

FX Quant Insight

What USD to buy?

Key takeaways

- Options are bullish USD ahead of the Fed vs. G10 and EM.
- Bullish USD/CHF: the uptrend remains in place with supportive up-down vol and residual skew for calls.
- US hour price actions should continue to drive the broad USD move this week.

FX Signal of the Week: Bullish USD/CHF: 0.8884

Exhibit 1: Options turned bullish USD, with trend-followers continue to favor USDCHF

Top signals from quant models

Section	Insight	Rationale
Option Flow	Bullish USD	Option flow moved for USD calls vs both G10 and EM last week.
Technical Matrix	Bullish USDCHF	Positioning model is most bullish for USD vs CHF.
CARS	Rates Regime	CARS shifted back to rates regime; model is bullish CAD, AUD and NOK vs GBP and NZD on rates and commodity factors.
Time Zone	US hour USD demand	US-based investors bought back the month-to-date USD dip last week.

Source: BofA Global Research

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Options are bullish USD ahead of the Fed

Following higher-than-expected core CPI, option flow moved for USD calls vs both G10 and EM ahead of this week's FOMC (20-Mar). According to both USD call skew richening and rising proportion of USD calls in SDR (Exhibit 2), we believe options investors are actively hedging the scenario of a hawkish Fed. For instance, this could come as a result of communication of Fed projecting fewer cuts in the dot plot for 2024. Our economists see this as a very close call ([US Economic Weekly: 15 March 2024](#)).

USD/CHF uptrend remains in place

The broad USD price action in March has been driven by US hour flows and we see the trend continuing this week. Should the dot plot projection change, the USD would likely see bullish knee-jerk price actions to completely unwind the selloff from this month. Despite last week's USD spot rally, it is still only in uptrends vs CHF, JPY, and CAD for now. Our technical matrix signal prefers to look for more USD/CHF upside (Exhibit 5). This could be suited for USD bulls who think Fed will surprise on the hawkish side as options flows indicated, in our view. Given latest flip-flopping price actions following mixed data surprises, our trend following positional model likes USDCHF the most at this juncture, given impulsive volatility on the way up and skew for USD calls / CHF puts. The risk to this view would be dovish Fed or hawkish SNB this week.

18 March 2024

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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

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Refer to important disclosures on page 7 to 8.

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Timestamp: 18 March 2024 05:00PM EDT

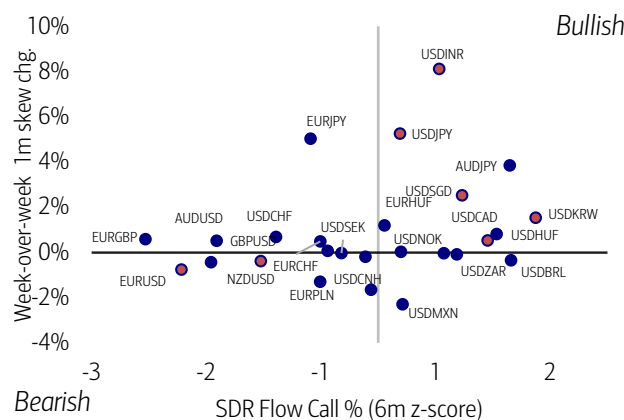
Option Flow Signals

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: Options flow moved for USD calls vs many G10 and EM currencies

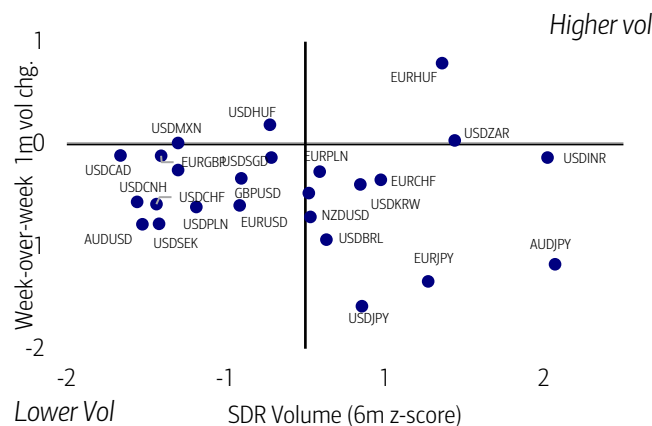
1m skew change vs call percentage z-score



Source: BofA Global Research, DTCC. Note: CNH flows are proxied by "CNY" flows in SDR.
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Exhibit 3: Implied vols broadly drifted lower except for EURHUF

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: Short-dated implied vols broadly declined last week

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 USD	Signals
EURUSD	1.0926	1.0905	5.23	-0.60	6.13	-0.20	0.40	EUR	-0.19%	-1.00	EUR No Signal
USDJPY	146.95	149.07	7.62	-1.59	8.39	-0.36	1.23	JPY	-1.43%	-1.50	JPY No Signal
GBPUSD	1.2814	1.2739	5.85	-0.34	7.08	-0.09	0.24	GBP	-0.59%	-0.50	GBP No Signal
USDCHF	0.8774	0.8824	6.21	-0.59	6.68	-0.20	0.39	CHF	-0.57%	-0.52	CHF No Signal
AUDUSD	0.6614	0.6572	7.79	-0.79	8.85	-0.22	0.57	AUD	-0.64%	0.14	AUD No Signal
USDCAD	1.3483	1.3537	4.76	-0.11	5.55	-0.05	0.06	CAD	-0.40%	-0.60	CAD No Signal
USDSEK	10.2428	10.3709	8.60	-0.78	9.63	-0.27	0.51	SEK	-1.24%	-0.33	SEK No Signal
USDNOK	10.4570	10.5820	9.28	-0.48	10.71	-0.20	0.28	NOK	-1.19%	-0.22	NOK No Signal
NZDUSD	0.6170	0.6094	8.03	-0.71	8.94	-0.24	0.47	NZD	-1.24%	-0.64	NZD No Signal
USDSGD	1.3304	1.3375	3.47	-0.13	4.27	-0.05	0.09	SGD	-0.53%	-2.56	SGD No Signal
USDKRW	1310.2	1333.7	7.02	-0.40	7.97	-0.06	0.34	KRW	-1.78%	-1.35	KRW No Signal
USDMXN	16.7972	16.6876	7.72	0.01	10.41	-0.15	-0.16	MXN	0.65%	2.33	MXN No Signal
USDTRY	32.0285	32.3010	8.80	-1.08	19.76	-0.87	0.21	TRY	-0.85%	-1.67	TRY No Signal
USDZAR	18.6792	18.8242	11.67	0.04	14.79	0.11	0.07	ZAR	-0.77%	0.12	ZAR No Signal
USDHUF	361.1	362.1	9.59	0.18	10.73	0.04	-0.14	HUF	-0.25%	-0.56	HUF No Signal
USDPLN	3.9187	3.9532	7.68	-0.61	9.41	-0.26	0.36	PLN	-0.88%	-1.07	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 model is the most bullish for USD vs CHF

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	1.09	↑	No Signal	Uptrend	None	1.0862	1.0960
	USDJPY	149.14	↑	No Signal	Transition	None	148.52	151.91
	GBPUSD	1.274	↑	No Signal	Range	None	1.2720	1.3142
	AUDUSD	0.6571	↔	No Signal	Range	None	0.6566	0.6585
	USDCHE	0.8834	↑	Bullish	Range	None	0.8825	0.8941
	USDCAD	1.354	↑	No Signal	Range	None	1.3513	1.3591
	NZDUSD	0.6092	↔	No Signal	Range	None	0.6081	0.6093
	USDSEK	10.3837	↓	No Signal	Transition	None	9.9066	10.3838
USDNOK	10.6062	↔	No Signal	Range	None	10.6045	10.6118	
EUR	EURGBP	0.8555	↓	Bearish	Range	None	0.8553	0.8607
	EURJPY	162.56	↑	Bearish	Range	None	161.16	164.30
	EURAUD	1.6588	↑	No Signal	Range	None	1.6528	1.6600
	EURCHF	0.96284	↑	Slightly Bearish	Uptrend	None	0.9626	0.9714
	EURCAD	1.4758	↑	Bullish	Uptrend	None	1.4748	1.5113
	EURNZD	1.7892	↑	No Signal	Range	None	1.7831	1.7951
	EURSEK	11.3177	↓	No Signal	Range	Upper	11.2677	11.3251
	EURNOK	11.5604	↑	No Signal	Range	None	11.5118	11.6015
G10 Cross	AUDJPY	97.996	↑	Slightly Bearish	Range	None	97.51	98.62
	AUDNZD	1.0786	↔	No Signal	Range	None	1.0752	1.0789
	AUDCAD	0.8897	↑	No Signal	Range	None	0.8854	0.8899
	NOKSEK	0.979	↓	Bearish	Transition	None	0.9497	0.9835
	CADJPY	110.147	↑	No Signal	Transition	None	110.14	111.17
	GBPJPY	190.00	↑	Bearish	Range	None	188.66	191.32
	NZDJPY	90.85	↔	No Signal	Downtrend	None	90.34	91.09
	GBPCHF	1.1254	↑	Slightly Bearish	Uptrend	None	1.1174	1.1506
EM	USDMXN	16.699	↓	Bearish	Downtrend	None	16.6262	17.0320
	USDBRL	4.9908	↑	Bullish	Range	None	4.9467	5.0187
	USDZAR	18.8876	↔	No Signal	Transition	None	18.7513	18.9096
	EURPLN	4.3132	↓	Bearish	Range	None	4.2935	4.3336
	EURHUF	394.79	↑	Slightly Bearish	Uptrend	None	387.99	399.75
	USDKRW	1333.70	↑	No Signal	Range	None	1328.48	1363.55
	USDINR	82.9125	↓	No Signal	Transition	None	82.89	82.99
	USDCNH	7.2033	↓	Bearish	Range	None	7.2017	7.2277

Data as of 03/18/24. 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 lookahead 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.

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: CARS is bullish AUD, CAD and NOK vs bearish GBP and NZD on combination of rates and commodity factors

CARS signals for a trending week (no macro shock)

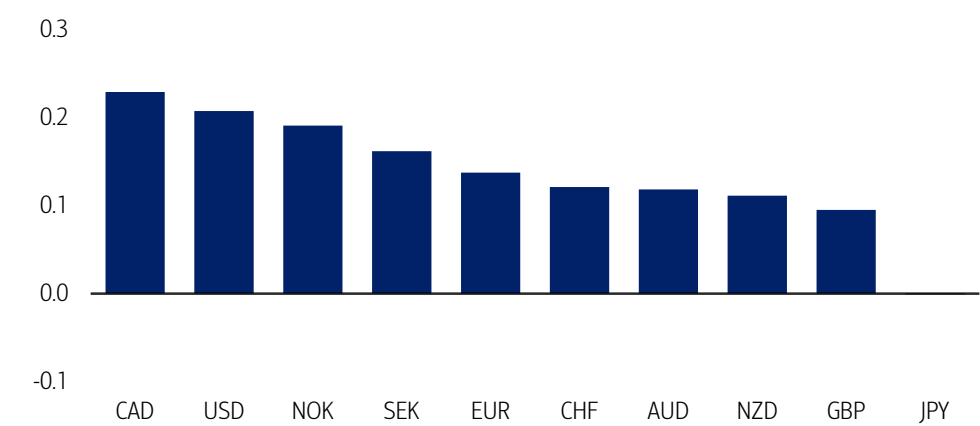
Currency	Bullish/Bearish	Equity	Rates	Commodity	Global regime	Values
EUR		4	5	4	Commodity z-score	0.9
JPY		2	8	9	Performing factor	Rates
GBP	Bearish	5	10	6		
AUD	Bullish	8	7	2		
CAD	Bullish	7	2	1	USD Equity	6
CHF		9	6	5	USD Rates	3
NZD	Bearish	10	9	8		
SEK		3	4	7		
NOK	Bullish	1	1	3		

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 increased except for JPY last week

2y global yield change



Source: BofA Global Research, Bloomberg

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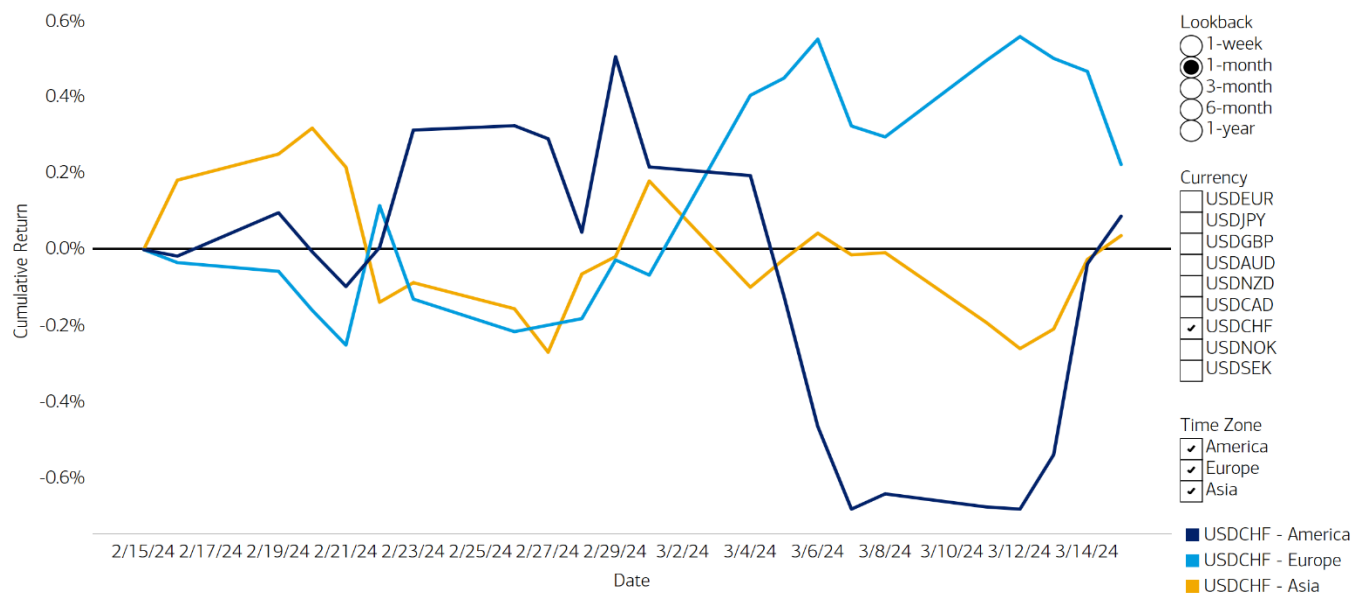


Interactive Time Zone

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: Month-to-date USD dip in US trading hours was bought back 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 rallied in US and Asia 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	-0.2%	0.7%	0.0%	-0.1%	0.1%	0.7%	0.1%	0.0%	1-week
USDJPY	0.1%	0.8%	0.0%	0.2%	-0.2%	1.3%	0.5%	0.1%	1-month
USDGBP	-0.3%	0.8%	0.2%	-0.2%	0.0%	1.0%	0.1%	0.3%	3-month
USDAUD	0.0%	0.8%	0.0%	-0.1%	0.0%	1.1%	0.2%	-0.1%	6-month
USDNZD	0.2%	0.8%	0.3%	0.1%	0.1%	1.4%	0.1%	0.0%	1-year
USDCAD	-0.2%	0.5%	0.1%	0.0%	0.0%	0.5%	0.1%	-0.1%	
USDCHF	-0.1%	0.5%	0.3%	-0.1%	0.0%	0.8%	0.2%	-0.2%	
USDNOK	-0.4%	1.3%	0.5%	-0.2%	0.1%	1.7%	0.1%	0.3%	
USDSEK	-0.4%	1.2%	0.3%	-0.1%	0.0%	1.4%	0.2%	0.3%	

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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