

FX Quant Insight

After recent USD peak

Key takeaways

- Option flow suggests investors have been selling OTM USD calls; time zone and rates factor also turn bearish USD.
- Should US data this week come in-line with forecast, EURUSD could grind higher as short-term USD peak may have formed.
- RV: CARS is bullish NZD vs. AUD with the largest yield pickup in NZ last week.

FX Signal of the Week: Bullish EUR/USD at 1.0775

Exhibit 1: Option flow, rates moves and time zone analysis suggest short-term peak has formed for the broad USD

Top signals from quant models

Section	Insight	Rationale
Option Flow	Short OTM USD calls	Implied vol declines and skew moves suggest investors sold USD calls last week.
Technical Matrix	Selectively bullish USD	Positioning analysis is bearish AUD, ZAR, and BRL vs USD.
CARS	Bearish USD	CARS is bullish NZD and JPY vs USD and CHF on rates factor.
Time Zone	US hour USD supply	Investors in US trading hours are selling the USD again.

Source: BofA Global Research

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Short-term peak may have formed for the broad USD

After some volatility induced by the Jan FOMC and NFP, our signals suggest the broad USD may have peaked. Over the past week, the USD resumed its weakness in US trading hours (Exhibit 8). The CARS rates factor also turned bearish USD as global yields broadly increased by more than the US last week (Exhibit 7). Option flows suggest investors have been selling OTM (out-of-money) USD calls to express this view. Short-dated implied vols broadly declined last week, and we find skews moving for USD puts vs G10 peers led by EUR. For this week, our economists expect CPI to remain soft (0.2% headline, 0.3% core) and retail sales to come in weaker than consensus (-0.3% ex-auto and 0.2% core control, see [Global Macro Watch, 11 February 2024](#)). Should the data stay largely in-line with our forecasts, we would expect the USD to continue its grind lower vs EUR. Risk to the view would be CPI or retail sales surprise to upside.

RV: bearish AUDNZD with NZD topping CARS

On the crosses, our CARS model is bearish AUDNZD with the largest yield pickup in NZ last week (Exhibit 7). Following lower than expected pick-up in NZ unemployment rate and higher wage, the options skew has moved in favor of NZD calls vs. both USD and AUD. The AUDNZD MAA is also in a downtrend with a separate bearish signal for AUD (Exhibit 5). We interpret that as options investors are chasing AUDNZD downtrend on the way down. The risk to this view would be a positive surprise in Australian employment data this week.

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Refer to important disclosures on page 7 to 8.

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For more details on the construction of the quant signals, please refer to the [Global Rates and FX Primer: FX Quant Insight: decipher weekly FX signals 07 September 2022](#).

CARS (model): Cross-Asset Regime Switching

SDR: Swap Data Repository

MAA: Moving Average Aggregator

UD: Up/Down volatility

RS: Residual Skew

ADX: Average Directional Movement Index

DMI: Directional Movement Index

NFP: Non-farm payrolls

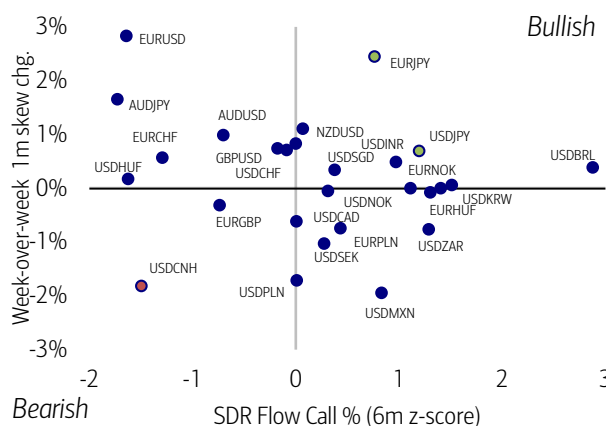
Option Flow Signals

Our options flow signals combine Event analysis framework ([FX Viewpoint: Vol-guided decisions 18 March 2021](#)) with SDR flows data ([FX Viewpoint: SDR: What do FX options flows tell us? 01 February 2021](#)) to gauge bullish and bearish sentiments.

To learn more about FX volatility and options please refer to our [FX Volatility Dashboard](#) as well as the FX Vol Dashboard Primer ([Global Rates and FX Primer: 09 March 2022](#)).

Exhibit 2: Investors bought JPY puts and CNH calls last week

1m skew change vs call percentage z-score

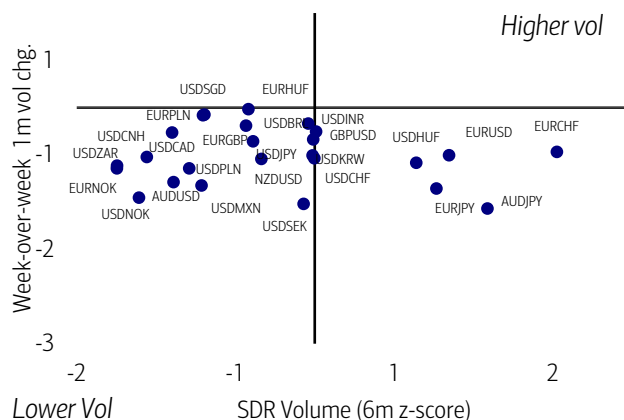


Source: BofA Global Research, DTCC. Note: CNH flows are proxied by "CNY" flows in SDR.

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Exhibit 3: Short-dated implied vols broadly declined last week

1m implied vol change vs volume z-score



Source: BofA Global Research, DTCC. Note: CNH flows are proxied by "CNY" flows in SDR.

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Exhibit 4: EURUSD call skew sharply rose amid broad-based decline for short-dated implied vols

Event analysis signals after last week's spot and vol moves

Pair	Old spot	New spot	1m vol	1m vol chg	1y vol	1y vol chg	1y - 1m chg	Currency	Return vs USD	1m skew % chg vs		Signals
										USD	USD	
EURUSD	1.0743	1.0766	5.91	-0.51	6.81	-0.32	0.19	EUR	0.21%	2.46		EUR No Signal
USDJPY	148.68	148.98	7.93	-0.51	9.38	-0.18	0.33	JPY	-0.20%	-0.02		JPY No Signal
GBPUSD	1.2536	1.2611	6.42	-0.26	8.01	-0.15	0.11	GBP	0.60%	0.57		GBP No Signal
USDCHF	0.8707	0.8757	6.68	-0.54	7.43	-0.21	0.33	CHF	-0.57%	-0.45		CHF No Signal
AUDUSD	0.6483	0.6525	8.61	-0.79	9.74	-0.33	0.46	AUD	0.65%	0.45		AUD No Signal
USDCAD	1.3540	1.3465	4.87	-0.27	5.74	-0.08	0.19	CAD	0.56%	0.47		CAD No Signal
USDSEK	10.6015	10.4304	9.49	-1.02	10.65	-0.43	0.59	SEK	1.63%	0.56		SEK No Signal
USDNOK	10.6859	10.5140	10.25	-0.96	11.75	-0.43	0.53	NOK	1.62%	-0.26		NOK No Signal
NZDUSD	0.6055	0.6130	9.04	-0.55	9.84	-0.34	0.21	NZD	1.23%	0.80		NZD No Signal
USDSGD	1.3471	1.3448	3.63	-0.08	4.48	-0.07	0.02	SGD	0.17%	-0.36		SGD No Signal
USDKRW	1330.8	1328.3	8.32	-0.34	9.13	-0.10	0.23	KRW	0.19%	-0.04		KRW No Signal
USDMXN	17.1155	17.0570	9.26	-0.82	11.83	-0.56	0.27	MXN	0.34%	-0.56		MXN No Signal
USDTRY	30.5467	30.7036	6.60	-0.61	19.69	-0.86	-0.25	TRY	-0.51%	-1.70		TRY No Signal
USDZAR	19.0667	19.0070	12.75	-0.62	15.09	-0.22	0.40	ZAR	0.31%	0.27		ZAR No Signal
USDHUF	359.9	360.0	10.08	-0.58	11.75	-0.29	0.30	HUF	-0.04%	-1.15		HUF No Signal
USDPLN	4.0419	4.0155	8.91	-0.65	10.29	-0.27	0.38	PLN	0.66%	0.72		PLN No Signal

Source: BofA Global Research, Bloomberg.

The table shows the 1-year percentile and 1-week change in 1m and 1y implied vol, the 1y-1m spread, and the 1m 25 delta risk reversal as a percentage of the ATM. For a currency with a put skew, the rules for generating the signal column are the following:

[1] Bearish Continuation: Spot change < -1%, 1m vol change > 0.5%, 1y vol change > 0%, 1m skew chg. < -2; [2] Bearish Contrarian: Spot change > 1%, 1m skew change < -2;

[3] Bullish Continuation: Spot change > 2%, 1y-1m change < -0.1%, 1m skew change > 2; [4] Bullish Contrarian Spot change < -1%, 1m vol change < -0.2%, 1m skew chg. > 1.

Parameters that triggered a bearish condition are colored in red; parameters that triggered a bullish condition are colored in green.

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Technical Matrix

The Technical Matrix is a table of technical indicators ([Get to know even more technical strategy, 24 January 2022](#)) and BofA positioning analysis ([Global Rates and FX Primer: 01 October 2018](#)) that look at trend following and reversal signals. To learn more about a variety of technical strategies, please see [Technicals Explained primer](#), as well as our Quantifying Technicals publications for [the ADX](#) and [Bollinger indicators](#).

Exhibit 5: Positioning analysis is bullish USD vs AUD, BRL and ZAR

Technical matrix with positioning analysis and key levels to watch

	Spot	Positioning Trend	Bullish / Bearish	ADX Trend	Bollinger Bands	Next Support	Next Resistance
USD	EURUSD	1.0773	↓	No Signal	Range	None	1.0764 1.0790
	USDJPY	148.96	↑	No Signal	Transition	None	147.51 151.91
	GBPUSD	1.2618	↔	No Signal	Range	None	1.2565 1.2631
	AUDUSD	0.6528	↓	Bearish	Downtrend	None	0.6270 0.6540
	USDCHE	0.8753	↔	No Signal	Transition	None	0.8621 0.8756
	USDCAD	1.3464	↔	No Signal	Range	None	1.3418 1.3476
	NZDUSD	0.6133	↑	No Signal	Transition	None	0.6093 0.6168
	USDSEK	10.4251	↔	No Signal	Range	None	10.3219 10.4268
	USDNOK	10.507	↔	No Signal	Range	None	10.4829 10.6118
EUR	EURGBP	0.8538	↓	No Signal	Range	None	0.8493 0.8593
	EURJPY	160.48	↑	No Signal	Range	None	159.15 164.30
	EURAUD	1.6503	↑	No Signal	Transition	None	1.6490 1.6505
	EURCHF	0.94299	↓	Bearish	Transition	None	0.9395 0.9498
	EURCAD	1.4505	↓	No Signal	Range	None	1.4158 1.4523
	EURNZD	1.7566	↓	No Signal	Range	None	1.7471 1.7616
	EURSEK	11.2313	↓	No Signal	Range	None	10.9882 11.2520
	EURNOK	11.3196	↓	Slightly Bullish	Range	None	11.3055 11.4143
G10 Cross	AUDJPY	97.243	↑	Slightly Bearish	Range	None	96.69 98.62
	AUDNZD	1.0644	↓	No Signal	Range	None	1.0560 1.0748
	AUDCAD	0.8789	↓	No Signal	Downtrend	None	0.8565 0.8853
	NOKSEK	0.9922	↔	No Signal	Range	None	0.9897 0.9997
	CADJPY	110.639	↑	Slightly Bearish	Range	None	108.88 111.17
	GBPJPY	187.95	↑	No Signal	Transition	None	184.48 188.66
	NZDJPY	91.36	↑	Slightly Bearish	Range	None	89.96 91.52
	GBPCHF	1.1044	↔	No Signal	Range	None	1.0991 1.1072
EM	USDMXN	17.0522	↓	Slightly Bullish	Transition	None	16.6262 17.1184
	USDBRL	4.9544	↑	Bullish	Range	None	4.9476 5.0187
	USDZAR	18.994	↑	Bullish	Range	None	18.9650 19.9204
	EURPLN	4.3181	↓	Bearish	Range	None	4.2935 4.3440
	EURHUF	387.2	↑	Slightly Bearish	Uptrend	None	385.02 389.13
	USDKRW	1328.25	↑	No Signal	Range	None	1323.82 1363.55
	USDINR	83.0025	↓	No Signal	Transition	None	82.80 83.16
	USDCNH	7.2147	↑	No Signal	Range	None	7.2082 7.2244

Data as of 02/12/24. Source: BofA Global Research, Bloomberg.

Positioning uptrend has MAA > 60, downtrend MAA < 40. Positioning uptrend reversal likely if MAA/UD/RS > 80, continuation likely if UD, RS < 50. Positioning downtrend reversal likely if MAA/UD/RS < 20, and continuation likely if UD, RS > 50. UD and RS are 1y percentile and MAA is in %.

Positioning is bullish (green) if matrix shows downtrend reversal or uptrend continuation; Positioning is bearish (red) if matrix shows uptrend reversal or downtrend continuation.

Positioning is slightly bullish or slightly bearish (yellow) if only one of UD or RS supports the signal.

ADX downtrend if ADX > 25 and DMI+ is below DMI-. ADX uptrend if ADX > 25 and DMI+ is above DMI-. ADX shows Transition if ADX is between 20 and 25, and Range if ADX < 20. Cells in the ADX Trend column are colored with more intensity if the ADX trend signal matches the positioning signal. 14-day lookback is used for the ADX indicators.

The Bollinger Bands column shows 'Upper' if spot is above the +2 std bollinger band, and 'Lower' if spot is below the -2 std band. 20-day SMA is used for Bollinger indicators.

Cells in Next Support and Next Resistance columns are colored if spot is within 0.5% of the support or resistance level.

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CARS Signals

CARS ("cross-asset regime-switching") is a systematic model that makes weekly buy/sell decisions for G10 currencies based on cross-asset factors (equity, rates, and commodities). FX's relationship with other asset classes is not constant over time, and investors could flock to own haven currencies during shock periods. The CARS model chooses the most performing factor for the appropriate macro regime of the week ([FX Viewpoint: CARS model: weekly FX cross-asset drivers 22 June 2022](#)).

Exhibit 6: Bullish NZD and JPY vs USD and CHF on rates factor

CARS signals for a trending week (no macro shock)

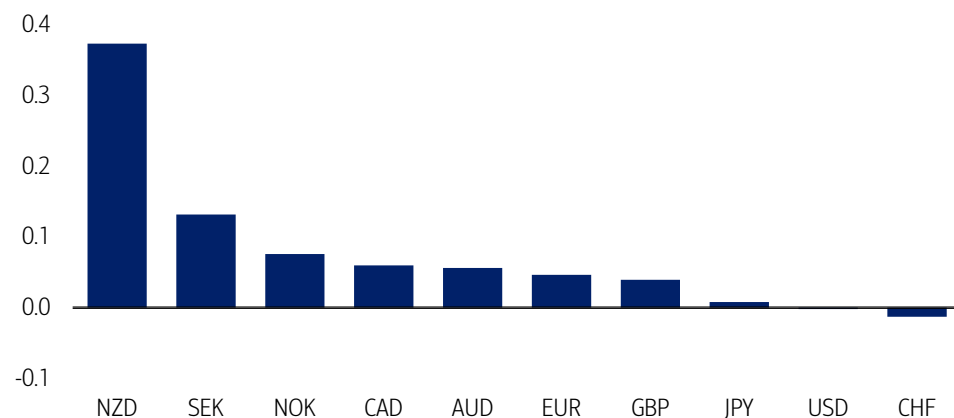
Currency	Bullish/Bearish	Equity	Rates	Commodity	Global regime	Values
EUR		1	7	4	Commodity z-score	0.3
JPY	Bullish	3	2	9	Performing factor	Rates
GBP		7	8	7		
AUD		6	5	3		
CAD		5	6	1	USD Equity	2
CHF	Bearish	9	10	5	USD Rates	9
NZD	Bullish	10	1	6		
SEK		4	3	8		
NOK		8	4	2		

The Equity ranking is ordered by 5y z-score of 1-week equity return. The Rates ranking is ordered by 5y z-score of 1-week rate change and level of 2y swap rate. The Commodity ranking is ordered by 52-week FX correlation with BCOM. The Commodity z-score is the 1y z-score of 1-week BCOM Index return.

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Exhibit 7: 2y swap rates broadly rose in G10 except for USD and CHF last week

2y global yield change



Source: BofA Global Research, Bloomberg

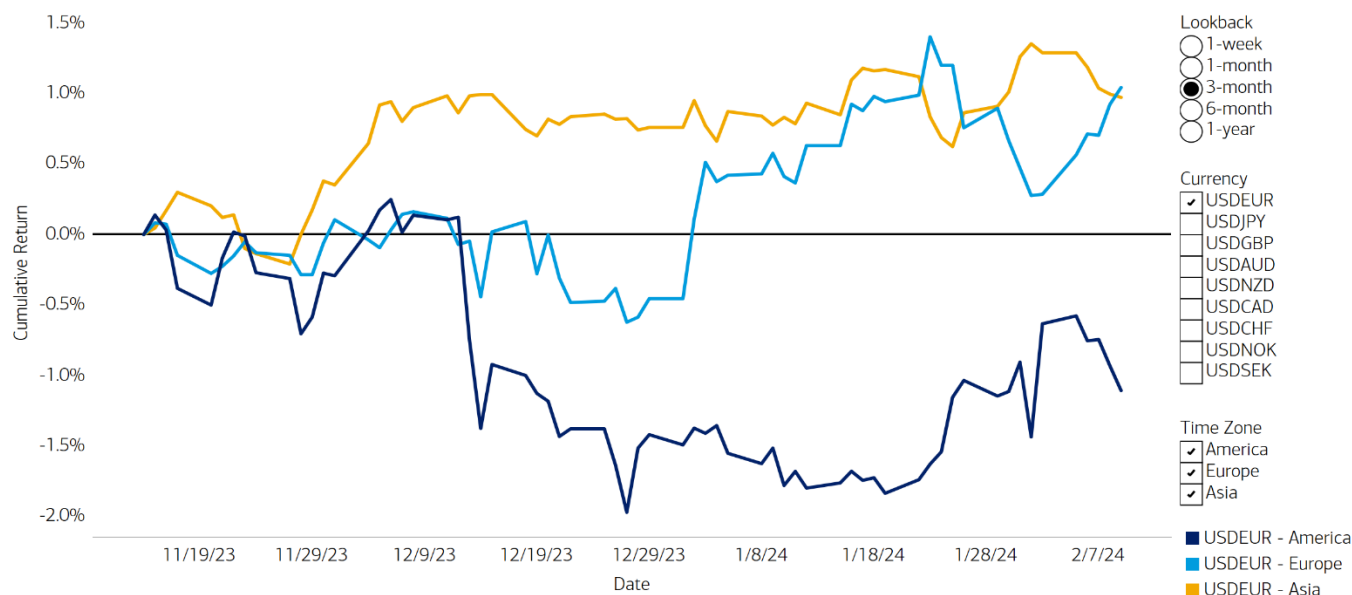
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Interactive Time Zone

Expanding exhibits in the HTML view shows cumulative FX returns at different lookback periods, currency groupings, and time zones ([FX Watch: Interacting with time zones 06 July 2022](#)). Hours are shown in Coordinated Universal Time (UTC). We define America time zone as 1pm-12am UTC (8am-7pm EST), Europe time zone as between 8am-1pm UTC (3am-8am EST), and Asia time zone as between 12am to 8am UTC (7pm-3am EST).

Exhibit 8: USD selloff in US trading hours resumed last week

Interactive time zone plot. For readers of the web-formatted version of this report, access interactive features of the visualization by clicking on the image. Use Google Chrome or Microsoft Edge browsers for the best experience



We denote America time zone as between 1pm to 12am UTC, Europe time zone as between 8am to 1pm UTC, and Asia time zone as between 12am to 8am UTC.

Source: BofA Global Research, Bloomberg

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Exhibit 9: USD gained in European trading hours and fell in US trading hours last week

Interactive time zone plot. For readers of the web-formatted version of this report, access interactive features of the visualization by clicking on the image. Use Google Chrome or Microsoft Edge browsers for the best experience

	8am-11am	11am-2pm	2pm-5pm	5pm-8pm	8pm-11pm	11pm-2am	2am-5am	5am-8am	Lookback
USDEUR	0.8%	0.1%	-0.4%	-0.1%	-0.1%	0.1%	0.0%	-0.3%	1-week
USDJPY	0.6%	0.2%	-0.4%	0.0%	-0.2%	0.6%	0.3%	0.1%	1-month
USDGBP	0.6%	0.3%	-0.4%	-0.1%	-0.1%	0.0%	0.1%	-0.4%	3-month
USDAUD	0.8%	0.2%	-0.1%	-0.1%	-0.3%	0.3%	0.0%	-0.2%	6-month
USDNZD	0.7%	0.1%	-0.2%	-0.3%	-0.6%	-0.8%	0.1%	-0.3%	1-year
USDCAD	0.4%	0.0%	0.1%	-0.4%	0.0%	-0.1%	0.0%	0.0%	
USDCHF	1.0%	0.2%	-0.3%	0.2%	-0.3%	0.7%	0.1%	0.0%	
USDNOK	0.6%	-0.4%	-0.4%	-0.2%	-0.1%	0.1%	-0.2%	0.1%	
USDSEK	0.8%	0.0%	-0.4%	-0.4%	-0.1%	-0.3%	-0.1%	0.0%	

Hours are as of UTC. Currency pairs with greater loss over the lookback period are colored in darker red. Currency pairs with greater gain over the lookback period are colored in darker green. We denote America time zone as between 1pm to 12am UTC, Europe time zone as between 8am to 1pm UTC, and Asia time zone as between 12am to 8am UTC.

Source: BofA Global Research, Bloomberg

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