

FX vol trading screeners

Weekly RV signals – week of 16 October

A few relevant trading signals for FX vols this week:

- CAD, AUD, PLN, NZD, ZAR vs. USD vols are a buy from a beta-to-vol angle; RUB, CNH, TRY, KRW, JPY are a sell (Figure 4).
- MXN, KRW and BRL are the three flattest USD-vol curves (1y-6m) from a 2-yr z-score (Figure 9) perspective; SEK, ZAR and RUB are the steepest. The analysis linking the shape of FX vol curves to the spot vs. rates differential correlation dynamics (Figure 11, 12) finds that most vol curves are now generally too steep for tenors longer than 6M (JPY, CHF, MXN are the exceptions), leaving the door open for select short FVA trades.
- Within USD/G10, based on the underlying rates vols/correlations (Figures 13, 14), NOK, SEK vols are rich by 2.6, 2.2 vols and CAD, EUR vols are cheap by 1.8, 1.3 vols, respectively. 1y G10 FX USD vols screen as cheap by 2.2 vols (2.0 sigma, Figure 18) relative to rates drivers, as the latter's vols extend their latest drop. Average USD/G10 rates correlation (56% on average) is near the past month's highs (Figure 16); all else being equal, higher rates correlation supports lower FX vol fair values.
- The sharp drop of USD realised correlations is now generally pointing to a premium for selling USD correlation against G10 currencies, and is adding pressure on USD implied corrs to fall as well, although this dynamic is mostly the result of the early August joint sell-off of risk and USD. CAD/NOK, NOK/JPY now show the widest premia coupled with the highest z-scores in implied correlations, offering good sell opportunities. CHF/SEK, AUD/NZD corrs via USD among others offer room to buy (Figure 20). Proxies of average USD implied and especially realised correlations have both come off sharply in recent weeks (Figure 21), due to the repricing higher of JPY and JPY-x vols, with the JPY regaining the status of main pivot currency driving FX moves.
- FX Vols are flat on average over the past week, as per the VXY G7 Index, as there are no new major developments on the geo-political front and 1M tenors are now well within the US election date. On the Gamma segment (Figures 23, 24), higher vols throughout the summer generally point to a wider vol premium for USD/G10 and especially USD/EM pairs. The realisation of 3M skew (from a spot/vol correlation standpoint, not accounting for vol-of-vol and vol corrections) is now more visible than a few weeks back across USD/G10 and USD/EM pairs (Figures 25, 26), thanks to tighter entry points. USD/CAD, USD/SEK, NZD/USD, Precious metals, USD/RUB, USD/TRY (the latter two are both illiquid), USD/PLN, USD/SGD, USD/CNH, USD/IDR are displaying some skew premium based on the above. G10, EM implied vol of vols adjusted higher since the start of the summer, and no longer remain dramatically undervalued relative to long-term averages, after the summer volatility triggered a repricing higher. Implied-realised premia (Figures 27, 28), remain wide on even lower realised vol of vol, putting aside MXN and INR.
- The sentiment model for Gamma trading adds very modestly to FX short-Gamma exposure, having reached the maximum reduction of risk on 5th

Global Quantitative and Derivatives Strategy

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August, as the latest (as of 14th October at day close) average signals are at 88% and 95% of the max Vega budget for USD-vols and EUR-vols (Figures 31, 37). 50% is the threshold at which the long/short version of the model would start taking long-Gamma trades. Among the global variables monitored, none is currently recommending to scale-down risk (Figure 32). The sole deviations from a full short-Gamma allocation are now GBP/USD, NZD/USD, USD/CNH, USD/SGD (signal at 79%) (Figures 29, 35). PnL time series and portfolios statistics show the recent and long-term effectiveness of the filtering approach as applied to USD and EUR vol portfolios (Figures 33, 34, 39, 40) – filtering reduced the recent summer drawdown relative to the short-Gamma benchmark.

- The mean-reversion model signals for 1y ATM vols (Figures 47, 48) favour selling JPY vol vs. EUR, GBP, CHF, CAD, NOK, SEK, AUD, NZD vols; buying CAD vol vs. CHF vol; buying AUD vs. NZD vols; selling MXN, SGD, CNH vols vs. ZAR, PLN, RUB, KRW vols; buying HUF vs. BRL vols. The Vol compression indicator (Figure 45), which measures an average level of dislocation within the FX vol space, is gradually approaching the highest level of the past two years, after having marked the end of the high dislocations regime, following the start of the Ukraine-Russia war, in Q3 2023.
- Page 12 focuses on RV opportunities in the FX vol convexity space (as expressed by 1y fly/ATM vol ratios). Tactically, vol convexity is cheapest on MXN, BRL, RUB and richest on AUD, NZD, GBP (Figure 49). Long-term historical distributions (Figure 53) are now finding G10, EM vol convexity better aligned with historical averages than over the past few months, when they were significantly depressed. Fly-to-vol ratios are now significantly above the early June levels, especially on G10 currencies. Vol convexity remains outright cheap in MXN, BRL, KRW, ZAR, CNH, JPY – all at or below the 7% bottom percentile of their historical distribution. Long-dated convexity offers a better time-decay profile for hedging purposes than short-dated one.

FX betas vs. vol, carry and skew

Figure 1: Beta over vol space for G10 currencies

	Betas						
G10	SPX	USD TWI	VIX	VXYG7	Mean Beta	1y Vol	Beta/Vol
EUR	0.05%	0.37%	0.03%	0.07%	0.13%	6.4%	2.02%
JPY	0.18%	0.18%	0.16%	0.16%	0.17%	10.2%	1.66%
GBP	0.09%	0.30%	0.06%	0.10%	0.14%	7.5%	1.86%
AUD	0.32%	0.43%	0.24%	0.23%	0.31%	9.6%	3.21%
NZD	0.28%	0.41%	0.21%	0.19%	0.27%	9.8%	2.79%
CAD	0.23%	0.30%	0.19%	0.14%	0.21%	5.2%	4.13%
CHF	0.06%	0.33%	0.06%	0.03%	0.12%	7.2%	1.67%
NOK	0.20%	0.47%	0.16%	0.18%	0.25%	11.7%	2.15%
SEK	0.19%	0.44%	0.13%	0.15%	0.23%	10.6%	2.13%

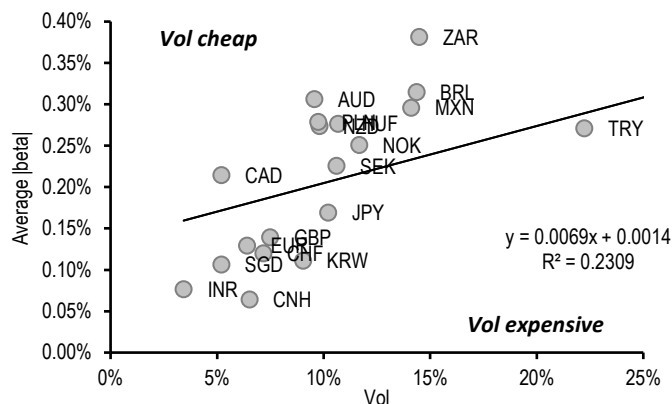
Source: J.P. Morgan.

Figure 2: Beta over vol space for EM currencies

	Betas						
EM	SPX	USD TWI	VIX	VXYG7	Mean Beta	1y Vol	Beta/Vol
BRL	0.37%	0.35%	0.31%	0.23%	0.31%	14.4%	2.19%
MXN	0.35%	0.30%	0.30%	0.24%	0.30%	14.1%	2.10%
TRY	0.26%	0.35%	0.23%	0.24%	0.27%	22.2%	1.22%
ZAR	0.39%	0.49%	0.34%	0.30%	0.38%	14.5%	2.63%
HUF	0.22%	0.51%	0.18%	0.20%	0.28%	10.7%	2.59%
PLN	0.25%	0.48%	0.19%	0.21%	0.28%	9.7%	2.86%
RUB	0.21%	0.27%	0.22%	0.18%	0.22%	31.0%	0.71%
KRW	0.07%	0.23%	0.06%	0.09%	0.11%	9.0%	1.23%
SGD	0.09%	0.20%	0.07%	0.07%	0.11%	5.2%	2.05%
CNH	0.05%	0.12%	0.04%	0.04%	0.06%	6.5%	0.98%
INR	0.06%	0.13%	0.05%	0.07%	0.08%	3.4%	2.23%

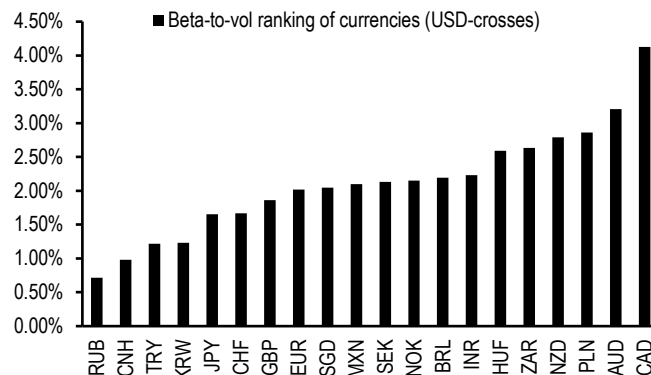
Source: J.P. Morgan.

Figure 3: Relationship between vol levels (1y ATM) and



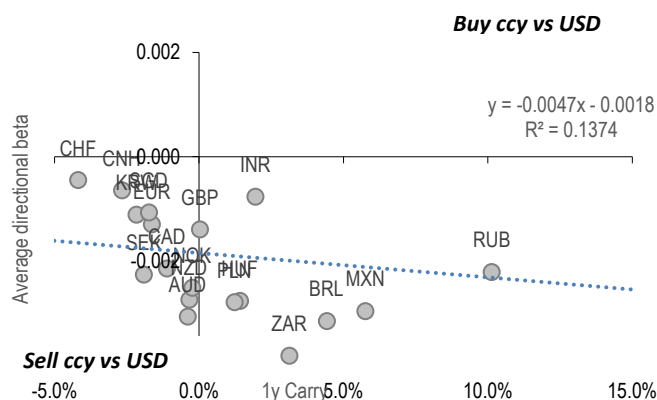
Source: J.P. Morgan.

Figure 4: Average |betas| across a set of USD-crosses



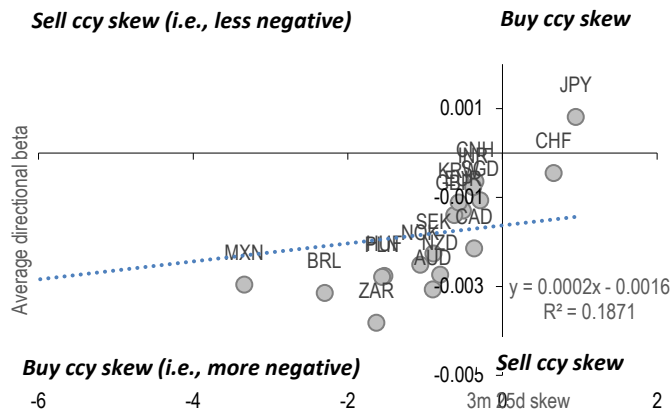
Source: J.P. Morgan.

Figure 5: Market betas vs. implied carry (from 3m FWD)



Source: J.P. Morgan.

Figure 6: Market betas vs. skew (3m 25delta risk-reversal)



Source: J.P. Morgan.

Find more details [here](#) and [here](#)

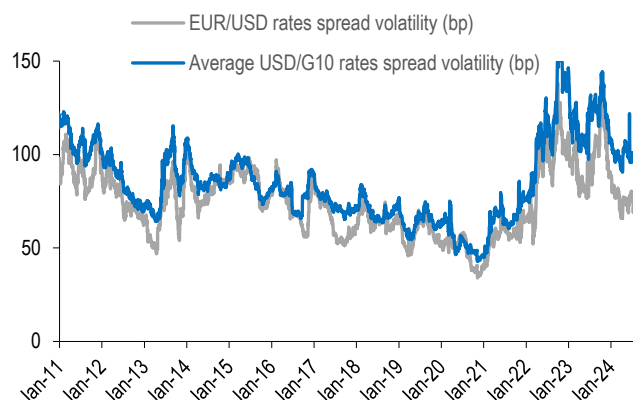
USD/G10 vols vs rates vols/correls

Figure 13: Summary of FX vs rates regression per currency

ccy	Rates vol	Correl	Spread vol	1y FX vol (market)	1y FX vol (model)
USD	107.8				
EUR	78.1	74.2%	72.3	6.4	7.7
JPY	42.2	33.5%	101.8	10.2	9.3
GBP	102.0	73.1%	77.2	7.5	8.0
CHF	78.0	57.1%	90.0	7.2	8.6
CAD	78.7	84.4%	59.1	5.2	7.0
AUD	90.5	63.5%	86.1	9.6	8.4
NZD	110.3	9.5%	146.7	9.8	11.6
NOK	73.9	45.8%	98.9	11.7	9.1
SEK	74.9	60.8%	86.1	10.6	8.4

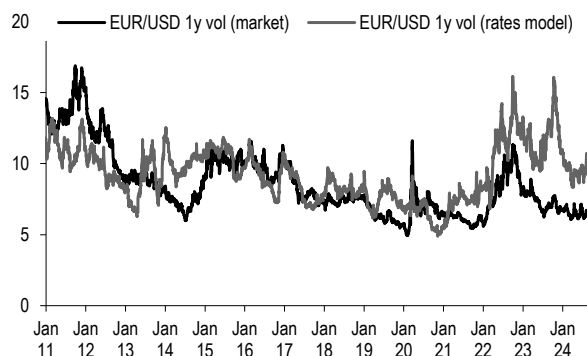
Source: J.P. Morgan.

Figure 15: EUR/USD and average USD/G10 rates spreads volatility



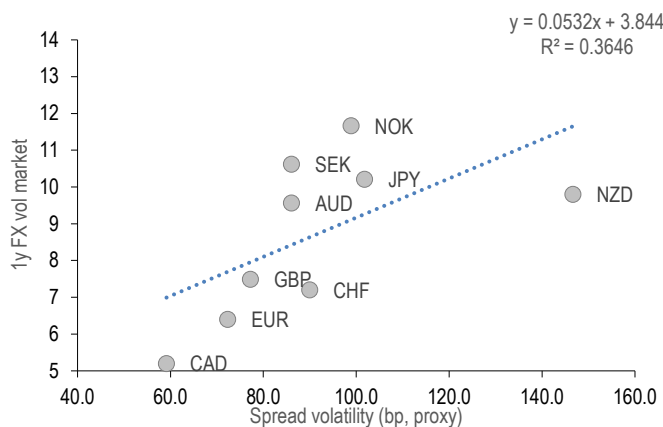
Source: J.P. Morgan.

Figure 17: Market vs rates time series models for EUR/USD...



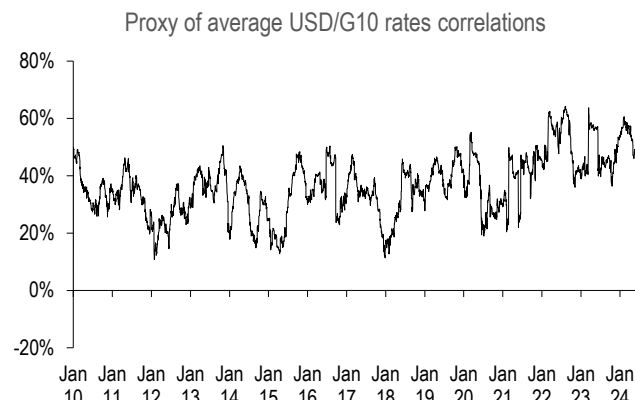
Source: J.P. Morgan.

Figure 14: 1y FX vols vs. swaptions – scatter plot



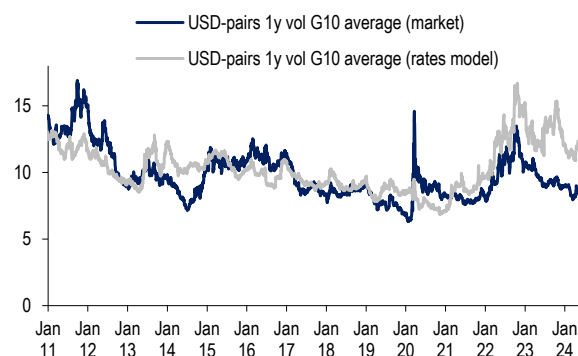
Source: J.P. Morgan.

Figure 16: Average USD/G10 rates correlation



Source: J.P. Morgan.

Figure 18: ...and average G10 FX vol (USD-pairs)



Source: J.P. Morgan.

Find more details [here](#) and [here](#)

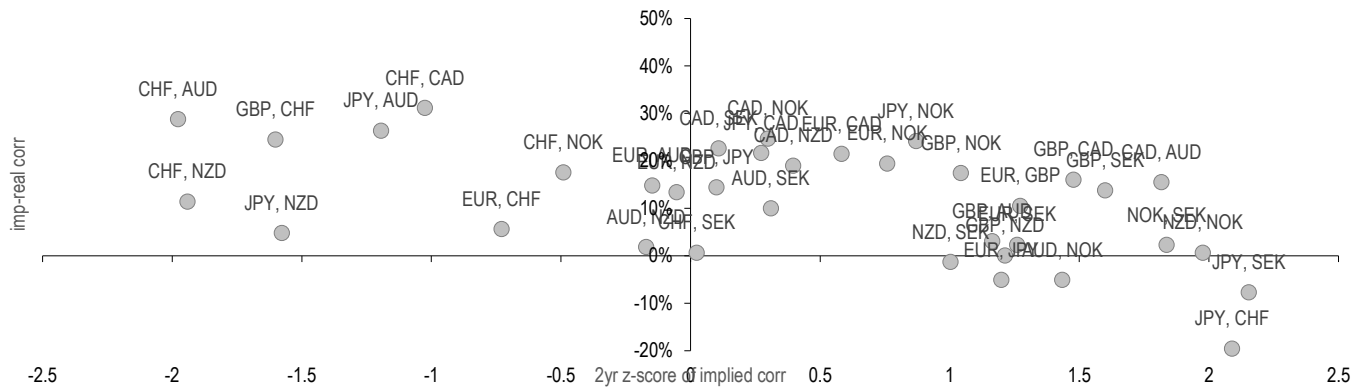
FX Correlations – Spot and Vol and Implied vs. Realised

Figure 19: FX spot (above diagonal) and vol (below diagonal) 6M correlations, USD-crosses

	EURUSD	USDJPY	GBPUSD	AUDUSD	NZDUSD	USDCAD	USDCHE	USDNOK	USDSEK	USDBRL	USDMXN	USDTRY	USDZAR	USDHUF	USDPLN	USD RUB	USDKRW	USDSGD	USDCNH
EURUSD	100%	-54%	77%	64%	62%	-51%	-61%	-65%	-80%	-28%	-8%	-12%	-33%	-83%	-88%	-17%	-47%	-84%	-53%
USDJPY	45%	100%	-36%	-25%	-39%	21%	77%	29%	48%	8%	-11%	2%	13%	36%	37%	3%	47%	74%	59%
GBPUSD	74%	51%	100%	71%	70%	-53%	-38%	-60%	-67%	-29%	-16%	-16%	-38%	-68%	-70%	-11%	-41%	-71%	-44%
AUDUSD	57%	67%	67%	100%	85%	-71%	-34%	-77%	-71%	-41%	-25%	-21%	-49%	-55%	-60%	-7%	-39%	-67%	-36%
NZDUSD	53%	62%	64%	95%	100%	-61%	-45%	-77%	-75%	-33%	-18%	-14%	-40%	-51%	-56%	-3%	-45%	-71%	-45%
USDCAD	47%	56%	55%	61%	61%	100%	27%	62%	60%	40%	32%	6%	35%	46%	51%	-2%	21%	51%	26%
USDCHE	72%	68%	76%	72%	67%	61%	100%	43%	60%	9%	-19%	-9%	19%	37%	42%	13%	39%	70%	60%
USDNOK	81%	47%	70%	62%	58%	43%	75%	100%	80%	34%	26%	11%	45%	55%	58%	9%	38%	65%	37%
USDSEK	81%	57%	80%	70%	66%	51%	83%	89%	100%	24%	11%	13%	38%	68%	69%	14%	46%	78%	53%
USDBRL	19%	22%	24%	36%	37%	34%	32%	24%	28%	100%	40%	0%	25%	26%	30%	-1%	27%	31%	20%
USDMXN	14%	24%	26%	39%	33%	36%	32%	16%	23%	41%	100%	14%	14%	20%	21%	1%	9%	8%	-5%
USDTRY	27%	16%	18%	20%	18%	20%	24%	32%	28%	17%	16%	100%	7%	21%	23%	16%	9%	10%	-4%
USDZAR	32%	41%	43%	53%	50%	35%	50%	40%	51%	33%	22%	20%	100%	24%	31%	16%	39%	42%	29%
USDHUF	80%	45%	72%	58%	53%	37%	66%	76%	78%	23%	25%	27%	34%	100%	85%	6%	35%	66%	43%
USDPLN	85%	47%	78%	63%	59%	45%	75%	81%	83%	26%	27%	34%	40%	87%	100%	15%	37%	71%	49%
USD RUB	3%	21%	4%	15%	12%	29%	6%	8%	9%	11%	0%	7%	17%	5%	6%	100%	11%	12%	8%
USDKRW	40%	38%	46%	49%	49%	42%	52%	41%	49%	26%	22%	27%	46%	42%	46%	12%	100%	66%	52%
USDSGD	47%	51%	60%	60%	56%	50%	64%	51%	62%	17%	14%	22%	42%	54%	60%	10%	59%	100%	78%
USDCNH	37%	47%	44%	59%	55%	34%	54%	38%	45%	14%	21%	12%	36%	42%	40%	-2%	41%	59%	100%

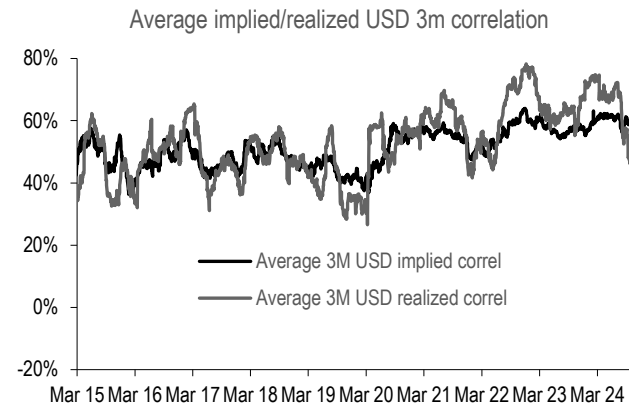
Source: J.P. Morgan.

Figure 20: Corr premium (implied-realised) and 2yr z-score on 3M USD correlations



Source: J.P. Morgan.

Figure 21: Implied and realised 3M average USD/G10 correl



Source: J.P. Morgan.

Figure 22: RV between sign of correl and of skews

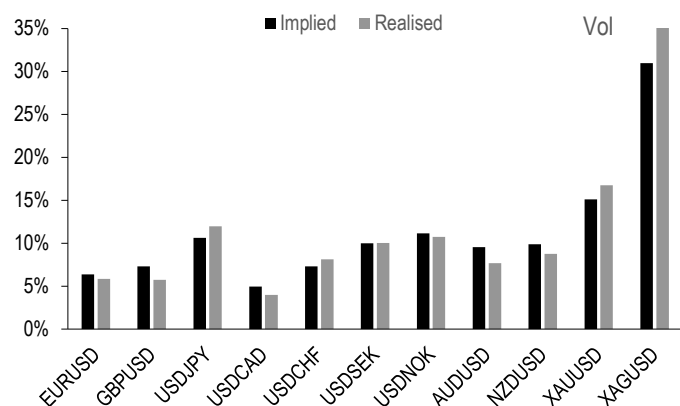
	EUR	GBP	JPY	CHF	CAD	AUD	NZD	NOK	SEK
EUR			RV	RV					
GBP			RV	RV					
JPY	RV	RV			RV	RV	RV	RV	RV
CHF	RV	RV			RV	RV	RV	RV	RV
CAD			RV	RV					
AUD			RV	RV					
NZD			RV	RV					
NOK			RV	RV					
SEK			RV	RV					

Source: J.P. Morgan.

Find more details on the RV between implied correlation and skew [here](#)

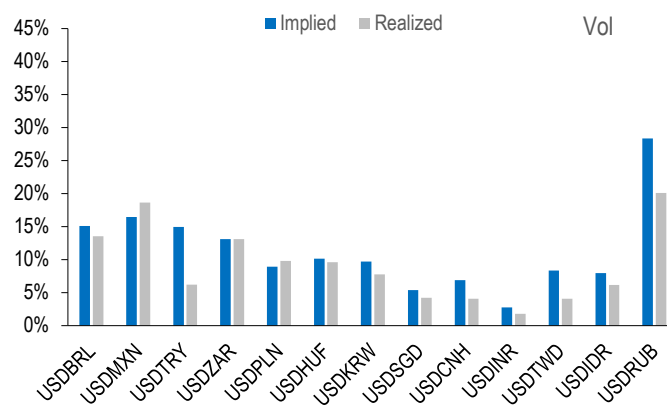
Implied vs. realised smile parameters (3M, G10,EM vs USD)

Figure 23: Implied vs realised vol (USD/G10)



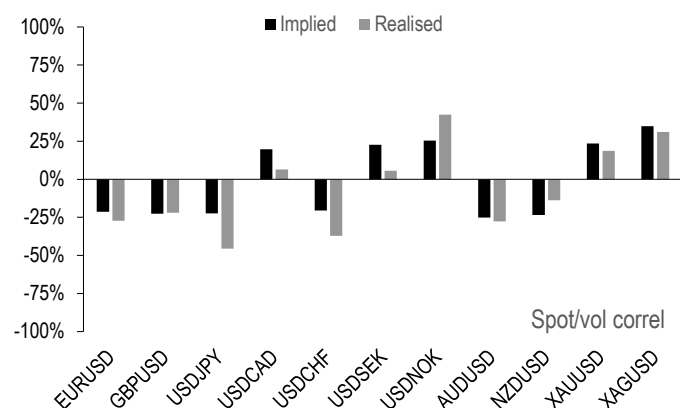
Source: J.P. Morgan.

Figure 24: Implied vs realised vol (USD/EM)



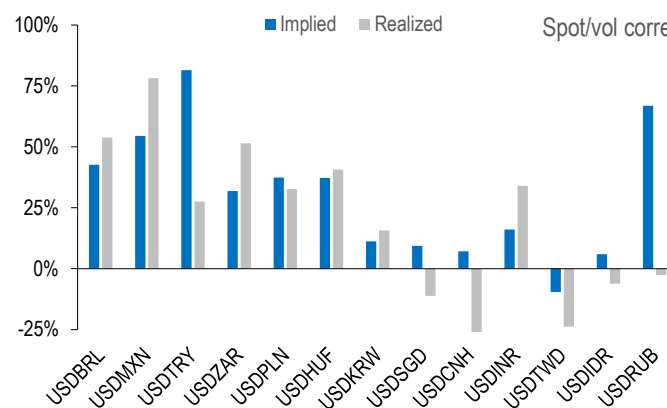
Source: J.P. Morgan.

Figure 25: Implied vs realised spot/vol correlation (USD/G10)



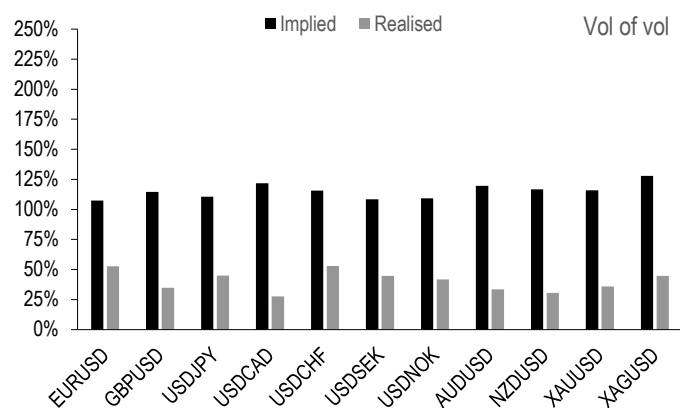
Source: J.P. Morgan.

Figure 26: Implied vs realised spot/vol correlation (USD/EM)



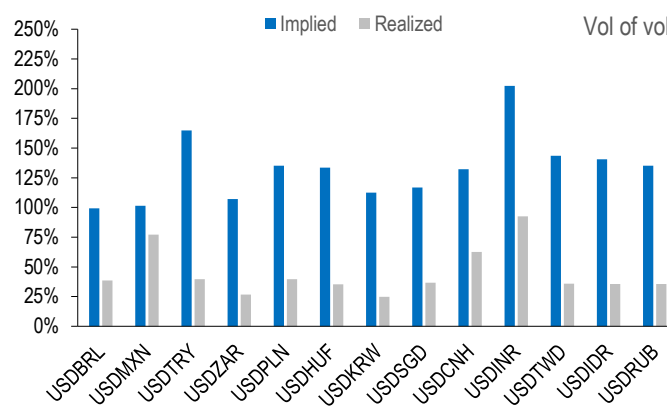
Source: J.P. Morgan.

Figure 27: Implied vs realised vol of vol (G10/EM USD-crosses)



Source: J.P. Morgan.

Figure 28: Implied vs realised vol of vol (G10/EM USD-crosses)



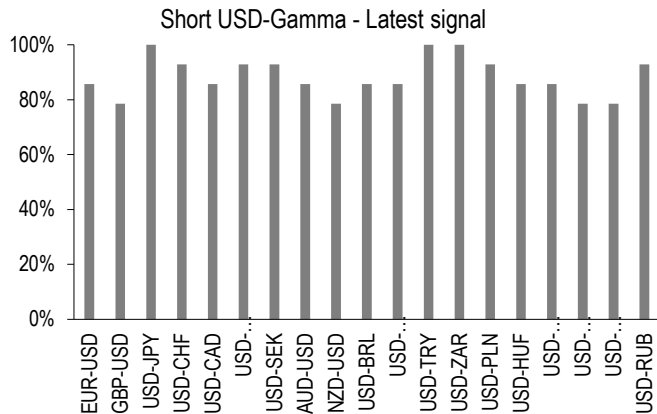
Source: J.P. Morgan.

Here you can find more details on [vol-of-vol](#) and [skew](#) premia.

Filters for USD short-Gamma trades (1M, 25d strangles)

Figure 29: Latest signals for short USD-Gamma

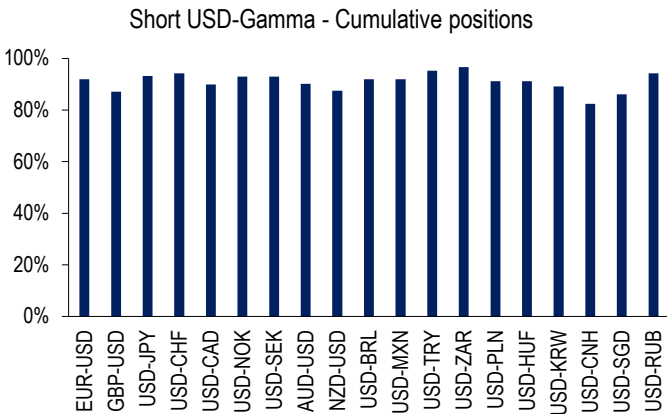
Fraction of the max allocation to short-vol



Source: J.P. Morgan.

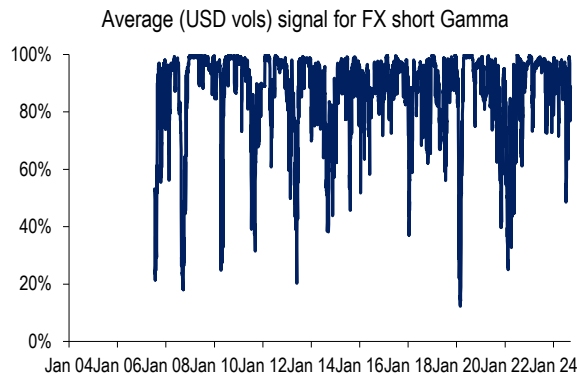
Figure 30: Cumulated positions for short USD-Gamma

Fraction of the max allocation to short-vol



Source: J.P. Morgan.

Figure 31: Latest signals – time series of the average



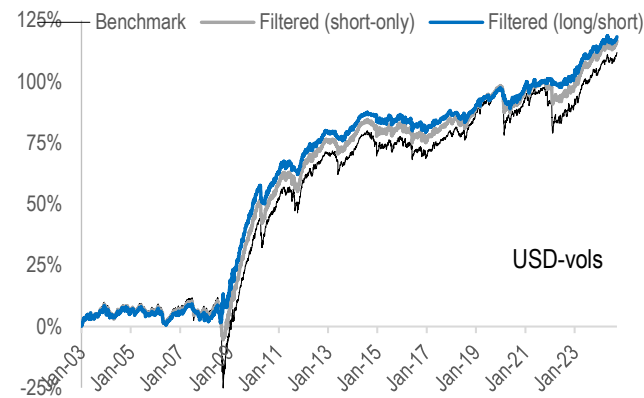
Source: J.P. Morgan.

Figure 32: Global risk-factors – current activation

	Jul Spread	FX Vol	US swaptions	Gold To Silver	VIX
z-score	-1.92	0.66	-0.16	0.39	1.19
Filter activated	NO	NO	NO	NO	NO

Source: J.P. Morgan.

Figure 33: USD short-Gamma portfolios – time series



Source: J.P. Morgan.

Figure 34: USD short-Gamma portfolios – statistics

Strategy	Return	Vol	Sharpe	Max DD
Benchmark	5.0%	7.6%	0.66	-37.1%
Short-only	5.2%	5.6%	0.92	-16.0%
Long/short	5.3%	5.0%	1.05	-8.6%

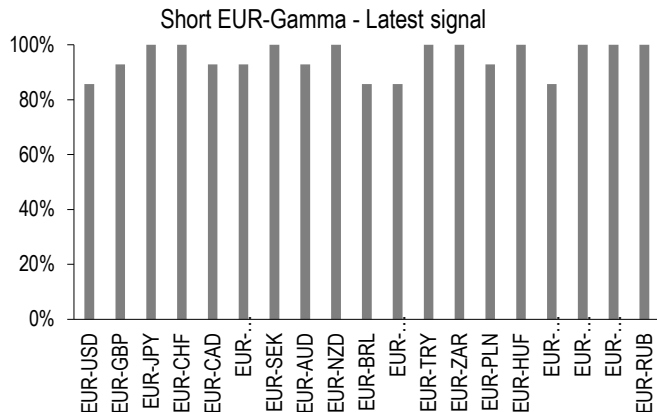
Source: J.P. Morgan.

Find more details in this [note](#) and related [follow-up](#)

Filters for EUR short-Gamma trades (1M, 25d strangles)

Figure 35: Latest signals for short EUR-Gamma

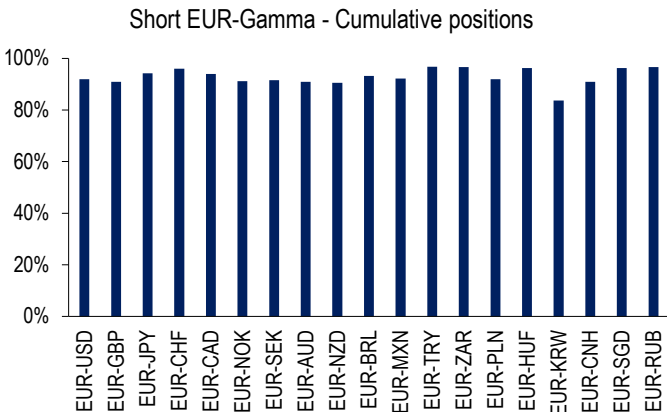
Fraction of the max allocation to short-vol



Source: J.P. Morgan.

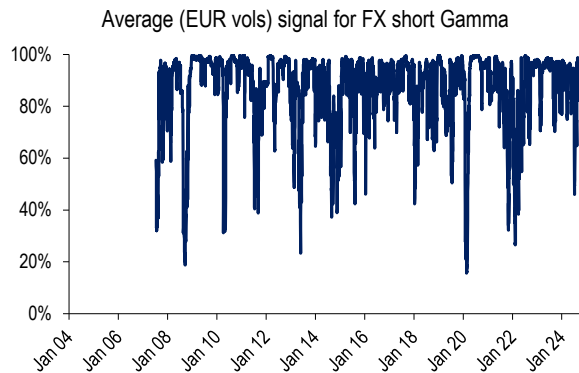
Figure 36: Cumulated positions for short EUR-Gamma

Fraction of the max allocation to short-vol



Source: J.P. Morgan.

Figure 37: Latest signals – time series of the average



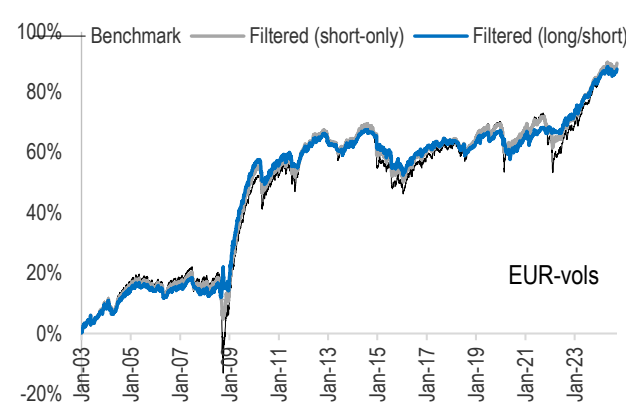
Source: J.P. Morgan.

Figure 38: Global risk factors – current activation

	Juli Spread	FX Vol	US swaptions	Gold To Silver	VIX
z-score	-1.92	0.66	-0.16	0.39	1.19
Filter activated	NO	NO	NO	NO	NO

Source: J.P. Morgan.

Figure 39: EUR short-Gamma portfolios – time series



Source: J.P. Morgan.

Figure 40: EUR short-Gamma portfolios – statistics

Strategy	Return	Vol	Sharpe	Max DD
Benchmark	3.9%	6.7%	0.59	-35.2%
Short-only	4.0%	4.8%	0.83	-19.3%
Long/short	3.9%	4.2%	0.94	-15.1%

Source: J.P. Morgan.

Find more details in this [note](#) and related [follow-up](#)

FX Vol Mean reversion (I) – Current dislocations and half-lives

Figure 41: 1y ATM vols 2yr z-scores

Off-diagonal spreads are long row vol / short column vol, diagonal ones long row vol

z-scores	EUR-USD	GBP-USD	USD-JPY	USD-CHF	USD-CAD	USD-NOK	USD-SEK	AUD-USD	NZD-USD
EUR-USD	-0.93	0.37	-2.18	-1.13	1.32	-0.14	-0.60	0.36	0.13
GBP-USD	-0.37	-0.80	-1.76	-0.78	0.42	-0.47	-0.85	-0.08	-0.40
USD-JPY	2.18	1.76	0.54	1.85	2.63	1.64	1.88	1.98	1.93
USD-CHF	1.13	0.78	-1.85	-0.65	1.71	0.55	0.30	0.86	0.72
USD-CAD	-1.32	-0.42	-2.63	-1.71	-1.35	-0.84	-1.28	-0.49	-0.75
USD-NOK	0.14	0.47	-1.64	-0.55	0.84	-0.69	-0.28	0.48	0.26
USD-SEK	0.60	0.85	-1.88	-0.30	1.28	0.28	-0.57	0.96	0.75
AUD-USD	-0.36	0.08	-1.98	-0.86	0.49	-0.48	-0.96	-0.81	-1.65
NZD-USD	-0.13	0.40	-1.93	-0.72	0.75	-0.26	-0.75	1.65	-0.74

Source: J.P. Morgan.

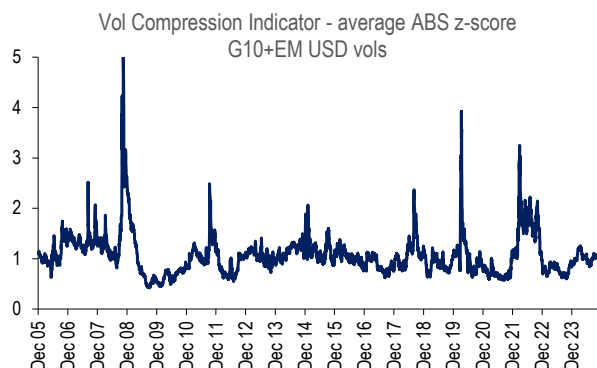
Figure 43: Half-lives for the vols/vol spreads – 1y ATM vols

Half-lives	EUR-USD	GBP-USD	USD-JPY	USD-CHF	USD-CAD	USD-NOK	USD-SEK	AUD-USD	NZD-USD
EUR-USD	301.6	177.0	92.3	141.2	83.9	246.4	401.9	59.4	46.8
GBP-USD	177.0	217.9	85.4	177.3	89.2	103.7	148.7	67.1	77.6
USD-JPY	92.3	85.4	155.4	87.0	96.0	86.5	79.5	90.0	76.6
USD-CHF	141.2	177.3	87.0	211.8	103.8	222.6	293.2	85.9	61.5
USD-CAD	83.9	89.2	96.0	103.8	342.6	105.3	101.7	53.1	28.9
USD-NOK	246.4	103.7	86.5	222.6	105.3	208.9	106.5	34.3	55.2
USD-SEK	401.9	148.7	79.5	293.2	101.7	106.5	286.3	34.8	43.3
AUD-USD	59.4	67.1	90.0	85.9	53.1	34.3	34.8	207.1	80.0
NZD-USD	46.8	77.6	76.6	61.5	28.9	55.2	43.3	80.0	202.2

Source: J.P. Morgan.

Figure 45: Vol Compression Indicator

Average abs of z-score of diagonal + off-diagonal G10+EM USD vol spreads



Source: J.P. Morgan.

Figure 42: 1y ATM vols 2yr z-scores

Off-diagonal spreads are long row vol / short column vol, diagonal ones long row vol

z-scores	USD-BRL	USD-MXN	USD-TRY	USD-ZAR	USD-PLN	USD-HUF	USD-RUB	USD-SGD	USD-KRW	USD-CNH
USD-BRL	-0.22	-0.91	0.92	0.19	0.90	1.89	0.67	-0.45	0.03	-0.54
USD-MXN	0.91	1.71	1.06	1.90	1.83	1.37	1.87	1.29	1.72	1.10
USD-TRY	-0.92	-1.06	-0.86	-0.79	-0.72	-0.57	-0.72	-0.93	-0.86	-0.95
USD-ZAR	-0.19	-1.90	0.79	-1.21	0.74	0.84	0.93	-2.24	-0.52	-1.96
USD-PLN	-0.90	-1.83	0.72	-0.74	-1.09	0.80	0.17	-1.84	-1.44	-1.91
USD-HUF	-1.89	-1.37	0.57	-0.84	-0.80	-0.95	-0.56	-1.21	-1.04	-1.24
USD-RUB	-0.67	-1.87	0.72	-0.93	-0.17	0.56	-1.20	-1.65	-1.19	-1.69
USD-SGD	0.45	-1.29	0.93	2.24	1.84	1.21	1.65	0.65	1.65	-0.68
USD-KRW	-0.03	-1.72	0.86	0.52	1.44	1.04	1.19	-1.65	-0.60	-1.61
USD-CNH	0.54	-1.10	0.95	1.96	1.91	1.24	1.69	0.68	1.61	1.00

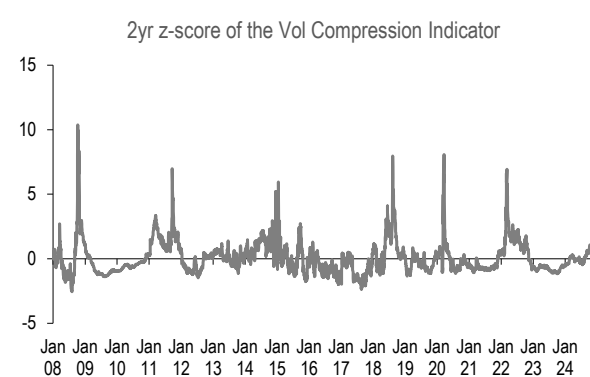
Source: J.P. Morgan.

Figure 44: Half-lives for the vols/vol spreads – 1y ATM vols

Half-lives	USD-BRL	USD-MXN	USD-TRY	USD-ZAR	USD-PLN	USD-HUF	USD-RUB	USD-SGD	USD-KRW	USD-CNH
USD-BRL	100.1	78.3	194.6	54.6	144.8	143.2	331.2	59.6	69.6	96.4
USD-MXN	78.3	97.6	216.3	60.4	94.4	110.5	294.0	53.2	30.3	83.0
USD-TRY	194.6	216.3	271.3	321.2	411.9	350.7	199.8	298.7	248.4	253.9
USD-ZAR	54.6	60.4	321.2	133.8	187.3	185.1	557.4	60.9	67.9	103.9
USD-PLN	144.8	94.4	411.9	187.3	456.8	45.8	599.1	226.7	43.1	838.0
USD-HUF	143.2	110.5	350.7	185.1	45.8	404.8	488.2	200.9	54.3	823.7
USD-RUB	331.2	294.0	199.8	557.4	599.1	488.2	477.1	476.6	346.9	382.1
USD-SGD	59.6	53.2	298.7	60.9	226.7	200.9	476.6	232.9	73.1	364.9
USD-KRW	69.6	30.3	248.4	67.9	43.1	54.3	346.9	73.1	138.8	280.4
USD-CNH	96.4	83.0	253.9	103.9	838.0	823.7	382.1	364.9	280.4	159.0

Source: J.P. Morgan.

Figure 46: 2yr z-score of the Vol Compression Indicator



Source: J.P. Morgan.

Find more details in this [piece](#) and its [follow-up](#)

FX Vol Mean reversion (II) – Additional filters

Figure 47: Number of filters activated for a spread (long row vol/short column vol) supported by the mean-reversion signal

# active filters	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
EUR-USD	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	1
GBP-USD	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	1
USD-JPY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USD-CHF	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	2	0	2
USD-CAD	0	0	1	2	0	0	0	0	0	0	2	0	0	0	0	0	1	0	1
USD-NOK	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	2
USD-SEK	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	1
AUD-USD	0	0	1	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1
NZD-USD	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	2
USD-BRL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USD-MXN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USD-TRY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USD-ZAR	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	1
USD-PLN	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	2
USD-HUF	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
USD-RUB	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	1
USD-SGD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USD-KRW	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	2
USD-CNH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: J.P. Morgan.

Figure 48: Filters activated for a given spread: A) mean-reversion; B) short-term dislocation; C) Vol Carry; D) Term structure

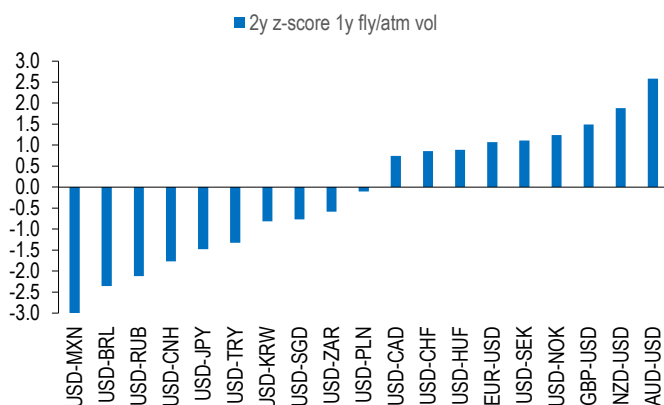
active filters	EUR-USD	GBP-USD	USD-JPY	USD-CHF	USD-CAD	USD-NOK	USD-SEK	AUD-USD	NZD-USD	USD-BRL	USD-MXN	USD-TRY	USD-ZAR	USD-PLN	USD-HUF	USD-RUB	USD-SGD	USD-KRW	USD-CNH
EUR-USD	B	BCD	AB	B	BCD	BCD	BCD	BC	B	BC	AB	BCD	BCD	BCD	CD	BCD	A	BC	A
GBP-USD	B	B	AB	B	B	BD	BCD	BC	B	B	AB	BCD	BCD	BCD	BC	BCD	A	B	A
USD-JPY	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BC	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD
USD-CHF	BCD	BCD	A	BC	BCD	BCD	BCD	BCD	BC	BC	ABC	BCD	BCD	BCD	BCD	BCD	AC	BC	AC
USD-CAD	B	CD	A	AB	0	BD	BCD	BC	B	B	AB	BCD	CD	BCD	CD	CD	A	0	A
USD-NOK	B	BC	AB	B	BC	B	BCD	BC	B	B	AB	BCD	BCD	BC	BC	BCD	AB	B	AB
USD-SEK	B	B	A	B	B	B	B	BC	B	0	AB	BCD	BCD	BC	C	BCD	A	B	A
AUD-USD	BD	BD	A	B	BD	BD	BD	B	AB	B	AB	BCD	BCD	BCD	BCD	BCD	A	B	A
NZD-USD	BCD	BCD	AB	BD	BCD	BCD	BCD	BCD	B	BCD	AB	BCD	BCD	BCD	BCD	BCD	A	BC	AC
USD-BRL	BD	BCD	B	BD	BCD	BCD	BCD	BCD	B	B	B	BCD	BCD	BCD	BCD	BCD	B	BC	B
USD-MXN	BCD	BCD	BD	BD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD
USD-TRY	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	BC	B	B	B
USD-ZAR	B	B	AB	B	B	B	B	B	B	B	AB	BCD	B	B	B	BCD	A	B	A
USD-PLN	B	B	AB	B	B	BD	BD	B	B	B	AB	BCD	BCD	B	C	BCD	AB	B	AB
USD-HUF	B	BD	B	B	B	BD	BD	B	B	AB	B	BCD	BCD	BD	B	BCD	B	B	B
USD-RUB	B	B	AB	B	B	B	B	B	B	B	AB	BD	B	B	B	B	A	B	A
USD-SGD	BCD	BCD	B	BD	BCD	BCD	BCD	BCD	BCD	BCD	B	BCD	BCD	BCD	BCD	BCD	B	BC	BCD
USD-KRW	BD	BCD	AB	BD	BCD	BCD	BCD	BCD	BD	BD	AB	BCD	BCD	BCD	BCD	BCD	AD	BD	AD
USD-CNH	BCD	BCD	B	BD	BCD	BCD	BCD	BCD	BD	BCD	B	BCD	BCD	BCD	BCD	BCD	B	BC	B

Source: J.P. Morgan.

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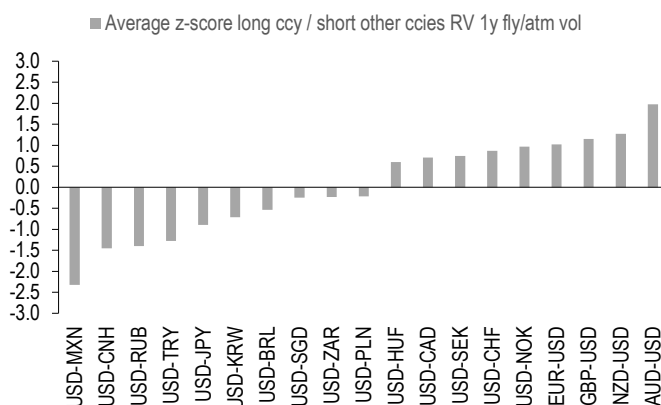
RV in the vol convexity space

Figure 49: 2yr z-score of diagonal 1y fly/atm vol ratios



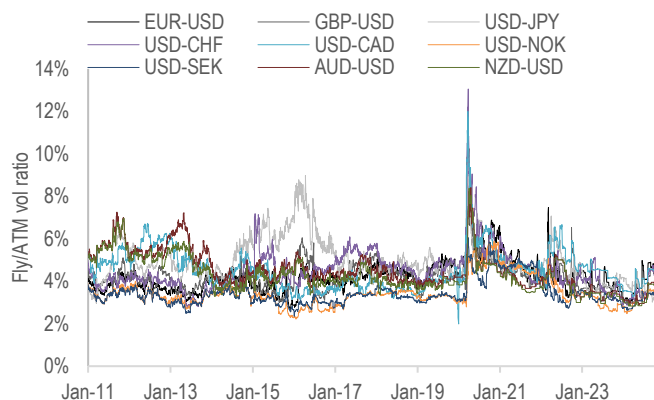
Source: J.P. Morgan.

Figure 50: 2yr z-score of average of off-diagonal 1y fly/atm vol ratios



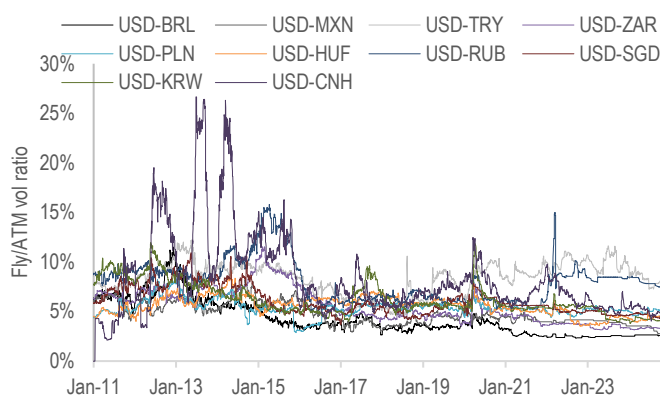
Source: J.P. Morgan.

Figure 51: Time series of USD/G10 1y fly/ATM vol ratios



Source: J.P. Morgan.

Figure 52: Time series of USD/EM 1y fly/ATM vol ratios



Source: J.P. Morgan.

Figure 53: Historical distributions of 1y fly/atm vol ratios for G10 and EM pairs

	1y 25D fly / ATM ratio																		
	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	4.4%	4.2%	3.3%	4.2%	4.5%	3.5%	3.4%	4.1%	3.8%	2.4%	2.6%	7.9%	3.3%	5.0%	4.4%	7.5%	4.6%	4.1%	4.4%
%ile rank	67.9%	49.9%	6.4%	43.3%	61.0%	64.5%	62.3%	39.3%	28.4%	0.2%	0.0%	38.0%	3.8%	33.8%	11.0%	38.0%	10.3%	1.6%	5.4%
Min	2.6%	2.9%	2.1%	2.7%	2.0%	2.2%	2.4%	2.9%	2.8%	2.3%	2.1%	4.3%	2.8%	2.4%	3.5%	4.7%	3.1%	3.8%	2.1%
Bottom 25%	3.8%	3.8%	4.1%	3.9%	3.7%	3.1%	3.1%	3.9%	3.8%	3.2%	4.0%	7.0%	4.1%	4.9%	5.0%	6.3%	5.0%	5.3%	5.6%
Average	4.3%	4.3%	4.8%	4.5%	4.4%	3.5%	3.5%	4.5%	4.3%	4.5%	4.9%	8.1%	5.5%	5.2%	5.5%	8.2%	6.0%	6.6%	8.3%
Median	4.2%	4.2%	4.6%	4.4%	4.3%	3.4%	3.3%	4.3%	4.1%	4.0%	4.7%	8.4%	5.1%	5.2%	5.6%	8.4%	5.6%	6.1%	7.0%
Top 75%	4.6%	4.6%	5.4%	4.9%	4.9%	3.7%	3.6%	4.9%	4.8%	5.7%	5.8%	9.3%	6.8%	5.7%	6.2%	9.3%	6.8%	8.0%	9.5%
Max	11.6%	10.2%	9.8%	13.1%	12.0%	5.9%	6.0%	8.4%	8.4%	11.5%	8.2%	12.3%	11.5%	8.5%	9.0%	15.8%	10.9%	12.9%	26.7%

Source: J.P. Morgan.

Find more details on vol convexity trades in [this piece](#)

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