

# Vanilla and Flow Exotics Trade Reports

## Searching for value

We present a number of analyses on vanilla vol carry, conditional vanilla trades, conditional midcurve trades, long-dated triangles and midcurve calendar spreads, and exchange traded curve trades. Please note links at the bottom of every page with example uses of the reports. We plan to update these biweekly before moving them, in time, to our website.

## Swaption Carry Breakdowns

## Global Markets Research

12 December 2014

## Research analysts

## Quantitative Strategies

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Fig. 1: USD Straddles - premium weighted, 6-month horizon

USD (Straddle) - Total Carry (6m horizon) / Premium								USD (Straddle) - Vega Carry (6m horizon) / Premium							
	1y	2y	5y	10y	15y	20y	30y		1y	2y	5y	10y	15y	20y	30y
1m	-9.3%	-47.5%	-74.3%	-83.0%	-87.1%	-89.8%	-92.4%	1m	-4.5%	-6.9%	-9.6%	-10.0%	-10.0%	-10.0%	-10.1%
3m	1.6%	-21.5%	-58.1%	-72.8%	-79.5%	-83.9%	-87.8%	3m	-18.2%	-1.3%	-3.8%	-6.3%	-7.4%	-8.1%	-7.9%
6m	26.1%	4.2%	-43.2%	-63.3%	-72.1%	-77.9%	-83.4%	6m	-9.9%	0.6%	-2.9%	-6.6%	-7.2%	-7.1%	-7.3%
9m	8.8%	-8.5%	-34.5%	-42.4%	-43.9%	-44.0%	-44.4%	9m	-4.5%	0.0%	-3.2%	-5.7%	-5.1%	-3.9%	-3.2%
1y	-0.6%	-11.8%	-25.9%	-29.9%	-30.9%	-30.9%	-30.0%	1y	-4.0%	-1.6%	-3.1%	-4.3%	-4.3%	-3.8%	-2.3%
18m	-8.8%	-12.9%	-15.6%	-17.9%	-17.6%	-18.0%	-18.3%	18m	-3.2%	-1.6%	-0.1%	-1.6%	-1.0%	-1.1%	-1.3%
2y	-13.2%	-13.1%	-12.3%	-13.0%	-13.1%	-12.9%	-12.8%	2y	-5.3%	-3.0%	-0.7%	-1.2%	-1.2%	-0.8%	-0.7%
3y	-8.4%	-7.3%	-7.8%	-8.1%	-7.7%	-7.3%	-7.3%	3y	-1.2%	0.1%	-0.3%	-0.7%	-0.3%	0.2%	0.1%
5y	-3.4%	-2.8%	-3.3%	-3.4%	-3.2%	-3.0%	-3.2%	5y	1.0%	0.9%	0.5%	0.4%	0.6%	0.8%	0.5%
7y	-1.2%	-1.0%	-1.1%	-1.2%	-1.1%	-1.1%	-1.0%	7y	1.1%	1.3%	1.1%	1.0%	1.1%	1.2%	1.3%
10y	0.5%	-0.1%	0.4%	0.4%	0.4%	0.4%	0.4%	10y	1.6%	1.3%	1.5%	1.5%	1.5%	1.5%	1.5%
15y	1.7%	1.8%	1.6%	1.3%	1.4%	1.3%	1.3%	15y	1.9%	2.0%	1.8%	1.5%	1.6%	1.6%	1.6%
20y	1.6%	1.7%	1.7%	1.6%	1.5%	1.2%	1.3%	20y	1.4%	1.5%	1.5%	1.4%	1.3%	1.1%	1.2%
30y	1.4%	1.2%	1.0%	0.8%	0.7%	0.6%	0.5%	30y	0.8%	0.7%	0.5%	0.3%	0.2%	0.2%	0.1%

  

USD (Straddle) - Curve Carry (6m horizon) / Premium								USD (Straddle) - Theta (6m horizon) / Premium							
	1y	2y	5y	10y	15y	20y	30y		1y	2y	5y	10y	15y	20y	30y
1m	30.8%	11.8%	3.2%	1.5%	1.0%	0.7%	0.4%	1m	-26.4%	-53.7%	-76.4%	-84.6%	-88.6%	-91.2%	-93.8%
3m	46.3%	27.5%	9.7%	4.7%	3.0%	2.1%	1.4%	3m	-27.7%	-45.1%	-62.9%	-73.3%	-78.7%	-82.5%	-86.7%
6m	65.2%	46.6%	17.8%	9.0%	5.9%	4.1%	2.8%	6m	-29.9%	-43.6%	-56.5%	-63.4%	-69.4%	-74.7%	-79.8%
9m	44.6%	28.4%	9.4%	4.7%	3.1%	2.4%	1.8%	9m	-30.6%	-35.7%	-39.4%	-40.1%	-40.7%	-41.3%	-41.7%
1y	28.2%	16.8%	5.6%	3.0%	2.2%	1.8%	1.5%	1y	-24.5%	-26.6%	-28.1%	-28.3%	-28.4%	-28.6%	-28.9%
18m	11.3%	6.2%	2.4%	1.6%	1.3%	1.1%	1.1%	18m	-16.8%	-17.4%	-17.9%	-17.9%	-17.9%	-18.0%	-18.0%
2y	4.4%	2.4%	1.2%	1.0%	0.9%	0.8%	0.8%	2y	-12.4%	-12.7%	-12.9%	-12.9%	-12.9%	-12.9%	-13.0%
3y	0.5%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	3y	-7.7%	-7.7%	-7.7%	-7.7%	-7.7%	-7.8%	-7.8%
5y	-0.4%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	5y	-4.0%	-4.0%	-4.0%	-4.0%	-4.0%	-4.0%	-4.0%
7y	0.0%	0.1%	0.2%	0.2%	0.2%	0.1%	0.1%	7y	-2.4%	-2.4%	-2.4%	-2.4%	-2.4%	-2.4%	-2.4%
10y	0.0%	-0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	10y	-1.1%	-1.1%	-1.1%	-1.1%	-1.1%	-1.1%	-1.1%
15y	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%	15y	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%
20y	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%	-0.1%	20y	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
30y	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%	-0.2%	30y	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%

Source: Nomura Research. For the method details of carry decomposition, please see [link](#). In the appendix

Fig. 2: USD Straddles – Vega weighted, 6-month horizon

USD (Straddle) - Total Carry (6m horizon) / Vega								USD (Straddle) - Vega Carry (6m horizon) / Vega							
	1y	2y	5y	10y	15y	20y	30y		1y	2y	5y	10y	15y	20y	30y
1m	-2.4	-27.6	-54.7	-56.1	-56.0	-57.6	-58.0	1m	-1.1	-4.0	-7.0	-6.7	-6.4	-6.4	-6.3
3m	0.7	-13.6	-44.1	-51.4	-54.0	-57.3	-58.4	3m	-7.4	-0.8	-2.9	-4.5	-5.0	-5.5	-5.2
6m	13.8	3.0	-34.2	-46.9	-51.0	-54.9	-57.3	6m	-5.3	0.4	-2.3	-4.9	-5.1	-5.0	-5.0
9m	5.5	-6.5	-28.4	-32.6	-32.0	-31.8	-30.9	9m	-2.8	0.0	-2.7	-4.4	-3.7	-2.8	-2.3
1y	-0.4	-9.7	-22.0	-23.6	-23.1	-22.8	-21.1	1y	-2.9	-1.3	-2.6	-3.4	-3.2	-2.8	-1.6
18m	-7.3	-11.4	-13.5	-14.5	-13.4	-13.5	-13.1	18m	-2.7	-1.4	-0.1	-1.3	-0.7	-0.9	-1.0
2y	-12.4	-12.4	-10.9	-10.7	-10.1	-9.7	-9.2	2y	-5.0	-2.8	-0.7	-1.0	-0.9	-0.6	-0.5
3y	-8.3	-7.0	-7.0	-6.8	-6.0	-5.5	-5.3	3y	-1.2	0.0	-0.3	-0.6	-0.3	0.1	0.1
5y	-3.3	-2.7	-3.0	-2.8	-2.5	-2.2	-2.3	5y	1.0	0.9	0.5	0.3	0.4	0.6	0.4
7y	-1.1	-0.9	-1.0	-1.0	-0.8	-0.8	-0.6	7y	1.0	1.2	1.0	0.8	0.8	0.8	0.9
10y	0.4	0.0	0.3	0.3	0.3	0.2	0.2	10y	1.3	1.1	1.2	1.1	1.0	0.9	0.9
15y	1.2	1.3	1.1	0.8	0.8	0.7	0.7	15y	1.3	1.4	1.2	1.0	0.9	0.9	0.8
20y	1.0	1.0	1.0	0.9	0.7	0.6	0.6	20y	0.9	0.9	0.9	0.8	0.7	0.5	0.6
30y	0.7	0.7	0.5	0.4	0.4	0.3	0.2	30y	0.4	0.4	0.2	0.2	0.1	0.1	0.0

  

USD (Straddle) - Curve Carry (6m horizon) / Vega								USD (Straddle) - Theta (6m horizon) / Vega							
	1y	2y	5y	10y	15y	20y	30y		1y	2y	5y	10y	15y	20y	30y
1m	7.8	6.9	2.3	1.0	0.6	0.4	0.3	1m	-6.7	-31.2	-56.2	-57.2	-57.0	-58.6	-58.9
3m	18.7	17.4	7.4	3.3	2.0	1.4	0.9	3m	-11.2	-28.6	-47.7	-51.8	-53.5	-56.3	-57.7
6m	34.6	32.8	14.1	6.7	4.1	2.9	1.9	6m	-15.9	-30.7	-44.7	-47.0	-49.1	-52.6	-54.8
9m	28.0	21.8	7.7	3.6	2.3	1.7	1.3	9m	-19.2	-27.5	-32.4	-30.8	-29.7	-29.8	-29.1
1y	20.2	13.8	4.7	2.4	1.6	1.3	1.0	1y	-17.5	-21.9	-23.8	-22.3	-21.3	-21.1	-20.4
18m	9.5	5.5	2.1	1.3	1.0	0.9	0.8	18m	-14.1	-15.5	-15.6	-14.5	-13.6	-13.5	-12.9
2y	4.2	2.3	1.1	0.8	0.7	0.6	0.6	2y	-11.6	-12.0	-11.4	-10.6	-9.9	-9.8	-9.4
3y	0.5	0.4	0.3	0.3	0.3	0.3	0.3	3y	-7.6	-7.4	-7.0	-6.5	-6.0	-5.9	-5.6
5y	-0.4	0.2	0.1	0.2	0.2	0.2	0.2	5y	-3.8	-3.7	-3.6	-3.3	-3.1	-2.9	-2.8
7y	0.0	0.1	0.1	0.1	0.1	0.1	0.1	7y	-2.2	-2.1	-2.0	-1.9	-1.7	-1.7	-1.6
10y	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	10y	-1.0	-0.9	-0.9	-0.8	-0.8	-0.7	-0.7
15y	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	15y	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
20y	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	20y	0.1	0.1	0.1	0.1	0.1	0.1	0.1
30y	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	30y	0.3	0.3	0.3	0.3	0.3	0.3	0.3

  

USD (Straddle) - Premium (6m horizon) / Vega							
	1y	2y	5y	10y	15y	20y	30y
1m	25.4	58.2	73.6	67.6	64.3	64.2	62.8
3m	40.4	63.4	75.9	70.6	67.9	68.3	66.5
6m	53.0	70.4	79.1	74.1	70.7	70.5	68.7
9m	62.8	76.9	82.3	76.8	72.9	72.1	69.7
1y	71.5	82.2	84.7	78.8	74.7	73.8	70.5
18m	83.9	88.7	86.7	80.9	75.8	74.9	71.6
2y	94.2	94.4	88.7	82.4	77.0	75.7	72.2
3y	98.6	95.9	90.2	84.1	77.8	75.6	72.1
5y	96.1	93.8	89.6	83.5	76.5	73.6	70.8
7y	92.6	89.7	86.6	80.8	73.5	70.4	67.4
10y	85.5	84.0	80.0	74.2	67.4	64.7	61.7
15y	71.9	69.9	67.4	64.2	57.9	55.7	53.2
20y	62.8	60.8	58.6	56.1	51.2	50.3	47.6
30y	54.3	53.4	53.1	52.3	48.2	48.2	46.7

Source: Nomura Research. For the method details of carry decomposition, please see [link](#). In the appendix

Fig. 3: USD Payers – PV01 weighted, 6-month horizon

USD (Payer) - Total Carry (6m horizon) / PV01								USD (Payer) - Vega Carry (6m horizon) / PV01							
	1y	2y	5y	10y	15y	20y	30y		1y	2y	5y	10y	15y	20y	30y
1m	-3.0	-7.0	-8.8	-8.1	-7.7	-7.7	-7.5	1m	-0.1	-0.5	-0.8	-0.8	-0.8	-0.8	-0.8
3m	-7.9	-12.4	-14.9	-13.9	-13.3	-13.4	-13.1	3m	-1.4	-0.2	-0.6	-0.9	-1.0	-1.1	-1.0
6m	-14.9	-19.8	-22.3	-20.9	-19.9	-19.8	-19.3	6m	-1.5	0.1	-0.7	-1.4	-1.4	-1.4	-1.4
9m	-21.1	-24.2	-22.4	-19.0	-16.6	-15.4	-13.9	9m	-1.0	0.0	-0.9	-1.5	-1.3	-1.0	-0.8
1y	-24.5	-25.2	-20.6	-16.7	-14.4	-13.2	-11.5	1y	-1.1	-0.5	-1.1	-1.4	-1.3	-1.1	-0.6
18m	-26.2	-22.9	-16.1	-13.0	-10.8	-9.9	-8.8	18m	-1.3	-0.7	0.0	-0.6	-0.4	-0.4	-0.5
2y	-25.1	-19.9	-13.5	-10.8	-9.1	-8.1	-7.1	2y	-2.8	-1.6	-0.4	-0.6	-0.5	-0.4	-0.3
3y	-13.2	-10.8	-8.9	-7.5	-6.1	-5.3	-4.7	3y	-0.8	0.0	-0.2	-0.4	-0.2	0.1	0.1
5y	-6.2	-5.4	-5.0	-4.1	-3.2	-2.7	-2.5	5y	0.9	0.8	0.4	0.3	0.4	0.5	0.3
7y	-3.2	-2.9	-2.7	-2.0	-1.4	-1.1	-0.8	7y	1.1	1.3	1.0	0.8	0.8	0.9	0.9
10y	-1.6	-1.4	-0.3	0.1	0.3	0.3	0.5	10y	1.7	1.4	1.5	1.4	1.3	1.2	1.2
15y	1.8	1.9	1.9	1.7	1.6	1.5	1.6	15y	2.1	2.2	1.9	1.5	1.4	1.4	1.3
20y	2.5	2.4	2.2	2.0	1.8	1.6	1.6	20y	1.6	1.6	1.5	1.4	1.2	1.0	1.0
30y	1.5	1.5	1.7	1.6	1.5	1.2	1.0	30y	0.9	0.8	0.5	0.3	0.3	0.2	0.1

  

USD (Payer) - Curve Carry (6m horizon) / PV01								USD (Payer) - Theta (6m horizon) / PV01							
	1y	2y	5y	10y	15y	20y	30y		1y	2y	5y	10y	15y	20y	30y
1m	-1.3	-2.2	-1.5	-1.0	-0.7	-0.6	-0.4	1m	-1.3	-4.4	-7.2	-7.1	-7.0	-7.2	-7.2
3m	-3.9	-5.6	-4.3	-2.8	-2.1	-1.7	-1.3	3m	-2.7	-6.3	-9.9	-10.5	-10.7	-11.2	-11.5
6m	-8.6	-10.7	-8.2	-5.5	-4.1	-3.4	-2.5	6m	-5.0	-9.3	-13.1	-13.5	-14.0	-15.0	-15.5
9m	-13.2	-14.4	-9.9	-6.4	-4.7	-3.7	-2.7	9m	-6.7	-9.5	-11.3	-10.7	-10.3	-10.3	-10.1
1y	-16.2	-15.8	-9.9	-6.3	-4.5	-3.5	-2.6	1y	-7.0	-8.8	-9.5	-8.9	-8.5	-8.4	-8.2
18m	-17.9	-14.5	-8.5	-5.3	-3.8	-2.9	-2.1	18m	-6.9	-7.6	-7.6	-7.1	-6.7	-6.6	-6.3
2y	-15.7	-11.5	-6.7	-4.2	-3.0	-2.2	-1.6	2y	-6.6	-6.8	-6.5	-6.0	-5.6	-5.5	-5.3
3y	-7.1	-5.7	-3.8	-2.5	-1.7	-1.2	-0.8	3y	-5.3	-5.2	-4.8	-4.5	-4.2	-4.1	-3.9
5y	-3.7	-2.8	-2.2	-1.4	-0.9	-0.6	-0.3	5y	-3.4	-3.4	-3.2	-3.0	-2.7	-2.6	-2.5
7y	-2.0	-1.9	-1.5	-0.8	-0.4	-0.3	0.0	7y	-2.3	-2.3	-2.2	-2.0	-1.8	-1.8	-1.7
10y	-2.1	-1.6	-0.6	-0.2	0.0	0.1	0.2	10y	-1.2	-1.2	-1.1	-1.1	-1.0	-0.9	-0.9
15y	-0.1	-0.1	0.2	0.3	0.3	0.3	0.4	15y	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
20y	0.6	0.6	0.4	0.4	0.4	0.4	0.4	20y	0.2	0.2	0.2	0.2	0.2	0.2	0.2
30y	-0.1	0.0	0.5	0.6	0.6	0.4	0.3	30y	0.7	0.7	0.7	0.7	0.6	0.6	0.6

  

USD (Payer) - Premium (6m horizon) / PV01							
	1y	2y	5y	10y	15y	20y	30y
1m	3.0	7.0	8.8	8.1	7.7	7.7	7.5
3m	7.9	12.4	14.9	13.9	13.3	13.4	13.1
6m	14.9	19.8	22.3	20.9	19.9	19.8	19.3
9m	21.8	26.7	28.5	26.6	25.3	25.0	24.2
1y	28.6	32.8	33.8	31.5	29.9	29.5	28.2
18m	41.0	43.4	42.4	39.6	37.1	36.6	35.0
2y	53.2	53.4	50.1	46.6	43.5	42.8	40.8
3y	68.2	66.3	62.4	58.1	53.8	52.3	49.9
5y	85.7	83.6	79.9	74.5	68.2	65.7	63.2
7y	97.8	94.7	91.4	85.3	77.6	74.3	71.2
10y	107.9	106.0	100.9	93.7	85.1	81.6	77.9
15y	111.1	108.1	104.2	99.2	89.5	86.1	82.2
20y	112.2	108.5	104.6	100.1	91.4	89.8	84.9
30y	118.7	116.8	116.1	114.2	105.5	105.4	102.0

Source: Nomura Research. For the method details of carry decomposition, please see [link](#). In the appendix

Fig. 4: EUR Straddles –premium weighted, 6-month horizon

EUR (Straddle) - Total Carry (6m horizon) / Premium								EUR (Straddle) - Vega Carry (6m horizon) / Premium							
	1y	2y	5y	10y	15y	20y	30y		1y	2y	5y	10y	15y	20y	30y
1m	-73.9%	-76.5%	-79.8%	-83.6%	-89.2%	-92.5%	-95.0%	1m	-5.9%	-6.0%	-6.1%	-6.5%	-6.8%	-6.9%	-7.1%
3m	-85.8%	-73.2%	-71.5%	-76.6%	-84.4%	-89.3%	-92.9%	3m	-16.2%	-10.0%	-5.9%	-7.7%	-7.2%	-7.1%	-8.4%
6m	-84.6%	-65.0%	-59.7%	-68.2%	-78.4%	-84.8%	-90.0%	6m	-14.1%	-4.8%	-1.2%	-6.1%	-4.8%	-3.8%	-5.0%
9m	-41.5%	-37.9%	-36.0%	-40.5%	-41.6%	-41.1%	-41.6%	9m	0.2%	-0.1%	1.0%	-1.7%	-0.5%	1.6%	1.6%
1y	-23.3%	-29.3%	-28.1%	-28.1%	-29.3%	-28.6%	-28.7%	1y	4.1%	-5.0%	-2.9%	-0.5%	-0.6%	1.0%	1.2%
18m	-19.3%	-23.0%	-18.6%	-17.0%	-16.9%	-16.8%	-17.2%	18m	-4.6%	-8.6%	-3.4%	-0.3%	0.5%	0.9%	0.7%
2y	-17.2%	-21.0%	-16.2%	-14.2%	-14.0%	-14.6%	-13.1%	2y	-6.0%	-9.8%	-4.9%	-1.8%	-1.1%	-1.6%	0.1%
3y	-16.4%	-15.0%	-10.7%	-9.2%	-8.6%	-8.5%	-7.7%	3y	-9.1%	-7.5%	-3.3%	-1.3%	-0.4%	-0.2%	0.7%
5y	-7.8%	-5.8%	-5.5%	-5.1%	-4.7%	-4.4%	-3.3%	5y	-3.5%	-1.6%	-1.2%	-0.5%	0.0%	0.3%	1.4%
7y	-3.5%	-3.3%	-3.4%	-3.2%	-3.1%	-2.6%	-2.3%	7y	-0.8%	-0.5%	-0.5%	-0.2%	0.0%	0.4%	0.8%
10y	-1.7%	-1.9%	-1.9%	-1.9%	-1.8%	-1.5%	-1.3%	10y	0.0%	-0.2%	-0.2%	-0.1%	0.0%	0.3%	0.5%
15y	-0.2%	-0.1%	-0.3%	-0.3%	-0.1%	0.2%	-0.1%	15y	0.5%	0.6%	0.5%	0.5%	0.7%	1.0%	0.8%
20y	0.3%	0.3%	0.4%	0.5%	0.6%	0.6%	0.6%	20y	0.7%	0.6%	0.8%	0.9%	0.9%	1.0%	1.0%
30y	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	30y	1.1%	1.1%	1.1%	1.2%	1.1%	1.2%	1.1%

  

EUR (Straddle) - Curve Carry (6m horizon) / Premium								EUR (Straddle) - Theta (6m horizon) / Premium							
	1y	2y	5y	10y	15y	20y	30y		1y	2y	5y	10y	15y	20y	30y
1m	2.8%	2.3%	1.7%	1.2%	0.6%	0.3%	0.2%	1m	-83.9%	-86.4%	-89.6%	-92.8%	-98.1%	-101.2%	-103.6%
3m	1.7%	4.5%	4.8%	3.5%	1.7%	0.9%	0.5%	3m	-75.7%	-69.9%	-72.6%	-75.7%	-84.0%	-88.9%	-91.2%
6m	2.4%	7.8%	9.4%	6.7%	3.4%	1.9%	1.0%	6m	-75.1%	-67.2%	-67.0%	-68.4%	-78.5%	-86.0%	-90.0%
9m	1.6%	4.1%	5.1%	3.4%	1.8%	1.1%	0.7%	9m	-43.0%	-41.6%	-41.7%	-41.8%	-42.6%	-43.3%	-43.5%
1y	3.1%	4.1%	3.8%	2.4%	1.4%	0.9%	0.6%	1y	-29.7%	-27.7%	-28.3%	-29.2%	-29.3%	-29.6%	-29.7%
18m	2.8%	2.7%	2.6%	1.6%	1.0%	0.7%	0.5%	18m	-17.7%	-17.3%	-17.9%	-18.4%	-18.5%	-18.6%	-18.5%
2y	2.0%	1.7%	1.9%	1.2%	0.8%	0.6%	0.5%	2y	-13.0%	-12.7%	-13.1%	-13.4%	-13.5%	-13.4%	-13.6%
3y	1.0%	1.0%	1.3%	0.8%	0.6%	0.5%	0.4%	3y	-8.2%	-8.3%	-8.5%	-8.6%	-8.6%	-8.6%	-8.7%
5y	0.7%	0.8%	0.7%	0.5%	0.4%	0.3%	0.3%	5y	-4.9%	-4.9%	-4.9%	-4.9%	-5.0%	-5.0%	-5.0%
7y	0.5%	0.4%	0.3%	0.3%	0.2%	0.2%	0.2%	7y	-3.1%	-3.2%	-3.2%	-3.2%	-3.2%	-3.2%	-3.2%
10y	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	10y	-1.7%	-1.7%	-1.7%	-1.7%	-1.7%	-1.7%	-1.7%
15y	0.0%	0.0%	0.0%	-0.1%	-0.1%	-0.1%	-0.1%	15y	-0.7%	-0.7%	-0.7%	-0.7%	-0.7%	-0.7%	-0.7%
20y	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%	20y	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%
30y	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%	0.0%	30y	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%

Source: Nomura Research. For the method details of carry decomposition, please see [link](#). In the appendix

Fig. 5: EUR Straddles – Vega weighted, 6-month horizon

EUR (Straddle) - Total Carry (6m horizon) / Vega								EUR (Straddle) - Vega Carry (6m horizon) / Vega							
	1y	2y	5y	10y	15y	20y	30y		1y	2y	5y	10y	15y	20y	30y
1m	-11.4	-13.3	-23.9	-38.4	-45.6	-50.6	-52.5	1m	-0.9	-1.0	-1.8	-3.0	-3.5	-3.8	-3.9
3m	-15.5	-13.9	-22.2	-36.8	-44.3	-49.8	-53.1	3m	-2.9	-1.9	-1.8	-3.7	-3.8	-3.9	-4.8
6m	-16.1	-12.6	-18.9	-34.3	-41.8	-47.2	-51.1	6m	-2.7	-0.9	-0.4	-3.1	-2.6	-2.1	-2.9
9m	-7.9	-7.7	-11.9	-20.9	-22.5	-22.8	-23.4	9m	0.0	0.0	0.3	-0.9	-0.3	0.9	0.9
1y	-4.5	-6.5	-9.9	-14.7	-16.0	-15.8	-16.1	1y	0.8	-1.1	-1.0	-0.3	-0.3	0.5	0.7
18m	-4.3	-6.1	-7.2	-9.2	-9.3	-9.3	-9.6	18m	-1.0	-2.3	-1.3	-0.2	0.3	0.5	0.4
2y	-4.5	-6.7	-7.0	-7.9	-7.8	-8.2	-7.3	2y	-1.6	-3.1	-2.1	-1.0	-0.6	-0.9	0.1
3y	-6.0	-6.3	-5.4	-5.5	-4.9	-4.9	-4.2	3y	-3.3	-3.2	-1.7	-0.8	-0.2	-0.1	0.4
5y	-4.2	-3.3	-3.3	-3.2	-2.7	-2.5	-1.8	5y	-1.9	-0.9	-0.7	-0.3	0.0	0.2	0.8
7y	-2.3	-2.1	-2.2	-2.0	-1.8	-1.5	-1.2	7y	-0.5	-0.3	-0.3	-0.1	0.0	0.3	0.4
10y	-1.1	-1.3	-1.3	-1.2	-1.1	-0.8	-0.7	10y	0.0	-0.1	-0.2	-0.1	0.0	0.2	0.2
15y	-0.1	-0.1	-0.2	-0.2	-0.1	0.1	0.0	15y	0.3	0.4	0.3	0.3	0.4	0.5	0.4
20y	0.2	0.2	0.3	0.3	0.3	0.3	0.2	20y	0.4	0.4	0.5	0.5	0.5	0.5	0.4
30y	0.5	0.5	0.5	0.5	0.4	0.4	0.4	30y	0.5	0.5	0.5	0.5	0.5	0.4	0.4

  

EUR (Straddle) - Curve Carry (6m horizon) / Vega								EUR (Straddle) - Theta (6m horizon) / Vega							
	1y	2y	5y	10y	15y	20y	30y		1y	2y	5y	10y	15y	20y	30y
1m	0.4	0.4	0.5	0.6	0.3	0.2	0.1	1m	-13.0	-15.0	-26.8	-42.6	-50.1	-55.4	-57.3
3m	0.3	0.9	1.5	1.7	0.9	0.5	0.3	3m	-13.7	-13.3	-22.5	-36.4	-44.1	-49.6	-52.1
6m	0.5	1.5	3.0	3.4	1.8	1.0	0.6	6m	-14.3	-13.0	-21.1	-34.3	-41.9	-47.8	-51.1
9m	0.3	0.8	1.7	1.7	1.0	0.6	0.4	9m	-8.2	-8.5	-13.8	-21.5	-23.0	-24.0	-24.4
1y	0.6	0.9	1.4	1.3	0.7	0.5	0.3	1y	-5.8	-6.2	-10.0	-15.3	-16.0	-16.4	-16.6
18m	0.6	0.7	1.0	0.8	0.5	0.4	0.3	18m	-4.0	-4.6	-7.0	-9.9	-10.2	-10.2	-10.3
2y	0.5	0.5	0.8	0.7	0.4	0.3	0.3	2y	-3.4	-4.1	-5.7	-7.5	-7.6	-7.6	-7.6
3y	0.4	0.4	0.7	0.5	0.3	0.3	0.2	3y	-3.0	-3.5	-4.3	-5.1	-4.9	-4.9	-4.8
5y	0.4	0.5	0.4	0.3	0.2	0.2	0.2	5y	-2.6	-2.8	-3.0	-3.1	-2.9	-2.9	-2.7
7y	0.3	0.3	0.2	0.2	0.1	0.1	0.1	7y	-2.0	-2.0	-2.0	-2.0	-1.9	-1.8	-1.6
10y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10y	-1.1	-1.1	-1.1	-1.1	-1.0	-1.0	-0.9
15y	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	15y	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3
20y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20y	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1
30y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30y	0.0	0.0	0.0	0.0	0.0	0.0	0.0

  

EUR (Straddle) - Premium (6m horizon) / Vega							
	1y	2y	5y	10y	15y	20y	30y
1m	15.4	17.4	29.9	45.9	51.1	54.7	55.3
3m	18.0	19.0	31.0	48.1	52.5	55.8	57.1
6m	19.1	19.3	31.6	50.2	53.3	55.6	56.8
9m	19.1	20.4	33.1	51.5	54.0	55.4	56.2
1y	19.5	22.3	35.2	52.3	54.6	55.3	55.9
18m	22.4	26.6	38.9	53.8	54.9	55.1	55.6
2y	26.0	31.9	43.2	55.9	56.1	56.3	55.6
3y	36.4	42.3	50.3	59.0	57.4	57.1	55.1
5y	54.0	56.8	60.1	62.9	58.9	57.7	53.0
7y	63.5	64.0	64.2	64.5	59.5	57.0	51.5
10y	66.7	67.2	66.5	65.5	59.8	56.2	50.1
15y	63.3	63.3	62.9	62.0	55.6	51.0	46.0
20y	57.8	58.2	57.6	56.6	50.6	45.9	41.6
30y	48.3	48.5	47.3	45.6	40.7	37.0	34.1

Source: Nomura Research. For the method details of carry decomposition, please see [link](#). In the appendix

Fig. 6: EUR Receivers – PV01 weighted, 6-month horizon

EUR (Receiver) - Total Carry (6m horizon) / PV01								EUR (Receiver) - Vega Carry (6m horizon) / PV01							
	1y	2y	5y	10y	15y	20y	30y		1y	2y	5y	10y	15y	20y	30y
1m	-0.8	-1.0	-1.9	-3.4	-4.4	-5.1	-5.4	1m	-0.1	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4
3m	-2.5	-1.7	-2.6	-5.0	-7.1	-8.6	-9.6	3m	-0.6	-0.4	-0.4	-0.7	-0.7	-0.8	-0.9
6m	-3.7	-1.6	-1.7	-5.1	-8.4	-10.8	-12.6	6m	-0.7	-0.3	-0.1	-0.9	-0.7	-0.6	-0.8
9m	-1.4	-0.5	-0.3	-2.6	-4.5	-5.5	-6.4	9m	0.0	0.0	0.1	-0.3	-0.1	0.3	0.3
1y	0.4	0.2	0.3	-1.2	-3.1	-3.9	-4.8	1y	0.3	-0.4	-0.4	-0.1	-0.1	0.2	0.3
18m	0.8	0.4	1.3	0.1	-1.3	-2.2	-3.1	18m	-0.5	-1.1	-0.6	-0.1	0.1	0.2	0.2
2y	0.8	-0.1	1.3	0.0	-1.3	-2.4	-2.6	2y	-0.9	-1.8	-1.2	-0.6	-0.4	-0.5	0.0
3y	-0.1	0.2	2.1	0.5	-0.5	-1.3	-1.5	3y	-2.3	-2.2	-1.2	-0.5	-0.2	-0.1	0.3
5y	2.5	3.9	3.0	0.7	-0.2	-0.6	-0.4	5y	-1.7	-0.8	-0.7	-0.3	0.0	0.2	0.7
7y	4.4	3.9	1.6	0.0	-0.7	-0.7	-0.6	7y	-0.5	-0.3	-0.4	-0.1	0.0	0.3	0.4
10y	1.0	0.1	-0.6	-1.3	-1.4	-1.1	-1.0	10y	0.0	-0.2	-0.2	-0.1	0.0	0.2	0.3
15y	-0.4	-0.3	-0.8	-0.9	-0.6	-0.3	-0.6	15y	0.5	0.6	0.5	0.5	0.6	0.8	0.6
20y	-0.9	-0.8	-0.2	0.0	0.2	0.1	0.1	20y	0.7	0.7	0.8	0.9	0.8	0.9	0.7
30y	1.4	1.4	1.2	0.8	0.4	0.6	0.7	30y	1.1	1.1	1.2	1.2	1.0	0.9	0.8

  

EUR (Receiver) - Curve Carry (6m horizon) / PV01								EUR (Receiver) - Theta (6m horizon) / PV01							
	1y	2y	5y	10y	15y	20y	30y		1y	2y	5y	10y	15y	20y	30y
1m	0.4	0.4	0.6	0.7	0.5	0.4	0.2	1m	-1.3	-1.5	-2.8	-4.5	-5.3	-5.9	-6.2
3m	0.5	1.1	1.9	2.3	1.6	1.2	0.8	3m	-2.6	-2.5	-4.3	-6.9	-8.5	-9.6	-10.1
6m	0.8	2.2	4.2	5.2	3.6	2.5	1.7	6m	-3.9	-3.5	-5.7	-9.4	-11.5	-13.2	-14.1
9m	1.4	2.4	4.4	5.2	3.6	2.6	1.7	9m	-2.8	-2.9	-4.8	-7.4	-7.9	-8.3	-8.4
1y	2.5	3.2	4.8	5.1	3.6	2.6	1.8	1y	-2.3	-2.5	-4.0	-6.1	-6.4	-6.5	-6.6
18m	3.3	3.7	5.3	5.0	3.5	2.5	1.7	18m	-1.9	-2.2	-3.4	-4.8	-5.0	-5.0	-5.0
2y	3.6	4.0	5.7	4.9	3.4	2.4	1.7	2y	-1.9	-2.3	-3.2	-4.2	-4.3	-4.3	-4.3
3y	4.3	4.8	6.3	4.6	3.2	2.3	1.6	3y	-2.1	-2.4	-2.9	-3.5	-3.4	-3.4	-3.3
5y	6.6	7.2	6.3	3.8	2.5	1.8	1.3	5y	-2.3	-2.5	-2.6	-2.8	-2.6	-2.6	-2.4
7y	7.1	6.4	4.1	2.3	1.3	1.0	0.7	7y	-2.1	-2.1	-2.1	-2.1	-2.0	-1.9	-1.7
10y	2.4	1.8	1.0	0.3	0.0	-0.1	-0.2	10y	-1.4	-1.4	-1.4	-1.4	-1.3	-1.2	-1.1
15y	-0.2	-0.2	-0.6	-0.7	-0.5	-0.4	-0.6	15y	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.5
20y	-1.3	-1.1	-0.7	-0.5	-0.4	-0.5	-0.4	20y	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2
30y	0.2	0.2	0.0	-0.4	-0.6	-0.3	-0.1	30y	0.1	0.1	0.1	0.0	0.0	0.0	0.0

  

EUR (Receiver) - Premium (6m horizon) / PV01							
	1y	2y	5y	10y	15y	20y	30y
1m	1.7	1.9	3.3	5.0	5.6	6.0	6.0
3m	3.5	3.7	6.1	9.4	10.3	10.9	11.2
6m	5.3	5.4	8.8	14.0	14.8	15.4	15.8
9m	6.6	7.0	11.4	17.7	18.6	19.0	19.3
1y	7.8	8.9	14.0	20.9	21.7	22.1	22.3
18m	10.9	13.0	19.0	26.2	26.8	26.9	27.1
2y	14.7	18.0	24.4	31.6	31.7	31.8	31.4
3y	25.2	29.2	34.8	40.8	39.7	39.5	38.1
5y	48.1	50.6	53.6	56.1	52.5	51.4	47.3
7y	67.1	67.6	67.8	68.1	62.9	60.2	54.4
10y	84.2	84.9	83.9	82.8	75.5	70.9	63.2
15y	97.8	97.8	97.3	95.8	86.0	78.8	71.1
20y	103.3	104.0	102.8	101.1	90.4	81.9	74.3
30y	105.7	106.0	103.4	99.8	89.1	80.9	74.5

Source: Nomura Research. For the method details of carry decomposition, please see [link](#). In the appendix

## Conditional Curve Trades with Vanilla Swaptions

Fig. 7: USD Vanilla Swaptions

Curve Carry (Spot - Fwd) (bp) (for Payers)

Option Expiry	Swap Tenor								
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	-5	-7	-6	-5	-4	-3	-2	-2	-1
3m	-16	-20	-17	-12	-10	-7	-6	-4	-3
6m	-37	-41	-35	-25	-20	-15	-13	-9	-6
1y	-86	-83	-69	-48	-38	-29	-25	-17	-12
2y	-166	-143	-115	-82	-64	-50	-44	-28	-21
3y	-205	-172	-139	-101	-80	-63	-54	-35	-26
5y	-239	-202	-166	-123	-100	-78	-67	-43	-31
7y	-258	-220	-183	-138	-112	-87	-75	-47	-33
10y	-281	-240	-201	-151	-122	-94	-80	-48	-32
12y	-286	-245	-204	-153	-123	-94	-79	-47	-29
15y	-287	-245	-204	-152	-121	-90	-75	-43	-24
20y	-280	-237	-195	-143	-111	-81	-67	-33	-13
30y	-267	-224	-183	-129	-96	-63	-47	-10	5

Curve Carry (Fwd - Spot) (bp) (for Receivers)

Option Expiry	Swap Tenor								
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	5	7	6	5	4	3	2	2	1
3m	16	20	17	12	10	7	6	4	3
6m	37	41	35	25	20	15	13	9	6
1y	86	83	69	48	38	29	25	17	12
2y	166	143	115	82	64	50	44	28	21
3y	205	172	139	101	80	63	54	35	26
5y	239	202	166	123	100	78	67	43	31
7y	258	220	183	138	112	87	75	47	33
10y	281	240	201	151	122	94	80	48	32
12y	286	245	204	153	123	94	79	47	29
15y	287	245	204	152	121	90	75	43	24
20y	280	237	195	143	111	81	67	33	13
30y	267	224	183	129	96	63	47	10	-5

Payers Moneyiness (Fwd - Strike) (bp)

Option Expiry	Swap Tenor								
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	-19.0	-53.3	-60.7	-56.1	-53.6	-50.0	-46.9	-44.8	-43.4
3m	-33.5	-59.3	-69.0	-59.9	-56.7	-50.0	-48.7	-47.1	-45.2
6m	-37.5	-57.7	-64.4	-59.0	-55.1	-50.0	-48.0	-44.4	-41.8
1y	-50.8	-62.5	-65.0	-61.5	-56.5	-50.0	-47.2	-41.7	-37.0
2y	-78.3	-77.6	-73.6	-63.6	-57.6	-50.0	-45.8	-37.5	-31.6
3y	-85.1	-78.9	-73.8	-64.7	-58.3	-50.0	-44.5	-32.5	-26.1
5y	-89.1	-82.9	-77.8	-69.5	-61.2	-50.0	-42.6	-25.5	-19.5
7y	-93.7	-85.6	-80.9	-72.6	-62.9	-50.0	-41.0	-20.6	-13.4
10y	-101.0	-99.4	-91.4	-77.1	-65.2	-50.0	-40.0	-18.4	-10.4
12y	-98.4	-94.8	-87.7	-74.8	-63.7	-50.0	-39.4	-17.2	-9.3
15y	-91.5	-85.0	-79.0	-68.8	-60.5	-50.0	-38.8	-16.4	-8.8
20y	-91.6	-82.3	-75.5	-65.9	-58.8	-50.0	-39.7	-22.9	-13.5
30y	-68.1	-65.7	-63.0	-58.7	-55.6	-50.0	-41.7	-30.0	-24.8

Receivers Moneyiness (Strike - Fwd) (bp)

Option Expiry	Swap Tenor								
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	50.3	49.7	49.7	49.9	49.9	50.0	50.0	50.0	50.0
3m	50.5	49.1	48.4	49.1	49.4	50.0	50.1	50.3	50.4
6m	51.4	48.4	47.2	48.1	48.9	50.0	50.4	51.2	51.7
1y	49.3	45.7	45.0	46.1	47.8	50.0	51.0	52.9	54.6
2y	37.2	37.3	39.0	43.6	46.4	50.0	52.0	56.1	58.9
3y	30.9	34.2	36.9	42.0	45.5	50.0	53.0	59.5	62.9
5y	25.6	30.1	33.5	38.7	43.4	50.0	54.5	64.7	68.2
7y	22.6	28.1	31.2	36.6	42.3	50.0	55.6	68.3	72.5
10y	18.1	21.2	26.0	34.1	40.9	50.0	56.3	69.9	74.2
12y	19.0	23.4	27.8	35.1	41.6	50.0	56.8	70.8	75.1
15y	22.4	28.1	31.9	38.3	43.4	50.0	57.1	71.5	75.7
20y	23.5	29.7	34.1	40.0	44.5	50.0	56.5	67.2	72.7
30y	37.4	39.9	41.6	44.6	46.7	50.0	54.8	61.0	63.2

Payers Total Pickup (Spot - Strike) (bp)

Option Expiry	Swap Tenor								
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	-24.5	-60.6	-67.2	-60.6	-57.1	-52.7	-49.3	-46.4	-44.5
3m	-49.6	-78.8	-86.3	-72.4	-66.4	-57.5	-55.2	-51.4	-48.4
6m	-74.9	-98.7	-99.7	-84.1	-74.7	-65.1	-61.1	-53.1	-48.2
1y	-136.5	-145.9	-133.6	-109.9	-94.4	-79.4	-72.7	-58.4	-49.2
2y	-244.8	-220.7	-188.7	-145.4	-122.1	-100.4	-89.4	-65.9	-52.4
3y	-289.9	-250.9	-213.2	-165.2	-138.4	-112.9	-98.9	-67.7	-51.7
5y	-328.0	-284.9	-243.7	-192.4	-161.2	-128.3	-110.0	-68.3	-50.2
7y	-352.1	-305.5	-263.8	-210.9	-175.3	-137.4	-116.3	-67.3	-46.1
10y	-381.7	-339.8	-292.2	-228.4	-187.2	-143.9	-119.8	-66.5	-42.4
12y	-384.4	-339.7	-291.9	-228.0	-187.0	-143.5	-118.2	-63.9	-38.6
15y	-378.7	-330.0	-283.5	-221.0	-181.2	-140.0	-114.0	-59.4	-32.6
20y	-371.8	-319.5	-270.9	-208.6	-170.3	-131.4	-106.8	-56.0	-26.8
30y	-334.6	-289.8	-245.8	-188.1	-151.7	-113.3	-88.7	-40.0	-19.9

Receivers Total Pickup (Strike - Spot) (bp)

Option Expiry	Swap Tenor								
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	55.7	57.0	56.2	54.4	53.5	52.7	52.4	51.6	51.2
3m	66.7	68.7	65.7	61.5	59.1	57.5	56.6	54.6	53.6
6m	88.8	89.5	82.5	73.2	68.5	65.1	63.6	59.8	58.0
1y	135.0	129.2	113.5	94.5	85.6	79.4	76.5	69.6	66.8
2y	203.7	180.4	154.1	125.5	110.9	100.4	95.7	84.5	79.8
3y	235.7	206.2	176.3	142.5	125.6	112.9	107.4	94.7	88.6
5y	264.5	232.1	199.4	161.5	143.3	128.3	121.9	107.5	99.0
7y	281.0	248.0	214.1	175.0	154.7	137.4	130.8	115.0	105.2
10y	298.8	261.6	226.8	185.4	162.9	143.9	136.1	118.0	106.1
12y	305.0	268.2	232.0	188.4	164.9	143.5	135.6	117.6	104.5
15y	309.5	273.1	236.4	190.4	164.0	140.0	132.3	114.5	99.4
20y	303.7	267.0	229.6	182.7	155.9	131.4	123.6	100.3	85.9
30y	303.9	264.0	224.5	174.0	142.8	113.3	101.8	70.9	58.2

Price given 10K notional at 10y tail

Expected PV in Physical measure

Payer

Option Expiry	Swap Tenor								
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	0.1	0.0	0.1	0.3	0.4	0.4	0.6	0.6	0.6
3m	1.3	1.7	3.0	7.4	9.0	10.8	11.0	11.3	11.5
6m	12.9	16.3	22.5	34.7	38.7	42.2	43.3	45.6	47.1
1y	47.1	64.8	77.6	91.4	100.6	108.9	111.6	116.7	120.0
2y	118.4	148.9	169.7	190.7	203.1	214.1	218.9	227.7	232.0
3y	181.6	221.6	247.7	271.1	284.7	296.2	302.2	313.0	316.9
5y	258.4	306.0	336.2	362.0	382.2	401.2	409.0	422.4	425.4
7y	295.9	349.7	381.3	409.4	433.5	456.7	465.5	479.7	482.2
10y	316.9	356.9	390.1	425.0	452.6	479.3	487.5	498.0	498.8
12y	327.3	368.7	398.1	427.3	451.2	473.6	481.9	492.1	492.7
15y	332.1	374.3	398.0	417.0	432.5	447.1	455.4	465.0	465.3
20y	302.6	344.7	363.9	376.3	384.4	391.6	399.0	406.5	408.4
30y	266.6	296.6	313.1	326.3	333.6	343.5	348.2	358.2	362.3

Price given 10K notional at 10y tail

Receiver

Option Expiry	Swap Tenor								
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	172.7	489.1	556.0	513.2	489.7	457.1	428.9	409.6	396.9
3m	307.3	544.1	632.4	553.3	525.5	465.8	453.8	439.5	422.7
6m	354.0	541.3	608.2	570.1	538.2	494.7	477.3	447.0	425.1
1y	505.2	629.6	663.4	643.4	607.1	556.1	533.4	488.7	449.3
2y	813.4	836.5	820.4	748.9	707.2	650.1	617.5	552.7	506.0
3y	921.0	905.2	885.1	825.5	782.2	720.7	679.2	587.2	536.7
5y	999.6	990.6	974.3	927.4	877.4	802.8	749.9	625.8	580.4
7y	1031.1	1018.9	1010.3	967.1	913.1	835.8	775.5	634.8	583.1
10y	1044.6	1071.4	1041.3	967.7	907.7	826.0	763.6	624.8	570.8
12y	995.2	1008.9	985.4	923.0	870.2	800.1	738.1	604.0	553.0
15y	899.9	899.0	882.3	833.9	796.4	745.8	686.5	562.7	517.8
20y	792.2	783.5	762.5	720.7	689.8	649.9	603.5	524.7	479.0
30y	539.9	559.3	563.6	557.2	551.1	538.8	510.9	476.7	462.0

Source: Nomura Research. For more method details, please see [link](#). Note P measure = Spot measure here, i.e.,  $\text{Spot}(T) \sim N(\text{Spot}(0), \text{SpotVol}(0) \cdot \text{sqrt}(T))$



Fig. 8: EUR Vanilla Swaps

## Curve Carry (Spot - Fwd) (bp) (for Payers)

		Swap Tenor								
		1y	2y	3y	5y	7y	10y	12y	20Y	30Y
Option Expiry	1m	-1	-1	-1	-1	-2	-2	-1	-1	-1
	3m	-1	-2	-3	-3	-4	-4	-4	-2	-2
	6m	-2	-4	-5	-7	-9	-9	-8	-5	-3
	1y	-6	-9	-12	-15	-19	-18	-16	-9	-6
	2y	-19	-24	-27	-35	-40	-36	-32	-18	-13
	3y	-34	-41	-47	-58	-62	-54	-47	-27	-19
	5y	-77	-89	-97	-107	-103	-85	-72	-41	-29
	7y	-134	-142	-147	-145	-133	-106	-90	-51	-36
	10y	-184	-184	-181	-170	-151	-117	-98	-54	-37
	12y	-194	-193	-188	-173	-153	-116	-96	-52	-35
	15y	-195	-192	-186	-170	-146	-109	-90	-48	-29
	20y	-181	-176	-169	-153	-132	-98	-79	-40	-20
30y	-168	-166	-161	-146	-126	-90	-70	-24	-13	

## Curve Carry (Fwd - Spot) (bp) (for Receivers)

Option Expiry	Swap Tenor									
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y	
	1m	1	1	1	1	2	2	1	1	1
	3m	1	2	3	3	4	4	4	2	2
	6m	2	4	5	7	9	9	8	5	3
	1y	6	9	12	15	19	18	16	9	6
	2y	19	24	27	35	40	36	32	18	13
	3y	34	41	47	58	62	54	47	27	19
	5y	77	89	97	107	103	85	72	41	29
	7y	134	142	147	145	133	106	90	51	36
10y	184	184	181	170	151	117	98	54	37	
12y	194	193	188	173	153	116	96	52	35	
15y	195	192	186	170	146	109	90	48	29	
20y	181	176	169	153	132	98	79	40	20	
30y	168	166	161	146	126	90	70	24	13	

## Payers Moneyyness (Fwd - Strike) (bp)

		Swap Tenor								
		1y	2y	3y	5y	7y	10y	12y	20Y	30Y
Option Expiry	1m	-11.9	-13.3	-16.4	-27.6	-34.1	-50.0	-41.0	-43.6	-40.3
	3m	-14.3	-14.9	-19.2	-30.3	-40.5	-50.0	-51.3	-54.3	-49.8
	6m	-10.0	-9.7	-14.1	-25.9	-37.9	-50.0	-50.7	-52.3	-48.7
	1y	-3.2	-6.5	-12.3	-26.0	-38.3	-50.0	-50.7	-51.0	-48.8
	2y	0.9	-9.0	-16.1	-28.7	-39.0	-50.0	-49.7	-48.4	-45.3
	3y	-7.9	-21.2	-27.8	-37.6	-43.2	-50.0	-48.5	-45.1	-40.6
	5y	-39.8	-46.7	-47.6	-48.0	-48.8	-50.0	-46.3	-37.5	-26.1
	7y	-64.9	-63.4	-60.2	-54.8	-52.8	-50.0	-45.2	-30.0	-14.8
	10y	-68.2	-67.4	-64.3	-58.4	-55.3	-50.0	-44.2	-21.0	-2.0
	12y	-68.3	-66.7	-63.9	-58.7	-55.6	-50.0	-43.4	-15.6	3.0
	15y	-67.9	-65.1	-62.6	-58.6	-55.8	-50.0	-41.5	-7.1	9.7
	20y	-67.3	-67.1	-64.4	-59.0	-56.3	-50.0	-40.9	-1.3	13.8
30y	-81.0	-80.6	-75.9	-66.2	-61.1	-50.0	-43.1	-4.5	9.7	

## Receivers Moneyyness (Strike - Fwd) (bp)

		Swap Tenor								
		1y	2y	3y	5y	7y	10y	12y	20Y	30Y
Option Expiry	1m	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	3m	50.5	50.5	50.5	50.4	50.2	50.0	50.0	49.8	50.0
	6m	52.1	52.2	52.1	51.6	50.9	50.0	49.9	49.7	50.1
	1y	55.1	55.1	54.6	53.2	51.7	50.0	49.9	49.8	50.2
	2y	59.7	58.0	56.9	54.9	52.7	50.0	50.1	50.4	51.4
	3y	59.6	56.2	54.9	53.0	51.9	50.0	50.5	51.7	53.4
	5y	50.8	49.0	49.1	49.8	50.1	50.0	51.5	55.2	60.2
	7y	41.6	42.4	43.9	46.8	48.3	50.0	52.1	58.8	66.0
	10y	38.8	39.5	41.4	45.0	47.0	50.0	52.4	63.0	72.4
	12y	38.6	39.8	41.6	45.0	47.0	50.0	52.7	65.6	75.0
	15y	38.9	40.7	42.4	45.2	47.0	50.0	53.4	70.1	78.5
20y	39.5	40.1	41.8	45.1	46.8	50.0	53.5	72.5	79.9	
30y	34.3	35.3	37.7	42.4	45.0	50.0	52.1	67.7	73.7	

## Payers Total Pickup (Spot - Strike) (bp)

	Swap Tenor									
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y	
Option Expiry	1m	-12.8	-14.2	-17.4	-28.9	-35.7	-51.6	-42.4	-44.5	-40.9
	3m	-15.3	-16.9	-21.7	-33.8	-44.9	-54.4	-55.2	-56.7	-51.4
	6m	-11.7	-13.5	-19.2	-32.9	-46.9	-58.8	-58.6	-57.0	-51.8
	1y	-9.3	-15.8	-23.8	-41.4	-57.3	-68.1	-66.6	-60.4	-55.2
	2y	-17.7	-32.5	-43.4	-64.1	-79.2	-86.2	-81.4	-66.9	-58.0
	3y	-42.3	-62.1	-74.6	-95.8	-105.4	-103.6	-95.0	-72.0	-59.3
	5y	-117.0	-135.4	-145.0	-154.6	-151.7	-134.6	-118.7	-78.9	-55.1
	7y	-199.1	-205.7	-206.8	-199.7	-186.0	-156.0	-135.3	-81.0	-50.5
	10y	-251.9	-251.2	-245.3	-228.4	-206.4	-167.4	-142.0	-75.1	-39.1
	12y	-262.4	-259.9	-252.1	-232.0	-208.2	-166.2	-139.2	-68.1	-31.8
	15y	-262.7	-256.8	-248.7	-228.1	-202.2	-159.2	-131.1	-55.2	-19.3
	20y	-248.3	-243.2	-233.6	-211.9	-188.4	-147.7	-120.4	-41.2	-6.1
30y	-249.3	-246.2	-236.5	-212.6	-186.9	-140.2	-112.9	-28.8	-3.7	

## Receivers Total Pickup (Strike - Spot) (bp)

		Swap Tenor								
		1y	2y	3y	5y	7y	10y	12y	20Y	30Y
Option Expiry	1m	50.9	50.9	51.1	51.3	51.6	51.6	51.4	50.9	50.6
	3m	51.5	52.5	53.0	53.9	54.7	54.4	53.8	52.2	51.6
	6m	53.7	55.9	57.1	58.7	59.9	58.8	57.8	54.4	53.3
	1y	61.2	64.5	66.1	68.7	70.7	68.1	65.8	59.1	56.6
	2y	78.4	81.5	84.3	90.3	93.0	86.2	81.8	68.9	64.1
	3y	94.0	97.1	101.7	111.3	114.1	103.6	97.1	78.6	72.1
	5y	128.0	137.6	146.5	156.4	153.0	134.6	123.8	96.6	89.3
	7y	175.7	184.7	190.6	191.7	181.4	156.0	142.2	109.8	101.7
	10y	222.4	223.3	222.4	215.0	198.0	167.4	150.2	117.2	109.6
	12y	232.8	233.0	229.8	218.3	199.7	166.2	148.5	118.1	109.7
	15y	233.7	232.4	228.6	214.7	193.4	159.2	143.1	118.2	107.4
20y	220.5	216.2	211.0	198.0	178.9	147.7	133.0	112.5	99.7	
30y	202.6	200.9	198.3	188.7	170.8	140.2	121.9	92.1	87.1	

Price given 10K notional at 10y tail

Price given 10K notional at 10y tail

Expected PV in Physical measure										Payer
Option Expiry	Swap Tenor									
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y	
	1m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2
	3m	1.7	1.8	1.5	1.0	0.9	1.2	1.4	2.3	4.1
	6m	15.4	15.4	13.4	9.7	8.6	10.0	11.0	14.6	19.8
	1y	53.1	48.1	42.5	34.6	33.5	39.5	41.7	48.8	55.4
	2y	118.8	103.1	96.5	91.7	91.8	103.4	108.0	120.1	128.3
	3y	156.6	136.1	129.6	126.8	140.2	167.8	173.6	186.6	192.8
	5y	185.7	179.5	190.7	222.4	242.7	271.0	280.1	301.4	313.4
	7y	211.0	223.1	243.5	285.3	311.0	347.2	358.4	390.3	408.2
	10y	307.6	321.1	335.4	364.1	388.8	429.4	442.7	490.0	515.2
	12y	328.8	342.8	356.3	383.9	409.1	452.0	468.1	524.4	550.9
15y	342.9	357.0	370.4	397.4	423.0	469.6	490.5	558.1	584.7	
20y	335.3	344.4	357.5	387.1	415.4	464.6	485.1	556.6	580.9	
30y	268.9	274.0	286.8	315.8	341.5	388.6	401.4	464.2	482.0	

Receiver										
Option Expiry	Swap Tenor									
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y	
	1m	113.1	126.8	155.5	261.9	323.5	474.9	389.5	414.4	382.8
	3m	137.6	143.4	183.9	288.6	385.0	475.5	487.8	517.4	476.3
	6m	110.7	107.9	147.4	255.3	367.9	483.2	491.0	510.0	480.6
	1y	83.7	109.7	159.4	280.2	395.3	510.4	518.9	529.7	515.5
	2y	110.1	187.9	248.5	361.4	456.5	569.9	571.1	572.2	551.7
	3y	231.2	336.5	391.1	477.7	541.1	629.8	621.5	604.2	568.9
	5y	559.0	615.5	632.6	662.0	685.9	723.2	699.2	641.8	550.7
	7y	807.6	800.6	787.8	774.7	778.3	787.6	756.6	656.4	539.7
10y	904.8	905.9	889.0	859.4	854.4	848.8	814.2	667.6	532.1	
12y	905.0	900.4	885.9	863.5	859.5	856.7	819.7	652.2	526.5	
15y	882.9	870.0	859.5	849.5	850.4	852.4	809.0	612.9	509.5	
20y	820.4	824.0	814.8	801.3	808.1	813.2	771.3	565.5	482.7	
30y	756.8	755.1	736.8	704.3	697.8	680.5	654.4	491.0	423.5	

Source: Nomura Research. . For more method details, please see [link](#). Note P measure = Spot measure here, i.e., Spot(T) ~ N(Spot(0), SpotVol(0)\*sqrt(T))



## Conditional Curve Trades with Mid-curves

Fig. 9: USD vanilla and mid-curves, 6-month expiry

Currency: USD Expiry: 6m																	
Payers									Receivers								
Fwd Pickup (Spot-Fwd, bp)									Fwd Pickup (Fwd-Spot, bp)								
Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y	Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y
Spot	-38	-41	-35	-25	-20	-15	-9	-6	Spot	38	41	35	25	20	15	9	6
1y	-45	-34	-26	-19				-5	1y	45	34	26	19				5
18m	-35	-25	-20	-14		-9		-4	18m	35	25	20	14		9		4
2y	-23	-17	-14	-10		-7		-3	2y	23	17	14	10		7		3
30m	-15								30m	15							
3y	-10	-9		-6				-2	3y	10	9		6				2
4y	-8								4y	8							
5y		-5		-4		-3	-1	-1	5y		5		4		3	1	1
7y									7y								1
10y				-1		0	0		10y				1		0	0	
15y									15y								
20y							1		20y						-1		
Vol Pickup (Fwd-Strike, bp)									Vol Pickup (Strike-Fwd, bp)								
Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y	Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y
Spot	15	3	-2	-3	-2	0	2	3	Spot	11	2	-2	-3	-2	0	2	3
1y	-10	-10	-11	-7				0	1y	-10	-10	-11	-7				0
18m	-30	-13							18m	-23	-13						
2y	-19	-17	-11	-8		-4		0	2y	-15	-14	-11	-8		-4		0
30m	-28								30m	-22							
3y	-14	-11		-6				0	3y	-14	-11		-6				0
4y	-9								4y	-9							
5y		-8		-6		-3	0	0	5y		-8		-6		-3	0	0
7y							0		7y							0	
10y				0		-3	0		10y				0		-3	0	
15y									15y								
20y							-3		20y						-3		
Total Pickup (Spot-Strike, bp)									Total Pickup (Strike-Spot, bp)								
Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y	Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y
Spot	-23	-39	-38	-28	-21	-15	-6	-3	Spot	49	44	33	22	18	15	11	9
1y	-55	-44	-37	-26				-5	1y	35	24	16	12				5
18m	-65	-38							18m	12	13						
2y	-42	-33	-25	-18		-11		-3	2y	8	2	3	2		3		3
30m	-43								30m	-7							
3y	-24	-20		-12				-2	3y	-3	-2		1				2
4y	-17								4y	-1							
5y		-13		-10		-6	-1	-1	5y		-3		-2		-1	1	1
7y							-1		7y							1	
10y				-1		-3	0		10y				1		-3	0	
15y									15y								
20y							-2		20y						-3		

Source: Nomura Research. For more method details, please see [link](#).

Fig. 10: USD ATM Normal Vol for 6m and 1y expiries

USD ATM Vol (bp) - 6-Month expiry									USD ATM Vol (bp) - 1-year expiry								
Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y	Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y
Spot	55	73	81	82	80	77	73	72	Spot	72	84	87	86	84	80	76	73
1y	95	95	96	90				74	1y	101	96	97	92				74
18m	118	99							18m	124	99						
2y	105	103	96	91		84		75	2y	99	102	98	94		87		76
30m	117								30m	118							
3y	101	97		88				75	3y	100	101		91				76
4y	93								4y	98							
5y		91		87		83	74	74	5y		91		88		86	75	74
7y							76		7y							77	
10y				76		83	78		10y				78		81	78	
15y									15y								
20y						82			20y						80		

Source: Nomura Research

Fig. 11: EUR vanilla and mid-curves, 6-month expiry

Currency: EUR Expiry: 6m																	
Payers									Receivers								
Fwd Pickup (Spot-Fwd, bp)									Fwd Pickup (Fwd-Spot, bp)								
Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y	Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y
Spot	-1	-4	-5	-7	-9	-9	-5	-3	Spot	1	4	5	7	9	9	5	3
1y	-6	-7			-10				1y	6	7			10			
18m	-7	-8	-8						18m	7	8	8					
2y	-8	-8	-10						2y	8	8	10					
30m									30m								
3y	-9	-10							3y	9	10						
4y	-12	-13							4y	12	13						
5y			-13	-11		-6			5y			13	11		6		
7y									7y								
10y						0	0		10y						0	0	
15y					1	1			15y				-1		-1		
20y						1	1		20y						-1	-1	
Vol Pickup (Fwd-Strike, bp)									Vol Pickup (Strike-Fwd, bp)								
Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y	Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y
Spot	22	21	18	13	7	0	-3	-4	Spot	14	15	13	9	5	0	-3	-3
1y	12	13			0				1y	11	9			0			
18m									18m								
2y	10	7	5						2y	8	6	5					
30m									30m								
3y	4	0							3y	2	0						
4y	-1	-4							4y	-2	-4						
5y			-13	-15		-9			5y			-10	-12		-9		
7y									7y								
10y						-9	-8		10y						-9	-8	
15y				-13		-9			15y				-13		-9		
20y						-8	-5		20y						-8	-5	
Total Pickup (Spot-Strike, bp)									Total Pickup (Strike-Spot, bp)								
Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y	Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y
Spot	21	17	13	5	-2	-9	-8	-7	Spot	16	18	18	16	14	9	2	0
1y	6	6			-10				1y	17	16			10			
18m									18m								
2y	2	-1	-4						2y	16	14	15					
30m									30m								
3y	-5	-10							3y	11	10						
4y	-13	-17							4y	10	9						
5y			-26	-26		-15			5y			3	-2		-3		
7y									7y								
10y						-10	-8		10y						-9	-8	
15y				-12		-8			15y				-14		-10		
20y						-7	-4		20y						-9	-6	

Source: Nomura Research. For more method details, please see [link](#).

Fig. 12: EUR ATM Normal Vol for 6m and 1y expiries

EUR ATM Vol (bp) - 6-month expiry									EUR ATM Vol (bp) - 1-year expiry								
Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y	Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y
Spot	19	19	23	31	40	50	55	56	Spot	20	23	27	35	43	52	56	56
1y	22	27			47				1y	27	32			51			
18m									18m								
2y	33	37	41						2y	37	42	46					
30m									30m								
3y	44	47							3y	48	52						
4y	53	57							4y	57	62						
5y			68	72		66			5y			71	73		67		
7y									7y								
10y						66	64		10y						65	63	
15y				73		66			15y				70		64		
20y						64	59		20y						63	58	

Source: Nomura Research

## Exchange Traded Vanillas and Mid-curves

Fig. 13: USD listed vanilla and mid-curve options

Mid-Curve Fwd Year	Contract	Expiry	Underlying Futures	Futures Price	ATM Strike	3-month aged contract			Call (Bull, ticks)			Put (Bear, ticks)		
						Expiry	Un. Futures	Fut. Px	PV	Aged Px	Rolldown	PV	Aged Px	Rolldown
0y	EDZ4	Fri, 12/12/14	EDZ4	99.759	99.750	12-Sep-14	EDU4	99.760	1.3	1.0	-0.3	0.4	0.0	-0.4
0y	EDF5	Fri, 01/16/15	EDH5	99.718	99.750	10-Oct-14	EDZ4	99.759	0.6	0.9	0.3	3.9	0.0	-3.9
0y	EDG5	Fri, 02/13/15	EDH5	99.718	99.750	14-Nov-14	EDZ4	99.759	1.0	0.9	-0.2	4.3	0.0	-4.3
0y	EDH5	Fri, 03/13/15	EDH5	99.718	99.750	12-Dec-14	EDZ4	99.759	3.5	1.3	-2.2	6.8	0.4	-6.4
0y	EDM5	Fri, 06/12/15	EDM5	99.563	99.625	13-Mar-15	EDH5	99.718	5.7	11.9	6.1	12.0	2.6	-9.4
0y	EDU5	Fri, 09/11/15	EDU5	99.358	99.375	12-Jun-15	EDM5	99.563	14.0	22.9	8.9	15.7	4.1	-11.6
1y	0EZ4	Fri, 12/12/14	EDZ5	99.108	99.125	12-Sep-14	EDU5	99.358	2.0	23.3	21.3	3.7	0.0	-3.7
1y	0EF5	Fri, 01/16/15	EDH6	98.863	98.875	10-Oct-14	EDZ5	99.108	9.7	23.3	13.5	11.0	0.0	-11.0
1y	0EG5	Fri, 02/13/15	EDH6	98.863	98.875	14-Nov-14	EDZ5	99.108	12.8	23.3	10.4	14.1	0.0	-14.1
1y	0EH5	Fri, 03/13/15	EDH6	98.863	98.875	12-Dec-14	EDZ5	99.108	14.8	23.3	8.4	16.1	0.0	-16.1
1y	0EM5	Fri, 06/12/15	EDM6	98.608	98.625	13-Mar-15	EDH6	98.863	23.4	32.0	8.6	25.1	8.2	-16.9
1y	0EU5	Fri, 09/11/15	EDU6	98.363	98.375	12-Jun-15	EDM6	98.608	31.1	40.1	9.0	32.3	16.8	-15.5
2y	2EZ4	Fri, 12/12/14	EDZ6	98.143	98.125	12-Sep-14	EDU6	98.363	4.8	23.7	19.0	3.0	0.0	-3.0
2y	2EF5	Fri, 01/16/15	EDH7	97.973	98.000	10-Oct-14	EDZ6	98.143	11.8	14.2	2.4	14.6	0.0	-14.6
2y	2EG5	Fri, 02/13/15	EDH7	97.973	98.000	14-Nov-14	EDZ6	98.143	15.8	14.2	-1.5	18.5	0.0	-18.5
2y	2EH5	Fri, 03/13/15	EDH7	97.973	98.000	12-Dec-14	EDZ6	98.143	18.5	14.6	-3.9	21.3	0.3	-20.9
2y	2EM5	Fri, 06/12/15	EDM7	97.813	97.875	13-Mar-15	EDH7	97.973	25.0	25.9	0.9	31.3	16.1	-15.1
2y	2EU5	Fri, 09/11/15	EDU7	97.688	97.750	12-Jun-15	EDM7	97.813	31.4	32.1	0.7	37.7	25.9	-11.8
3y	3EZ4	Fri, 12/12/14	EDZ7	97.578	97.625	12-Sep-14	EDU7	97.688	1.8	6.3	4.5	6.5	0.0	-6.5
3y	3EF5	Fri, 01/16/15	EDH8	97.498	97.500	10-Oct-14	EDZ7	97.578	12.8	7.8	-5.1	13.1	0.0	-13.1
3y	3EG5	Fri, 02/13/15	EDH8	97.498	97.500	14-Nov-14	EDZ7	97.578	16.2	7.8	-8.4	16.4	0.0	-16.4
3y	3EH5	Fri, 03/13/15	EDH8	97.498	97.500	12-Dec-14	EDZ7	97.578	19.6	8.8	-10.8	19.9	1.1	-18.8
3y	3EM5	Fri, 06/12/15	EDM8	97.428	97.375	13-Mar-15	EDH8	97.498	31.1	27.0	-4.0	25.8	14.8	-11.0
3y	3EU5	Fri, 09/11/15	EDU8	97.358	97.375	12-Jun-15	EDM8	97.428	33.3	31.1	-2.3	35.1	25.8	-9.3
4y	4EZ4	Fri, 12/12/14	EDZ8	97.293	97.250	12-Sep-14	EDU8	97.358	6.1	10.8	4.6	1.9	0.0	-1.9
4y	4EF5	Fri, 01/16/15	EDH9	97.243	97.250	10-Oct-14	EDZ8	97.293	11.8	4.3	-7.5	12.5	0.0	-12.5
4y	4EG5	Fri, 02/13/15	EDH9	97.243	97.250	14-Nov-14	EDZ8	97.293	15.6	4.3	-11.4	16.4	0.0	-16.4
4y	4EH5	Fri, 03/13/15	EDH9	97.243	97.250	12-Dec-14	EDZ8	97.293	18.4	6.1	-12.2	19.1	1.9	-17.2
4y	4EM5	Fri, 06/12/15	EDM9	97.198	97.250	13-Mar-15	EDH9	97.243	23.9	18.4	-5.5	29.1	19.1	-10.0
4y	4EU5	Fri, 09/11/15	EDU9	97.148	97.125	12-Jun-15	EDM9	97.198	33.6	30.8	-2.7	31.3	23.6	-7.7

Source: Nomura Research, tick size of vanilla contract is aligned to midcurve contract. Tick size = \$25 throughout (convention of \$12.5 in front contract is ignored)

Fig. 14: EUR listed vanilla and mid-curve options

Mid-Curve Fwd Year	Contract	Expiry	Underlying Futures	Futures Price	ATM Strike	3-month aged contract			Call (Bull, ticks)			Put (Bear, ticks)		
						Expiry	Jn. Future	Fut. Px	PV	Aged Px	Rolldown	PV	Aged Px	Rolldown
0y	ERZ4	Mon, 12/15/14	ERZ4	99.913	99.875	15-Sep-14	ERU4	99.917	3.75	4.20	0.45	0.00	0.00	0.00
0y	ERF5	Mon, 01/19/15	ERH5	99.903	99.875	13-Oct-14	ERZ4	99.913	3.89	3.75	-0.14	1.14	0.00	-1.14
0y	ERG5	Mon, 02/16/15	ERH5	99.903	99.875	17-Nov-14	ERZ4	99.913	4.72	3.75	-0.97	1.97	0.00	-1.97
0y	ERH5	Mon, 03/16/15	ERH5	99.903	99.875	15-Dec-14	ERZ4	99.913	5.26	3.75	-1.51	2.51	0.00	-2.51
0y	ERJ5	Mon, 04/13/15	ERM5	99.913	99.875	19-Jan-15	ERH5	99.903	6.65	3.89	-2.76	2.90	1.14	-1.76
0y	ERK5	Mon, 05/18/15	ERM5	99.913	99.875	16-Feb-15	ERH5	99.903	7.44	4.72	-2.72	3.69	1.97	-1.72
0y	ERM5	Mon, 06/15/15	ERM5	99.913	99.875	16-Mar-15	ERH5	99.903	7.66	5.26	-2.40	3.91	2.51	-1.40
0y	ERU5	Mon, 09/14/15	ERU5	99.913	99.875	15-Jun-15	ERM5	99.913	8.96	7.66	-1.30	5.21	3.91	-1.30
1y	0RZ4	Mon, 12/15/14	ERZ5	99.898	99.875	15-Sep-14	ERU5	99.913	2.39	3.75	1.36	0.14	0.00	-0.14
1y	0RF5	Mon, 01/19/15	ERH6	99.883	99.875	13-Oct-14	ERZ5	99.898	2.58	2.25	-0.33	1.83	0.00	-1.83
1y	0RG5	Mon, 02/16/15	ERH6	99.883	99.875	17-Nov-14	ERZ5	99.898	3.66	2.25	-1.41	2.91	0.00	-2.91
1y	0RH5	Mon, 03/16/15	ERH6	99.883	99.875	15-Dec-14	ERZ5	99.898	4.42	2.39	-2.03	3.67	0.14	-3.53
1y	0RJ5	Mon, 04/13/15	ERM6	99.858	99.875	19-Jan-15	ERH6	99.883	3.63	2.58	-1.05	5.38	1.83	-3.55
1y	0RK5	Mon, 05/18/15	ERM6	99.858	99.875	16-Feb-15	ERH6	99.883	4.25	3.66	-0.59	6.00	2.91	-3.09
1y	0RM5	Mon, 06/15/15	ERM6	99.858	99.875	16-Mar-15	ERH6	99.883	4.72	4.42	-0.30	6.47	3.67	-2.80
1y	0RU5	Mon, 09/14/15	ERU6	99.828	99.875	15-Jun-15	ERM6	99.858	4.91	4.72	-0.19	9.66	6.47	-3.19
2y	2RZ4	Mon, 12/15/14	ERZ6	99.798	99.750	15-Sep-14	ERU6	99.828	4.80	7.75	2.95	0.05	0.00	-0.05
2y	2RF5	Mon, 01/19/15	ERH7	99.773	99.750	13-Oct-14	ERZ6	99.798	4.46	4.75	0.29	2.21	0.00	-2.21
2y	2RG5	Mon, 02/16/15	ERH7	99.773	99.750	17-Nov-14	ERZ6	99.798	5.85	4.75	-1.10	3.60	0.00	-3.60
2y	2RH5	Mon, 03/16/15	ERH7	99.773	99.750	15-Dec-14	ERZ6	99.798	6.82	4.80	-2.02	4.57	0.05	-4.52
2y	2RJ5	Mon, 04/13/15	ERM7	99.738	99.750	19-Jan-15	ERH7	99.773	5.64	4.46	-1.18	6.89	2.21	-4.68
2y	2RK5	Mon, 05/18/15	ERM7	99.738	99.750	16-Feb-15	ERH7	99.773	6.63	5.85	-0.78	7.88	3.60	-4.28
2y	2RM5	Mon, 06/15/15	ERM7	99.738	99.750	16-Mar-15	ERH7	99.773	7.37	6.82	-0.54	8.62	4.57	-4.04
2y	2RU5	Mon, 09/14/15	ERU7	99.703	99.750	15-Jun-15	ERM7	99.738	7.67	7.37	-0.31	12.42	8.62	-3.81
3y	3RZ4	Mon, 12/15/14	ERZ7	99.663	99.625	15-Sep-14	ERU7	99.703	4.26	7.75	3.49	0.51	0.00	-0.51
3y	3RF5	Mon, 01/19/15	ERH8	99.628	99.625	13-Oct-14	ERZ7	99.663	4.52	3.75	-0.77	4.27	0.00	-4.27
3y	3RG5	Mon, 02/16/15	ERH8	99.628	99.625	17-Nov-14	ERZ7	99.663	6.56	3.75	-2.81	6.31	0.00	-6.31
3y	3RH5	Mon, 03/16/15	ERH8	99.628	99.625	15-Dec-14	ERZ7	99.663	7.93	4.26	-3.68	7.68	0.51	-7.18
3y	3RJ5	Mon, 04/13/15	ERM8	99.583	99.625	19-Jan-15	ERH8	99.628	6.91	4.52	-2.40	11.16	4.27	-6.90
3y	3RK5	Mon, 05/18/15	ERM8	99.583	99.625	16-Feb-15	ERH8	99.628	8.10	6.56	-1.53	12.35	6.31	-6.03
3y	3RM5	Mon, 06/15/15	ERM8	99.583	99.625	16-Mar-15	ERH8	99.628	9.08	7.93	-1.15	13.33	7.68	-5.65
3y	3RU5	Mon, 09/14/15	ERU8	99.540	99.500	15-Jun-15	ERM8	99.583	17.23	16.73	-0.49	13.23	8.48	-4.74
4y	4RZ4	Mon, 12/15/14	ERZ8	99.507	99.500	15-Sep-14	ERU8	99.540	2.31	4.00	1.69	1.58	0.00	-1.58
4y	4RF5	Mon, 01/19/15	ERH9	99.471	99.500	13-Oct-14	ERZ8	99.507	4.64	0.73	-3.92	7.56	0.00	-7.56
4y	4RG5	Mon, 02/16/15	ERH9	99.471	99.500	17-Nov-14	ERZ8	99.507	7.31	0.73	-6.58	10.23	0.00	-10.23
4y	4RH5	Mon, 03/16/15	ERH9	99.471	99.500	15-Dec-14	ERZ8	99.507	9.03	2.31	-6.72	11.94	1.58	-10.36
4y	4RJ5	Mon, 04/13/15	ERM9	99.417	99.375	19-Jan-15	ERH9	99.471	14.84	12.35	-2.49	10.60	2.76	-7.83
4y	4RK5	Mon, 05/18/15	ERM9	99.417	99.375	16-Feb-15	ERH9	99.471	16.69	14.88	-1.81	12.45	5.29	-7.16
4y	4RM5	Mon, 06/15/15	ERM9	99.417	99.375	16-Mar-15	ERH9	99.471	17.87	16.75	-1.12	13.63	7.17	-6.46
4y	4RU5	Mon, 09/14/15	ERU9	99.354	99.375	15-Jun-15	ERM9	99.417	17.99	17.87	-0.11	20.12	13.63	-6.49

Source: Nomura Research, tick size of vanilla contract is aligned to midcurve contract. Tick size = EUR25 throughout (convention of EUR12.5 in front contract is ignored)

## Swaption Triangles

Fig. 15: USD Liquid Vol Triangles (correspond to traded mid-curves)

Triangle	Swaptions	Package PV (cts)		1y Carry/PV		1Y Vol Carry/PV		Term Carry/PV		Fwd Vol		Spot-Fwd Vol Spread	
		Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile
2y10y10y	+2y10y-2y20y+12y10y	797.5	51%	19%	4%	5%	50%	62%	8%	70.64	1%	4.83	45%
2y10y20y	+2y10y-2y30y+12y20y	1,131.3	54%	23%	12%	6%	68%	74%	8%	59.66	2%	5.78	38%
2y10y5y	+2y10y-2y15y+12y5y	486.3	63%	17%	0%	5%	50%	53%	3%	75.78	2%	4.68	39%
2y1y1y	+2y1y-2y2y+3y1y	31.7	65%	26%	95%	2%	66%	-70%	87%	90.18	85%	-26.16	64%
2y1y2y	+2y1y-2y3y+3y2y	59.3	54%	38%	99%	5%	90%	-45%	93%	89.99	72%	-14.57	73%
2y1y30y	+2y1y-2y31y+3y30y	417.0	83%	37%	35%	9%	83%	113%	38%	68.05	0%	5.44	30%
2y1y5y	+2y1y-2y6y+3y5y	135.8	81%	10%	20%	1%	66%	4%	92%	86.10	62%	-4.38	41%
2y2y1y	+2y2y-2y3y+4y1y	53.9	62%	21%	75%	4%	68%	11%	100%	95.28	71%	-5.64	65%
2y2y2y	+2y2y-2y4y+4y2y	100.5	62%	29%	75%	6%	79%	32%	100%	89.34	52%	0.49	67%
2y2y30y	+2y2y-2y32y+4y30y	700.1	77%	33%	20%	8%	76%	110%	33%	68.09	1%	6.08	25%
2y2y3y	+2y2y-2y5y+4y3y	152.9	84%	22%	48%	3%	72%	34%	100%	92.46	55%	-2.65	49%
2y2y5y	+2y2y-2y7y+4y5y	233.5	81%	25%	51%	5%	76%	47%	87%	86.90	47%	1.63	42%
2y3y1y	+2y3y-2y4y+5y1y	69.6	67%	27%	63%	9%	78%	47%	100%	92.64	51%	6.34	65%
2y3y2y	+2y3y-2y5y+5y2y	139.7	83%	20%	39%	3%	74%	44%	92%	90.33	46%	5.23	59%
2y3y30y	+2y3y-2y33y+5y30y	917.7	73%	30%	9%	7%	70%	100%	25%	68.08	2%	5.42	22%
2y3y5y	+2y3y-2y8y+5y5y	310.7	80%	23%	25%	6%	75%	54%	62%	88.07	40%	3.13	36%
2y4y1y	+2y4y-2y5y+6y1y	89.4	87%	13%	8%	0%	43%	39%	56%	95.50	56%	3.66	38%
2y5y10y	+2y5y-2y15y+7y10y	702.5	66%	22%	2%	7%	63%	61%	16%	82.85	20%	3.02	16%
2y5y20y	+2y5y-2y25y+7y20y	970.6	62%	26%	3%	7%	54%	82%	15%	69.46	1%	6.14	28%
2y5y2y	+2y5y-2y7y+7y2y	173.8	61%	25%	30%	9%	69%	58%	50%	89.28	26%	5.46	33%
2y5y30y	+2y5y-2y35y+8y30y	1,168.1	57%	29%	12%	8%	67%	93%	18%	65.38	2%	6.40	20%
2y5y5y	+2y5y-2y10y+7y5y	404.5	84%	24%	4%	9%	76%	56%	20%	86.84	35%	4.50	15%
2y7y20y	+2y7y-2y27y+9y20y	1,082.0	60%	25%	6%	7%	54%	78%	10%	65.43	2%	6.43	20%
2y8y20y	+2y8y-2y28y+10y20y	1,109.9	56%	24%	6%	7%	54%	77%	10%	63.24	2%	6.50	21%
5y10y10y	+5y10y-5y20y+15y10y	574.2	52%	10%	30%	2%	52%	130%	1%	65.34	5%	9.39	45%
5y10y20y	+5y10y-5y30y+15y20y	716.9	49%	15%	61%	4%	74%	181%	14%	51.80	5%	13.38	47%
5y10y5y	+5y10y-5y15y+15y5y	346.5	49%	11%	44%	4%	71%	115%	0%	70.27	11%	10.20	49%
5y1y1y	+5y1y-5y2y+6y1y	21.6	79%	19%	9%	7%	11%	-77%	89%	94.34	100%	-23.32	43%
5y1y2y	+5y1y-5y3y+6y2y	37.2	50%	29%	22%	15%	22%	-54%	98%	81.08	90%	0.53	76%
5y1y30y	+5y1y-5y31y+6y30y	249.9	55%	20%	43%	10%	69%	213%	59%	58.45	7%	11.99	19%
5y1y5y	+5y1y-5y6y+6y5y	86.5	74%	-4%	7%	-2%	6%	-2%	97%	75.97	54%	8.50	57%
5y2y1y	+5y2y-5y3y+7y1y	34.0	66%	12%	8%	5%	11%	27%	97%	88.50	95%	6.77	62%
5y2y2y	+5y2y-5y4y+7y2y	59.9	33%	20%	31%	10%	48%	67%	100%	78.43	57%	16.69	78%
5y2y30y	+5y2y-5y32y+7y30y	401.4	51%	21%	41%	8%	69%	249%	47%	57.59	10%	15.05	22%
5y2y3y	+5y2y-5y5y+7y3y	89.3	43%	20%	45%	11%	68%	77%	100%	80.69	49%	12.90	69%
5y2y5y	+5y2y-5y7y+7y5y	144.6	72%	17%	44%	9%	67%	85%	91%	76.38	43%	12.81	47%
5y3y1y	+5y3y-5y4y+8y1y	43.2	62%	20%	45%	10%	67%	97%	97%	84.31	74%	15.87	52%
5y3y2y	+5y3y-5y5y+8y2y	82.4	51%	17%	48%	10%	73%	105%	95%	79.54	45%	17.46	60%
5y3y30y	+5y3y-5y33y+8y30y	516.7	50%	20%	42%	8%	72%	249%	39%	56.58	5%	16.01	23%
5y3y5y	+5y3y-5y8y+8y5y	189.9	76%	18%	47%	10%	75%	115%	71%	76.76	34%	14.01	38%
5y4y1y	+5y4y-5y5y+9y1y	53.9	72%	15%	54%	10%	81%	103%	80%	84.71	69%	13.93	38%
5y5y10y	+5y5y-5y15y+10y10y	479.5	76%	12%	26%	5%	57%	126%	14%	75.57	10%	8.40	19%
5y5y20y	+5y5y-5y25y+10y20y	604.3	62%	15%	22%	5%	49%	190%	12%	60.46	10%	13.14	16%
5y5y2y	+5y5y-5y7y+10y2y	112.2	75%	15%	22%	6%	48%	117%	40%	78.58	38%	15.66	29%
5y5y30y	+5y5y-5y35y+10y30y	664.4	52%	20%	39%	7%	62%	242%	29%	54.12	6%	16.66	27%
5y5y5y	+5y5y-5y10y+10y5y	255.8	82%	16%	33%	7%	64%	129%	26%	76.14	38%	13.90	22%
5y7y20y	+5y7y-5y27y+12y20y	683.8	54%	15%	42%	4%	69%	185%	5%	57.56	6%	13.32	16%
5y8y20y	+5y8y-5y28y+13y20y	705.3	52%	15%	48%	4%	72%	183%	5%	55.89	6%	13.15	21%

Source: Nomura Research, stats are based on the recent 4-year history till 5-Dec-2014

Fig. 16: EUR Liquid Vol Triangles (correspond to traded mid-curves)

Triangle	Swaptions	Package PV (cts)		1y Carry/PV		1Y Vol Carry/PV		Term Carry/PV		Fwd Vol		Spot-Fwd Vol Spread	
		Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile
2y10y10y	+2y10y-2y20y+12y10y	949.8	90%	13%	0%	1%	39%	45%	8%	64.27	4%	1.12	7%
2y10y20y	+2y10y-2y30y+12y20y	1,354.7	91%	16%	3%	1%	37%	59%	12%	53.53	7%	3.05	14%
2y1y1y	+2y1y-2y2y+3y1y	8.9	1%	46%	100%	10%	91%	-54%	68%	21.13	0%	-1.74	93%
2y1y2y	+2y1y-2y3y+3y2y	27.8	0%	2%	35%	-10%	41%	-68%	35%	34.73	0%	-12.30	34%
2y1y4y	+2y1y-2y5y+3y4y	57.0	0%	6%	23%	-14%	21%	-54%	16%	37.50	0%	-6.31	13%
2y1y7y	+2y1y-2y8y+3y7y	99.1	0%	47%	89%	-5%	11%	-24%	24%	43.52	0%	-0.51	24%
2y2y1y	+2y2y-2y3y+4y1y	25.7	0%	-6%	12%	-19%	7%	-51%	16%	35.60	0%	-9.69	14%
2y2y2y	+2y2y-2y4y+4y2y	59.4	0%	-3%	11%	-14%	4%	-45%	10%	43.79	0%	-11.47	10%
2y2y3y	+2y2y-2y5y+4y3y	87.5	1%	2%	8%	-12%	4%	-39%	8%	45.11	0%	-8.63	8%
2y2y8y	+2y2y-2y8y+4y8y	212.8	0%	10%	10%	-4%	5%	11%	19%	51.08	0%	0.37	16%
2y3y1y	+2y3y-2y4y+5y1y	41.1	0%	-1%	8%	-14%	3%	-34%	7%	43.31	0%	-6.79	8%
2y3y2y	+2y3y-2y5y+5y2y	84.8	5%	9%	10%	-6%	6%	-24%	6%	48.11	0%	-5.46	7%
2y4y1y	+2y4y-2y5y+6y1y	52.6	9%	14%	7%	-4%	3%	-15%	2%	47.34	0%	-1.12	3%
2y5y10y	+2y5y-2y15y+7y10y	618.7	55%	14%	1%	-1%	11%	38%	8%	61.83	0%	0.61	6%
2y5y15y	+2y5y-2y20y+7y15y	774.9	54%	17%	1%	0%	14%	56%	18%	56.52	0%	2.31	18%
2y5y25y	+2y5y-2y30y+7y25y	1,033.8	56%	21%	3%	0%	19%	74%	20%	52.07	3%	3.68	17%
2y5y3y	+2y5y-2y8y+7y3y	191.2	38%	11%	1%	0%	5%	12%	1%				
2y5y5y	+2y5y-2y10y+7y5y	299.6	41%	16%	2%	-1%	8%	30%	5%	57.44	0%	3.06	3%
5y10y10y	+5y10y-5y20y+15y10y	779.0	97%	6%	20%	0%	65%	85%	1%	64.06	34%	1.33	1%
5y10y20y	+5y10y-5y30y+15y20y	1,084.5	97%	6%	3%	-1%	54%	106%	3%	51.70	75%	4.89	3%
5y1y1y	+5y1y-5y2y+6y1y	11.5	5%	-15%	0%	-28%	0%	-93%	10%	27.89	8%	-8.51	43%
5y1y2y	+5y1y-5y3y+6y2y	27.2	13%	9%	0%	1%	2%	-93%	4%	31.25	5%	-8.82	10%
5y1y4y	+5y1y-5y5y+6y4y	52.9	22%	16%	17%	7%	27%	-87%	4%	30.11	4%	1.09	8%
5y1y7y	+5y1y-5y8y+6y7y	92.6	55%	17%	47%	6%	43%	-73%	7%	43.17	0%	-0.16	8%
5y2y1y	+5y2y-5y3y+7y1y	27.7	38%	3%	2%	-2%	2%	-84%	5%	37.86	8%	-11.95	7%
5y2y2y	+5y2y-5y4y+7y2y	54.6	78%	10%	15%	4%	26%	-78%	2%	38.41	7%	-6.09	6%
5y2y3y	+5y2y-5y5y+7y3y	77.8	75%	13%	33%	5%	44%	-74%	1%	38.37	7%	-1.89	4%
5y2y8y	+5y2y-5y10y+7y8y	188.5	75%	16%	27%	1%	24%	-32%	4%	51.55	10%	-0.09	2%
5y3y1y	+5y3y-5y4y+8y1y	37.3	56%	19%	72%	13%	82%	-66%	0%	38.22	6%	-1.69	4%
5y3y2y	+5y3y-5y5y+8y2y	72.9	79%	19%	71%	11%	79%	-53%	0%	40.03	5%	2.61	2%
5y4y1y	+5y4y-5y5y+9y1y	44.9	63%	20%	81%	9%	83%	-37%	0%	40.79	4%	5.42	1%
5y4y2y	+5y4y-5y6y+9y2y	92.8	95%	19%	59%	8%	68%	-26%	0%	49.26	6%	1.99	1%
5y5y10y	+5y5y-5y15y+10y10y	565.0	95%	4%	0%	-2%	18%	41%	1%	65.99	48%	-3.55	1%
5y5y15y	+5y5y-5y20y+10y15y	667.4	93%	6%	1%	-2%	32%	76%	2%	58.45	23%	0.38	1%
5y5y25y	+5y5y-5y30y+10y25y	872.1	94%	5%	1%	-4%	27%	103%	4%	52.94	82%	2.81	5%
5y5y3y	+5y5y-5y8y+10y3y	164.1	92%	6%	0%	1%	14%	7%	1%				
5y5y5y	+5y5y-5y10y+10y5y	259.3	92%	8%	0%	0%	16%	27%	1%	58.06	35%	2.45	1%

Source: Nomura Research, stats are based on the recent 4-year history till 5-Dec-2014



## Mid-curve Calendar Spread Trades

Fig. 17: USD Mid-curve calendar spread trades

MidCurve Calendar Sprd	Trade	1y Carry/PV %		Term Carry/PV %		Fwd Vol		Spot-Fwd Vol Spread		Upper B/E Buffer (high B/E - Spot) bp		Lower B/E Buffer (Spot- low B/E) bp	
		Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile
2y1y1y	-2y1y1y + 3y1y struck @ 1y1y fwd	32%	17.3%	271%	44.1%	91.9	88.7%	-20.9	79.3%	0.87	76.0%	0.50	83.5%
2y2y1y	-2y2y1y + 4y1y struck @ 2y1y fwd	43%	33.8%	171%	23.9%	95.6	72.7%	-0.4	76.9%	1.09	44.6%	0.82	69.9%
2y3y1y	-2y3y1y + 5y1y struck @ 3y1y fwd	43%	62.4%	157%	23.4%	92.6	51.6%	7.6	74.1%	1.28	24.4%	1.02	58.6%
2y4y1y	-2y4y1y + 6y1y struck @ 4y1y fwd	19%	0.9%	104%	2.8%	96.2	58.6%	2.5	29.5%	1.11	1.8%	0.92	30.5%
2y1y2y	-2y1y2y + 3y2y struck @ 1y2y fwd	53%	49.7%	283%	43.6%	89.4	70.4%	-7.8	84.9%	0.88	49.2%	0.63	79.8%
2y2y2y	-2y2y2y + 4y2y struck @ 2y2y fwd	41%	15.4%	193%	28.1%	90.5	53.9%	4.6	80.2%	1.13	35.2%	0.88	63.3%
2y3y2y	-2y3y2y + 5y2y struck @ 3y2y fwd	29%	10.7%	141%	5.1%	92.3	52.1%	4.7	54.4%	1.15	7.5%	0.94	46.0%
2y5y2y	-2y5y2y + 7y2y struck @ 5y2y fwd	36%	80.2%	116%	26.7%	87.6	22.0%	6.6	44.1%	1.28	9.8%	1.05	39.4%
2y2y3y	-2y2y3y + 4y3y struck @ 2y3y fwd	25%	1.8%	154%	6.1%	94.2	61.0%	-0.6	58.2%	0.96	15.0%	0.78	49.2%
2y1y5y	-2y1y5y + 3y5y struck @ 1y5y fwd	40%	30.9%	261%	17.8%	86.2	63.3%	-1.7	53.9%	0.80	20.1%	0.66	47.4%
2y2y5y	-2y2y5y + 4y5y struck @ 2y5y fwd	37%	26.7%	178%	7.0%	86.7	46.9%	2.5	47.8%	0.97	6.1%	0.82	42.7%
2y3y5y	-2y3y5y + 5y5y struck @ 3y5y fwd	34%	62.9%	139%	10.7%	87.6	40.3%	3.2	35.6%	1.03	4.2%	0.90	34.2%
2y5y5y	-2y5y5y + 7y5y struck @ 5y5y fwd	24%	1.8%	99%	8.9%	86.9	36.6%	3.2	9.3%	1.09	4.6%	0.92	4.6%
2y10y5y	-2y10y5y + 12y5y struck @ 10y5y fwd	17%	0.0%	68%	6.5%	76.4	5.1%	4.1	18.7%	1.11	7.5%	0.89	0.4%
2y5y10y	-2y5y10y + 7y10y struck @ 5y10y fwd	20%	1.8%	98%	14.0%	81.0	15.4%	2.9	16.9%	0.96	6.1%	0.91	9.3%
2y10y10y	-2y10y10y + 12y10y struck @ 10y10y fwd	17%	0.4%	76%	25.3%	70.4	3.2%	4.3	30.9%	1.07	15.0%	0.99	7.0%
2y5y20y	-2y5y20y + 7y20y struck @ 5y20y fwd	33%	54.4%	116%	19.2%	69.0	2.3%	4.6	15.4%	0.89	8.4%	0.96	8.4%
2y7y20y	-2y7y20y + 9y20y struck @ 7y20y fwd	26%	7.0%	101%	12.6%	65.5	4.6%	5.3	12.6%	0.94	6.1%	1.02	5.6%
2y8y20y	-2y8y20y + 10y20y struck @ 8y20y fwd	25%	8.4%	97%	12.6%	63.6	5.6%	5.4	13.1%	0.96	7.0%	1.04	4.6%
2y10y20y	-2y10y20y + 12y20y struck @ 10y20y fwd	19%	0.9%	88%	16.9%	60.1	4.6%	5.1	23.0%	0.98	11.7%	1.04	5.1%
2y1y30y	-2y1y30y + 3y30y struck @ 1y30y fwd	52%	45.0%	266%	14.5%	68.7	3.7%	1.7	18.7%	0.60	10.3%	0.66	14.5%
2y2y30y	-2y2y30y + 4y30y struck @ 2y30y fwd	43%	41.7%	192%	17.3%	68.2	3.7%	4.4	20.1%	0.73	11.7%	0.81	13.1%
2y3y30y	-2y3y30y + 5y30y struck @ 3y30y fwd	37%	37.0%	155%	16.4%	67.9	3.7%	4.7	21.5%	0.79	13.1%	0.89	10.3%
2y5y30y	-2y5y30y + 7y30y struck @ 5y30y fwd	34%	46.4%	125%	16.4%	64.9	2.3%	5.9	16.9%	0.87	9.3%	1.01	7.9%
5y2y1y	-5y2y1y + 7y1y struck @ 2y1y fwd	15%	3.2%	376%	0.9%	88.5	95.3%	6.8	62.4%	1.66	69.0%	1.16	74.1%
5y3y1y	-5y3y1y + 8y1y struck @ 3y1y fwd	21%	6.1%	342%	5.1%	84.3	74.1%	15.9	52.1%	1.94	46.9%	1.48	58.6%
5y4y1y	-5y4y1y + 9y1y struck @ 4y1y fwd	20%	31.4%	273%	3.7%	84.7	68.5%	13.9	38.4%	1.95	22.5%	1.54	46.9%
5y1y2y	-5y1y2y + 6y2y struck @ 1y2y fwd	21%	6.1%	619%	7.0%	81.1	90.1%	0.5	76.0%	1.27	70.4%	0.83	82.1%
5y2y2y	-5y2y2y + 7y2y struck @ 2y2y fwd	24%	13.6%	479%	13.1%	78.4	56.8%	16.7	77.9%	1.81	60.5%	1.30	75.5%
5y3y2y	-5y3y2y + 8y2y struck @ 3y2y fwd	22%	18.7%	367%	9.3%	79.5	45.0%	17.5	60.0%	1.91	37.5%	1.47	56.3%
5y5y2y	-5y5y2y + 10y2y struck @ 5y2y fwd	19%	25.3%	268%	9.3%	78.6	37.5%	15.7	29.1%	2.11	0.0%	1.63	29.1%
5y2y3y	-5y2y3y + 7y3y struck @ 2y3y fwd	26%	27.2%	424%	10.3%	80.7	49.2%	12.9	69.4%	1.64	43.6%	1.24	62.9%
5y1y5y	-5y1y5y + 6y5y struck @ 1y5y fwd	27%	15.9%	637%	1.8%	76.0	53.5%	8.5	56.8%	1.19	11.7%	0.92	47.4%
5y2y5y	-5y2y5y + 7y5y struck @ 2y5y fwd	25%	26.7%	443%	6.5%	76.4	42.7%	12.8	46.9%	1.54	5.6%	1.23	41.7%
5y3y5y	-5y3y5y + 8y5y struck @ 3y5y fwd	25%	43.1%	350%	11.7%	76.8	33.8%	14.0	37.5%	1.70	0.0%	1.40	33.3%
5y5y5y	-5y5y5y + 10y5y struck @ 5y5y fwd	21%	41.3%	255%	7.9%	76.1	38.4%	13.9	21.5%	1.96	0.4%	1.55	18.3%
5y10y5y	-5y10y5y + 15y5y struck @ 10y5y fwd	12%	61.0%	143%	14.5%	70.3	10.7%	10.2	48.8%	1.98	2.3%	1.45	0.4%
5y5y10y	-5y5y10y + 10y10y struck @ 5y10y fwd	14%	45.5%	207%	3.7%	75.6	10.3%	8.4	19.2%	1.55	0.4%	1.40	6.1%
5y10y10y	-5y10y10y + 15y10y struck @ 10y10y fwd	11%	43.1%	154%	15.0%	65.3	5.1%	9.4	44.6%	1.83	4.2%	1.55	0.4%
5y5y20y	-5y5y20y + 10y20y struck @ 5y20y fwd	19%	39.4%	279%	13.1%	60.5	10.3%	13.1	15.9%	1.51	0.9%	1.55	2.8%
5y7y20y	-5y7y20y + 12y20y struck @ 7y20y fwd	17%	67.6%	241%	10.3%	57.6	6.1%	13.3	15.9%	1.66	2.3%	1.68	1.4%
5y8y20y	-5y8y20y + 13y20y struck @ 8y20y fwd	17%	70.8%	230%	16.4%	55.9	6.1%	13.2	21.1%	1.74	2.8%	1.73	1.4%
5y10y20y	-5y10y20y + 15y20y struck @ 10y20y fwd	19%	75.1%	223%	44.6%	51.8	4.6%	13.4	46.9%	1.94	23.0%	1.84	2.8%
5y1y30y	-5y1y30y + 6y30y struck @ 1y30y fwd	32%	52.5%	685%	16.4%	58.5	7.0%	12.0	18.7%	0.90	8.9%	0.98	17.3%
5y2y30y	-5y2y30y + 7y30y struck @ 2y30y fwd	29%	57.2%	506%	22.5%	57.6	9.8%	15.0	22.0%	1.16	10.7%	1.24	14.5%
5y3y30y	-5y3y30y + 8y30y struck @ 3y30y fwd	27%	63.8%	420%	25.3%	56.6	4.6%	16.0	23.0%	1.34	10.7%	1.44	13.6%
5y5y30y	-5y5y30y + 10y30y struck @ 5y30y fwd	24%	58.2%	337%	30.0%	54.1	6.1%	16.7	26.7%	1.56	8.4%	1.69	5.6%
5y1y1y	-5y1y1y + 6y1y struck @ 1y1y fwd	8%	3.7%	430%	0.0%	94.3	99.5%	-23.3	43.3%	1.14	88.6%	0.60	79.7%

Source: Nomura Research, stats are based on the recent 4-year history till 5-Dec-2014

Fig. 18: EUR Mid-curve calendar spread trades

MidCurve Calendar Sprd	Trade	1y Carry/PV %		Term Carry/PV %		Fwd Vol		Spot-Fwd Vol Spread		Upper B/E Buffer (high B/E - Spot) bp		Lower B/E Buffer (Spot-low B/E) bp	
		Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile
2y10y10y	-2y10y10y + 12y10y struck @ 10y10y fwd	14%	0.4%	62%	15.4%	64.3	3.7%	1.1	6.5%	0.82	3.2%	0.69	4.6%
2y10y20y	-2y10y20y + 12y20y struck @ 10y20y fwd	18%	2.8%	77%	17.8%	53.5	6.5%	3.1	13.6%	0.80	8.9%	0.73	9.8%
2y1y1y	-2y1y1y + 3y1y struck @ 1y1y fwd	26%	53.9%	968%	94.3%	21.1	0.4%	-1.7	92.9%	0.30	17.3%	0.04	7.0%
2y1y2y	-2y1y2y + 3y2y struck @ 1y2y fwd	29%	26.2%	158%	8.4%	34.7	0.4%	-12.3	33.8%	0.23	9.3%	0.11	8.9%
2y1y4y	-2y1y4y + 3y4y struck @ 1y4y fwd	60%	56.8%	270%	9.8%	37.5	0.0%	-6.3	12.6%	0.43	7.9%	0.21	6.5%
2y1y7y	-2y1y7y + 3y7y struck @ 1y7y fwd	65%	84.9%	332%	40.8%	43.5	0.4%	-0.5	24.4%	0.58	11.2%	0.34	6.5%
2y2y1y	-2y2y1y + 4y1y struck @ 2y1y fwd	20%	7.0%	266%	20.6%	35.6	0.0%	-9.7	13.6%	0.24	7.0%	0.10	6.5%
2y2y2y	-2y2y2y + 4y2y struck @ 2y2y fwd	29%	3.7%	115%	6.5%	43.8	0.0%	-11.5	9.8%	0.40	4.2%	0.19	6.1%
2y2y3y	-2y2y3y + 4y3y struck @ 2y3y fwd	36%	3.2%	147%	5.1%	45.1	0.0%	-8.6	7.9%	0.49	2.8%	0.25	4.2%
2y2y8y	-2y2y8y + 4y8y struck @ 2y8y fwd	41%	10.7%	208%	25.3%	51.1	0.4%	0.4	15.9%	0.69	3.2%	0.48	2.8%
2y3y1y	-2y3y1y + 5y1y struck @ 3y1y fwd	29%	4.2%	209%	19.2%	43.3	0.0%	-6.8	7.9%	0.51	3.2%	0.22	3.7%
2y3y2y	-2y3y2y + 5y2y struck @ 3y2y fwd	41%	20.6%	137%	5.1%	48.1	0.0%	-5.5	6.5%	0.68	1.4%	0.33	3.2%
2y4y1y	-2y4y1y + 6y1y struck @ 4y1y fwd	46%	37.0%	219%	35.6%	47.3	0.0%	-1.1	2.8%	0.91	1.4%	0.38	1.4%
2y4y2y	-2y4y2y + 6y2y struck @ 4y2y fwd	40%	15.9%	145%	4.2%	51.7	0.0%	-0.4	4.2%	0.92	1.4%	0.47	1.4%
2y5y10y	-2y5y10y + 7y10y struck @ 5y10y fwd	24%	2.3%	100%	22.5%	61.8	0.4%	0.6	6.1%	0.77	0.9%	0.65	1.8%
2y5y15y	-2y5y15y + 7y15y struck @ 5y15y fwd	23%	1.8%	113%	28.6%	56.5	0.0%	2.3	17.8%	0.76	7.0%	0.68	7.9%
2y5y25y	-2y5y25y + 7y25y struck @ 5y25y fwd	24%	2.8%	121%	27.2%	52.1	2.8%	3.7	17.3%	0.73	9.8%	0.69	9.8%
2y5y5y	-2y5y5y + 7y5y struck @ 5y5y fwd	31%	7.9%	132%	27.2%	57.4	0.0%	3.1	3.2%	0.99	0.0%	0.69	0.9%
5y10y10y	-5y10y10y + 15y10y struck @ 10y10y fwd	7%	15.9%	106%	0.9%	64.1	33.8%	1.3	0.9%	1.25	0.9%	0.99	0.4%
5y10y20y	-5y10y20y + 15y20y struck @ 10y20y fwd	6%	6.5%	132%	3.2%	51.7	74.6%	4.9	3.2%	1.20	1.4%	1.01	1.8%
5y1y1y	-5y1y1y + 6y1y struck @ 1y1y fwd	-9%	1.8%	1818%	47.4%	27.9	8.1%	-8.5	43.0%	0.36	4.6%	0.04	5.1%
5y1y2y	-5y1y2y + 6y2y struck @ 1y2y fwd	85%	53.9%	850%	16.9%	31.3	4.6%	-8.8	9.8%	0.32	4.6%	0.21	5.6%
5y1y4y	-5y1y4y + 6y4y struck @ 1y4y fwd	180%	94.8%	1400%	50.7%	30.1	4.2%	1.1	7.9%	0.50	1.8%	0.34	2.8%
5y1y7y	-5y1y7y + 6y7y struck @ 1y7y fwd	54%	63.8%	814%	7.9%	43.2	0.0%	-0.2	8.4%	0.86	1.4%	0.46	4.6%
5y2y1y	-5y2y1y + 7y1y struck @ 2y1y fwd	35%	34.7%	780%	16.9%	37.9	7.5%	-11.9	6.5%	0.52	4.2%	0.16	4.6%
5y2y2y	-5y2y2y + 7y2y struck @ 2y2y fwd	60%	80.2%	594%	6.5%	38.4	7.0%	-6.1	6.1%	0.48	1.8%	0.36	4.2%
5y2y3y	-5y2y3y + 7y3y struck @ 2y3y fwd	70%	84.0%	686%	16.4%	38.4	7.0%	-1.9	4.2%	0.58	1.8%	0.45	2.3%
5y2y8y	-5y2y8y + 7y8y struck @ 2y8y fwd	13%	4.6%	423%	1.8%	51.5	9.8%	-0.1	2.3%	1.03	1.4%	0.64	1.4%
5y3y1y	-5y3y1y + 8y1y struck @ 3y1y fwd	68%	91.0%	805%	43.1%	38.2	5.6%	-1.7	4.2%	0.70	1.8%	0.33	1.8%
5y3y2y	-5y3y2y + 8y2y struck @ 3y2y fwd	64%	88.2%	602%	36.6%	40.0	5.1%	2.6	2.3%	0.68	1.4%	0.58	1.8%
5y4y1y	-5y4y1y + 9y1y struck @ 4y1y fwd	51%	90.1%	701%	54.4%	40.8	4.2%	5.4	1.4%	0.94	1.4%	0.55	1.4%
5y4y2y	-5y4y2y + 9y2y struck @ 4y2y fwd	24%	46.9%	371%	3.2%	49.3	6.1%	2.0	0.9%	0.92	1.4%	0.70	0.4%
5y5y10y	-5y5y10y + 10y10y struck @ 5y10y fwd	2%	0.4%	143%	0.9%	66.0	47.8%	-3.6	0.9%	0.98	0.4%	0.80	0.9%
5y5y15y	-5y5y15y + 10y15y struck @ 5y15y fwd	5%	0.4%	174%	2.3%	58.5	22.5%	0.4	0.9%	1.02	0.9%	0.87	0.9%
5y5y25y	-5y5y25y + 10y25y struck @ 5y25y fwd	3%	1.4%	182%	5.6%	52.9	81.7%	2.8	5.1%	0.96	2.3%	0.87	3.2%
5y5y5y	-5y5y5y + 10y5y struck @ 5y5y fwd	5%	0.4%	227%	0.9%	58.1	34.7%	2.4	0.9%	1.42	0.0%	0.91	0.9%

Source: Nomura Research, stats are based on the recent 4-year history till 5-Dec-2014

# Appendix A-1

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