with the wider vol premia on EMFX, could favour an implementation of short vol / long wings constructs such as DNTs or at-expiry ranges.

A recent research report (*How effective are one-touch calendar spreads in fading flat & inverted vol curves?* Jankovic, Sandilya, 18 March) investigated the possibility of harvesting Theta from inverted or flat curves via calendars of one touches when underlying spot shows weak to no trend (as defined by the 14-day ADX indicator). Here we consider an alternative mechanism that looks at the interplay between shape of vol curves and spot returns' mean-reverting dynamics. A previous piece investigated, amongst other things, the link between spot returns auto-regression and shape of vol curves (Figure 4 on page 13 of *Optimal option delta-hedging*, Ravagli et al, November 2018): in simple terms, high-frequency negative autoregression, indicative of mean-reverting properties, should be conducive to spot fluctuating around rather narrow ranges, for a comparable unit of market vol, and to lower probability of barriers to be broken.

Exhibit 3. Steep vol curves (measured as (3M-1M)/3M) and high-frequency mean-reversion are a good starting point for monitoring DNTs candidates. Recent behaviours vs. current pricing favors USD/NOK, EUR/SEK, MXN/JPY and USD/RUB as candidates for DNT trades.



Source: J.P. Morgan

We monitor an aggregate auto-regressive coefficient by combining recent observations with long-term average behaviors, and generally support DNT trades when steep or flattish front-end vol curves (like in the 1M-3M segment) are coupled with such proxies of mean-reverting dynamics (bottom-right quadrant of Exhibit 3, LHS). The analysis can be supported by a more direct assessment of pricing vs. recent historical behaviors across pairs (Exhibit 3, RHS – see latest daily FX vol chartpack note). A comparison of the two charts allows pinpointing the following candidates: RUB, KRW, IDR and MXN in EM space, NOK, SEK and CHF in G10 space. Low vol and implied below trailing realized reduce the appeal of looking at CHF for sourcing vol carry via DNTs.

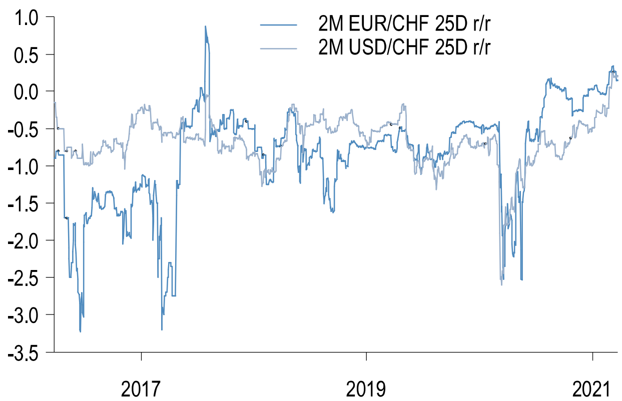
Elevated dislocation vs. other vols and wide vol premia (~5 vol and 3 vols, respectively) make RUB and IDR as two appealing candidates for vol-harvesting purposes via DNTs, supported by an aggregate AR coefficient that is informative of mean-reversion properties. Macro narrative around RUB remains bullish, with EM strategy team OW on the currency in the GBI-EM Model Portfolio (see for instance *Emerging Markets Outlook and Strategy*, Oganes and Goulden, 4 March, although price action in Oil is worth a careful look. Similar arguments good be applied to NOK, too, although in this case (and for SEK) elevated pricing of flies would be less supportive of the DNT implementation. On IDR, the EM strategy team recently reduced Model Portfolio allocation from OW to MW, on an overall less constructive outlook on Chinese exceptionalism in capital flows and continuation of strong portfolio inflows for the region as a whole. Still, technical factors as highlighted for RUB and a steep vol curve support the leveraged trade. While macro context is similar on KRW, tighter vol premium reduces in this case the appeal of the trade. A more marked OW view in Mexico and higher implied vols make us opt to consider the USD/MXN DNT below. Consider:

- *Buy a 2M DNT on USD/RUB, barriers at 72.5/79 @ USD 17.5/22.75% (spot ref. 76.4)*
- *Buy a 2M DNT on USD/MXN, barriers at 19.8/21.8 @ USD 18.6/22.1% (spot ref. 20.88)*

Fade the unusual EUR/CHF vol surface setup via calendars

As our analysts *acknowledge*, FX market has found itself in an unusual situation in which CHF has been one of the worst-performing major currencies. But they see a major structural uptrend in EUR/CHF as unlikely, not least as EUR-CHF rate diffs are stuck at zero. They also discount the SNB's characterization of CHF as "highly valued" and point out that the term has been used by SNB since Sep 2017 and does not mean that SNB is going to intervene (more on that *here*). Alongside the CHF spot markets sell-off, options pricing in risk reversals first tightened finally to flip bid for CHF puts, both vs USD an EUR (Exhibit 4). Considering those quite extended levels EUR/CHF particularly could be vulnerable to a reversal, as we discuss below.

Exhibit 4. USD/CHF risk reversals caught up with EUR/CHF riskies after a period of rapid tightening and highly unusual as both flipped bid for CHF puts.



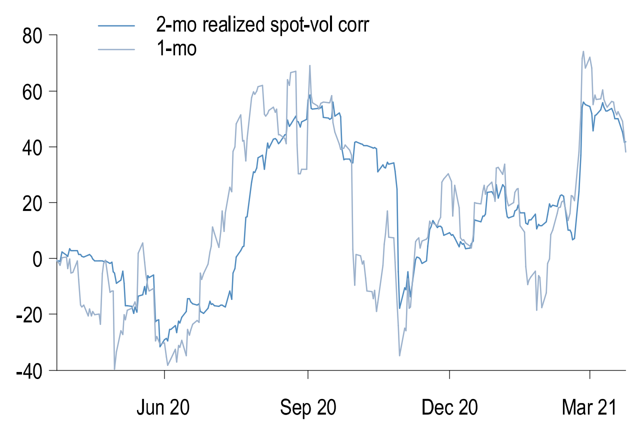
Source: J.P. Morgan

Our analysts envisage only a 1-2% upside for EUR/CHF. The backdrop goes well hand-in-hand with the sell gamma signal from our machine gamma trading model (Exhibit 5) which takes implieds 1-yr percentiles and implied – realized vol spread as inputs to an SVM model in order to predict likelihood of short gamma finishing ITM. The model currently assigns 73% probability for a short delta-hedged 1M straddle in USD/CHF to make money. This reassures us that even the trade on EUR/CHF could be profitable. Note that 1-mo trailing realized vol is still hovering well above the implied in USD/CHF (~1.4vol pts spread) and modestly above the implied (~0.4vol pts) in EUR/CHF.

Exhibit 5. CHF gamma in short camp based on our machine learning gamma trading model. EUR/CHF spot-vol correlation is starting to consolidate.

See here: *https://www.jpmm.com/research/content/GPS-3686428-0.pdf*

USD pair	1M ATM	1-y percentile	short vol carry	Predicted hit ratio	Direction
NOK	12.9	0.51	1.13	0.94	Rich
CAD	7.2	0.61	0.53	0.88	Rich
NZD	10.1	0.39	0.66	0.76	Rich
CHF	6.5	0.39	-0.07	0.73	Rich
AUD	10.1	0.37	0.07	0.68	Rich
JPY	5.9	0.25	0.67	0.38	Cheap
SEK	8.7	0.13	0.19	0.13	Cheap
EUR	6.0	0.11	-0.17	0.05	Cheap
GBP	7.5	0.06	-0.56	0.04	Cheap

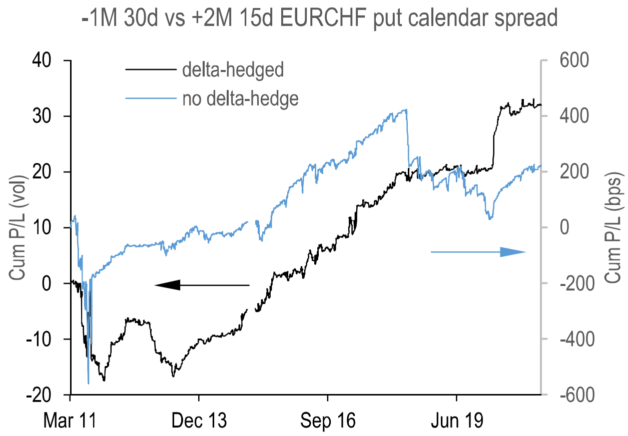


Source: J.P. Morgan

While EUR/CHF spot-vol correlation is starting to consolidate (Exhibit 5 - RHS), positioning for a mean-reversion in EUR/CHF risk reversals is easier said than done considering the systematically strong underperformance of CHF skews. Calendar structures are one way to circumvent the issue. One-touch calendar spreads -1M/+2M EUR/CHF puts at 40TV set on the 2M leg (same strikes on both legs) indicates positive carry of ~7% on 17% premium paid. That's indicative of favorability of EUR/CHF put calendar spreads. We backtest delta-hedged short 1M 30d vs long 2M 15d EUR/CHF put calendars. Setting the notionals equal makes the trade at initiation short gamma and near vega neutral. Nevertheless, as can be seen in Exhibit 6 the construct shows a robust historical performance (we drop Jan – March 2015 from the backtest due to the exceptionally strong de-peg effect).

Exhibit 6. Robust performance of equal weighted, delta-hedged short 1M 30d / long 2M 15d EUR/CHF put calendar spreads.

Rolled into fresh strikes monthly. We drop Jan, Feb and March 2015 due to the de-peg effect. 0.3 vol pts b/o assumed. Delta-hedged daily with expiry matched forwards at smile delta.



Source: J.P. Morgan

Consider:

- *On EUR/CHF, sell a 1M 30delta put @ 4.4/4.8 vols indic vs. buy a 2M 15delta put @ 5.1 vols ch., keep delta-hedged*

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