

## FX Quant Insight

## Remain bearish GBP amid USD uncertainty

## Key takeaways

- Mixed quant signals for the USD as option flow shows demand for USD calls and short-dated vols are not broad-based.
- Broad USD uptrend breadth shows overbought signal; USD uptrends also look stretched vs INR and KRW.
- Bearish GBP signals grew on downtrend continuation positioning signal and rates divergence vs rest of G10.

## FX Trade of the week: Sell GBP/CAD: 1.6991

**Exhibit 1: Bearish GBP quant conviction grew on positioning signal and rates factor**

Top signals from quant models

Section	Insight	Rationale
Option Flow	INR and PLN put	Option flow show demand for INR and PLN puts last week.
Technical Matrix	Bearish GBP	Bearish continuation signal for GBP/USD; USD uptrends vs KRW and INR look stretched
CARS	Rates regime	Bullish CAD and JPY, bearish GBP and NZD on rates factor
Time Zone	USD demand continued	US and European hour USD demand continued last week.

Source: BofA Global Research

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## Mixed quant signals for the USD

Heading into a data heavy week, FX quant signals for the USD are mixed. Last week's option flow shows investors' demand for vols and USD call skews was only against a selective number of EM currencies (Exhibit 2-Exhibit 3). In the previous week (Aug 28 to Sep 1), investors appeared to be buying USD puts vs G10 majors to hedge long USD spot gains ([Global FX Weekly: 08 September 2023](#)). In terms of positioning, USD trend breadth has reached an overbought level vs rest of G10 complex, and the Technical Matrix shows the USD uptrends are now stretched vs KRW and INR (Exhibit 5). The demand for USD during US and UK hours has continued last week but could reverse quickly if the new US economic data disappoints this week.

## Bearish GBP signals grew stronger since end of August

While signals are currently mixed for the USD, the bearish GBP signals we first flagged in [FX Quant Insight on 28 August 2023](#) have grown stronger. The Technical Matrix shows bearish continuation signals for GBP/USD on rising GBP put skew and greater down vol than up vol for the pair. CARS is also bearish GBP vs CAD and JPY on the back of falling GBP yields vs rest of G10 peers (Exhibit 6). We continue to hold a bearish GBP view but vs CAD this week on the back of the rates factor signal and that CAD has room to rise in the short-term on the back of last Friday's strong labor data ([Canada Watch: 08 September 2023](#)). The risk may be a decline in crude oil price this week.

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Refer to important disclosures on page 7 to 8.

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Timestamp: 11 September 2023 04:34PM EDT

11 September 2023

Currency Strategy  
Global

BofA

Data  
Analytics

**Vadim Iaralov**  
FX Strategist  
BofA  
+1 646 855 8732  
[vadim.iaralov@bofa.com](mailto:vadim.iaralov@bofa.com)

**Howard Du, CFA**  
G10 FX Strategist  
BofA  
+1 646 855 6586  
[yuhao.du@bofa.com](mailto:yuhao.du@bofa.com)

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

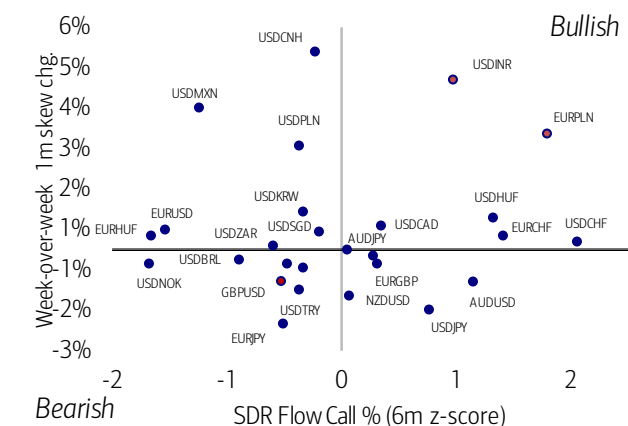
# Option Flow Signals

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: Option flow for INR and PLN puts stood out last week

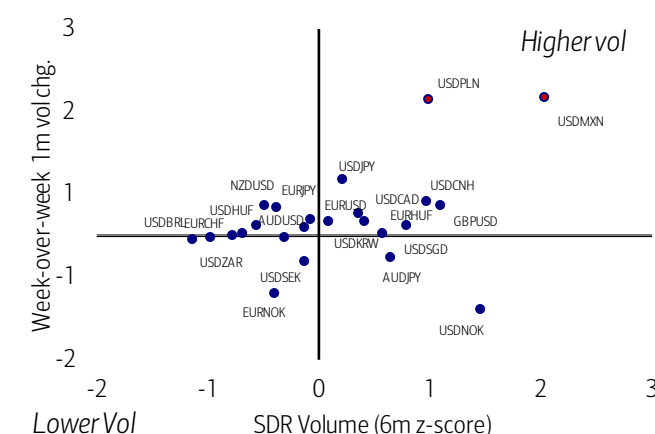
1m skew change vs call percentage z-score



Source: BofA Global Research, DTCC. Note: CNH flows are proxied by "CNY" flows in SDR.  
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## Exhibit 3: Short-dated vols increased the most for MXN and PLN 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: 1m implied vols have not materially increased to track the rising USD

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	1.0796	1.0731	6.86	0.08	6.96	0.07	-0.01	EUR	-0.60%	0.50	EUR No Signal	
USDJPY	146.47	146.52	9.72	0.65	9.35	0.31	-0.33	JPY	-0.03%	0.92	JPY No Signal	
GBPUSD	1.2625	1.2531	8.02	0.34	8.52	0.23	-0.12	GBP	-0.75%	-0.54	GBP No Signal	
USDCHF	0.8846	0.8916	7.08	-0.02	7.34	-0.01	0.01	CHF	-0.79%	-0.13	CHF No Signal	
AUDUSD	0.6461	0.6438	10.47	0.16	10.57	0.10	-0.06	AUD	-0.36%	-0.75	AUD No Signal	
USDCAD	1.3591	1.3575	5.69	0.15	6.20	-0.02	-0.17	CAD	0.12%	-0.42	CAD No Signal	
USDSEK	10.9965	11.0760	11.26	-0.35	11.07	-0.02	0.32	SEK	-0.72%	0.12	SEK No Signal	
USDNOK	10.6277	10.6379	12.33	-0.92	12.60	-0.32	0.60	NOK	-0.10%	-0.11	NOK No Signal	
NZDUSD	0.5939	0.5925	10.47	0.32	10.65	0.10	-0.22	NZD	-0.24%	-1.04	NZD No Signal	
USDSGD	1.3549	1.3606	4.63	0.10	4.67	-0.03	-0.13	SGD	-0.42%	-0.35	SGD No Signal	
USDKRW	1319.6	1331.4	9.22	0.14	9.49	0.07	-0.06	KRW	-0.89%	-0.88	KRW No Signal	
USDMXN	17.1815	17.5252	13.67	1.65	12.64	0.28	-1.38	MXN	-1.98%	-0.18	MXN No Signal	
USDTRY	26.7595	26.8749	13.41	-0.40	25.30	-0.64	-0.23	TRY	-0.43%	0.03	TRY No Signal	
USDZAR	19.0782	18.8508	15.28	-0.06	15.71	-0.06	0.00	ZAR	1.20%	-0.12	ZAR No Signal	
USDHUF	354.2	358.1	13.51	0.08	13.99	0.10	0.02	HUF	-1.08%	-0.66	HUF No Signal	
USDPLN	4.1414	4.3277	11.73	1.62	11.33	0.51	-1.11	PLN	-4.40%	0.11	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: Downtrend continuation signal for GBP/USD; however, USD uptrends vs KRW and INR are stretched

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	1.073	↓	Slightly Bullish	Transition	None	1.0611	1.0825
	USDJPY	146.49	↑	No Signal	Transition	None	143.58	151.95
	GBPUSD	1.2529	↓	Bearish	Downtrend	None	1.2428	1.2656
	AUDUSD	0.6431	↓	No Signal	Range	None	0.6170	0.6547
	USDCHE	0.8918	↑	No Signal	Range	None	0.8879	0.9051
	USDCAD	1.3594	↑	No Signal	Uptrend	None	1.3586	1.3977
	NZDUSD	0.592	↓	Slightly Bullish	Range	None	0.5904	0.6025
	USDSEK	11.0873	↑	No Signal	Transition	None	10.9758	11.4967
	USDNOK	10.655	↑	No Signal	Range	None	10.5982	10.6872
EUR	EURGBP	0.8564	↓	No Signal	Range	None	0.8493	0.8580
	EURJPY	157.18	↑	No Signal	Range	None	157.13	159.76
	EURAUD	1.6685	↑	No Signal	Range	None	1.6650	1.7065
	EURCHF	0.95691	↓	No Signal	Transition	None	0.9410	0.9606
	EURCAD	1.4585	↔	No Signal	Range	None	1.4576	1.4620
	EURNZD	1.8126	↑	No Signal	Transition	None	1.8021	1.8462
	EURSEK	11.8962	↑	Slightly Bearish	Transition	None	11.7478	11.9633
	EURNOK	11.4322	↔	No Signal	Uptrend	None	11.3908	11.5578
G10 Cross	AUDJPY	94.204	↑	No Signal	Range	None	93.81	94.38
	AUDNZD	1.0864	↑	No Signal	Range	None	1.0861	1.0981
	AUDCAD	0.8741	↓	Bearish	Range	None	0.8599	0.8805
	NOKSEK	1.0406	↑	No Signal	Range	None	1.0316	1.0822
	CADJPY	107.769	↑	No Signal	Range	None	107.19	110.64
	GBPJPY	183.55	↑	No Signal	Range	None	183.14	186.77
	NZDJPY	86.71	↑	No Signal	Range	None	86.48	87.19
	GBPCHF	1.1174	↓	No Signal	Downtrend	None	1.1046	1.1196
EM	USDMXN	17.4757	↔	No Signal	Uptrend	None	17.2723	18.0094
	USDBRL	4.937	↑	No Signal	Transition	None	4.9005	5.0147
	USDZAR	18.8989	↑	No Signal	Transition	None	18.7093	19.3508
	EURPLN	4.6495	↑	No Signal	Uptrend	Upper	4.6483	4.7072
	EURHUF	383.57	↑	No Signal	Uptrend	None	383.29	393.04
	USDKRW	1331.35	↑	Bearish	Range	None	1330.45	1357.37
	USDINR	83.0275	↑	Bearish	Range	None	82.53	83.29
	USDCNH	7.309	↑	No Signal	Transition	None	7.2417	7.3749

Data as of 09/11/23. 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.

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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 CAD and JPY, bearish GBP and NZD on rates factor divergence

CARS signals for a trending week (no macro shock)

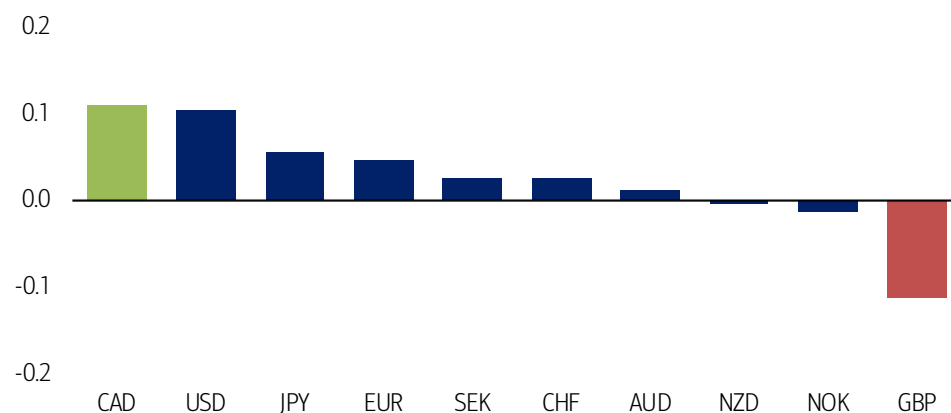
Currency	Bullish/Bearish	Equity	Rates	Commodity	Global regime	Values
EUR		4	4	5	Commodity z-score	0.1
JPY	Bullish	7	1	9	Performing factor	Rates
GBP	Bearish	1	10	7		
AUD		9	8	3		
CAD	Bullish	8	2	2	USD Equity	5
CHF		6	6	8	USD Rates	3
NZD	Bearish	10	9	6		
SEK		3	5	4		
NOK		2	7	1		

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: GBP yield declined the most last week

1-week global rate change



Source: BofA Global Research, Bloomberg

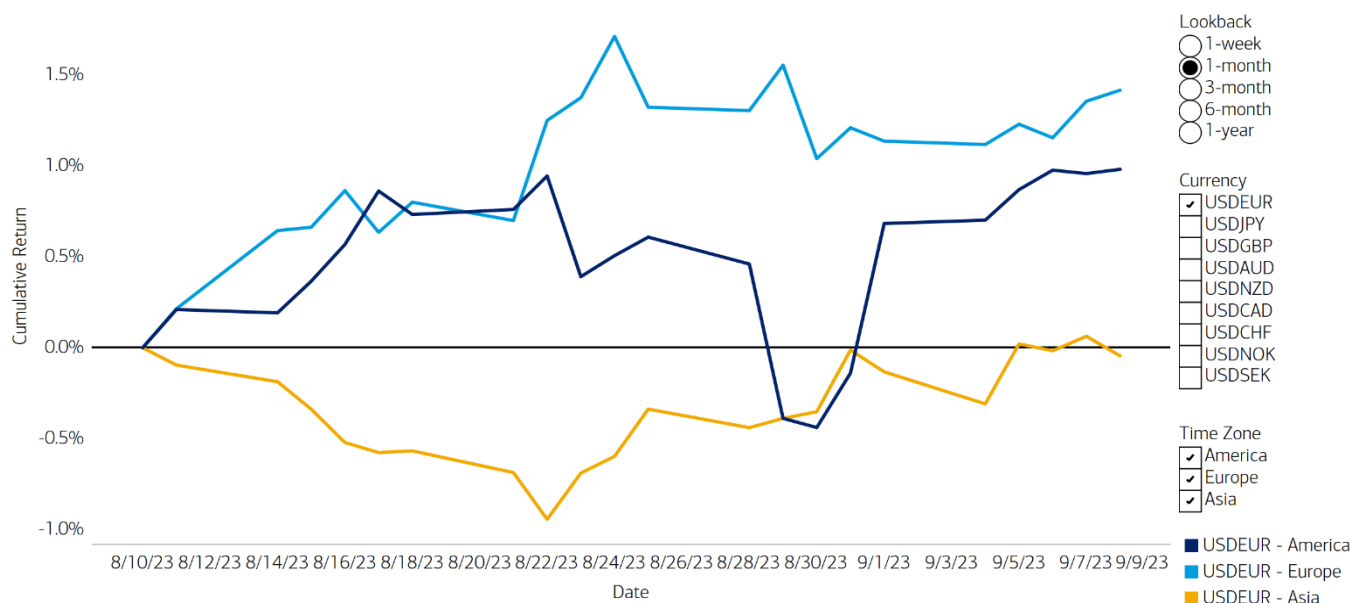
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# Interactive Time Zone

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 (9am-8pm EDT), Europe time zone as between 8am-1pm UTC (4am-9am EDT), and Asia time zone as between 12am to 8am UTC (8pm-4am EDT).

## Exhibit 8: Long USD position over the past month has been largely accumulated in US and European trading hours

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: The USD continued to rally during most hours of the day over the past 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	0.1%	0.1%	0.3%	0.2%	-0.1%	0.5%	-0.2%	0.4%	1-week
USDJPY	0.2%	0.1%	0.4%	0.3%	0.0%	0.7%	-0.2%	0.3%	1-month
USDGBP	0.2%	0.1%	0.2%	0.2%	-0.1%	0.8%	-0.3%	0.7%	3-month
USDAUD	0.0%	0.1%	0.4%	0.1%	0.0%	0.9%	-0.2%	0.3%	6-month
USDNZD	-0.1%	0.2%	0.6%	0.2%	-0.1%	0.8%	-0.4%	0.4%	1-year
USDCAD	-0.1%	-0.5%	0.3%	0.1%	-0.1%	0.5%	-0.2%	0.4%	
USDCHE	0.4%	0.3%	0.1%	0.1%	-0.1%	0.6%	-0.1%	0.3%	
USDNOK	-0.4%	-0.2%	0.3%	0.1%	-0.1%	0.1%	-0.2%	0.6%	
USDSEK	0.4%	-0.3%	0.5%	0.1%	-0.3%	0.6%	-0.3%	0.6%	

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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