

Key takeaways

- The low levels of rates vol are disguising an active option market, and changes in skews may reflect changes in positioning.
- Long term data show payer skews are strong indicators of positioning, while recent trends suggest otherwise.
- With the recent price action in rates and vol, skew signals point to risks of a curve steepener move.

By Carol Zhang and Sphia Salim

Chart of the day: 3m2y skew moves since June saw US and EUR investors perceive risks differently

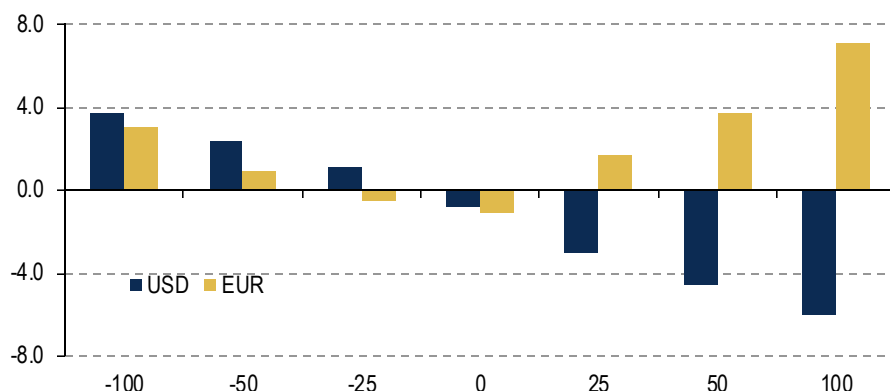


Chart shows 3m changes in implied volatility every 25bp away from ATM Source: BofA Merrill Lynch Global Research

The rates vol market has something to say

Rates volatility makes new historical lows so often nowadays that it is not even considered newsworthy anymore. However, it does not mean the vol market is dead; skews have seen big moves recently with investors using options to express their directional views or hedge their outright positions (see Chart of the day). Such skew moves are worth monitoring as they can send important messages to duration players.

Our analysis of historical changes in receiver and payer skews in USD and EUR rates suggest that (1) over the long run, large moves in skews are useful indicators of subsequent selloffs/rallies. Rich risk reversals in the US tend to lead a sell-off in the US, while a rally is more likely in Europe. (2) Over the last three years, receivers have tended to be more accurate indicators than payers. Given the recent price action, we believe a continuation of the skew trends would raise risks of curve steepening moves on both sides of the pond.

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In the long run, follow vol traders in the US and do the opposite in Europe

A few years ago, we analyzed extreme skews and their relationship to positioning for select tenors. Our work at the time suggested richening risk reversals tend to precede a duration sell-off in the US, and [the opposite tended to be true in Europe](#).

A more granular analysis suggests looking at payer and receiver skews separately may provide a more complete picture in terms of investor positioning and sentiment (Table 1 and Table 2). For example, looking at monthly data collected since 2004 per Table 1, 10y US rates have outperformed the 1m forwards about 70% of the time after 3m10y receivers richened (compared to just 54% of the time over the whole period). The average and median outperformance were 10bp and 12bp respectively (versus 3bp and 2bp on all months). At the same time, a cheapening in US receiver skews on long tails also tends to point to selloffs: 30y rates have underperformed forwards 56% of the time, compared to 33% of the time when receivers have been rich.

The diametrically opposite signals for the EUR market are also very apparent when considering payers and receivers separately (compare Table 1 vs Table 2). There, a richening in receiver skews would tend to signal greater chances of a sell-off versus forwards, as though positioning in options was moving in the same direction as positioning in cash (ie, with options being used to express views rather than hedge duration positions, as what could be happening in the US).

Table 1: Percentage of times that US yields rise 1m following payer or receiver skews reached extreme levels, observed since 2004

USD rates since 2004					
Frequency of yield sell-off following changes in skews					
	Tenor	unconditioned	<33	33-66	>66
Receivers	2y	46%	48%	48%	41%
	5y	46%	49%	50%	39%
	10y	46%	59%	52%	31%
	30y	45%	56%	46%	33%
Payers	2y	46%	42%	47%	47%
	5y	46%	39%	48%	50%
	10y	46%	33%	50%	57%
	30y	45%	42%	39%	52%

We analyze the top and bottom third percentiles of 3m changes in the 3m payer and receiver skews. For each percentile we computed average and median changes in each tenor in the following month, calculated as the spread between current 1m fwd rate and spot rate 1m later. We report the frequency of subsequent negative returns in each percentile. The same statistics are also reported unconditionally. We use monthly observations for this analysis. Sample: 2004-2018.

(*) the receiver (payer) skew is measured as 25bp OTM receiver (payer) implied vol minus ATM implied vol Source: BofA Merrill Lynch Global Research

Table 2: Percentage of times that European yields rise 1m following payer or receiver skews reached extreme levels, observed since 2007

EUR rates since 2007					
Frequency of yield sell-off following changes in skews					
	Tenor	unconditioned	<33	33-66	>66
Receivers	2y	35%	26%	39%	40%
	5y	36%	31%	38%	40%
	10y	39%	34%	33%	51%
	30y	47%	44%	40%	54%
Payers	2y	35%	41%	36%	29%
	5y	36%	45%	38%	28%
	10y	39%	46%	39%	34%
	30y	47%	55%	36%	47%

We analyze the top and bottom third percentiles of 3m changes in the 3m payer and receiver skews. For each percentile we computed average and median changes in each tenor in the following month, calculated as the spread between current 1m fwd rate and spot rate 1m later. We report the frequency of subsequent negative returns in each percentile. The same statistics are also reported unconditionally. We use monthly observations for this analysis. Sample: 2007-2018.

(*) the receiver (payer) skew is measured as 25bp OTM receiver (payer) implied vol minus ATM implied vol. Source: BofA Merrill Lynch Global Research

More recently, the message from the skews is mixed

Looking at more recent data, payer skews seemed to be losing their status as leading indicators, and have become more of a coincident signal. Looking at Table 3, for example, sell-offs in 30y tend to happen more often at the same time as payers becoming richer (73% of the time), whereas the yield moves in the following month have been more uniformly distributed regardless of skew changes.

At the same time, receivers have become more important indicators in both the US and Eurozone in the last three years. In the US, the 2y and 30y receiver skews have shown the most significant predictive power: 2y and 30y yields have tended to sell off about 80% of the time when receiver skews are cheap (Table 4). While a cheapening in the 2y sector in the US could reflect higher investor confidence in the Fed's hiking path, the cheaper receiver skew in 30y could be linked with cleaner positioning in the long end. Plotting receiver skews in 30y tenor against CFTC positioning, a flat skew in receivers has coincided with significant reductions in net short positions (Chart 1).

Table 3: USD payer skews in 30y tenor have been better coincident indicators of rate moves, rather than leading indicators (since '16)

Increases in yields 1m following payer skew moves				
	unconditioned	<33	33-66	>66
Avg yield chg (bp)	0.9	0.5	-1.5	2.6
Median yield chg (bp)	3.2	5.0	1.1	5.2
Frequency of yield rise (%)	58%	56%	56%	60%

Increases in yields during the same time as the skew moves				
	unconditioned	<33	33-66	>66
Avg yield chg (bp)	3.5	-9.0	7.8	8.3
Median yield chg (bp)	3.7	-9.3	-0.8	5.5
Frequency of yield rise (%)	58%	44%	44%	73%

Source: BofA Merrill Lynch Global Research

In Europe, the richening in receiver skews has been a more relevant indicator since Mar 2016 (when the ECB last cut rates), signaling higher chances of rates underperforming forwards in the long end 8 out of 10 times. What remains relevant in the payer skew would be a significant cheapening in 3m10y payers, as this has been followed by a selloff 67% of the time (versus an unconditional level of 53% - see Table 5).

Table 4: Percentage of times that US yields rise 1m following payer or receiver skews reached extreme levels, observed since Dec 2015 (circled cells show where recent skew moves stand)

USD since Dec 2015					
Frequency of yield sell-off following changes in skews					
	Tenor	unconditioned	<33	33-66	>66
Receivers	2y	61%	80%	60%	54%
	5y	61%	44%	64%	69%
	10y	58%	58%	60%	55%
	30y	58%	78%	43%	60%

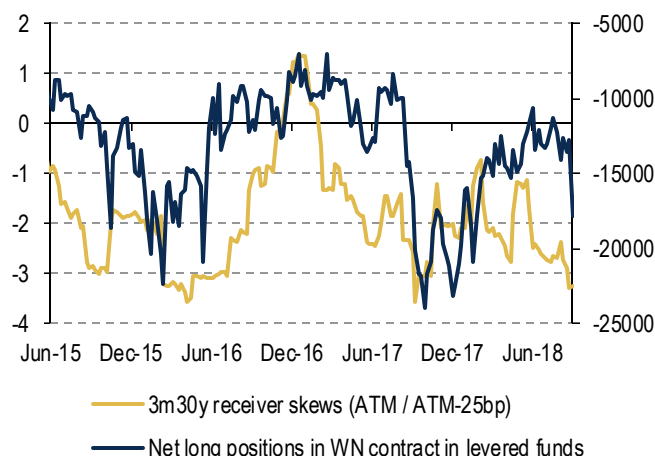
	Tenor	unconditioned	<33	33-66	>66
Payers	2y	61%	45%	71%	60%
	5y	61%	62%	67%	55%
	10y	58%	58%	33%	67%
	30y	58%	56%	56%	60%

We analyze the top and bottom third percentiles of 3m changes in the 3m payer and receiver skews. For each percentile we computed average and median changes in each tenor in the following month, calculated as the spread between current 1m fwd rate and spot rate 1m later. We report the frequency of subsequent negative returns in each percentile. The same statistics are also reported unconditionally. We use monthly observations for this analysis. Sample: Dec 2015-Aug 2018.
 (*) the receiver (payer) skew is measured as 25bp OTM receiver (payer) implied vol minus ATM implied vol
 Source: BofA Merrill Lynch Global Research

Where are we now?

From a skew and positioning perspective, we believe the recent moves raise the risks of curve steepening in both the US and Europe. While skews in several sectors have touched extreme levels (see circled boxes in Table 4 and Table 5), the main tenors we would watch for are the cheapness of 2y payers in the US (pointing to higher chance of a rally), and the richness in long-end receivers in the Eurozone (higher chance of a sell-off). Given the recent sell-off in rates, we recommend monitoring 10y payer skews in the US and receiver skews in EU rates as signs of potential extension of this move.

Chart 1: Cheapness in receiver skews (less negative) has coincided with a sharp reduction in net shorts by levered funds in 30y



Note: we adjust CFTC positions by the total number of traders in the long and short leg using the method describe [here](#). Source: BofA Merrill Lynch Global Research

Table 5: Percentage of times that European yields rise 1m following payer or receiver skews reached extreme levels, observed since Mar '16 (circled cells show where recent skew moves stand)

EUR since Mar16					
Frequency of yield sell-off following changes in skews					
	Tenor	unconditioned	<33	33-66	>66
Receivers	2y	37%	33%	14%	50%
	5y	47%	44%	33%	53%
	10y	53%	60%	20%	80%
	30y	60%	60%	46%	86%

	Tenor	unconditioned	<33	33-66	>66
Payers	2y	37%	33%	38%	36%
	5y	47%	43%	45%	50%
	10y	53%	67%	55%	46%
	30y	60%	67%	60%	57%

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 (*) the receiver (payer) skew is measured as 25bp OTM receiver (payer) implied vol minus ATM implied vol
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