

JPM FX - Derivatives Chartpack Notes

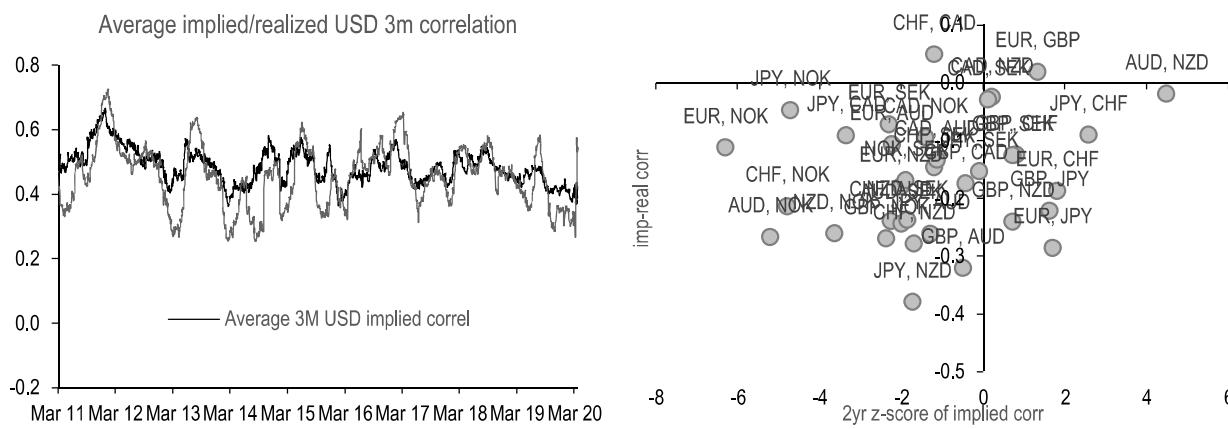
RV opportunities in the implied correlation vs. riskies space

- We generally find that, unlike vol levels and Equity correlations, FX USD implied correlations are still not pricing any particular premium related to the risk-off mode as experienced by markets so far this Month.
 - As an another possibility for trading high-leverage structures, we look for implied correlations that screen as expensive when compared with an alternative measure of “directionality” of risk, as expressed by the relative sign of risk-reversals prices.

FX vols spectacularly emerged from their most recent lethargic state at the end of February, with current pricing not consistent with a proper distressed market mode yet ([Not yet at distress highs in FX vol](#), Sandilya, 20 March). Of course this view may come under pressure if the COVID-19 spread starts to show signs of slowing as some of the alternative data analyses show and/or if a compromise solution starts to bring parts of the economy back online ([Political choices and financial forecast, big data and early indications of US pandemic inflection](#), Kolanovic & Kaplan, March 24). One thing which stuns in the FX space is the lack of repricing of USD implied correlations, at a time when all risk-measures are spiking and, as a comparison, measures of Equity implied correlations reached all-time highs in mid-March. Long USD correlation and skew positions were recommended as a hedge in a piece published this January, ahead of the market carnage that started a few weeks later ([Long USD skews and correlations offer room for playing COVID-19 hedge trades](#), Ravagli, Jankovic, 27 Jan).

We can see that, at least in the G10 space (Exhibit 1, LHS chart), average pricing of 3M USD implied correlations remained fairly constant over the past month, trading at a 15 corr points discount vs realized correlation, which spiked over the past two weeks as long USD positions were supported in the risk-off correction. A more granular analysis in the 2yr z-score of implied correlations vs. correlation premium space shows several cases, amongst which NZD-JPY, NZD-CHF and GBP-USD (in the latter case, implied trails realized by 32 corr points), where current pricing of implied correlations is attractive. Keeping in mind that liquidity of correlation products might be now drier than during normal market conditions, scouting for cheap entry points in the correlation space does not look like an unrealistic task, even at this point in the COVID-19 crisis. One possibility why this might be the case is that, after a rollercoaster ride, the DXY Index is on up a mere 1.5% since mid-February, as an indication that its safe haven status might not be fully trusted by investors.

Exhibit 1. USD-correlations in the G10 space are still trading at a substantial discount vs. realized correlations.

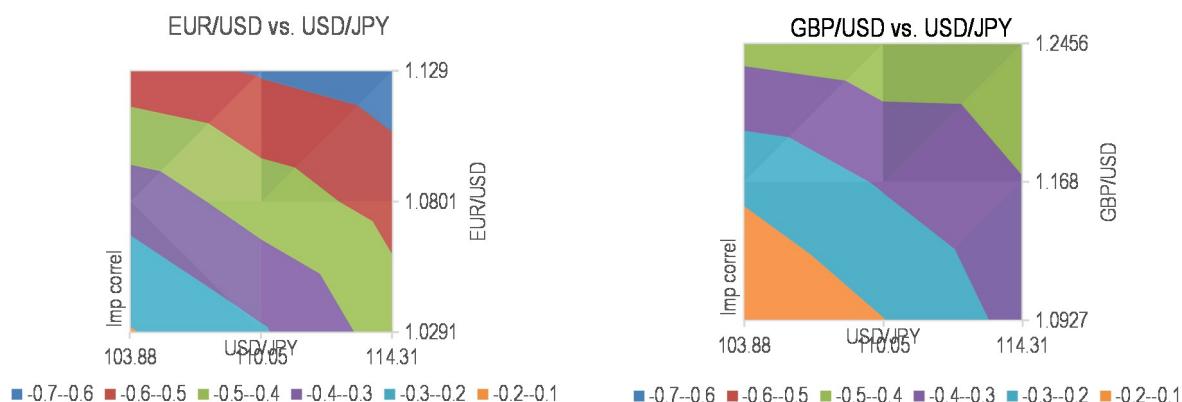


Source: J.P. Morgan, Bloomberg

We remind readers that the simplest way for estimating implied correlations is via a trigonometric identity involving ATM volatilities, as, for instance, displayed in the charts above. The actual pricing of correlation products, like corr swap, dual-digs, best/worst-of is in addition also sensitive to vol smiles. In the two following charts, we display two simplified case studies (Exhibit 2), for USD/JPY vs. EUR/USD and GBP/USD, where we consider three strikes for each pair (corresponding to 3M ATMF and +25delta), and compute the implied correlation based on the cross-vol for the equivalent strike (as an example, for EUR/USD $K_1 = 1.0927$, USD/JPY $K_2 = 103.88$, EUR/JPY $K_{1,2} = K_1 * K_2 = 113.51$).

The resulting correlation surfaces display a marked strike-sensitivity (i.e., they do depend on the skew), as an indication that, for both buyers and sellers of correlation, the choice of the strike, as in dual-digi structures, can be optimized for reaching a desired correlation benefit. In the two cases below, however, the level of the correlation remains negative for all strikes considered, even the one where USD moves in opposite direction vs. the two other currencies (i.e., EUR/USD and USD/JPY down). After re-expressing the above in terms of USD as a common asset currency for both pairs, USD correlations are then always positive.

Exhibit 2. Two examples of implied correlation surfaces: USD/JPY vs EUR/USD and GBP/USD (3M, as of 23 March)

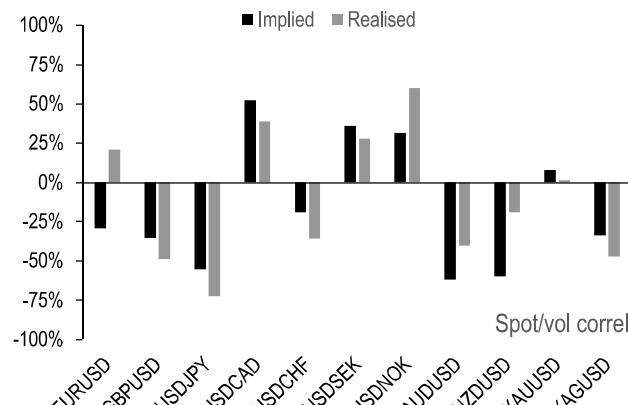


Short-correlation trades can also allow playing high-leverage structures that don't require paying excessive upfront premia. We expand on an analysis as already introduced last week ([Leveraged hedging of COVID-19 uncertainty with dual digitals](#), Jankovic, Ravagli, 17 March) where we were finding substantial (short-correlation) discounts by looking for a mismatch between sign of correlation and relative sign of riskies.

In the world of pricing, skew levels are directly related to the implied spot/volatility correlations (Exhibit 3, LHS). In other words, for each pair, the sign of the riskies suggests which direction spot price should move following a rise in volatility levels. Based on the sign of riskies, we can see that now market would expect USD to rise in a higher-vol environment against all EM pairs, and all G10 pairs with the exception of CHF and JPY. This, at least, by assuming that current pricing of riskies is reflective of current dynamics and/or is not dramatically altered by excessive flows, an argument that could probably be invoked when looking at the latest USD/JPY pricing dynamics, with riskies reaching the widest level since GFC. While current vol levels are now well above long-term averages, the skew proxy would indicate where spot could move if risk conditions were to worsen further from here.

That said, for two USD/ccy pairs, one can simply compare the level of implied correlation (for simplicity, by referring to the ATM levels as discussed above) with the relative sign of USD riskies. **On the occasions where the pricing of the two USD riskies is opposite, and the implied correlation is positive (or the other way around), there is an apparent mismatch as far as directionality of risk is concerned between riskies and correls.** The apparent conundrum can be resolved by realizing that, while implied correls for two pairs tend to be positive when measured via the common currency, and are therefore representative of a general appreciation or drop of that currency, the implied move as forecast by riskies sign could be better representative of the actual correlation in the left-tail, risk-off quadrant, with higher market vols. Given that most USD correlations are positive and that the two pairs with risk-off sensitivity vs. USD are JPY and CHF, such RV opportunities can be currently found on triplets involving USD and *just one* of the two latter currencies (see Exhibit 3, RHS).

Exhibit 3. Implied vs. realized spot/vol correl for G10 currencies and precious metals. RV opportunity between pricing of riskies and of implied corrls in case of a further rise in vols: cases where such RV opportunities are present are label as “RV” and drawn in blue
 Implied spot/vol correl refers to: standard FX convention (left-hand side chart) and USD/VVY (right-hand side chart)



Source: J.P. Morgan

When finding such RV mismatches, one could conclude that either the price of riskies or that of corrls presents an opportunity. In this piece we'll assume that price of riskies correctly predicts spot directionality in a risk-off market, and we trade correlations accordingly, via dual-digital structures (conversely, one could be interested in trading riskies). We keep in mind the strike sensitivity of correlation surfaces as seen above, which guides in the choice of the strikes for the dual digis for maximizing correlation discounts. For instance, last week when suggesting bearish structures on EUR and GBP, we favoured closer to the money strikes on USD/JPY, implying higher premia, but better entry points in terms of higher implied correlation (as seen in Exhibit 2).

CHF/ccy USD-implied correlations are positive at present. We point out that SNB intervention, as carried out last week, might put a cap on the possible appreciation of CHF. SEK looks appealing to be included into the structure on the back of a lower vol / less explosive price action so far displayed than for other G10 pairs (most notably, NOK) and an attractive entry point in terms of implied correl (around 47% for 3M USD/CHF vs. USD/SEK correl, from ATM vols, trailing realized by just 15 corr points). The better risk tone over the past day, with lower vols and a weaker dollar, might offer a better entry point for playing the defensive structure as above. We point out that, while do not cover XAU and XAG in the RV screener above, the positive sign of the XAU/USD r/r would suggest value in considering XAU on par with JPY and CHF for offering correlation discount in dual-digital structures.

The two dual-digi structures as recommended below summarize the earlier findings on attractive high-leverage structures respectively long and short correl.

Consider:

- *Buy a 2M dual-digi GBP/USD < 4% OTMS, AUD/USD < 4% OTMS @ 14% (mid trades at 50% discount vs. cheapest digital)*
- *Buy a 2M dual-digi USD/CHF < 1% OTMS, USD/SEK > 5% OTMS @ 6.25% (mid trades at 80% discount vs. cheapest digital)*

Global Quantitative and Derivatives Strategy

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