

FX Vol Strategist

FX Strategy

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Relative Value framework for call/put spreads

- We construct a simple relative value framework to identify good risk/ reward short-dated call/ put spread trades across the G10 and EM currency universe.
- Based on two dimensions - the relative pricing of implied volatility quantified by the ratio of one-month implied to one-month realized volatility and the steepness of the skews expressed as the ratio of 10-delta option volatility to 25-delta option volatility – we attempt to find the best candidates to be long or short against any given currency via simple (1x1 spread) or leveraged call/ put spreads (e.g. 1x2 spreads).
- Despite the recent cheapening in JPY skews and decline in implied JPY cross vols, our analysis suggests that JPY crosses are still relatively attractive to express a short-term bearish G10 view via leveraged put spreads. Given the richening in the wings, it is also interesting to note that leveraged USDJPY spread trades stand out as being attractive to express both a short-term bullish and bearish USD view in our relative value framework.
- To position for emerging market outperformance, EUR-EM leveraged put spreads look more attractive than USD-EM put spreads in our framework. In particular, EUR-Asia vols are broadly trading at a premium over USD-Asia vols and with a steeper put skew structure. In Latam, EURMXN stands out as the best relative value leveraged put spread play.
- In contrast, EURTRY, EURILS and EURUB vols have been delivering. With EMEA generally lagging the recovery in emerging markets, we generally prefer vol-neutral put spreads or outright options in the region in line with our EURTRY digital put recommendation last week.

We construct a simple relative value framework to identify good risk/ reward short-dated call/ put spreads across the G10 and EM currency universe. For our analysis, we focus on the one-month sector of the curve, grouping currency pairs based on common currency pivots. We look at two dimensions:

- the relative pricing of implied volatility quantified by the ratio of one-month implied to one-month realized volatility and
- the relative skew pricing expressed as the ratio of 10-delta option volatility to 25-delta option volatility.

Based on these two parameters, we attempt to find the best candidates to be long or short against any given currency via simple (1x1 spread) or leveraged call/ put spreads (e.g. 1x2 spreads).

Exhibit 2 - Exhibit 11 and Exhibit 12 - Exhibit 21 illustrate the results for G10 and EM currencies, respectively. The charts show the scatter plot of one-month implied/ historical vol ratio on the X-axis versus the one-month 10-delta/ 25-delta call (put) volatility ratio on the Y-axis for different currency pairs.

While both simple and leveraged spread trades are short skew, leveraged spread trades are also typically short vol. Ideally, a leveraged call (put) spread is best suited if the implied vol pricing looks rich relative to realized vol and the call (put) skew structure is positively sloped with 10-delta vols trading above 25-delta vols. So the currency pairs on the top-right corner of the scatter plot are the best candidates for leveraged call (or put) spreads and short-dated reverse knock out options. As we move towards the top-left corner, we can identify currency pairs that are relatively more attractive for simple vol neutral strategies such as 1x1 call/put spreads.

Exhibit 1 provides a summary of the results. Despite the recent cheapening in JPY skews and decline in implied JPY cross vols, JPY gamma has been not been delivering. The JPY crosses are therefore still relatively attractive to express a short-term bearish G10 view via leveraged put spreads. Given the richening in the wings, it is also interesting to note that leveraged USDJPY spread trades stand out as being attractive to express both a short-term bullish and bearish USD view in our relative value framework.

To position for emerging market outperformance, EUR-EM leveraged put spreads look more attractive than USD-EM put spreads in our framework. In particular, EUR-Asia vols are broadly trading at a premium over USD-Asia vols and with a steeper put skew structure. In Latam, EURMXN stands out as the best relative value leveraged put spread play. In contrast, EURTRY, EURILS and EURUB vols have been delivering. With EMEA generally lagging the recovery in emerging markets, we generally prefer vol-neutral put spreads or outright options in the region in line with our EURTRY digital put recommendation last week.

As with most models, there are limitations associated with our model. For instance, the analysis does not take into account spot/ vol directionality. Implied vols for very high beta/ risk sensitive currency pairs are generally positively correlated with spot moves. Hence, a bearish risk trade with an underlying short vol position may not be desirable for such currency pairs. Reverse knock out options may be better suited as they limit the downside on the trade to the upfront premium.

Similarly, exogenous or idiosyncratic factors such as central bank intervention are important drivers when thinking about trade structures, especially in some emerging markets. The model does not take into account such drivers. Nevertheless, the framework provides a good starting point to think about potential ways to structure trades around a given view.

Exhibit 1: Summary of model results

'-' implies that there are no clear good risk/ reward trades based on the model

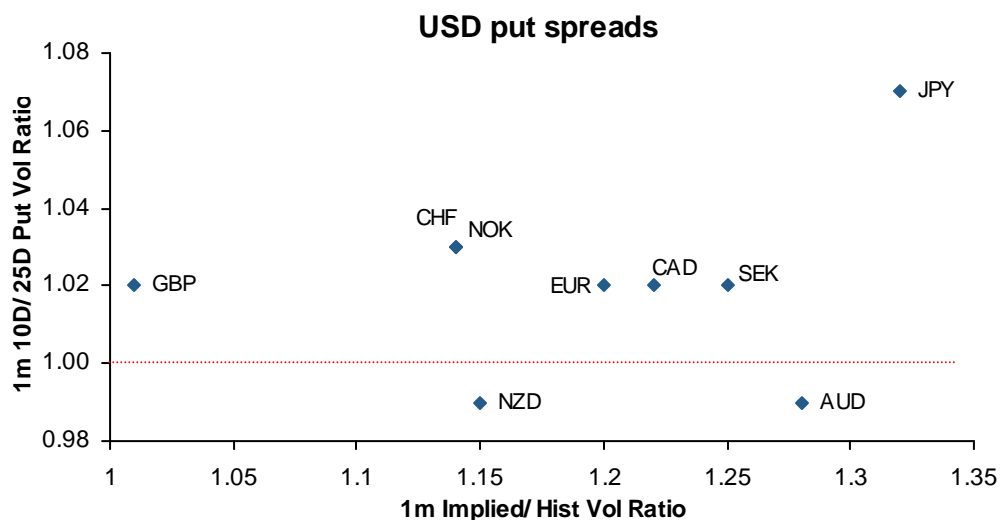
		Simple 1X1 Spreads	Leveraged Spreads
G10			
USD	Bullish	GBPUSD	AUDUSD, USDJPY
	Bearish	-	USDJPY
EUR	Bullish	EURNZD	EURSEK, EURNOK
	Bearish	EURGBP	EURJPY
JPY	Bullish	CHFJPY	AUDJPY
	Bearish	GBPJPY	USDJPY, NOKJPY
GBP	Bullish	GBPCAD	GBPAUD
	Bearish	GBPUSD	-
AUD	Bullish	AUDNOK	AUDCHF, EURAUD
	Bearish	-	AUDJPY, GBPAUD
EM			
Asia vs USD	Bullish	USDSGD	USDCNY, USDTWD
	Bearish	USDMYR	USDIDR
Asia vs EUR	Bullish	EURMYR	EURIDR
	Bearish	EURKRW	EURPHP
Latin America	Bullish	-	EURMXN, CADMXN
	Bearish	CADBRL	USDMXN
EMEA vs USD	Bullish	USDPLN	USDTRY
	Bearish	USDRUB	USDTRY
EMEA vs EUR	Bullish	EURILS	EURZAR
	Bearish	EURRUB	EURCZK

Source: Credit Suisse

Spread options relative value analysis – G10

Exhibit 2: USD put spreads (bearish USD)

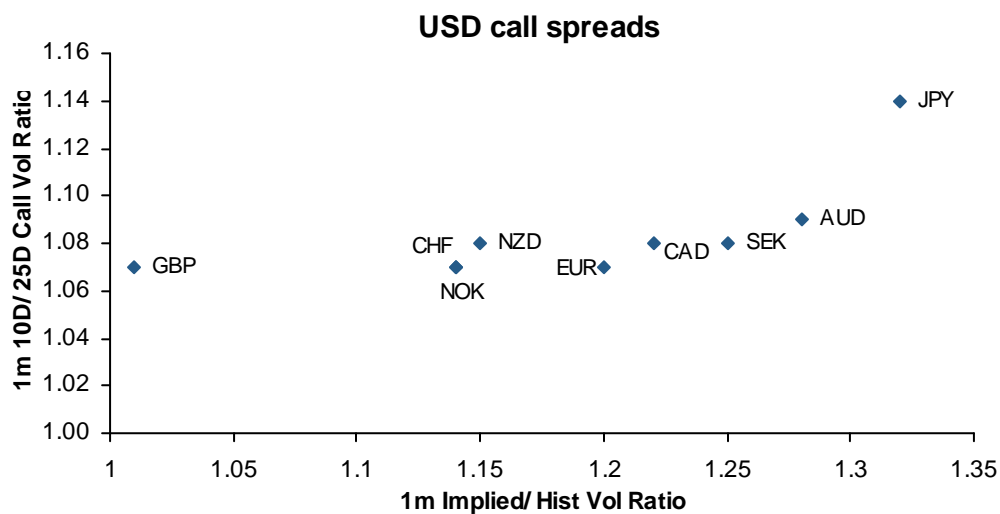
Historical Volatility calculated using daily WMR fixing



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 3: USD call spreads (bullish USD)

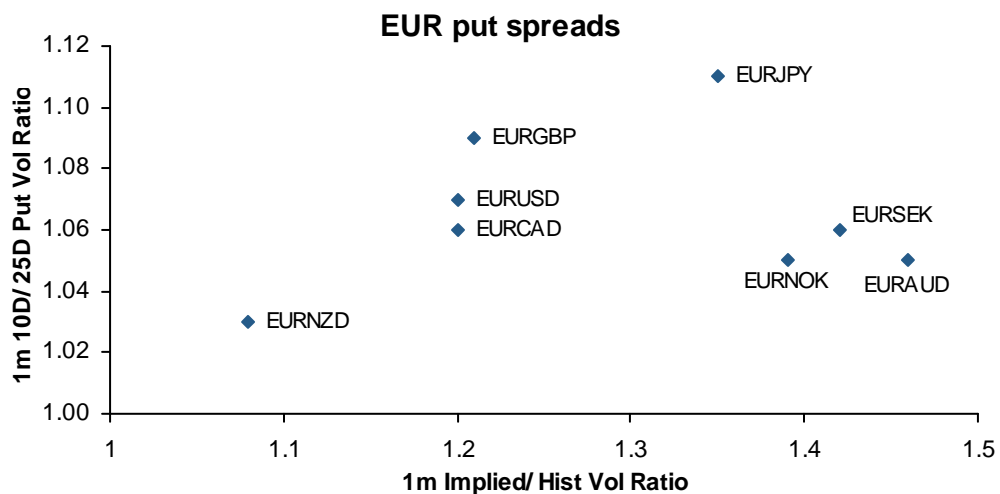
Historical Volatility calculated using daily WMR fixing



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 4: EUR put spreads (bearish EUR)

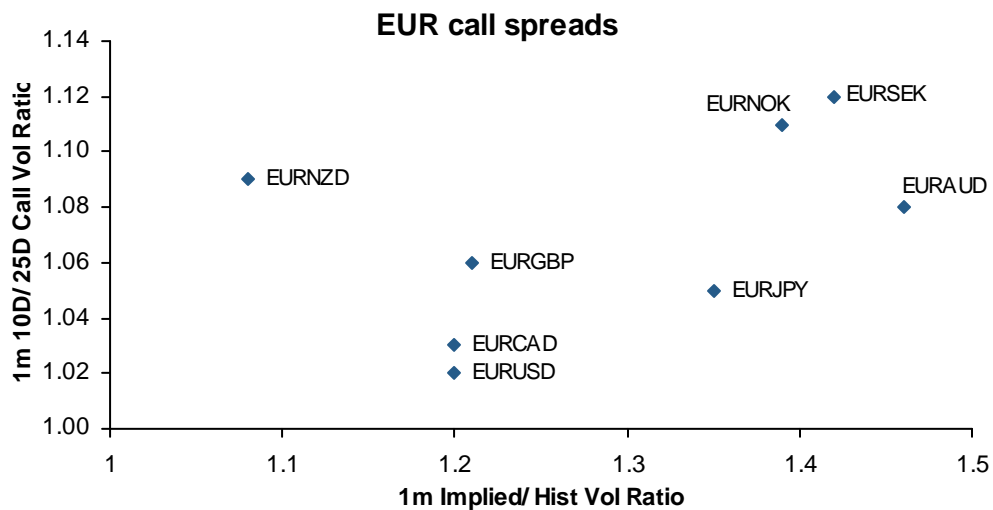
Historical Volatility calculated using daily WMR fixing



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 5: EUR call spreads (bullish EUR)

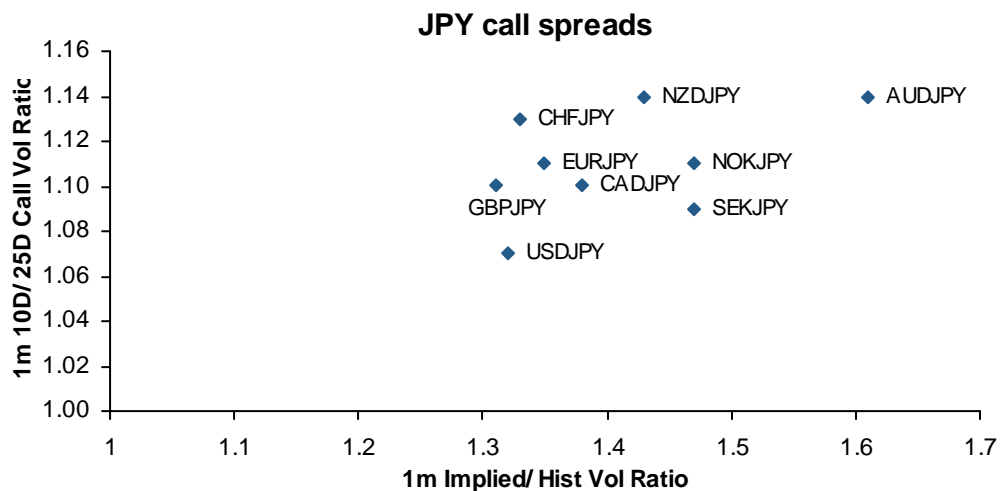
Historical Volatility calculated using daily WMR fixing



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 6: JPY call spreads (bullish JPY)

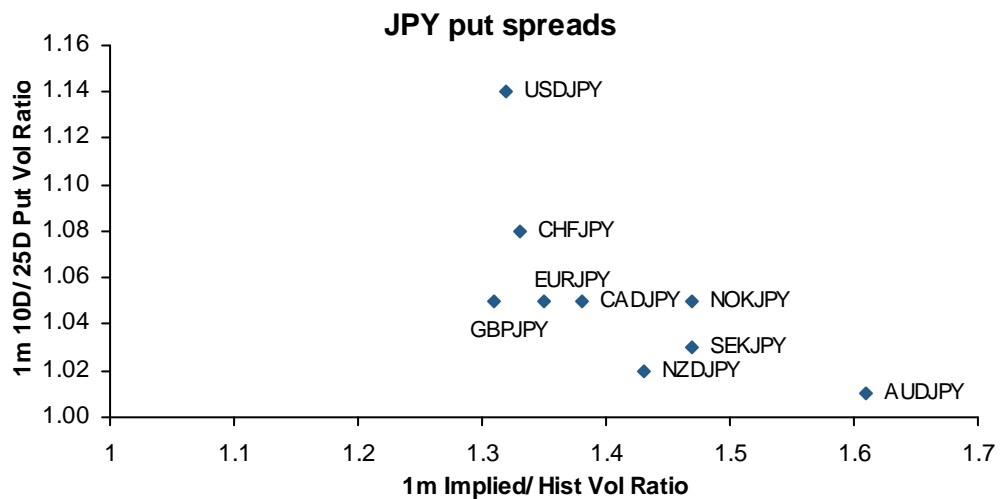
Historical Volatility calculated using daily WMR fixing



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 7: JPY put spreads (bearish JPY)

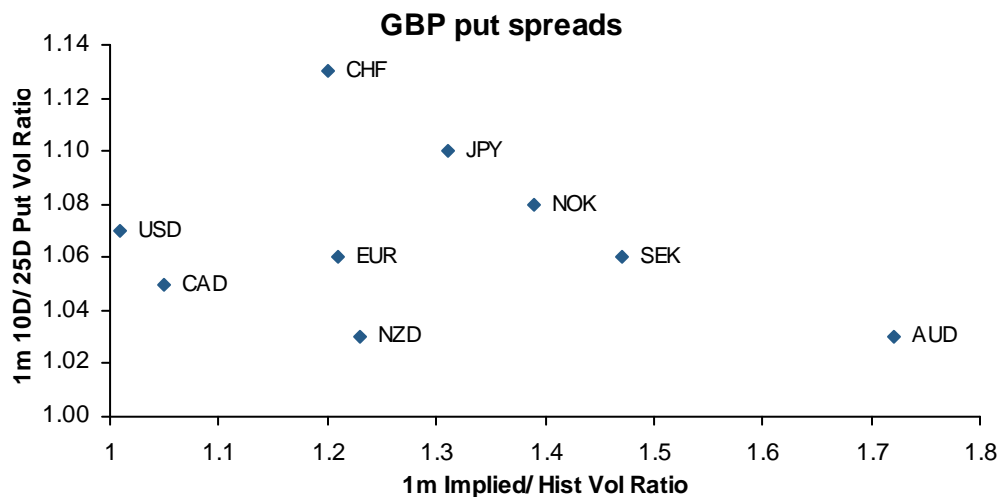
Historical Volatility calculated using daily WMR fixing



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 8: GBP put spreads (bearish GBP)

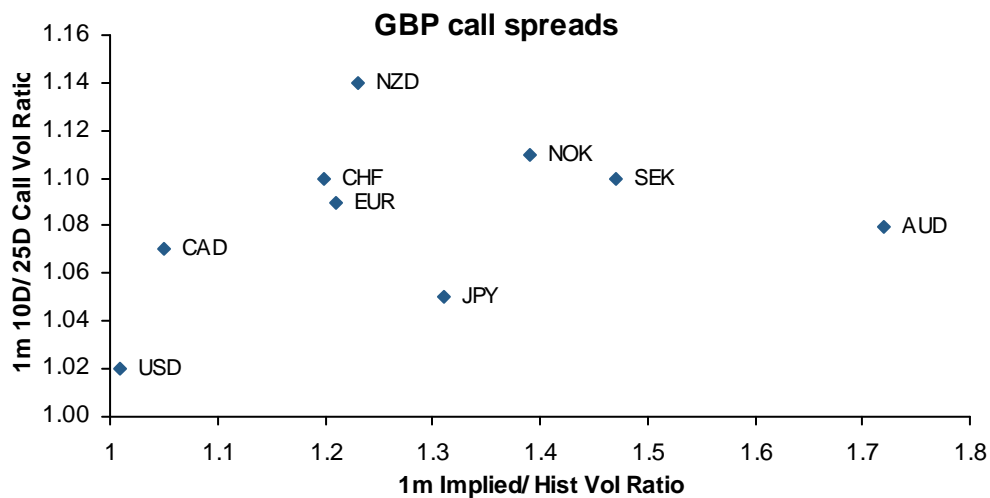
Historical Volatility calculated using daily WMR fixing



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 9: GBP call spreads (bullish GBP)

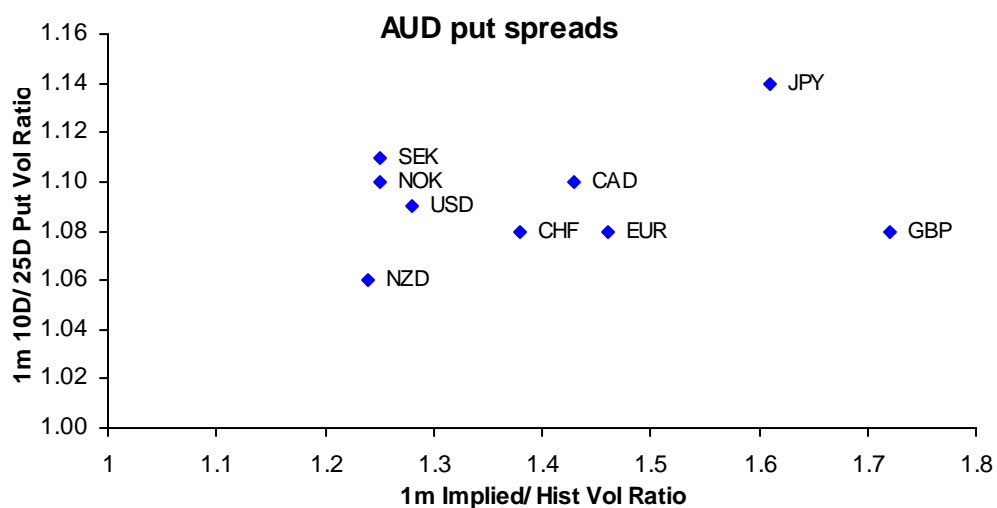
Historical Volatility calculated using daily WMR fixing



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 10: AUD put spreads (bearish AUD)

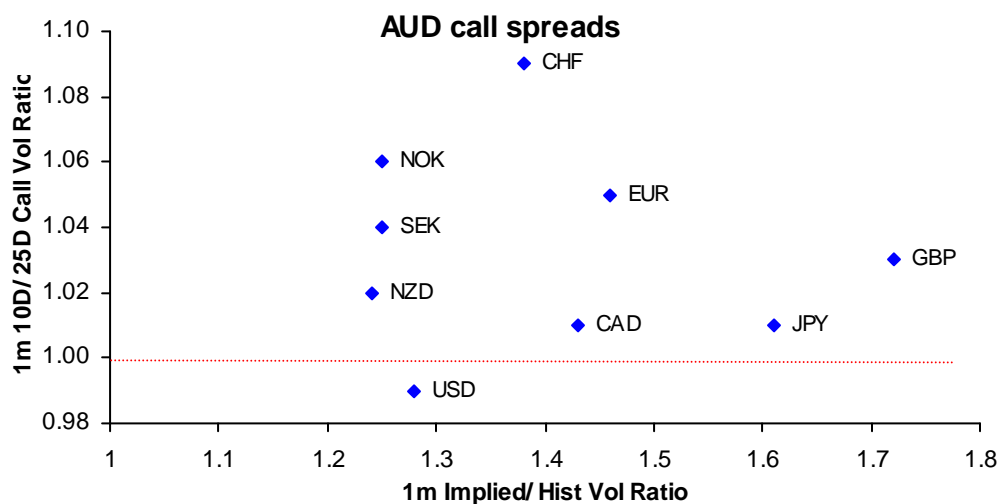
Historical Volatility calculated using daily WMR fixing



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 11: AUD call spreads (bullish AUD)

Historical Volatility calculated using daily WMR fixing

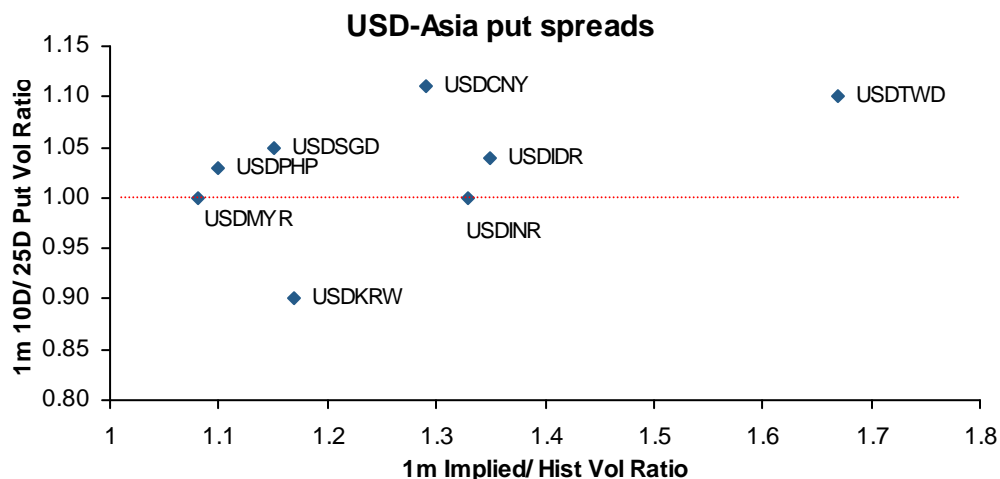


Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Spread options relative value analysis – EM

Exhibit 12: USD-Asia put spreads (Bullish Asia)

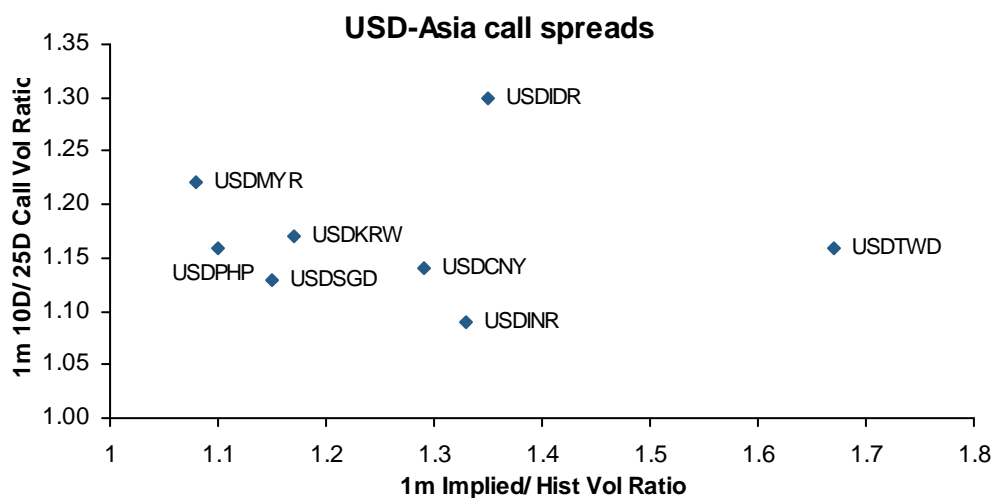
SGD: WMR fixing; KRW: KFTC30 fixing; INR: RBIB fixing; TWD, IDR, CNY, PHP and MYR are NDF fixings



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 13: USD-Asia call spreads (Bearish Asia)

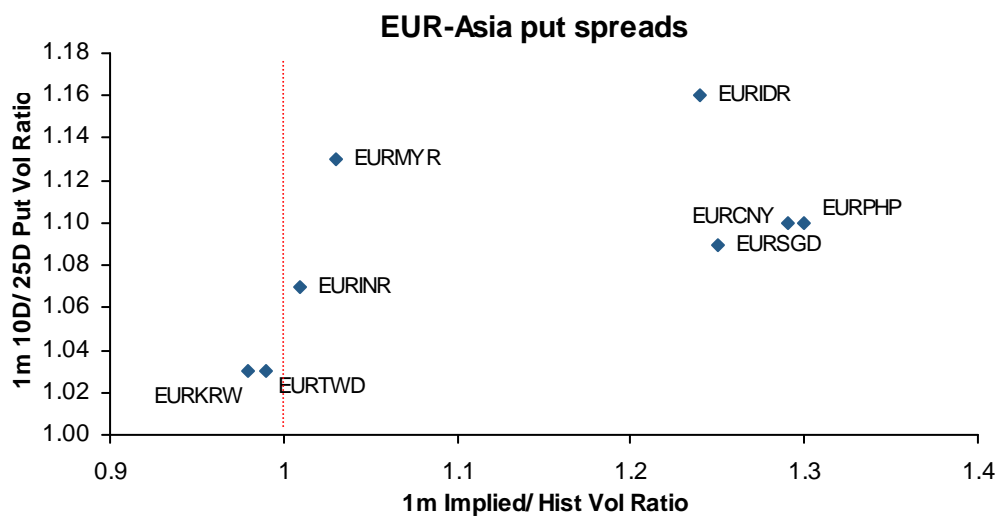
SGD: WMR fixing; KRW: KFTC30 fixing; INR: RBIB fixing; TWD, IDR, CNY, PHP and MYR are NDF fixings



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 14: EUR-Asia put spreads (Bullish Asia)

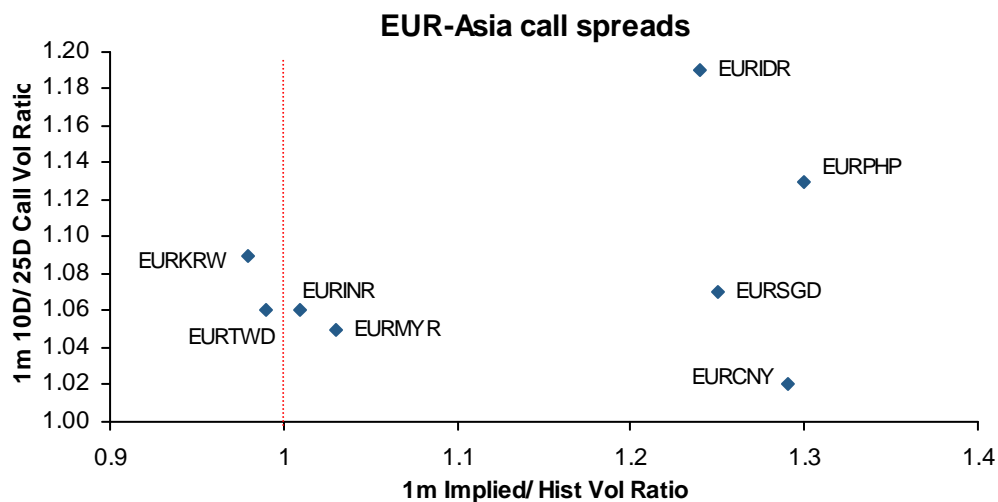
SGD: WMR fixing; KRW: KFTC30 fixing; INR: RBIB fixing; TWD, IDR, CNY, PHP and MYR are NDF fixings



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 15: EUR-Asia call spreads (Bearish Asia)

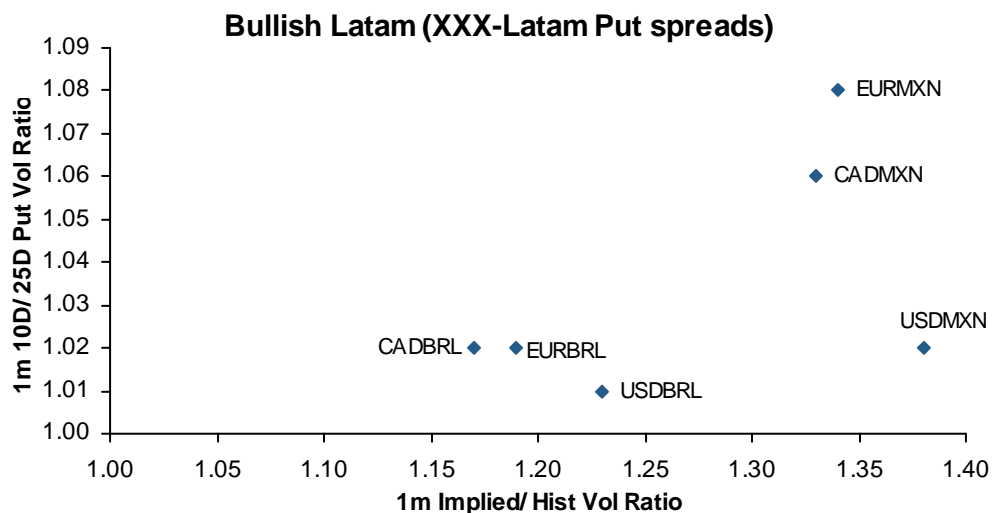
SGD: WMR fixing; KRW: KFTC30 fixing; INR: RBIB fixing; TWD, IDR, CNY, PHP and MYR are NDF fixings



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 16: XXX-Latam put spreads (Bullish Latam)

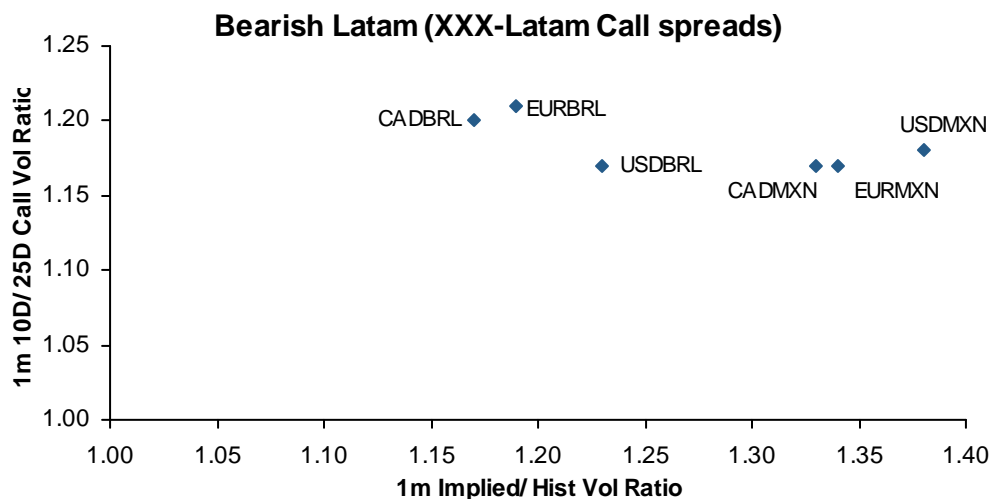
Historical Volatility calculated using daily WMR fixing



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 17: XXX-Latam call spreads (Bearish Latam)

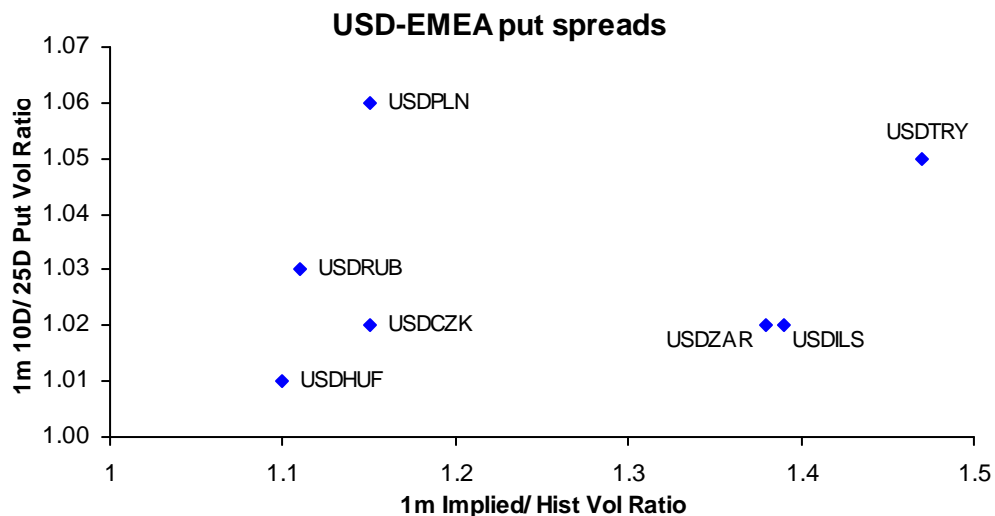
Historical Volatility calculated using daily WMR fixing



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 18: USD-EMEA put spreads (Bullish EMEA)

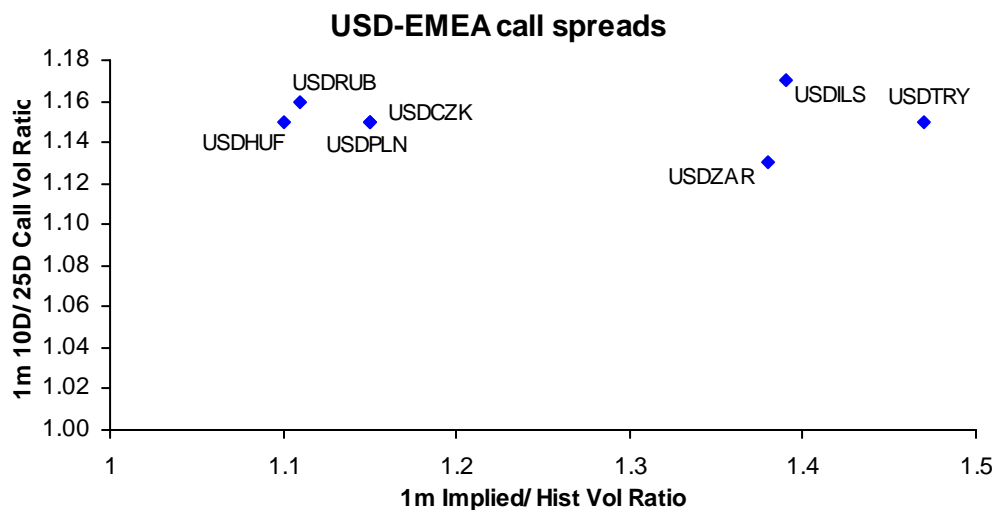
TRY: ECB37 fixing; RUB: EMTA fixing; ILS: FXIL fixing; PLN, CZK, HUF and ZAR are WMR fixings



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 19: USD-EMEA call spreads (Bearish EMEA)

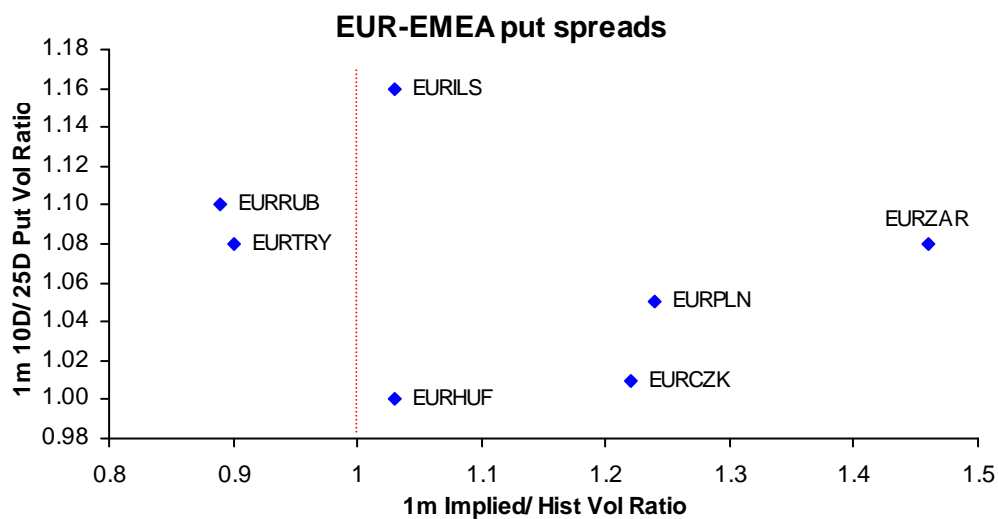
TRY: ECB37 fixing; RUB: EMTA fixing; ILS: FXIL fixing; PLN, CZK, HUF and ZAR are WMR fixings



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 20: EUR-EMEA put spreads (Bullish EMEA)

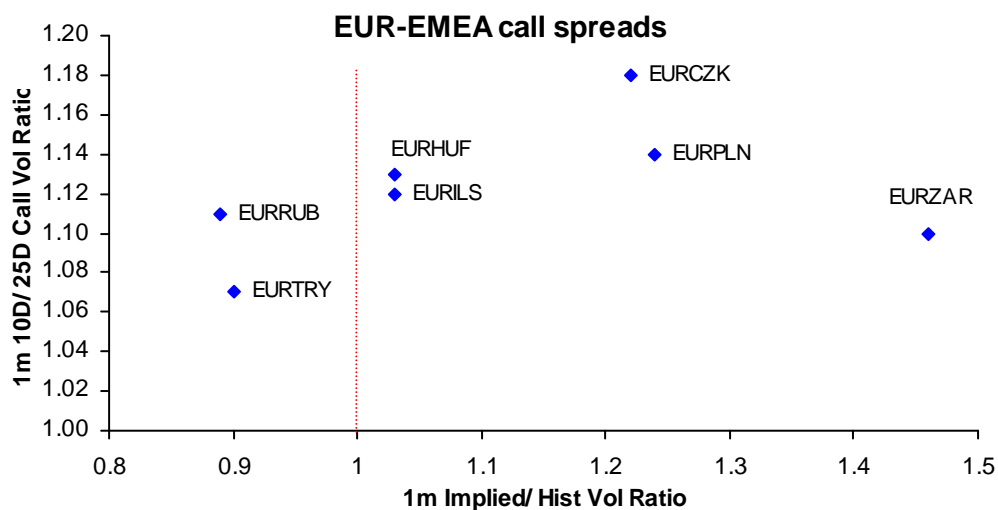
TRY: ECB37 fixing; RUB: EMTA fixing; ILS: FXIL fixing; PLN, CZK, HUF and ZAR are WMR fixings



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Exhibit 21: EUR-EMEA call spreads (Bearish EMEA)

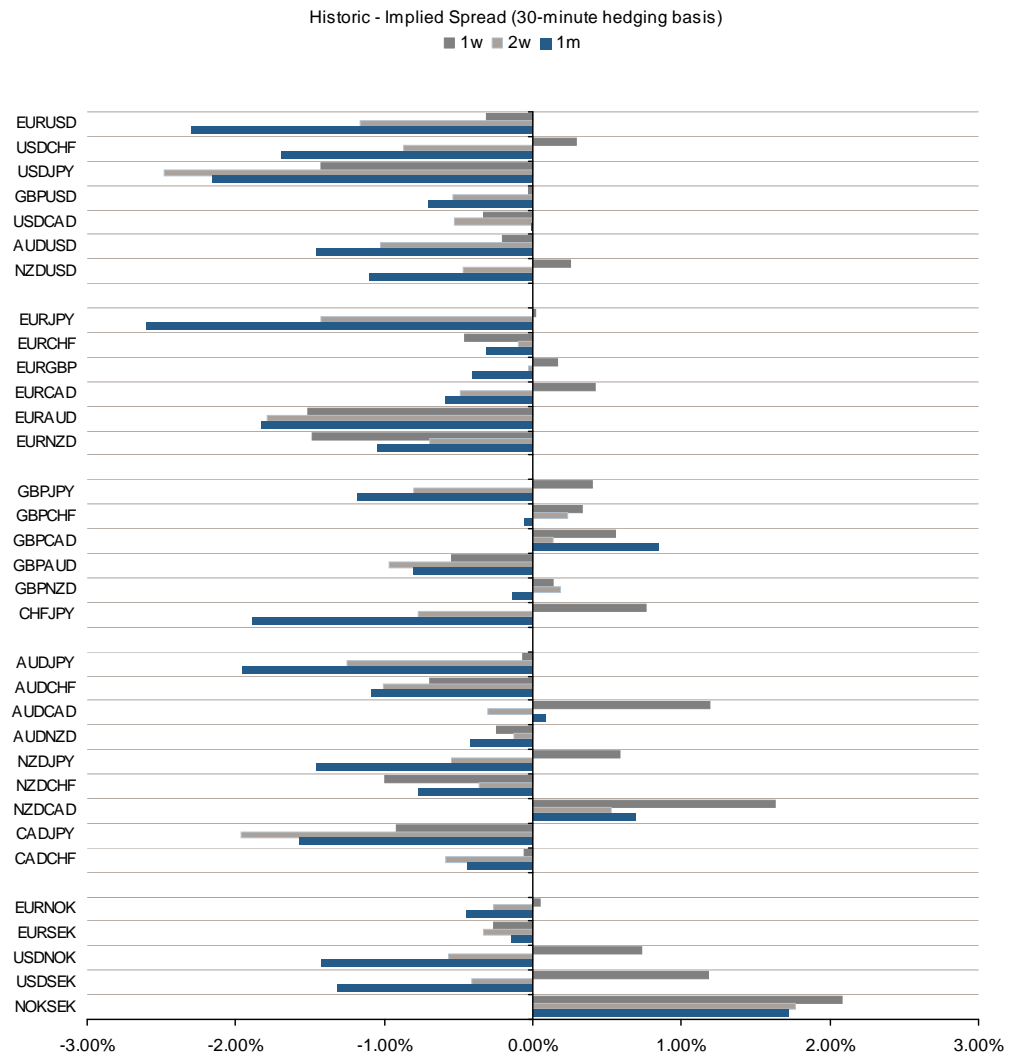
TRY: ECB37 fixing; RUB: EMTA fixing; ILS: FXIL fixing; PLN, CZK, HUF and ZAR are WMR fixings



Source: Credit Suisse Locus, the BLOOMBERG PROFESSIONAL™ service

Gamma Relative Value

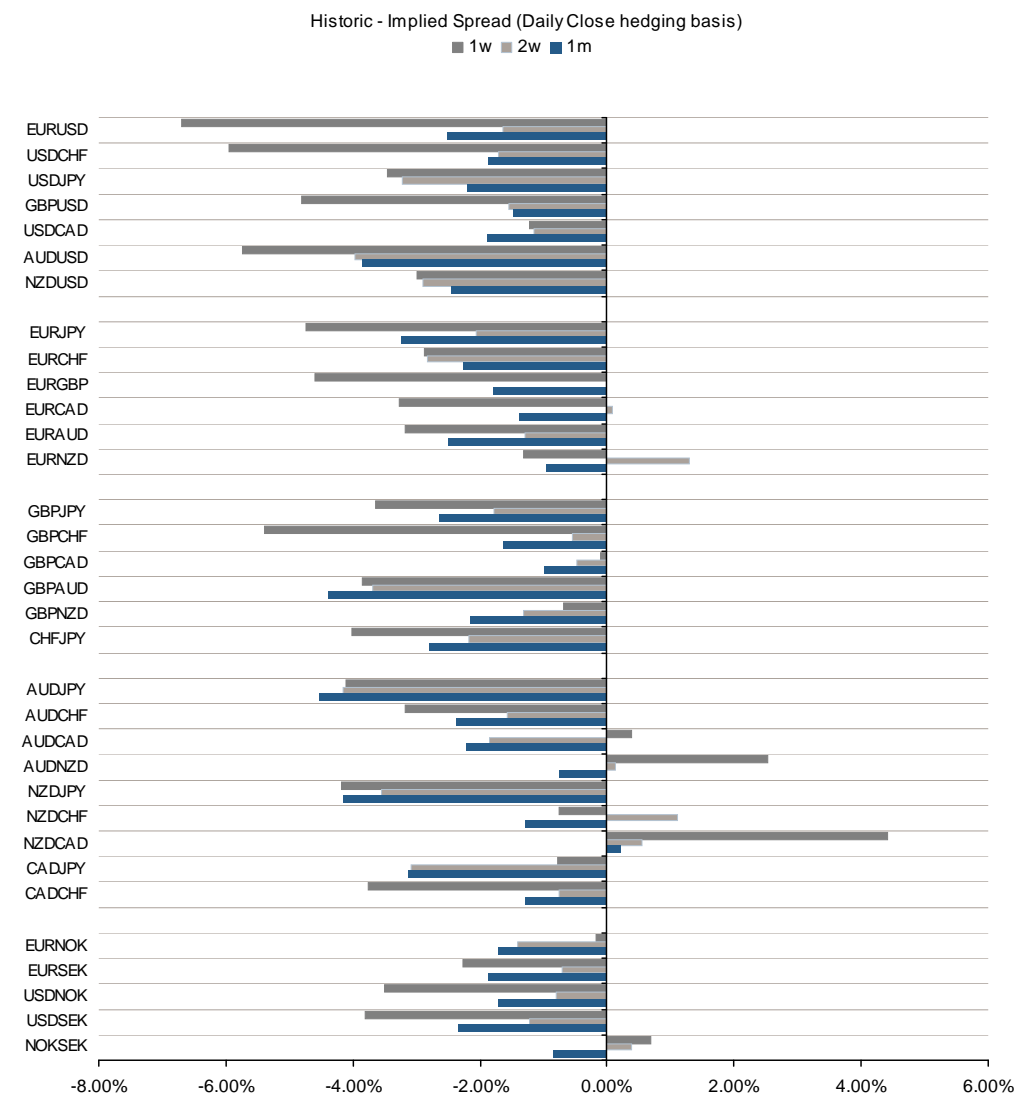
Exhibit 22: FX Gamma Tracker: 30-minute Tick-Based



Source: Credit Suisse

Exhibit 23: FX Gamma Tracker: Daily close

Based on 4pm London - Daily WMR fixes



Source: Credit Suisse

Exhibit 24: FX Gamma Tracker: Underlying data

RAW DATA - IMPLIEDS ARE NOT TRADABLE LEVELS, PLEASE CONTACT YOUR CS COVERAGE									
	<u>Historics</u>			<u>Implieds</u>					
	1w	2w	1m	1w	2w	1m			
EURUSD	10.69%	10.04%	9.20%	11.00%	11.20%	11.50%	EURUSD		
USDCHF	10.79%	10.08%	9.71%	10.50%	10.95%	11.40%	USDCHF		
USDJPY	4.37%	4.17%	4.54%	5.80%	6.65%	6.70%	USDJPY		
GBPUSD	7.47%	7.26%	7.50%	7.50%	7.80%	8.20%	GBPUSD		
USDCAD	7.17%	7.57%	8.24%	7.50%	8.10%	8.25%	USDCAD		
AUDUSD	10.19%	9.77%	9.84%	10.40%	10.80%	11.30%	AUDUSD		
NZDUSD	10.80%	10.43%	10.20%	10.55%	10.90%	11.30%	NZDUSD		
EURJPY	10.52%	9.57%	8.90%	10.50%	11.00%	11.50%	EURJPY		
EURCHF	3.54%	3.90%	4.19%	4.00%	4.00%	4.50%	EURCHF		
EURGBP	7.92%	7.62%	7.54%	7.75%	7.65%	7.95%	EURGBP		
EURCAD	8.88%	8.22%	8.40%	8.46%	8.71%	8.99%	EURCAD		
EURAUD	7.46%	7.50%	7.94%	8.97%	9.29%	9.77%	EURAUD		
EURNZD	8.03%	9.01%	8.89%	9.52%	9.70%	9.94%	EURNZD		
GBRJPY	8.40%	7.70%	7.82%	8.00%	8.50%	9.00%	GBRJPY		
GBPCHF	8.68%	8.48%	8.49%	8.35%	8.25%	8.55%	GBPCHF		
GBPCAD	7.52%	7.60%	8.57%	6.96%	7.46%	7.72%	GBPCAD		
GBPAUD	8.46%	8.35%	9.08%	9.01%	9.32%	9.88%	GBPAUD		
GBPNZD	9.11%	9.47%	9.46%	8.97%	9.28%	9.60%	GBPNZD		
CHFJPY	11.06%	10.03%	9.31%	10.30%	10.80%	11.20%	CHFJPY		
AUDJPY	10.18%	9.40%	9.30%	10.25%	10.65%	11.25%	AUDJPY		
AUDCHF	8.48%	8.58%	9.09%	9.17%	9.59%	10.17%	AUDCHF		
AUDCAD	7.73%	6.84%	7.57%	6.54%	7.14%	7.48%	AUDCAD		
AUDNZD	6.06%	6.32%	6.48%	6.30%	6.45%	6.90%	AUDNZD		
NZDJPY	10.84%	10.10%	9.79%	10.25%	10.65%	11.25%	NZDJPY		
NZDCHF	8.92%	9.79%	9.77%	9.92%	10.15%	10.54%	NZDCHF		
NZDCAD	8.62%	8.10%	8.41%	6.99%	7.57%	7.72%	NZDCAD		
CADJPY	7.85%	7.72%	8.30%	8.77%	9.68%	9.87%	CADJPY		
CADCHF	8.95%	8.72%	9.25%	9.01%	9.31%	9.69%	CADCHF		
EURNOK	5.80%	5.54%	5.75%	5.75%	5.80%	6.20%	EURNOK		
EURSEK	6.24%	6.27%	6.75%	6.50%	6.60%	6.90%	EURSEK		
USDNOK	12.23%	11.33%	10.92%	11.50%	11.90%	12.35%	USDNOK		
USDSEK	12.93%	11.94%	11.68%	11.75%	12.35%	13.00%	USDSEK		
NOKSEK	6.98%	6.72%	7.07%	4.90%	4.95%	5.35%	NOKSEK		

Source: Credit Suisse

Recent trade recommendations

Bullish EM versus the EUR

- [Three-month EURTRY digital puts](#), January 17
- [One-month EURHUF 1x2 put spreads](#), January 19
- [Three-month EURINR 1x1.5 RKI put spreads](#), January 19

Tactically bearish EM vol

- [Three-month USDKRW 1x2x1 put butterfly](#), January 12

Bearish EUR

- [Three-month EURUSD put, USDSGD put, USDJPY put worst-of](#), January 12

Bullish USD versus the CHF

- [Three month USDCHF seagulls](#), November 30

EURCHF floor to remain unchanged

- [Sell three-month EURCHF vol swap](#), November 28

Flatteners in USDJPY vol curve

- [Sell 1yr in 1yr USDJPY FVA](#), December 13

Bearish SEK

- [Three-month GBPSEK 1x1.5 call spread](#), January 10

Bearish CHFJPY

- [Three-month CHFJPY put butterflies](#), January 3

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Disclosure Appendix

Analyst Certification

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For the history of recommendations provided by Technical Analysis, please visit the website at <http://www.credit-suisse.com/techanalysis>.

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Emerging Markets Bond Recommendation Definitions

Buy: Indicates a recommended buy on our expectation that the issue will deliver a return higher than the risk-free rate.

Sell: Indicates a recommended sell on our expectation that the issue will deliver a return lower than the risk-free rate.

Corporate Bond Fundamental Recommendation Definitions

Buy: Indicates a recommended buy on our expectation that the issue will be a top performer in its sector.

Outperform: Indicates an above-average total return performer within its sector. Bonds in this category have stable or improving credit profiles and are undervalued, or they may be weaker credits that, we believe, are cheap relative to the sector and are expected to outperform on a total-return basis. These bonds may possess price risk in a volatile environment.

Market Perform: Indicates a bond that is expected to return average performance in its sector.

Underperform: Indicates a below-average total-return performer within its sector. Bonds in this category have weak or worsening credit trends, or they may be stable credits that, we believe, are overvalued or rich relative to the sector.

Sell: Indicates a recommended sell on the expectation that the issue will be among the poor performers in its sector.

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