

Views and flows

The dovish Fed tilt at the January meeting anchors the frontend and skews the curve dynamic back towards bull flattening and bear steepening moves. The belly of the curve will have to do the heavy lifting before the case for the repricing of the frontend becomes evident. Volatility on the left side of the grid reflected this new dynamic quickly, leading the underperformance on the week, and we see scope for further steepening of the vol grid particularly inside 1y expiries (expectations for the cycle turn should continue to lend some support to intermediate expiries).

Relative value

The left side led the underperformance on the volatility grid on the dovish Fed, and the grid steepened back to levels not seen since early December. We believe there is scope for further underperformance in this new regime, particularly inside 1y expiries, towards the 10-15bp range for the 3m10y vs 3m2y implied volatility spread (see Chart 3). Implieds look cheap across the grid when directionality with rates is removed (Table 6 and Table 8). Ratios of implied to delivered volatility continue to reveal cheapness of implied virtually across the entire grid relative to delivered volatility.

Receiver skew looks generally rich relative to payer skew across the grid (Table 21), and we expect this to persist in the context of a late cycle dynamic. On Z-Scores, however, this richness continues to be more pronounced (versus recent history) on the right side of the grid (Table 22). In the context of the recent dynamic of the forwards, however, we continue to see scope for richening of receiver skew particularly for intermediate expiries (see Table 19).

On Conditional curves, bull steepeners and bear flatteners give up to the forwards virtually across the entire grid (see Table 25 and Table 27), while bull flatteners and bear steepeners show pickups that are somewhat attractive in the context of recent history (see Table 23 and Table 29). We recommended fading the early Jan steepening of the 5s30s curve through [bear flatteners](#) (entry: 27, current: 25bp), expressed by buying payer spreads in 5y tails to overcome the give up, as well as [long dated steepeners](#) (entry: 9bp, current: 23bp) on 2s10s which benefit from attractive entry levels relative to the forwards and position for peak steepening in the next cycle [here](#).

Forward volatility continues to look rich, particularly in 1m to 3m expiries on 1y and 2y tails (Table 32).

Trade recommendations

Bull flattening and bear steepening moves are expected to dominate the curve under the new dovish Fed. We like to position for the former through 6m fwd 2s5s bull flattener expressed by buying 6m5y receiver spreads (atm/2.25%) financed by selling 6m2y receivers atm-10bp (costless indicative). The position picks up 10bp relative to the forwards, with positive carry of roughly 3bp/3m. The trade positions for a bull flattening of the curve near-term, but in a scenario where it is unlikely that the market moves to price cuts from the Fed over a 6m window. The main risk for the trade is the reverse of this scenario: a significant dovish repricing of expectations for the Fed and bull steepening of the curve. Because we recommend selling the low strike on the 5y leg the position is exposed to rallies beyond that strike, even in a bull flattening scenario.

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Levels and Recent Moves

Table 1: ATM Normal Volatility Grid

	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	28.0	45.4	50.7	53.0	52.4	51.7	46.8
3M	28.4	47.2	53.4	56.0	55.2	54.4	49.2
6M	40.3	53.6	57.7	59.4	58.1	56.9	51.5
1Y	55.4	63.2	63.7	64.0	62.5	60.9	55.1
2Y	70.6	72.6	71.0	69.4	67.3	64.9	59.0
3Y	75.7	76.0	74.5	72.2	69.9	67.5	60.9
4Y	78.1	78.1	76.8	73.7	71.3	68.8	61.6
5Y	78.9	78.5	77.3	74.4	72.1	69.7	62.1
10Y	74.3	73.2	72.4	70.7	68.6	66.6	59.2
30Y	50.9	51.0	50.9	50.5	50.3	49.2	48.1

Source: BofA Merrill Lynch Global Research

Table 2: ATM Volatility Grid - 3m Z-Scores

	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	-1.7	-1.3	-1.4	-1.5	-1.5	-1.5	-1.6
3M	-2.4	-1.7	-1.6	-1.8	-1.9	-1.9	-2.1
6M	-2.2	-2.0	-2.0	-2.2	-2.3	-2.4	-2.5
1Y	-2.2	-2.4	-2.6	-2.6	-2.7	-2.6	-2.6
2Y	-2.3	-2.7	-2.8	-2.8	-2.8	-2.7	-2.5
3Y	-2.8	-3.0	-3.0	-2.9	-2.8	-2.6	-2.4
4Y	-2.5	-2.5	-2.5	-2.6	-2.6	-2.4	-2.3
5Y	-2.5	-2.5	-2.5	-2.6	-2.4	-2.3	-2.1
10Y	-0.2	-0.5	-0.6	-0.8	-0.7	-0.6	-0.6
30Y	-2.0	-1.8	-1.7	-1.2	0.0	0.2	2.2

Source: BofA Merrill Lynch Global Research

Table 3: ATM Normal Volatility Grid - CoW

	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	-3.7	-4.4	-4.8	-5.0	-4.1	-3.0	-3.6
3M	-7.6	-7.0	-4.9	-4.0	-3.3	-2.2	-2.7
6M	-6.9	-6.9	-5.0	-4.2	-3.6	-3.0	-3.4
1Y	-6.2	-5.3	-4.5	-4.1	-3.6	-3.1	-3.1
2Y	-4.1	-4.2	-3.7	-3.3	-2.9	-2.6	-2.1
3Y	-3.7	-3.7	-3.3	-2.7	-2.4	-2.1	-1.7
4Y	-2.5	-2.5	-2.3	-2.0	-1.9	-1.8	-1.5
5Y	-1.8	-1.8	-1.8	-1.7	-1.6	-1.5	-1.1
10Y	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.1
30Y	-0.4	-0.4	-0.4	0.0	0.0	0.1	0.1

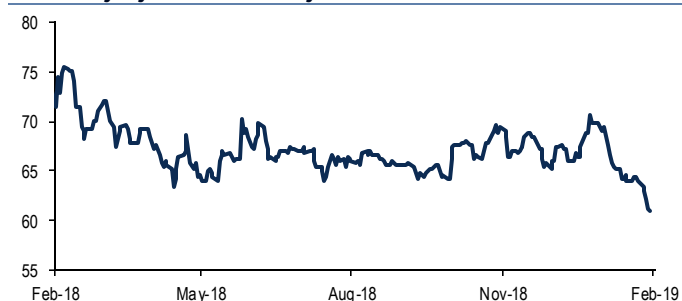
Source: BofA Merrill Lynch Global Research

Table 4: ATM Straddle Premiums

	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	0.1%	0.2%	0.3%	0.5%	0.7%	1.0%	2.1%
3M	0.1%	0.4%	0.6%	1.0%	1.4%	1.8%	3.9%
6M	0.2%	0.6%	0.9%	1.5%	2.0%	2.7%	5.7%
1Y	0.4%	1.0%	1.4%	2.3%	3.1%	4.1%	8.6%
2Y	0.7%	1.5%	2.2%	3.5%	4.6%	6.0%	12.7%
3Y	1.0%	1.9%	2.7%	4.3%	5.7%	7.5%	15.7%
4Y	1.1%	2.2%	3.2%	5.0%	6.5%	8.6%	17.9%
5Y	1.2%	2.4%	3.5%	5.5%	7.2%	9.5%	19.7%
10Y	1.4%	2.8%	4.1%	6.4%	8.5%	11.3%	23.4%
30Y	1.0%	2.0%	3.0%	4.8%	6.5%	8.7%	20.3%

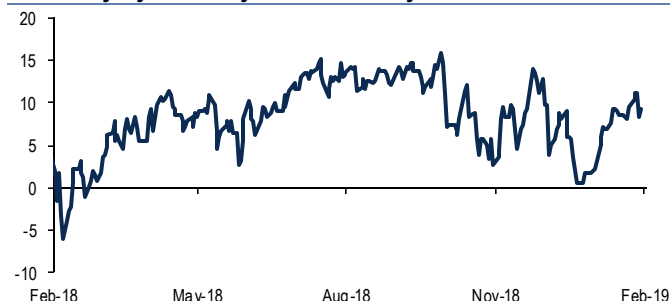
Source: BofA Merrill Lynch Global Research

Chart 1: 1y10y Normal Volatility



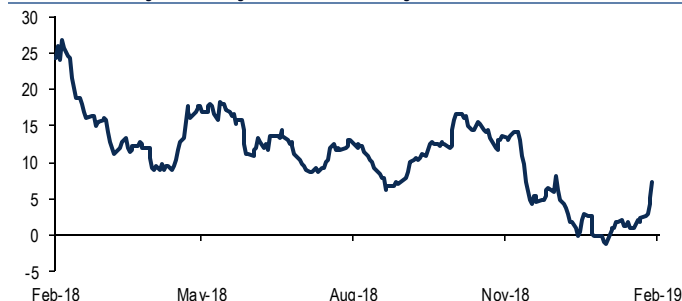
Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 2: 1y10y vs. 1m10y Normal Volatility



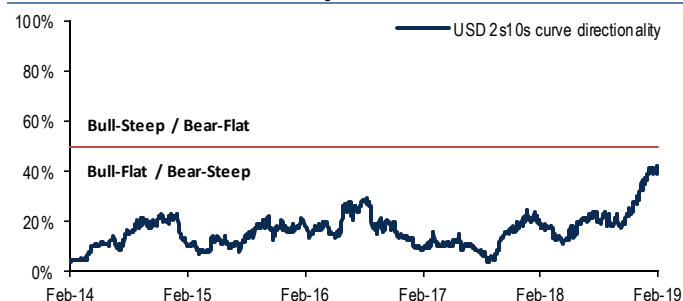
Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 3: 3m10y vs. 3m2y Normal Volatility



Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 4: 2s10s curve directionality



Source: BofA Merrill Lynch Global Research, Bloomberg

Volatility Grid Relative Value

PCA Z-SCORES

Table 5: 3m Z-Scores w/ PCA framework

	1y	2y	3y	5y	7y	10y	30y
3m	2.3	0.0	2.7	2.2	1.9	2.5	1.4
6m	-0.8	-2.6	0.5	0.8	0.7	0.9	-1.4
1y	-1.0	-1.2	-2.1	-2.2	-2.4	-1.9	-1.6
2y	-0.4	-2.1	-2.4	-2.8	-3.5	-2.9	-1.9
5y	-0.6	-0.6	-0.5	-1.0	-0.9	-0.8	-0.7
10y	1.2	0.9	0.9	0.7	0.9	1.0	1.2

Source: BofA Merrill Lynch Global Research

Table 7: 6m Z-Scores w/ PCA framework

	1y	2y	3y	5y	7y	10y	30y
3m	-1.8	1.0	1.9	3.0	2.9	3.7	2.3
6m	-1.7	-1.1	-0.5	0.7	-0.3	-1.0	-2.2
1y	-0.2	0.1	-0.4	-1.4	-3.0	-3.7	-3.5
2y	0.9	0.5	-1.3	-3.8	-2.7	-3.2	-2.3
5y	0.9	1.2	1.1	-0.4	-0.7	-0.4	-0.5
10y	1.9	1.0	1.2	0.2	0.2	0.3	1.3

Source: BofA Merrill Lynch Global Research

Table 9: 1y Z-Scores w/ PCA framework

	1y	2y	3y	5y	7y	10y	30y
3m	-2.8	2.1	1.4	3.3	0.7	0.8	-0.7
6m	-1.6	1.4	-0.8	0.2	-0.5	-1.8	-3.1
1y	-1.2	-0.3	-1.5	-0.5	-0.5	-0.9	-2.3
2y	0.7	-0.5	-0.4	0.4	0.1	-4.2	-0.8
5y	-0.1	2.1	2.2	-0.2	-1.4	-2.1	0.9
10y	1.6	1.1	1.1	0.0	-0.5	-0.2	0.5

Source: BofA Merrill Lynch Global Research

IMPLIED/DELIVERED RATIOS

Table 11: Implied vs. Delivered (21d) Ratio

	1y	2y	3y	5y	7y	10y	30y
1m	66%	72%	71%	72%	74%	77%	91%
3m	54%	68%	71%	74%	76%	80%	95%
6m	60%	69%	72%	76%	78%	82%	99%
1y	66%	73%	76%	80%	83%	88%	106%
2y	79%	85%	86%	91%	93%	99%	115%

Source: BofA Merrill Lynch Global Research

Table 13: 3m Z-Scores for Implied vs. Delivered (21d) Ratio

	1y	2y	3y	5y	7y	10y	30y
1m	-1.3	-1.2	-1.2	-1.3	-1.3	-1.3	-1.3
3m	-1.6	-1.3	-1.2	-1.3	-1.3	-1.3	-1.2
6m	-1.3	-1.2	-1.2	-1.3	-1.3	-1.3	-1.2
1y	-1.2	-1.1	-1.2	-1.3	-1.3	-1.3	-1.1
2y	-1.1	-1.2	-1.3	-1.3	-1.3	-1.2	-1.0

Source: BofA Merrill Lynch Global Research

Table 6: 3m Z-Scores w/ PCA framework w/o rates directionality

	1y	2y	3y	5y	7y	10y	30y
3m	-2.9	-3.3	-2.9	-2.7	-2.5	-2.2	-2.2
6m	-3.3	-3.7	-3.2	-3.0	-2.8	-2.6	-2.7
1y	-3.2	-3.3	-3.3	-3.3	-3.1	-2.9	-2.8
2y	-3.1	-3.5	-3.5	-3.3	-3.2	-3.0	-2.8
5y	-2.8	-2.9	-2.9	-2.9	-2.8	-2.6	-2.4
10y	-0.4	-0.6	-0.6	-0.7	-0.6	-0.4	-0.4

Source: BofA Merrill Lynch Global Research

Table 8: 6m Z-Scores w/ PCA framework w/o rates directionality

	1y	2y	3y	5y	7y	10y	30y
3m	-3.9	-4.2	-3.6	-3.2	-3.0	-2.6	-2.5
6m	-4.1	-4.4	-4.0	-3.7	-3.6	-3.3	-3.3
1y	-3.8	-3.8	-4.0	-4.1	-4.0	-3.7	-3.5
2y	-3.4	-3.8	-4.2	-4.3	-4.2	-3.9	-3.4
5y	-3.2	-3.2	-3.3	-3.6	-3.5	-3.2	-3.0
10y	-0.7	-1.1	-1.2	-1.3	-1.2	-1.1	-0.9

Source: BofA Merrill Lynch Global Research

Table 10: 1y Z-Scores w/ PCA framework w/o rates directionality

	1y	2y	3y	5y	7y	10y	30y
3m	-1.3	-0.1	0.0	-0.2	-0.4	-0.8	-1.6
6m	-0.3	0.2	0.3	0.0	-0.5	-0.9	-1.7
1y	0.6	0.7	0.4	0.1	-0.3	-0.8	-1.4
2y	0.9	0.7	0.5	0.2	-0.1	-0.4	-0.7
5y	1.2	1.1	1.1	1.1	1.0	0.8	0.6
10y	1.7	1.7	1.7	1.7	1.6	1.7	1.8

Source: BofA Merrill Lynch Global Research

Table 12: Implied vs. Delivered (63d) Ratio

	1y	2y	3y	5y	7y	10y	30y
1m	69%	77%	78%	83%	87%	92%	101%
3m	57%	73%	78%	86%	90%	95%	106%
6m	65%	75%	80%	89%	94%	99%	110%
1y	72%	81%	86%	95%	100%	106%	118%
2y	88%	99%	102%	110%	114%	119%	127%

Source: BofA Merrill Lynch Global Research

Table 14: 3m Z-Scores for Implied vs. Delivered (63d) Ratio

	1y	2y	3y	5y	7y	10y	30y
1m	-1.8	-1.8	-1.9	-2.0	-1.9	-1.8	-1.5
3m	-2.1	-2.1	-2.0	-2.0	-2.0	-2.0	-1.8
6m	-2.0	-2.0	-2.0	-2.1	-2.1	-2.2	-2.1
1y	-1.9	-1.9	-1.9	-2.1	-2.2	-2.2	-1.8
2y	-1.9	-2.0	-2.2	-2.2	-2.2	-2.1	-0.9

Source: BofA Merrill Lynch Global Research

Skew Relative Value

Table 15: Skew 25% delta

	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	2.2	3.3	3.5	3.2	2.9	2.4	2.0
3M	3.4	5.1	4.9	4.1	3.6	3.0	2.5
6M	4.1	5.1	5.5	4.9	4.4	3.7	2.5
1Y	4.9	6.0	5.9	5.0	4.2	3.2	2.3
2Y	6.5	6.2	5.4	4.0	3.5	2.8	2.6
5Y	4.0	3.8	3.5	2.8	2.6	2.4	2.5
10Y	2.9	3.1	3.2	3.6	3.7	3.8	3.8
30Y	5.6	5.7	5.8	6.2	6.3	6.4	6.5

Source: BofA Merrill Lynch Global Research

Table 16: Skew 75% delta

	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	-1.4	-1.8	-1.8	-1.3	-0.9	-0.4	-0.2
3M	-2.3	-2.9	-2.2	-0.9	-0.5	0.2	0.4
6M	-1.8	-1.8	-2.0	-1.2	-0.6	0.2	1.0
1Y	-1.7	-2.4	-2.3	-1.1	-0.3	0.7	1.3
2Y	-2.9	-2.4	-1.6	0.0	0.5	1.1	1.0
5Y	1.2	1.4	1.7	2.3	2.4	2.5	1.9
10Y	5.3	5.1	4.9	4.4	4.1	3.8	3.0
30Y	7.7	7.5	7.3	6.9	6.7	6.3	5.8

Source: BofA Merrill Lynch Global Research

Table 17: Breakeven Widths for Costless Receiver Ladders

	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	9.1	14.5	16.0	16.5	16.1	15.7	14.1
3M	18.1	29.2	31.8	32.0	31.0	30.2	27.0
6M	35.4	45.9	49.6	49.8	47.9	45.9	40.3
1Y	66.7	76.3	77.1	74.6	72.3	67.9	60.6
2Y	120.7	122.3	117.5	110.5	105.0	99.8	90.3
5Y	195.6	193.9	189.5	179.9	174.0	167.4	150.7
10Y	253.4	250.7	249.6	246.6	240.9	235.4	212.2

Source: BofA Merrill Lynch Global Research

Table 18: Breakeven Widths for Costless Payer Ladders

	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	7.2	11.9	13.4	14.2	14.2	14.2	13.0
3M	12.4	21.3	25.0	27.2	27.2	27.4	24.8
6M	26.7	35.9	38.7	41.0	40.7	40.7	37.7
1Y	53.1	59.9	60.6	62.8	62.7	63.1	58.3
2Y	93.5	97.4	97.1	98.7	96.8	95.2	86.8
5Y	181.5	181.6	180.4	177.0	172.3	167.4	148.1
10Y	271.0	266.1	261.8	252.5	244.0	235.0	204.5

Source: BofA Merrill Lynch Global Research

Table 19: 3m Z-Score for Receiver Skew (w/o directionality with forwards and ATM)

	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	-0.6	-0.5	-1.1	-1.0	-1.6	-0.8	-1.8
3M	0.9	0.6	0.8	1.0	0.5	0.6	-0.2
6M	0.1	-0.7	0.0	0.4	0.7	0.5	-0.8
1Y	-1.2	-0.7	-0.9	0.9	0.6	0.7	-0.1
2Y	0.7	0.7	0.9	1.1	1.6	1.3	2.1
5Y	-3.7	4.0	2.8	-1.1	0.5	1.9	1.6
10Y	1.4	1.4	1.3	1.1	1.0	0.9	0.7

Source: BofA Merrill Lynch Global Research

Table 20: 3m Z-Score for Payer Skew (w/o directionality with forwards and ATM)

	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	-1.6	-1.5	-2.3	-2.0	-2.0	-2.0	-2.0
3M	-2.1	-1.5	-1.2	-1.7	-1.3	-0.3	-0.7
6M	-0.7	-0.2	-0.7	-0.8	-1.0	-1.5	-0.6
1Y	-0.2	-0.5	-1.0	-1.4	-1.8	-2.2	-1.1
2Y	-0.9	-1.3	-1.1	-1.0	-1.4	-2.0	-1.7
5Y	0.1	-5.3	-4.7	-2.8	-3.5	-3.7	-3.3
10Y	-3.4	-3.4	-3.4	-3.5	-3.1	-3.4	-3.3

Source: BofA Merrill Lynch Global Research

Table 21: Ratio of Payer/Receiver BE widths for Costless Ladders

	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	79%	82%	84%	86%	88%	90%	92%
3M	69%	73%	78%	85%	88%	91%	92%
6M	75%	78%	78%	82%	85%	89%	94%
1Y	80%	78%	79%	84%	87%	93%	96%
2Y	77%	80%	83%	89%	92%	95%	96%
5Y	93%	94%	95%	98%	99%	100%	98%
10Y	107%	106%	105%	102%	101%	100%	96%

Source: BofA Merrill Lynch Global Research

Table 22: 3m Z-Score Ratio of Payer/Receiver Skew

	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	0.2	0.5	0.2	-0.7	-0.9	-1.7	-1.3
3M	0.0	0.3	0.1	-1.4	-1.1	-1.1	-1.3
6M	1.7	1.8	0.5	-0.9	-1.2	-1.6	-1.8
1Y	2.0	2.2	0.2	-1.2	-1.6	-1.5	-1.3
2Y	-0.9	-0.9	-1.2	-1.7	-1.8	-1.9	-1.8
5Y	-10.9	-7.1	-6.6	-4.3	-5.4	-4.6	-1.4
10Y	-2.8	-2.9	-2.9	-3.0	-2.5	-2.2	-1.3

Source: BofA Merrill Lynch Global Research

Conditional Curve Trades

Table 23: Bull Flattener (pickup to forwards for ATM)

ATM	2/5s	2/10s	2/30s	5/10s	5/30s	10/30s
3M	-3.9	-3.1	-0.8	0.7	2.6	2.0
6M	-3.6	-2.1	1.3	1.5	4.4	3.0
1Y	-0.6	1.9	6.2	2.4	6.7	4.4
1.5Y	1.7	5.2	10.6	3.8	9.3	5.8
2Y	3.6	8.3	14.4	5.0	11.2	6.5

Source: BofA Merrill Lynch Global Research

Table 24: Bull Flattener (pickup to forwards for -25bp OTM)

-25bp	2/5s	2/10s	2/30s	5/10s	5/30s	10/30s
3M	-5.9	-3.1	1.5	2.2	6.3	4.4
6M	-5.6	-1.7	4.4	3.4	8.7	5.8
1Y	-0.1	4.4	10.9	4.6	10.8	6.9
1.5Y	3.2	8.7	15.7	5.8	13.2	7.9
2Y	5.6	12.0	19.4	6.9	14.7	8.5

Source: BofA Merrill Lynch Global Research

Table 25: Bull Steepener (pickup to forwards for ATM)

ATM	2/5s	2/10s	2/30s	5/10s	5/30s	10/30s
3M	3.9	3.1	0.8	-0.7	-2.6	-2.0
6M	3.6	2.1	-1.3	-1.5	-4.4	-3.0
1Y	0.6	-1.9	-6.2	-2.4	-6.7	-4.4
1.5Y	-1.7	-5.2	-10.6	-3.8	-9.3	-5.8
2Y	-3.6	-8.3	-14.4	-5.0	-11.2	-6.5

Source: BofA Merrill Lynch Global Research

Table 26: Bull Steepener (pickup to forwards for -25bp OTM)

-25bp	2/5s	2/10s	2/30s	5/10s	5/30s	10/30s
3M	5.9	3.1	-1.5	-2.2	-6.3	-4.4
6M	5.6	1.7	-4.4	-3.4	-8.7	-5.8
1Y	0.1	-4.4	-10.9	-4.6	-10.8	-6.9
1.5Y	-3.2	-8.7	-15.7	-5.8	-13.2	-7.9
2Y	-5.6	-12.0	-19.4	-6.9	-14.7	-8.5

Source: BofA Merrill Lynch Global Research

Table 27: Bear Flattener (pickup to forwards for ATM)

ATM	2/5s	2/10s	2/30s	5/10s	5/30s	10/30s
3M	3.5	2.9	0.8	-0.7	-2.4	-1.9
6M	3.2	1.9	-1.1	-1.3	-4.2	-2.8
1Y	0.5	-1.8	-6.1	-2.2	-6.5	-4.4
1.5Y	-1.5	-5.0	-10.3	-3.6	-8.9	-5.6
2Y	-3.4	-8.1	-14.0	-4.8	-10.8	-6.3

Source: BofA Merrill Lynch Global Research

Table 28: Bear Flattener (pickup to forwards for +25bp OTM)

+25bp	2/5s	2/10s	2/30s	5/10s	5/30s	10/30s
3M	11.1	11.5	6.8	-0.1	-3.8	-3.6
6M	6.2	5.2	0.9	-1.3	-5.2	-4.0
1Y	1.7	-0.4	-6.1	-2.1	-7.7	-5.8
1.5Y	-0.9	-4.6	-11.6	-3.8	-10.8	-7.3
2Y	-3.0	-8.3	-15.9	-5.4	-13.2	-8.1

Source: BofA Merrill Lynch Global Research

Table 29: Bear Steepener (pickup to forwards for ATM)

ATM	2/5s	2/10s	2/30s	5/10s	5/30s	10/30s
3M	-3.5	-2.9	-0.8	0.7	2.4	1.9
6M	-3.2	-1.9	1.1	1.3	4.2	2.8
1Y	-0.5	1.8	6.1	2.2	6.5	4.4
1.5Y	1.5	5.0	10.3	3.6	8.9	5.6
2Y	3.4	8.1	14.0	4.8	10.8	6.3

Source: BofA Merrill Lynch Global Research

Table 30: Bear Steepener (pickup to forwards for +25bp OTM)

+25bp	2/5s	2/10s	2/30s	5/10s	5/30s	10/30s
3M	-11.1	-11.5	-6.8	0.1	3.8	3.6
6M	-6.2	-5.2	-0.9	1.3	5.2	4.0
1Y	-1.7	0.4	6.1	2.1	7.7	5.8
1.5Y	0.9	4.6	11.6	3.8	10.8	7.3
2Y	3.0	8.3	15.9	5.4	13.2	8.1

Source: BofA Merrill Lynch Global Research

Forward Volatility

Table 31: 6m Forward Volatility

	1y	2y	5y	10y	30y
1m	49.0	58.2	61.7	59.9	55.1
3m	56.7	63.6	64.9	62.6	57.3
6m	59.6	66.2	66.4	63.7	58.2
1y	61.3	68.9	68.5	64.9	59.2
2y	75.1	76.6	73.3	68.3	62.1
5y	80.5	80.0	75.8	70.9	63.1
10y	74.2	73.1	70.8	66.7	59.3

Source: BofA Merrill Lynch Global Research

Table 32: 6m fwd vol as % ATM

	1y	2y	5y	10y	30y
1m	175%	128%	116%	116%	118%
3m	200%	135%	116%	115%	116%
6m	148%	124%	112%	112%	113%
1y	111%	109%	107%	107%	107%
2y	106%	106%	106%	105%	105%
5y	102%	102%	102%	102%	102%
10y	100%	100%	100%	100%	100%

Source: BofA Merrill Lynch Global Research

Table 33: 3m Z-Scores of 6m fwd vol % ATM

	1y	2y	5y	10y	30y
1m	1.6	0.7	0.5	0.5	0.8
3m	3.3	1.2	0.9	1.1	1.5
6m	2.2	0.9	0.8	1.5	2.4
1y	0.4	-0.2	1.0	1.6	2.5
2y	0.1	0.5	1.9	2.2	2.6
5y	2.7	2.4	2.4	2.8	3.0
10y	3.5	3.4	3.5	3.5	3.2

Source: BofA Merrill Lynch Global Research

Table 34: 1y Forward Volatility

	1y	2y	5y	10y	30y
1m	57.7	65.2	66.1	63.2	58.1
3m	65.3	70.7	68.9	64.9	59.1
6m	67.2	73.0	70.6	66.0	60.1
1y	69.1	76.1	72.9	67.8	62.3
2y	79.8	80.3	75.9	70.4	63.5
5y	81.0	80.4	76.3	71.4	63.3
10y	73.8	72.7	70.6	66.4	59.0

Source: BofA Merrill Lynch Global Research

Table 35: 1y fwd vol as % ATM

	1y	2y	5y	10y	30y
1m	206%	144%	125%	122%	124%
3m	230%	150%	123%	119%	120%
6m	167%	136%	119%	116%	117%
1y	125%	120%	114%	111%	113%
2y	113%	111%	109%	108%	108%
5y	103%	102%	103%	103%	102%
10y	99%	99%	100%	100%	100%

Source: BofA Merrill Lynch Global Research

Table 36: 3m Z-Scores of 1y fwd vol % ATM

	1y	2y	5y	10y	30y
1m	1.7	0.9	0.9	0.9	1.2
3m	3.4	1.1	0.8	1.0	1.6
6m	2.5	1.0	1.1	1.6	2.5
1y	0.9	0.0	1.6	1.6	2.8
2y	0.9	1.1	2.2	2.5	2.7
5y	2.7	2.3	2.6	3.0	3.2
10y	3.9	3.8	3.7	3.7	3.5

Source: BofA Merrill Lynch Global Research

Table 37: 2y Forward Volatility

	1y	2y	5y	10y	30y
1m	59.5	71.4	72.3	68.4	63.3
3m	79.9	82.1	77.5	71.5	64.8
6m	79.3	82.4	77.8	71.9	64.7
1y	75.8	82.7	78.2	72.4	64.6
2y	85.3	86.2	79.9	73.2	64.6
5y	81.3	80.7	77.0	71.8	62.8
10y	72.5	71.5	69.6	65.3	58.0

Source: BofA Merrill Lynch Global Research

Table 38: 2y fwd vol as % ATM

	1y	2y	5y	10y	30y
1m	213%	157%	136%	132%	135%
3m	281%	174%	138%	132%	132%
6m	197%	154%	131%	126%	126%
1y	137%	131%	122%	119%	117%
2y	121%	119%	115%	113%	110%
5y	103%	103%	103%	103%	101%
10y	98%	98%	98%	98%	98%

Source: BofA Merrill Lynch Global Research

Table 39: 3m Z-Scores of 2y fwd vol % ATM

	1y	2y	5y	10y	30y
1m	1.2	0.7	1.0	1.0	1.6
3m	3.4	1.3	1.5	1.5	2.2
6m	2.5	1.3	1.9	2.2	2.8
1y	1.7	1.3	2.3	2.4	2.8
2y	1.7	2.7	2.8	2.9	2.8
5y	2.9	2.5	3.3	3.4	3.3
10y	4.4	4.2	3.8	3.7	3.5

Source: BofA Merrill Lynch Global Research

Table 40: 3y Forward Volatility

	1y	2y	5y	10y	30y
1m	15.9	59.3	71.1	68.6	62.6
3m	76.1	83.2	79.8	73.2	64.5
6m	78.8	86.1	80.7	73.6	64.5
1y	80.4	87.9	81.2	74.0	64.7
2y	86.6	87.0	81.3	74.7	64.9
5y	81.1	80.4	77.0	71.7	61.9
10y	70.9	69.9	68.4	64.1	56.8

Source: BofA Merrill Lynch Global Research

Table 41: 3y fwd vol as % ATM

	1y	2y	5y	10y	30y
1m	57%	130%	134%	133%	134%
3m	268%	176%	142%	135%	131%
6m	195%	161%	136%	129%	125%
1y	145%	139%	127%	121%	117%
2y	123%	120%	117%	115%	110%
5y	103%	102%	103%	103%	100%
10y	95%	96%	97%	96%	96%

Source: BofA Merrill Lynch Global Research

Table 42: 3m Z-Scores of 3y fwd vol % ATM

	1y	2y	5y	10y	30y
1m	-0.7	0.3	0.8	0.9	1.5
3m	3.4	1.6	1.6	1.6	2.1
6m	2.6	2.1	2.2	2.3	2.9
1y	2.3	2.7	2.6	2.5	3.1
2y	1.8	2.5	2.4	3.1	3.1
5y	3.2	2.9	3.4	3.5	3.4
10y	4.6	4.3	3.8	3.8	3.6

Source: BofA Merrill Lynch Global Research

Table 43: 5y Forward Volatility

	1y	2y	5y	10y	30y
1m		49.1	70.8	70.0	62.6
3m	73.1	78.7	80.6	74.9	64.5
6m	75.1	80.0	81.2	75.0	64.4
1y	76.8	81.6	81.4	74.5	63.9
2y	81.8	84.1	80.8	73.3	62.8
5y	79.1	78.0	75.2	70.4	59.5
10y	66.8	66.0	65.4	61.4	54.0

Source: BofA Merrill Lynch Global Research

Table 44: 5y fwd vol as % ATM

	1y	2y	5y	10y	30y
1m		108%	134%	135%	134%
3m	257%	167%	144%	138%	131%
6m	186%	149%	137%	132%	125%
1y	139%	129%	127%	122%	116%
2y	116%	116%	116%	113%	106%
5y	100%	99%	101%	101%	96%
10y	90%	90%	93%	92%	91%

Source: BofA Merrill Lynch Global Research

Table 45: 3m Z-Scores of 5y fwd vol % ATM

	1y	2y	5y	10y	30y
1m		0.7	1.1	1.4	1.9
3m	3.3	1.4	1.6	2.0	2.5
6m	2.2	1.4	2.1	2.9	3.4
1y	1.5	1.7	2.8	3.5	3.6
2y	1.8	3.0	3.4	3.9	3.6
5y	3.8	3.8	3.9	3.8	3.4
10y	3.8	3.5	3.0	3.1	3.1

Source: BofA Merrill Lynch Global Research

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