

Vanilla and Flow Exotics Trade Reports

Searching for value

We provide analysis on vanilla vol carry, conditional vanilla trades, conditional mid-curve trades, long-dated triangles, mid-curve calendar spreads, and exchange-traded curve trades. Please note the links at the bottom of each page with examples of the reports' uses. For further guidance on the use of these reports and the methodology behind them please see [How to use vol reports: Eyeballing Relative Value](#).

Global Markets Research

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Research analysts

Quantitative Strategies

Nick Firoozye - Nlplc
nick.firoozye@nomura.com
+44 20 7102 1660

Qilong Zhang - NIHK
qilong.zhang@nomura.com
+852 2252 6191

Tomoya Horiuchi - Nlplc
tomoya.horiuchi@nomura.com
+44 20 7102 4574

Guillaume Andrieux - Nlplc
guillaume.andrieux1@nomura.com
+44 20 7102 1742

Swaption Carry Breakdown

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	-68.4%	-82.8%	-89.0%	-92.0%	-94.1%	-95.5%	-96.8%	1m	-7.7%	-7.9%	-8.2%	-8.2%	-8.2%	-8.1%	-8.1%
3m	-53.9%	-70.5%	-80.9%	-86.2%	-90.1%	-92.3%	-94.6%	3m	-15.0%	-5.5%	-4.2%	-5.1%	-4.9%	-4.8%	-4.7%
6m	-48.0%	-63.1%	-74.4%	-81.6%	-86.6%	-89.6%	-92.7%	6m	-14.4%	-6.2%	-3.6%	-4.5%	-4.3%	-3.9%	-4.2%
9m	-43.7%	-42.2%	-40.3%	-41.3%	-41.3%	-40.9%	-41.2%	9m	-11.8%	-6.2%	-1.3%	-1.4%	-0.7%	0.1%	0.0%
1y	-36.8%	-32.0%	-27.9%	-28.2%	-27.7%	-26.9%	-26.5%	1y	-14.3%	-7.2%	-1.4%	-1.3%	-0.4%	0.6%	1.3%
18m	-28.2%	-23.2%	-19.3%	-18.5%	-18.0%	-17.4%	-17.0%	18m	-12.3%	-6.5%	-2.0%	-0.9%	-0.2%	0.5%	1.1%
2y	-17.9%	-16.2%	-13.5%	-12.6%	-11.8%	-12.0%	-11.4%	2y	-6.3%	-4.4%	-1.5%	-0.4%	0.5%	0.2%	0.9%
3y	-11.5%	-10.5%	-8.4%	-7.9%	-7.4%	-6.8%	-6.5%	3y	-4.1%	-3.0%	-0.8%	-0.3%	0.2%	0.8%	1.2%
5y	-3.7%	-4.3%	-4.3%	-3.9%	-3.5%	-3.1%	-3.0%	5y	-0.1%	-0.1%	-0.3%	0.2%	0.5%	0.9%	1.0%
7y	-2.0%	-2.0%	-1.9%	-1.7%	-1.5%	-1.4%	-1.5%	7y	0.6%	0.6%	0.6%	0.9%	1.0%	1.1%	1.1%
10y	-0.2%	-0.2%	-0.3%	-0.2%	-0.1%	-0.1%	-0.1%	10y	1.2%	1.2%	1.2%	1.2%	1.3%	1.4%	1.3%
15y	1.0%	1.2%	1.0%	0.7%	0.8%	0.7%	0.7%	15y	1.6%	1.8%	1.6%	1.3%	1.4%	1.4%	1.4%
20y	1.0%	1.0%	1.1%	1.1%	0.9%	0.8%	0.7%	20y	1.2%	0.9%	1.3%	1.3%	1.2%	1.0%	1.0%
30y	1.0%	1.1%	0.8%	0.6%	0.5%	0.4%	0.3%	30y	0.9%	0.9%	0.7%	0.5%	0.4%	0.3%	0.3%
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	4.8%	1.5%	0.6%	0.4%	0.2%	0.2%	0.2%	1m	-67.9%	-81.9%	-87.7%	-90.7%	-92.8%	-94.2%	-95.6%
3m	12.5%	5.2%	2.3%	1.3%	0.9%	0.6%	0.5%	3m	-46.2%	-68.9%	-80.3%	-84.9%	-89.0%	-91.5%	-93.9%
6m	16.9%	8.7%	4.5%	2.6%	1.6%	1.2%	0.9%	6m	-48.6%	-62.4%	-73.6%	-79.6%	-85.0%	-88.6%	-91.6%
9m	5.1%	3.2%	2.0%	1.3%	0.9%	0.8%	0.7%	9m	-37.0%	-39.4%	-41.3%	-41.5%	-41.8%	-42.1%	-42.2%
1y	2.6%	1.8%	1.2%	0.9%	0.8%	0.7%	0.6%	1y	-25.6%	-27.2%	-28.4%	-28.5%	-28.7%	-28.9%	-29.1%
18m	1.2%	1.0%	0.8%	0.7%	0.6%	0.6%	0.6%	18m	-16.9%	-17.6%	-18.1%	-18.2%	-18.3%	-18.4%	-18.4%
2y	0.7%	0.7%	0.6%	0.6%	0.5%	0.5%	0.5%	2y	-12.3%	-12.4%	-12.6%	-12.7%	-12.8%	-12.8%	-12.8%
3y	0.4%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%	3y	-8.0%	-8.1%	-8.2%	-8.2%	-8.2%	-8.2%	-8.3%
5y	0.7%	0.1%	0.2%	0.3%	0.3%	0.3%	0.3%	5y	-4.4%	-4.4%	-4.4%	-4.4%	-4.4%	-4.4%	-4.4%
7y	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	7y	-2.8%	-2.8%	-2.8%	-2.8%	-2.8%	-2.8%	-2.8%
10y	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	10y	-1.5%	-1.5%	-1.5%	-1.5%	-1.5%	-1.5%	-1.5%
15y	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%	15y	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%
20y	0.0%	0.3%	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%	-0.1%	30y	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%

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

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	-27.7	-50.6	-72.1	-75.2	-76.8	-77.7	-78.2	1m	-3.1	-4.8	-6.6	-6.7	-6.7	-6.6	-6.6
3m	-26.8	-45.0	-66.3	-72.1	-75.0	-76.5	-77.7	3m	-7.5	-3.5	-3.5	-4.2	-4.1	-3.9	-3.8
6m	-25.7	-41.7	-61.0	-68.3	-72.0	-73.9	-76.1	6m	-7.8	-4.1	-3.0	-3.8	-3.5	-3.2	-3.4
9m	-25.5	-29.2	-33.1	-34.8	-34.3	-33.5	-33.5	9m	-6.9	-4.3	-1.1	-1.2	-0.6	0.1	0.0
1y	-23.9	-23.3	-23.1	-24.0	-23.0	-22.0	-21.4	1y	-9.3	-5.3	-1.1	-1.1	-0.3	0.5	1.0
18m	-21.3	-18.3	-16.4	-15.8	-15.0	-14.1	-13.5	18m	-9.3	-5.1	-1.7	-0.7	-0.2	0.4	0.8
2y	-14.5	-13.4	-11.7	-10.8	-9.8	-9.7	-9.0	2y	-5.1	-3.6	-1.3	-0.4	0.4	0.2	0.7
3y	-10.3	-9.4	-7.4	-6.8	-6.1	-5.4	-5.0	3y	-3.6	-2.6	-0.7	-0.2	0.2	0.7	0.9
5y	-3.4	-3.9	-3.9	-3.3	-2.8	-2.4	-2.2	5y	-0.1	-0.1	-0.2	0.1	0.4	0.7	0.7
7y	-1.8	-1.8	-1.7	-1.4	-1.2	-1.0	-1.0	7y	0.6	0.5	0.5	0.8	0.8	0.8	0.8
10y	-0.2	-0.2	-0.2	-0.1	-0.1	0.0	-0.1	10y	1.0	1.0	0.9	0.9	0.9	0.9	0.9
15y	0.7	0.8	0.7	0.5	0.5	0.4	0.4	15y	1.1	1.2	1.1	0.9	0.8	0.8	0.8
20y	0.6	0.6	0.7	0.6	0.5	0.4	0.4	20y	0.7	0.6	0.8	0.8	0.7	0.5	0.5
30y	0.6	0.6	0.4	0.3	0.2	0.2	0.2	30y	0.5	0.5	0.4	0.3	0.2	0.2	0.1
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	2.0	0.9	0.5	0.3	0.2	0.1	0.1	1m	-27.5	-50.0	-71.0	-74.1	-75.7	-76.7	-77.2
3m	6.2	3.3	1.9	1.1	0.7	0.5	0.4	3m	-23.0	-43.9	-65.8	-71.0	-74.1	-75.9	-77.1
6m	9.1	5.8	3.7	2.2	1.4	1.0	0.7	6m	-26.1	-41.3	-60.3	-66.6	-70.7	-73.1	-75.1
9m	3.0	2.2	1.6	1.1	0.8	0.6	0.6	9m	-21.7	-27.3	-33.9	-34.9	-34.7	-34.5	-34.3
1y	1.7	1.3	1.0	0.8	0.6	0.6	0.5	1y	-16.6	-19.8	-23.6	-24.2	-23.9	-23.7	-23.5
18m	0.9	0.8	0.7	0.6	0.5	0.5	0.5	18m	-12.8	-13.9	-15.3	-15.6	-15.3	-14.9	-14.7
2y	0.5	0.5	0.5	0.5	0.5	0.4	0.4	2y	-10.0	-10.3	-10.9	-10.9	-10.6	-10.3	-10.1
3y	0.3	0.3	0.4	0.4	0.4	0.4	0.3	3y	-7.1	-7.2	-7.2	-7.1	-6.8	-6.5	-6.3
5y	0.7	0.1	0.2	0.2	0.2	0.2	0.2	5y	-4.0	-4.0	-3.9	-3.8	-3.5	-3.4	-3.3
7y	0.1	0.1	0.1	0.1	0.1	0.1	0.1	7y	-2.5	-2.5	-2.4	-2.3	-2.1	-2.0	-2.0
10y	0.0	0.0	0.0	0.1	0.0	0.0	0.0	10y	-1.3	-1.3	-1.3	-1.2	-1.1	-1.0	-1.0
15y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15y	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
20y	0.0	0.2	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	30y	0.1	0.1	0.1	0.1	0.1	0.1	0.1
USD (Straddle) - Premium (6m horizon) / Vega															
	1y	2y	5y	10y	15y	20y	30y								
1m	40.5	61.1	81.0	81.8	81.6	81.4	80.7								
3m	49.7	63.8	81.9	83.6	83.3	82.9	82.1								
6m	53.7	66.1	81.9	83.8	83.1	82.4	82.0								
9m	58.5	69.3	82.3	84.1	83.0	81.9	81.3								
1y	64.8	72.9	83.0	84.8	83.3	81.7	80.7								
18m	75.5	78.9	84.8	85.6	83.4	81.1	79.7								
2y	81.2	83.0	86.2	85.9	82.9	80.9	78.9								
3y	89.3	88.9	87.7	86.2	82.3	79.3	76.8								
5y	91.5	90.4	89.0	85.7	80.0	76.3	73.5								
7y	89.8	88.8	87.0	82.7	76.2	72.9	70.2								
10y	84.0	83.2	81.4	76.8	70.4	67.0	64.8								
15y	72.5	70.4	70.1	67.5	61.6	58.7	56.6								
20y	64.6	64.4	61.6	59.5	54.8	53.1	51.5								
30y	54.8	54.1	53.8	53.7	50.1	49.5	48.4								

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

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	-4.9	-7.4	-9.9	-10.0	-9.9	-9.9	-9.8	1m	-0.4	-0.6	-0.8	-0.8	-0.8	-0.8	-0.8
3m	-9.9	-12.8	-16.4	-16.8	-16.7	-16.6	-16.5	3m	-1.5	-0.7	-0.7	-0.9	-0.8	-0.8	-0.8
6m	-15.3	-18.9	-23.4	-23.9	-23.8	-23.6	-23.4	6m	-2.2	-1.2	-0.9	-1.1	-1.0	-0.9	-1.0
9m	-15.4	-16.4	-17.1	-16.2	-14.9	-13.9	-13.2	9m	-2.4	-1.5	-0.4	-0.4	-0.2	0.0	0.0
1y	-15.7	-15.2	-14.6	-13.5	-12.0	-10.9	-10.0	1y	-3.7	-2.1	-0.5	-0.4	-0.1	0.2	0.4
18m	-16.5	-14.8	-13.2	-11.5	-10.0	-8.9	-8.0	18m	-4.6	-2.5	-0.8	-0.4	-0.1	0.2	0.4
2y	-13.9	-13.2	-11.4	-9.5	-8.0	-7.3	-6.4	2y	-2.9	-2.1	-0.7	-0.2	0.2	0.1	0.4
3y	-12.7	-11.6	-9.4	-7.6	-6.3	-5.3	-4.5	3y	-2.5	-1.8	-0.5	-0.2	0.1	0.5	0.6
5y	-7.8	-7.6	-6.5	-4.8	-3.8	-3.1	-2.6	5y	-0.1	-0.1	-0.2	0.1	0.4	0.6	0.7
7y	-4.7	-4.3	-3.7	-2.6	-1.9	-1.6	-1.3	7y	0.6	0.6	0.6	0.8	0.8	0.9	0.8
10y	-2.0	-1.6	-0.9	-0.5	-0.2	-0.1	0.0	10y	1.3	1.3	1.2	1.2	1.2	1.2	1.1
15y	0.4	1.0	1.1	1.0	0.9	0.9	1.0	15y	1.8	1.9	1.7	1.4	1.3	1.2	1.2
20y	2.1	1.8	1.7	1.5	1.3	1.1	1.0	20y	1.3	1.0	1.5	1.4	1.2	1.0	0.9
30y	1.4	1.3	1.4	1.2	1.0	0.8	0.7	30y	1.0	1.1	0.8	0.6	0.5	0.3	0.3
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	-0.9	-0.9	-0.8	-0.6	-0.4	-0.3	-0.2	1m	-3.7	-6.4	-8.9	-9.2	-9.3	-9.4	-9.5
3m	-2.9	-2.8	-2.5	-1.9	-1.4	-1.1	-0.7	3m	-5.0	-9.1	-13.4	-14.4	-15.0	-15.3	-15.5
6m	-4.9	-5.0	-4.7	-3.6	-2.7	-2.1	-1.4	6m	-7.8	-12.1	-17.5	-19.2	-20.3	-21.0	-21.5
9m	-5.4	-5.4	-5.0	-3.7	-2.7	-2.0	-1.4	9m	-7.6	-9.5	-11.8	-12.1	-12.1	-12.0	-11.9
1y	-5.4	-5.3	-4.9	-3.6	-2.6	-1.9	-1.3	1y	-6.7	-7.9	-9.4	-9.7	-9.5	-9.4	-9.4
18m	-5.6	-5.4	-4.8	-3.4	-2.4	-1.8	-1.2	18m	-6.3	-6.8	-7.5	-7.7	-7.5	-7.3	-7.2
2y	-5.4	-5.3	-4.5	-3.1	-2.2	-1.6	-1.0	2y	-5.7	-5.8	-6.2	-6.2	-6.0	-5.8	-5.7
3y	-5.3	-4.9	-4.0	-2.6	-1.8	-1.3	-0.8	3y	-5.0	-5.0	-5.0	-4.9	-4.7	-4.5	-4.4
5y	-4.1	-4.0	-2.8	-1.7	-1.1	-0.7	-0.4	5y	-3.6	-3.6	-3.5	-3.4	-3.2	-3.0	-2.9
7y	-2.7	-2.3	-1.8	-1.0	-0.5	-0.3	-0.1	7y	-2.7	-2.6	-2.6	-2.4	-2.2	-2.1	-2.1
10y	-1.8	-1.3	-0.6	-0.2	0.0	0.0	0.1	10y	-1.7	-1.6	-1.6	-1.5	-1.4	-1.3	-1.3
15y	-0.7	-0.3	0.0	0.2	0.2	0.2	0.3	15y	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.6
20y	1.0	1.0	0.4	0.3	0.3	0.3	0.3	20y	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
30y	0.2	0.1	0.5	0.5	0.4	0.3	0.3	30y	0.2	0.2	0.2	0.2	0.2	0.2	0.1
USD (Payer) - Premium (6m horizon) / PV01															
	1y	2y	5y	10y	15y	20y	30y								
1m	5.0	7.4	9.9	10.0	9.9	9.9	9.8								
3m	10.0	12.8	16.4	16.8	16.7	16.6	16.5								
6m	15.4	18.9	23.4	23.9	23.8	23.6	23.4								
9m	20.4	24.1	28.6	29.3	28.9	28.5	28.3								
1y	26.0	29.0	33.1	33.8	33.2	32.6	32.2								
18m	37.2	38.7	41.6	42.0	40.9	39.8	39.1								
2y	46.0	46.8	48.6	48.5	46.8	45.6	44.5								
3y	62.0	61.4	60.6	59.6	56.9	54.8	53.1								
5y	82.2	80.7	79.3	76.4	71.3	68.0	65.6								
7y	95.5	93.7	91.9	87.3	80.5	76.9	74.1								
10y	106.8	104.9	102.6	96.9	88.8	84.6	81.8								
15y	113.0	108.8	108.4	104.3	95.2	90.8	87.5								
20y	116.3	114.9	110.0	106.3	97.8	94.8	92.0								
30y	120.7	118.3	117.6	117.3	109.5	108.2	105.8								

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

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	-6.1%	-98.1%	-91.0%	-90.5%	-94.0%	-96.3%	-98.0%	1m	1.3%	3.2%	3.4%	3.4%	3.3%	3.2%	3.2%
3m	-10.0%	-98.1%	-81.9%	-83.1%	-89.7%	-93.6%	-96.4%	3m	15.1%	30.9%	16.1%	7.8%	7.4%	7.8%	8.5%
6m	-21.5%	-96.4%	-71.4%	-75.6%	-85.2%	-90.7%	-94.5%	6m	15.9%	28.6%	16.7%	7.9%	6.9%	8.1%	10.2%
9m	-32.4%	-41.2%	-36.2%	-38.5%	-40.4%	-39.9%	-38.7%	9m	1.4%	0.0%	3.3%	2.2%	1.7%	3.1%	5.1%
1y	-34.3%	-34.4%	-28.0%	-27.3%	-27.6%	-26.9%	-26.4%	1y	-6.9%	-7.9%	-2.1%	0.1%	0.9%	2.2%	3.0%
18m	-33.1%	-27.9%	-19.9%	-18.2%	-17.2%	-17.0%	-17.0%	18m	-13.8%	-12.5%	-4.0%	-1.1%	0.7%	1.2%	1.4%
2y	-26.1%	-20.2%	-15.4%	-13.4%	-12.8%	-11.9%	-11.6%	2y	-11.7%	-9.1%	-4.1%	-1.2%	-0.1%	1.0%	1.5%
3y	-18.5%	-14.9%	-11.1%	-9.2%	-7.9%	-7.3%	-7.0%	3y	-9.2%	-7.6%	-3.7%	-1.2%	0.4%	1.2%	1.6%
5y	-8.0%	-6.2%	-5.6%	-4.5%	-3.8%	-3.3%	-2.9%	5y	-2.9%	-1.9%	-1.3%	0.1%	1.0%	1.5%	1.9%
7y	-3.9%	-3.7%	-3.6%	-2.9%	-2.4%	-2.0%	-1.8%	7y	-0.8%	-0.8%	-0.6%	0.1%	0.8%	1.2%	1.5%
10y	-1.7%	-1.9%	-1.7%	-1.5%	-1.4%	-1.4%	-1.5%	10y	0.1%	-0.1%	0.0%	0.4%	0.5%	0.5%	0.4%
15y	-0.6%	-0.7%	-0.6%	-0.4%	-0.4%	-0.2%	-0.2%	15y	0.3%	0.2%	0.3%	0.6%	0.6%	0.9%	1.0%
20y	-0.4%	-0.3%	-0.2%	-0.1%	-0.1%	0.0%	0.1%	20y	0.2%	0.3%	0.4%	0.5%	0.6%	0.7%	0.8%
30y	0.3%	0.3%	0.5%	0.5%	0.4%	0.4%	0.3%	30y	0.6%	0.6%	0.8%	0.8%	0.8%	0.8%	0.6%
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	4.0%	0.0%	0.4%	0.4%	0.2%	0.1%	0.1%	1m	-9.7%	-116.4%	-109.5%	-109.2%	-112.4%	-114.6%	-116.3%
3m	11.6%	0.0%	1.8%	1.7%	0.8%	0.4%	0.2%	3m	-34.3%	-138.6%	-106.3%	-98.5%	-104.7%	-109.0%	-112.4%
6m	11.9%	0.1%	4.6%	3.8%	1.7%	0.8%	0.4%	6m	-47.3%	-131.6%	-93.9%	-88.6%	-96.9%	-103.7%	-109.9%
9m	1.6%	0.6%	3.1%	2.2%	1.1%	0.6%	0.4%	9m	-34.8%	-41.2%	-41.8%	-42.2%	-42.4%	-42.9%	-43.4%
1y	-2.0%	1.1%	2.6%	1.7%	0.9%	0.6%	0.4%	1y	-25.2%	-27.4%	-28.3%	-28.9%	-29.2%	-29.5%	-29.6%
18m	-2.8%	1.7%	2.1%	1.3%	0.7%	0.5%	0.4%	18m	-16.7%	-17.3%	-18.2%	-18.6%	-18.9%	-18.9%	-19.0%
2y	-2.2%	1.6%	1.7%	1.0%	0.6%	0.5%	0.4%	2y	-12.2%	-12.6%	-12.9%	-13.2%	-13.3%	-13.4%	-13.4%
3y	-1.1%	1.1%	1.2%	0.8%	0.5%	0.4%	0.3%	3y	-8.3%	-8.4%	-8.6%	-8.8%	-8.8%	-8.9%	-8.9%
5y	-0.2%	0.7%	0.6%	0.4%	0.3%	0.2%	0.2%	5y	-4.9%	-4.9%	-5.0%	-5.0%	-5.0%	-5.0%	-5.1%
7y	0.0%	0.4%	0.3%	0.2%	0.1%	0.1%	0.0%	7y	-3.2%	-3.2%	-3.2%	-3.2%	-3.2%	-3.2%	-3.2%
10y	0.0%	0.1%	0.0%	0.0%	-0.1%	-0.1%	-0.2%	10y	-1.8%	-1.8%	-1.8%	-1.8%	-1.8%	-1.8%	-1.8%
15y	0.0%	0.0%	-0.1%	-0.1%	-0.2%	-0.2%	-0.3%	15y	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%
20y	0.0%	0.0%	-0.1%	-0.1%	-0.1%	-0.1%	-0.2%	20y	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%
30y	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%	0.0%	30y	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%

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

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	-2.3	-45.3	-52.5	-64.6	-74.8	-82.8	-88.5	1m	0.5	1.5	1.9	2.5	2.6	2.8	2.9
3m	-3.0	-33.6	-40.5	-55.8	-67.0	-74.9	-80.6	3m	4.6	10.6	8.0	5.2	5.6	6.3	7.1
6m	-6.1	-31.0	-33.6	-49.9	-62.6	-70.6	-75.6	6m	4.5	9.2	7.9	5.2	5.1	6.3	8.2
9m	-9.6	-13.9	-17.4	-25.6	-29.6	-30.7	-30.3	9m	0.4	0.0	1.6	1.5	1.2	2.4	4.0
1y	-10.8	-12.2	-13.8	-18.3	-20.2	-20.4	-20.3	1y	-2.2	-2.8	-1.0	0.1	0.7	1.7	2.3
18m	-12.5	-11.5	-10.4	-12.5	-12.5	-12.8	-12.9	18m	-5.2	-5.1	-2.1	-0.7	0.5	0.9	1.0
2y	-11.3	-9.3	-8.6	-9.4	-9.4	-8.9	-8.7	2y	-5.1	-4.2	-2.3	-0.8	-0.1	0.8	1.1
3y	-10.1	-8.3	-6.9	-6.6	-5.7	-5.3	-5.0	3y	-5.0	-4.2	-2.3	-0.8	0.3	0.9	1.1
5y	-5.3	-4.1	-3.9	-3.3	-2.7	-2.3	-2.0	5y	-1.9	-1.3	-0.9	0.1	0.7	1.0	1.3
7y	-2.8	-2.6	-2.6	-2.2	-1.6	-1.3	-1.1	7y	-0.5	-0.6	-0.4	0.1	0.5	0.8	0.9
10y	-1.2	-1.3	-1.3	-1.1	-0.9	-0.9	-0.9	10y	0.0	-0.1	0.0	0.3	0.3	0.3	0.3
15y	-0.4	-0.5	-0.4	-0.3	-0.3	-0.1	-0.1	15y	0.2	0.1	0.2	0.4	0.4	0.5	0.5
20y	-0.3	-0.2	-0.1	-0.1	0.0	0.0	0.0	20y	0.1	0.2	0.3	0.3	0.3	0.4	0.4
30y	0.2	0.2	0.3	0.3	0.2	0.2	0.1	30y	0.3	0.4	0.4	0.4	0.4	0.4	0.3
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	1.5	0.0	0.2	0.3	0.2	0.1	0.1	1m	-3.7	-53.8	-63.2	-77.9	-89.4	-98.5	-105.1
3m	3.5	0.0	0.9	1.2	0.6	0.3	0.2	3m	-10.4	-47.4	-52.5	-66.1	-78.1	-87.3	-94.0
6m	3.4	0.0	2.2	2.5	1.2	0.7	0.4	6m	-13.4	-42.3	-44.2	-58.5	-71.2	-80.8	-87.9
9m	0.5	0.2	1.5	1.4	0.8	0.5	0.3	9m	-10.3	-13.9	-20.1	-28.0	-31.1	-33.0	-34.1
1y	-0.6	0.4	1.3	1.1	0.6	0.4	0.3	1y	-7.9	-9.7	-13.9	-19.4	-21.3	-22.4	-22.9
18m	-1.1	0.7	1.1	0.9	0.5	0.4	0.3	18m	-6.3	-7.1	-9.6	-12.8	-13.7	-14.2	-14.4
2y	-0.9	0.7	0.9	0.7	0.5	0.3	0.3	2y	-5.3	-5.8	-7.2	-9.2	-9.7	-9.9	-10.1
3y	-0.6	0.6	0.8	0.5	0.4	0.3	0.3	3y	-4.5	-4.7	-5.4	-6.3	-6.4	-6.4	-6.5
5y	-0.1	0.5	0.4	0.3	0.2	0.2	0.1	5y	-3.3	-3.3	-3.4	-3.7	-3.6	-3.5	-3.4
7y	0.0	0.3	0.2	0.1	0.1	0.0	0.0	7y	-2.2	-2.2	-2.3	-2.4	-2.2	-2.1	-2.0
10y	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	10y	-1.3	-1.3	-1.3	-1.3	-1.2	-1.1	-1.1
15y	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	15y	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5
20y	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	20y	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3
30y	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	30y	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1
EUR (Straddle) - Premium (6m horizon) / Vega															
	1y	2y	5y	10y	15y	20y	30y								
1m	38.1	46.2	57.7	71.4	79.6	85.9	90.4								
3m	30.2	34.2	49.4	67.1	74.7	80.1	83.6								
6m	28.3	32.2	47.1	66.0	73.5	77.9	80.0								
9m	29.7	33.7	48.0	66.4	73.3	76.9	78.4								
1y	31.5	35.4	49.2	66.9	73.0	75.9	77.2								
18m	37.6	41.2	52.4	68.4	72.6	74.9	76.0								
2y	43.3	45.9	55.7	69.8	72.9	74.2	74.8								
3y	54.8	55.8	62.1	72.3	72.7	72.5	72.5								
5y	66.5	66.2	69.3	73.9	70.6	68.5	67.3								
7y	70.8	70.4	72.3	73.9	68.6	65.3	63.3								
10y	71.7	72.0	72.7	72.2	66.5	63.3	61.5								
15y	69.1	69.8	69.6	67.9	62.3	58.0	55.7								
20y	66.8	67.0	66.0	64.1	58.6	54.1	51.2								
30y	59.9	59.8	57.1	54.6	50.1	46.6	45.3								

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

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	-5.3	-5.4	-6.6	-8.0	-9.1	-9.9	1m	0.1	0.2	0.2	0.3	0.3	0.3	0.3
3m	-1.9	-6.8	-6.3	-8.9	-11.9	-14.0	-15.5	3m	0.9	2.1	1.6	1.0	1.1	1.3	1.4
6m	-3.5	-8.5	-5.7	-9.6	-14.7	-18.0	-20.3	6m	1.3	2.6	2.2	1.5	1.4	1.8	2.3
9m	-3.6	-3.4	-1.7	-4.3	-7.2	-8.6	-9.3	9m	0.1	0.0	0.5	0.5	0.4	0.8	1.4
1y	-3.6	-2.6	-0.7	-2.6	-5.0	-6.1	-6.9	1y	-0.9	-1.1	-0.4	0.0	0.3	0.7	0.9
18m	-3.7	-1.7	0.5	-1.2	-3.0	-4.1	-5.0	18m	-2.5	-2.5	-1.0	-0.4	0.3	0.4	0.5
2y	-2.5	-0.1	1.3	-0.5	-2.3	-3.0	-3.6	2y	-2.9	-2.4	-1.3	-0.5	-0.1	0.4	0.6
3y	-0.6	0.4	1.9	0.0	-1.2	-1.8	-2.3	3y	-3.5	-2.9	-1.6	-0.6	0.2	0.6	0.8
5y	2.3	3.6	2.3	0.3	-0.6	-0.9	-1.1	5y	-1.7	-1.1	-0.8	0.1	0.6	0.9	1.1
7y	3.5	2.9	0.9	-0.8	-1.1	-1.1	-1.1	7y	-0.6	-0.6	-0.5	0.1	0.6	0.8	1.0
10y	1.1	0.1	-1.1	-1.7	-1.8	-1.7	-1.7	10y	0.1	-0.1	0.0	0.3	0.4	0.4	0.4
15y	-2.0	-2.2	-2.0	-1.7	-1.4	-1.0	-1.0	15y	0.3	0.2	0.4	0.6	0.6	0.8	0.9
20y	-2.4	-2.0	-1.4	-1.0	-0.7	-0.7	-0.5	20y	0.2	0.4	0.5	0.6	0.6	0.6	0.7
30y	0.4	0.5	0.4	0.1	-0.3	0.0	0.2	30y	0.7	0.8	0.9	1.0	0.9	0.8	0.6
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	0.0	0.0	0.5	0.7	0.5	0.3	0.2	1m	-0.7	-6.3	-7.2	-8.8	-10.2	-11.2	-12.0
3m	-0.3	0.0	1.9	2.4	1.6	1.0	0.6	3m	-2.4	-9.6	-10.4	-13.1	-15.5	-17.4	-18.8
6m	-0.5	0.5	4.4	5.2	3.4	2.2	1.3	6m	-4.1	-12.2	-12.5	-16.5	-20.2	-22.9	-25.0
9m	-0.1	1.5	4.8	5.2	3.4	2.3	1.4	9m	-3.6	-4.8	-7.0	-9.8	-10.8	-11.5	-11.9
1y	0.5	2.5	5.3	5.2	3.4	2.3	1.4	1y	-3.2	-3.9	-5.6	-7.8	-8.6	-9.0	-9.2
18m	1.9	4.3	6.2	5.3	3.4	2.3	1.5	18m	-3.1	-3.5	-4.7	-6.3	-6.7	-7.0	-7.1
2y	3.3	5.5	6.6	5.2	3.3	2.2	1.5	2y	-3.0	-3.3	-4.1	-5.2	-5.5	-5.6	-5.7
3y	5.9	6.6	7.2	4.9	3.0	2.0	1.4	3y	-3.1	-3.3	-3.7	-4.4	-4.4	-4.5	-4.5
5y	6.9	7.7	6.2	3.5	2.0	1.3	0.8	5y	-2.9	-2.9	-3.1	-3.3	-3.2	-3.1	-3.0
7y	6.5	5.9	3.8	1.6	0.7	0.3	0.1	7y	-2.4	-2.4	-2.4	-2.5	-2.3	-2.2	-2.2
10y	2.7	1.8	0.6	-0.4	-0.7	-0.7	-0.7	10y	-1.6	-1.6	-1.6	-1.6	-1.5	-1.4	-1.4
15y	-1.4	-1.4	-1.4	-1.4	-1.2	-1.0	-1.1	15y	-0.9	-0.9	-0.9	-0.9	-0.8	-0.8	-0.8
20y	-1.9	-1.7	-1.2	-1.0	-0.7	-0.8	-0.7	20y	-0.7	-0.7	-0.7	-0.6	-0.6	-0.5	-0.5
30y	0.1	0.1	-0.2	-0.6	-0.8	-0.5	-0.2	30y	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3
EUR (Receiver) - Premium (6m horizon) / PV01															
	1y	2y	5y	10y	15y	20y	30y								
1m	4.4	5.3	6.6	8.2	9.1	9.8	10.4								
3m	6.0	6.8	9.9	13.4	14.9	16.0	16.7								
6m	8.1	9.2	13.4	18.8	20.9	22.2	22.8								
9m	10.3	11.7	16.7	23.2	25.6	26.8	27.3								
1y	12.6	14.2	19.7	26.8	29.3	30.4	30.9								
18m	18.5	20.2	25.7	33.6	35.6	36.8	37.3								
2y	24.5	26.0	31.5	39.4	41.2	41.9	42.3								
3y	37.9	38.6	42.9	50.0	50.2	50.1	50.1								
5y	59.4	59.0	61.8	65.9	63.0	61.1	59.9								
7y	74.8	74.5	76.5	78.1	72.4	69.0	66.8								
10y	90.5	90.8	91.8	91.1	83.8	79.8	77.4								
15y	106.8	107.9	107.6	104.9	96.2	89.5	85.9								
20y	119.2	119.6	117.8	114.3	104.4	96.4	91.2								
30y	130.9	130.7	124.7	119.3	109.4	101.7	98.8								

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

Conditional Curve Trades with Vanilla Swaptions

Fig. 7: USD Vanilla Swaption

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

		Swap Tenor								
		1y	2y	3y	5y	7y	10y	12y	20Y	30Y
Option Expiry	1m	-3	-3	-2	-2	-2	-2	-1	-1	-1
	3m	-9	-8	-7	-6	-5	-5	-4	-3	-2
	6m	-16	-14	-13	-12	-10	-9	-8	-5	-3
	1y	-28	-26	-24	-23	-20	-17	-14	-9	-6
	2y	-51	-48	-46	-42	-37	-31	-26	-17	-12
	3y	-73	-69	-67	-60	-52	-43	-37	-23	-16
	5y	-113	-106	-100	-87	-76	-60	-52	-32	-22
	7y	-139	-129	-121	-106	-90	-71	-61	-37	-25
	10y	-165	-152	-140	-119	-101	-79	-67	-39	-25
	12y	-169	-155	-143	-122	-102	-79	-66	-38	-23
	15y	-173	-158	-146	-123	-101	-77	-64	-36	-19
	20y	-167	-151	-138	-114	-94	-70	-58	-28	-11
30y	-156	-141	-128	-103	-81	-55	-41	-11	3	

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

	Swap Tenor								
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	3	3	2	2	2	2	1	1	1
3m	9	8	7	6	5	5	4	3	2
6m	16	14	13	12	10	9	8	5	3
1y	28	26	24	23	20	17	14	9	6
2y	51	48	46	42	37	31	26	17	12
3y	73	69	67	60	52	43	37	23	16
5y	113	106	100	87	76	60	52	32	22
7y	139	129	121	106	90	71	61	37	25
10y	165	152	140	119	101	79	67	39	25
12y	169	155	143	122	102	79	66	38	23
15y	173	158	146	123	101	77	64	36	19
20y	167	151	138	114	94	70	58	28	11
30y	156	141	128	103	81	55	41	11	-3

Payers Moneyiness (Fwd - Strike) (bp)

	1y	2y	3y	5y	7y	10y	12y	20Y	30Y	
Option Expiry	1m	8.1	4.6	2.9	0.2	-0.2	-	0.0	0.1	0.3
	3m	11.6	7.4	4.2	0.6	-0.1	-	0.1	0.3	0.6
	6m	15.0	9.4	5.2	0.9	0.4	-	0.2	0.8	1.1
	1y	14.5	9.0	5.3	1.2	0.6	-	0.6	2.6	3.4
	2y	4.1	2.2	0.7	-1.0	-0.6	-	1.5	5.8	8.0
	3y	-6.7	-6.0	-5.0	-3.1	-1.7	-	2.4	9.7	12.9
	5y	-15.7	-13.0	-10.9	-7.9	-4.6	-	4.5	16.7	21.1
	7y	-22.7	-18.9	-16.6	-12.0	-6.8	-	5.9	20.6	25.5
	10y	-28.2	-24.8	-21.4	-15.3	-8.6	-	7.0	24.3	29.1
	12y	-27.6	-21.6	-19.0	-14.4	-8.0	-	7.6	25.6	30.5
	15y	-25.3	-16.8	-14.3	-11.7	-6.6	-	7.9	26.6	31.5
	20y	-27.7	-25.0	-20.9	-10.8	-5.8	-	7.5	22.9	26.6
30y	-12.9	-8.0	-6.6	-3.2	-1.4	-	7.2	18.1	19.9	

Receivers Moneyiness (Strike - Fwd) (bp)

	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	8.0	4.6	2.9	0.2	-0.2	-	0.0	0.1	0.3
3m	11.5	7.2	4.1	0.6	-0.2	-	0.1	0.3	0.7
6m	14.7	9.0	5.1	1.0	0.4	-	0.2	0.8	1.1
1y	14.2	8.6	5.1	1.2	0.6	-	0.6	2.8	3.6
2y	4.0	2.1	0.7	-1.0	-0.6	-	1.6	6.1	8.5
3y	-6.4	-5.8	-4.9	-3.2	-1.8	-	2.5	10.3	13.8
5y	-14.6	-12.4	-10.7	-8.0	-4.7	-	4.7	18.0	22.8
7y	-20.9	-17.6	-15.9	-12.0	-6.9	-	6.2	21.9	27.2
10y	-25.5	-22.1	-19.5	-14.7	-8.5	-	7.2	25.3	30.2
12y	-25.1	-19.5	-17.4	-13.7	-7.8	-	7.6	26.4	31.4
15y	-23.4	-15.4	-13.3	-11.1	-6.3	-	7.8	26.9	31.9
20y	-25.7	-22.7	-19.0	-9.9	-5.3	-	6.9	22.0	25.8
30y	-11.4	-7.0	-5.7	-2.7	-1.1	-	5.9	15.2	16.8

Payers Total Pickup (Spot - Strike) (bp)

	1y	2y	3y	5y	7y	10y	12y	20Y	30Y	
Option Expiry	1m	5.1	2.1	0.4	-2.0	-2.1	-1.6	-1.3	-0.8	-0.4
	3m	2.6	-0.1	-2.7	-5.6	-5.6	-4.6	-3.9	-2.2	-1.1
	6m	-0.7	-4.5	-7.8	-11.0	-10.1	-8.7	-7.4	-4.0	-2.3
	1y	-13.4	-16.6	-19.1	-21.4	-19.2	-16.5	-13.7	-6.5	-2.9
	2y	-47.2	-46.1	-45.4	-43.4	-37.5	-30.7	-24.9	-10.8	-3.7
	3y	-80.1	-75.2	-71.5	-63.1	-53.7	-42.6	-34.2	-13.2	-3.1
	5y	-128.6	-118.9	-110.7	-95.4	-80.4	-60.5	-47.7	-15.3	-0.9
	7y	-162.1	-147.9	-137.7	-118.0	-96.9	-71.4	-55.4	-16.3	0.8
	10y	-192.8	-176.6	-161.7	-134.6	-109.3	-78.9	-59.7	-15.0	4.5
	12y	-196.8	-176.6	-162.0	-136.2	-110.5	-78.9	-58.7	-12.7	7.8
15y	-198.2	-175.0	-160.4	-134.7	-108.0	-76.7	-56.2	-9.0	12.6	
20y	-194.4	-175.7	-158.6	-125.1	-99.5	-70.1	-50.3	-4.6	15.6	
30y	-168.7	-149.0	-134.6	-106.7	-82.3	-54.9	-34.3	7.2	22.7	

Receivers Total Pickup (Strike - Spot) (bp)

	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	11.0	7.1	5.3	2.3	1.6	1.6	1.4	1.0	0.9
3m	20.4	14.7	11.0	6.9	5.3	4.6	4.1	2.9	2.4
6m	30.3	22.9	18.0	12.9	10.9	8.7	7.8	5.7	4.5
1y	42.1	34.2	29.6	23.8	20.5	16.5	14.9	11.8	10.0
2y	55.3	50.4	46.9	41.4	36.3	30.7	27.9	22.8	20.1
3y	67.0	63.3	61.6	56.8	50.3	42.6	39.2	33.2	29.8
5y	98.3	93.5	89.1	79.5	71.2	60.5	56.8	50.0	44.8
7y	118.5	111.4	105.3	94.0	83.3	71.4	67.6	58.9	51.8
10y	139.1	129.7	120.8	104.6	92.2	78.9	73.9	64.5	54.8
12y	144.1	135.4	125.7	108.1	94.7	78.9	73.9	64.7	54.1
15y	149.4	142.7	132.7	111.8	95.0	76.7	71.9	62.5	50.8
20y	141.0	128.1	118.6	104.4	88.4	70.1	64.7	49.5	36.9
30y	144.4	134.0	122.3	100.8	79.8	54.9	47.3	26.1	14.0

Price given 10K notional at 10y tail

Expected PV in Physical measure

Expected PV in Physical measure										Payers
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y	
Option Expiry	1m	93.7	93.8	93.8	94.0	94.0	93.9	93.9	93.9	93.8
	3m	157.6	157.6	157.5	158.0	158.1	158.0	158.0	157.8	157.7
	6m	224.1	223.8	223.8	225.0	225.0	224.8	224.7	224.5	224.3
	1y	314.3	313.0	313.3	315.5	315.8	315.8	315.7	315.2	314.8
	2y	437.3	439.2	441.0	443.1	444.6	445.8	445.7	444.5	443.4
	3y	525.5	528.4	532.4	536.9	538.5	539.5	539.3	537.4	535.7
	5y	637.3	646.5	655.4	666.9	669.0	668.9	668.5	664.4	661.2
	7y	691.7	699.5	710.8	728.1	732.2	734.0	733.6	728.7	724.9
	10y	715.6	715.2	727.2	748.1	756.6	762.6	762.3	758.1	754.8
	12y	721.0	720.7	730.5	747.9	755.1	759.9	760.3	757.1	754.1
	15y	710.9	711.1	717.2	726.9	730.6	733.2	734.5	733.3	731.0
	20y	662.9	655.5	658.6	665.2	666.6	667.7	670.4	673.1	673.2
30y	604.7	595.8	593.6	592.9	594.4	597.4	602.9	612.4	616.1	

Price given 10K notional at 10y tail

	Receivers								
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	18.0	50.1	66.6	92.3	96.1	93.9	93.7	93.0	91.4
3m	49.0	88.1	118.1	152.1	159.5	158.0	157.1	154.8	151.7
6m	84.3	135.4	175.0	216.2	221.3	224.8	222.9	217.0	214.5
1y	179.1	228.8	263.6	304.3	310.1	315.8	310.1	290.8	283.3
2y	399.3	419.0	434.2	452.5	450.3	445.8	431.9	391.7	371.0
3y	586.1	583.3	577.8	565.4	554.1	539.5	517.5	450.7	420.7
5y	775.7	761.7	751.9	735.9	708.7	668.9	630.1	520.8	480.6
7y	885.7	861.2	852.2	829.5	788.8	734.0	684.4	559.0	515.5
10y	942.7	915.1	898.6	869.6	824.5	762.6	707.6	570.3	529.8
12y	933.8	887.7	876.3	857.4	815.5	759.9	703.8	566.8	527.1
15y	894.1	832.8	820.5	810.3	777.4	733.2	679.0	547.6	510.1
20y	843.0	817.9	794.2	734.4	703.4	667.7	623.2	528.3	503.7
30y	673.1	638.5	628.9	609.8	601.6	597.4	565.6	517.5	510.3

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

Fig. 8: EUR Vanilla Swapion

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

		Swap Tenor								
		1y	2y	3y	5y	7y	10y	12y	20Y	30Y
Option Expiry	1m	1	0	-0	-1	-2	-2	-1	-1	-0
	3m	3	0	-2	-4	-5	-5	-4	-2	-1
	6m	4	-1	-4	-8	-10	-9	-8	-4	-2
	1y	3	-5	-12	-17	-20	-19	-16	-8	-5
	2y	-9	-23	-32	-41	-44	-38	-33	-17	-10
	3y	-32	-47	-57	-67	-67	-56	-48	-24	-15
	5y	-86	-102	-112	-117	-109	-87	-72	-35	-22
	7y	-146	-155	-159	-153	-137	-104	-85	-40	-25
	10y	-196	-193	-191	-174	-148	-108	-85	-37	-21
	12y	-206	-199	-193	-171	-143	-101	-78	-31	-15
	15y	-197	-185	-179	-156	-127	-85	-63	-20	-4
	20y	-170	-157	-150	-129	-103	-64	-44	-5	11
30y	-142	-132	-128	-110	-85	-47	-25	19	24	

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

	Swap Tenor								
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	-1	-0	0	1	2	2	1	1	0
3m	-3	-0	2	4	5	5	4	2	1
6m	-4	1	4	8	10	9	8	4	2
1y	-3	5	12	17	20	19	16	8	5
2y	9	23	32	41	44	38	33	17	10
3y	32	47	57	67	67	56	48	24	15
5y	86	102	112	117	109	87	72	35	22
7y	146	155	159	153	137	104	85	40	25
10y	196	193	191	174	148	108	85	37	21
12y	206	199	193	171	143	101	78	31	15
15y	197	185	179	156	127	85	63	20	4
20y	170	157	150	129	103	64	44	5	-11
30y	142	132	128	110	85	47	25	-19	-24

Payers Moneyness (Fwd - Strike) (bp)

	1y	2y	3y	5y	7y	10y	12y	20Y	30Y	
Option Expiry	1m	6.2	5.0	4.6	3.0	1.5	-	-0.8	-3.5	-4.6
	3m	11.2	10.5	9.6	6.6	3.6	-	-1.3	-5.4	-6.9
	6m	15.9	15.0	13.7	9.9	5.5	-	-1.8	-7.1	-8.4
	1y	21.4	20.0	18.1	13.2	7.2	-	-2.1	-7.7	-9.0
	2y	24.6	22.8	20.5	15.0	8.2	-	-1.6	-5.8	-7.0
	3y	20.8	19.9	17.9	13.4	8.3	-	-0.4	-1.4	-2.2
	5y	8.6	10.2	9.3	7.0	4.5	-	1.9	7.5	8.5
	7y	0.4	2.5	2.5	1.7	1.4	-	3.7	14.9	17.2
	10y	-6.0	-4.9	-3.9	-2.7	-1.2	-	4.4	17.5	19.2
	12y	-7.6	-7.1	-5.7	-4.0	-1.9	-	4.4	19.7	21.5
	15y	-10.2	-10.9	-9.0	-6.0	-3.2	-	4.5	23.3	25.1
	20y	-15.5	-14.5	-11.8	-7.3	-4.0	-	4.8	26.4	29.1
	30y	-30.1	-26.9	-21.0	-10.4	-5.8	-	3.7	21.4	19.6

Receivers Moneyness (Strike - Fwd) (bp)

	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	6.3	5.0	4.6	2.9	1.4	-	-0.7	-3.6	-4.9
3m	11.5	10.6	9.6	6.2	3.3	-	-1.2	-5.7	-7.4
6m	16.3	15.1	13.6	9.2	5.0	-	-1.7	-7.3	-8.9
1y	21.9	20.0	17.6	12.0	6.5	-	-1.9	-7.6	-9.1
2y	24.0	21.9	19.2	13.4	7.3	-	-1.5	-5.5	-6.8
3y	19.0	18.0	16.0	11.8	7.4	-	-0.4	-1.3	-2.0
5y	7.6	8.9	8.2	6.1	3.9	-	1.7	6.8	7.9
7y	0.3	2.1	2.1	1.5	1.2	-	3.3	13.4	15.7
10y	-5.1	-4.2	-3.4	-2.4	-1.1	-	3.8	15.4	17.1
12y	-6.4	-6.0	-4.9	-3.4	-1.7	-	3.9	17.5	19.1
15y	-8.3	-8.9	-7.4	-5.1	-2.7	-	4.0	20.9	22.5
20y	-12.6	-12.3	-9.9	-6.0	-3.4	-	4.2	23.3	25.8
30y	-23.8	-23.1	-18.0	-8.8	-5.0	-	3.2	18.8	17.2

Payers Total Pickup (Spot - Strike) (bp)

Swap Tenor (per 100M/100Y)										
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y	
Option Expiry	1m	7.4	5.2	4.1	1.8	0.0	-1.5	-2.1	-4.2	-5.0
	3m	14.2	10.7	8.0	3.0	-1.0	-4.5	-5.2	-7.4	-8.1
	6m	20.1	14.3	9.5	2.3	-4.0	-9.1	-9.7	-11.2	-10.9
	1y	24.5	14.8	6.6	-4.0	-13.0	-18.6	-18.1	-16.0	-14.0
	2y	15.5	-0.6	-11.2	-25.7	-35.5	-38.0	-34.2	-22.4	-17.3
	3y	-11.6	-27.5	-38.8	-53.6	-59.1	-56.5	-48.3	-25.6	-17.4
	5y	-77.3	-91.7	-102.6	-109.7	-104.4	-86.7	-69.7	-27.9	-13.8
	7y	-146.1	-152.2	-156.4	-151.6	-135.5	-104.2	-81.1	-25.6	-7.9
	10y	-202.5	-197.7	-194.5	-177.0	-149.6	-107.8	-80.7	-19.3	-1.8
	12y	-213.5	-205.7	-199.2	-175.2	-145.2	-100.8	-73.2	-10.9	6.7
	15y	-207.5	-195.9	-187.6	-162.0	-130.6	-85.3	-58.7	3.2	21.3
	20y	-185.6	-171.2	-162.0	-136.3	-106.8	-64.0	-39.4	21.1	40.2
30y	-172.6	-159.1	-149.2	-120.3	-91.1	-46.7	-21.2	40.7	44.0	

Receivers Total Pickup (Strike - Spot) (bp)

	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	5.1	4.8	5.1	4.1	2.9	1.5	0.6	-2.9	-4.4
3m	8.5	10.4	11.2	9.8	7.9	4.5	2.7	-3.6	-6.2
6m	12.1	15.8	17.8	16.9	14.5	9.1	6.2	-3.2	-6.4
1y	18.8	25.3	29.1	29.3	26.7	18.6	14.1	0.7	-4.0
2y	33.1	45.3	50.8	54.0	51.0	38.0	31.1	11.0	3.5
3y	51.3	65.4	72.7	78.8	74.8	56.5	47.6	22.9	13.1
5y	93.5	110.8	120.0	122.8	112.8	86.7	73.3	42.3	30.2
7y	146.7	156.8	161.0	154.7	138.1	104.2	88.1	53.9	40.8
10y	191.4	188.6	187.2	171.9	147.3	107.8	88.9	52.3	38.0
12y	199.5	192.6	188.6	167.8	141.6	100.8	81.5	48.2	34.0
15y	189.0	176.1	171.2	151.0	124.6	85.3	67.2	41.1	26.4
20y	157.5	144.4	140.3	123.0	99.4	64.0	48.4	28.6	14.6
30y	118.7	109.1	110.2	101.1	80.3	46.7	28.2	-0.5	-7.2

Price given 10K notional at 10y tail

Price given 10K notional at 10y tail

Expected PV in Physical measure

Payers

Implied Volatility Swap Tenor										
	1y	2y	3y	5y	7y	10y	12y	20Y	30Y	
Option Expiry	1m	78.3	78.8	79.1	79.3	79.1	78.8	78.8	79.5	79.7
	3m	127.6	128.7	129.5	130.2	129.6	128.7	129.0	130.6	131.0
	6m	177.5	179.3	180.7	181.5	180.4	179.0	179.4	182.0	182.3
	1y	253.7	256.1	257.8	257.3	255.5	254.6	255.2	257.7	258.2
	2y	376.9	376.9	376.1	371.4	369.6	370.3	371.4	374.8	375.6
	3y	473.1	470.1	467.4	462.4	461.6	462.8	465.0	471.1	472.4
	5y	601.6	595.2	591.7	587.0	588.7	594.2	598.1	609.5	613.4
	7y	688.6	680.7	677.8	674.7	678.6	687.9	692.8	708.3	712.9
	10y	756.5	753.3	752.2	753.0	759.8	773.8	778.6	796.3	801.4
	12y	782.4	778.6	779.8	784.8	793.9	810.5	814.3	831.5	836.4
15y	798.1	795.4	800.7	812.8	825.0	844.5	846.9	862.7	867.4	
20y	819.7	834.4	831.3	829.9	844.4	867.7	869.1	885.5	890.8	
30y	767.1	789.0	789.1	790.3	799.1	817.3	817.5	832.7	833.8	

Receivers

	1y	2y	3y	5y	7y	10y	12y	20Y	30Y
1m	18.8	30.7	34.7	50.3	64.4	78.8	86.4	112.9	123.7
3m	19.3	27.5	36.6	66.6	95.1	128.7	141.2	182.4	197.5
6m	23.7	34.4	47.9	85.8	127.4	179.0	196.9	250.2	263.3
1y	45.5	61.8	82.5	129.6	186.4	254.6	275.1	331.8	344.8
2y	136.8	155.0	177.8	226.7	290.8	370.3	386.5	430.4	443.2
3y	270.6	276.6	294.5	334.2	382.6	462.8	469.0	484.4	493.2
5y	517.8	497.3	502.7	520.8	546.6	594.2	580.6	538.4	532.4
7y	685.2	657.5	654.8	659.0	665.5	687.9	658.8	570.0	552.3
10y	811.0	797.8	787.4	777.3	770.5	773.8	739.8	639.0	627.7
12y	849.7	841.1	829.7	818.8	810.3	810.5	776.2	658.7	646.1
15y	883.7	886.8	875.2	861.7	850.9	844.5	809.7	666.3	652.4
20y	941.0	947.4	922.6	885.6	875.3	867.7	831.9	676.6	655.4
30y	976.7	975.0	933.6	861.4	838.9	817.3	791.5	678.5	690.3

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

Conditional Curve Trades with Mid-curves

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

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	-16	-14	-13	-12	-10	-9	-5	-3		Spot	16	14	13	12	10	9	5	3	
1y	-12	-12	-11	-10		-7		-3		1y	12	12	11	10		7		3	
18m	-11	-11	-11	-10		-7	-4	-3		18m	11	11	11	10		7	4	3	
2y	-11	-11	-11	-9		-6	-3	-2		2y	11	11	11	9		6	3	2	
30m	-11									30m	11								
3y	-10	-10		-8		-5		-2		3y	10	10		8		5		2	
4y	-10						-2			4y	10						2		
5y		-7		-5		-3	-2	-1		5y		7		5		3	2	1	
7y							-1			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	18	11	6	1	1	0	1	1		Spot	17	10	6	1	1	0	1	1	
1y	0	0	-3	-4		-3		0		1y	0	0	-3	-4		-3		0	
18m	-12	-4								18m	-12	-4							
2y	-7	-8	-9	-7		-4	0	0		2y	-7	-8	-9	-7		-4	0	0	
30m	-15									30m	-15								
3y	-9	-12		-7		-3		0		3y	-9	-12		-7		-3		0	
4y	-14						0			4y	-14						0		
5y		-9		-6		-7	0	0		5y		-9		-6		-7	0	0	
7y							-2			7y							-2		
10y				-4		-5	-3			10y				-4		-5	-3		
15y										15y									
20y						-6				20y						-6			
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	2	-3	-7	-11	-10	-9	-4	-2		Spot	33	24	19	13	11	9	6	5	
1y	-12	-12	-14	-14		-11		-3		1y	12	12	8	6		4		3	
18m	-24	-15								18m	-1	7							
2y	-19	-18	-19	-16		-11	-3	-2		2y	4	3	2	2		2	3	2	
30m	-26									30m	-4								
3y	-19	-22		-15		-9		-2		3y	2	-1		1		2		2	
4y	-25						-2			4y	-4						2		
5y		-16		-12		-10	-2	-1		5y		-2		-1		-4	2	1	
7y							-3			7y							-2		
10y				-5		-6	-3			10y				-3		-5	-3		
15y										15y									
20y						-5				20y						-6			

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

Fig. 10: USD ATM normal vols and skews for 6-month expiry

ATMVol										Realized Vol									
Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y		Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y	
Spot	54.3	66.8	74.9	82.7	83.8	84.5	83.2	82.8		Spot	32.3	48.3	60.2	70.7	74.0	76.0	77.0	77.6	
1y	81.6	86.4	90.1	92.1		91.3		85.1		1y	76.6	79.7	82.3	83.9		82.9		81.4	
18m	107.0	92.5								18m	84.4	85.6							
2y	98.2	98.6	100.2	97.9		92.9	86.1	87.1		2y	87.5	88.6	89.3	88.5		86.3	84.1	83.7	
30m	111.5									30m	90.5								
3y	100.3	105.7		98.2		90.9		87.9		3y	92.5	92.0		89.9		87.6		84.8	
4y	110.6						85.7			4y	94.6						86.0		
5y		100.8		96.0		97.4	86.9	86.9		5y		92.5		91.0		88.3	86.3	85.7	
7y							89.4			7y							86.3		
10y				91.7		94.4	90.7			10y				87.3		85.9	86.0		
15y										15y									
20y						95.5				20y						86.1			
Vol RR -/+25bp										Vol Butterfly -/+25bp									
Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y		Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y	
Spot	1.2	2.2	1.4	-1.2	-1.4	-1.2	-1.7	-1.9		Spot	0.7	0.5	0.4	0.4	0.4	0.5	0.5	0.6	
1y	3.0	1.4	-0.2	-1.7		-1.4		-2.0		1y	0.4	0.4	0.4	0.4		0.5		0.5	
18m	2.3	0.2								18m	0.5	0.4							
2y	0.3	-1.3	-2.5	-2.1		-1.6	-2.0	-2.1		2y	0.4	0.4	0.3	0.4		0.5	0.5	0.5	
30m	-0.7									30m	0.4								
3y	-2.7	-3.6		-2.2		-1.9		-2.1		3y	0.4	0.3		0.4		0.5		0.5	
4y	-4.4						-2.1			4y							0.5		
5y		-1.7		-1.2		-1.7	-2.0	-2.1		5y		0.4		0.5		0.5	0.5	0.6	
7y							-2.1			7y							0.6		
10y				-2.1		-2.2	-2.4			10y				0.5		0.5	0.6		
15y										15y									
20y						-2.6				20y						0.7			

Source: Nomura research.

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

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	4	-1	-4	-8	-10	-9	-4	-2		Spot	-4	1	4	8	10	9	4	2	
1y	-5	-8			-12					1y	5	8			12				
18m	-8	-10	-11	-12				-3		18m	8	10	11	12				3	
2y	-11	-12	-12	-13				-3		2y	11	12	12	13				3	
30m										30m									
3y	-12	-13								3y	12	13							
4y	-15	-15								4y	15	15							
5y			-14	-11		-6				5y			14	11		6			
7y										7y									
10y				0		1	1			10y				0		-1	-1		
15y				3		2				15y				-3		-2			
20y						2	1			20y						-2	-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	16	19	17	12	6	0	-6	-8		Spot	17	20	17	11	6	0	-7	-8	
1y	13	13			0					1y	13	11			0				
18m										18m									
2y	9	7	4	0				-10		2y	9	7	4	0				-10	
30m										30m									
3y	0	0								3y	0	0							
4y	-5	-7								4y	-5	-7							
5y			-13	-14		-14				5y			-13	-14		-14			
7y										7y									
10y				-15		-18	-16			10y				-15		-21	-18		
15y				-23		-17				15y				-29		-20			
20y						-14	-13			20y						-14	-13		
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	19	13	4	-3	-9	-11	-10		Spot	13	20	21	18	15	9	-2	-5	
1y	8	5			-12					1y	17	19			12				
18m										18m									
2y	-2	-5	-8	-13				-13		2y	20	18	16	13				-8	
30m										30m									
3y	-12	-13								3y	12	13							
4y	-20	-22								4y	10	8							
5y			-27	-25		-19				5y			1	-3		-8			
7y										7y									
10y				-16		-17	-14			10y				-15		-23	-20		
15y				-20		-14				15y				-31		-23			
20y						-13	-12			20y						-16	-15		

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

Fig. 12: EUR ATM normal vols and skews for 6-month expiry

ATMVol										Realized Vol									
Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y		Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y	
Spot	28.5	32.3	36.8	47.3	56.5	66.3	78.3	80.5		Spot	15.5	26.1	31.6	42.6	51.0	59.3	64.7	65.5	
1y	40.0	43.7			65.6					1y	37.4	40.4			60.7				
18m										18m									
2y	50.1	55.1	60.1	69.3				85.3		2y	44.5	49.7	56.3	63.7				70.9	
30m										30m									
3y	65.9	68.0								3y	56.9	63.8							
4y	76.1	79.3								4y	72.3	73.3							
5y			89.4	91.1		90.9				5y			80.5	83.3		80.5			
7y										7y									
10y				94.1		98.5	94.2			10y				80.5		79.4	76.0		
15y				106.9		96.4				15y				78.7		75.1			
20y						91.9	90.1			20y						71.5	68.9		
Vol RR +/-25bp										Vol Butterfly +/-25bp									
Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y		Fwd/Tenor	1y	2y	3y	5y	7y	10y	20y	30y	
Spot	-2.6	-0.9	0.8	4.0	4.5	4.8	-1.4	-2.1		Spot	1.7	1.5	1.3	0.9	0.7	0.6	0.5	0.4	
1y	-0.5	4.8			4.3					1y	1.1	2.0			0.5				
18m										18m									
2y	4.1	-0.9	2.2	3.9				-2.1		2y	1.2	-1.4	-0.1	0.4				0.4	
30m										30m									
3y	0.5	2.8								3y	-0.5	0.0							
4y	4.3	4.2								4y	0.3	0.3							
5y			4.7	4.9		1.5				5y			0.3	0.4		0.4			
7y										7y									
10y				-1.0		-4.1	-3.9			10y				0.4		0.3	0.3		
15y				-7.4		-5.8				15y				0.3		0.3			
20y						-3.8	-3.1			20y						0.3	0.4		

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	Futures	Implied Fut. Px	PV	Aged Px	Rolldown	PV	Aged Px	Rolldown
0y	EDH6	Fri, 03/11/16	EDH6	99.360	99.375	9-Mar-16	Mar 2016	99.360	0.1	0.0	-3.4	1.7	1.5	-9.1
0y	EDJ6	Fri, 04/15/16	EDM6	99.225	99.250	9-Mar-16	May 2016	99.285	5.7	3.5	-5.4	8.4	0.0	-20.8
0y	EDM6	Fri, 06/10/16	EDM6	99.225	99.250	11-Mar-16	Mar 2016	99.360	5.3	10.9	5.6	8.0	0.0	-8.0
0y	EDU6	Fri, 09/16/16	EDU6	99.145	99.125	10-Jun-16	Jun 2016	99.225	12.3	12.5	0.2	10.6	2.8	-7.8
0y	EDZ6	Fri, 12/16/16	EDZ6	99.070	99.125	16-Sep-16	Sep 2016	99.145	13.3	12.3	-0.9	19.0	10.6	-8.4
1y	0EH6	Fri, 03/11/16	EDH7	99.015	99.000	9-Mar-16	Mar 2017	99.020	2.8	2.0	-34.8	1.5	0.0	-69.0
1y	0EJ6	Fri, 04/15/16	EDM7	98.955	99.000	9-Mar-16	May 2017	98.985	7.4	0.0	-18.2	12.1	1.5	-26.2
1y	0EK6	Fri, 05/13/16	EDM7	98.955	99.000	9-Mar-16	Apr 2017	99.000	10.4	0.0	-14.5	15.1	0.0	-21.2
1y	0EM6	Fri, 06/10/16	EDM7	98.955	99.000	11-Mar-16	Mar 2017	99.015	11.8	2.8	-9.0	16.5	1.5	-15.0
1y	0EU6	Fri, 09/16/16	EDU7	98.890	98.875	10-Jun-16	Jun 2017	98.955	21.9	18.5	-3.4	20.7	10.8	-9.9
1y	0EZ6	Fri, 12/16/16	EDZ7	98.815	98.875	16-Sep-16	Sep 2017	98.890	23.5	21.9	-1.6	29.8	20.7	-9.1
2y	2EH6	Fri, 03/11/16	EDH8	98.755	98.750	9-Mar-16	Mar 2018	98.785	3.0	3.5	24.4	2.7	0.0	-123.9
2y	2EJ6	Fri, 04/15/16	EDM8	98.690	98.750	9-Mar-16	May 2018	98.750	8.6	0.0	-21.3	14.9	0.0	-36.7
2y	2EM6	Fri, 06/10/16	EDM8	98.690	98.750	11-Mar-16	Mar 2018	98.755	14.5	3.0	-11.5	20.7	2.7	-18.0
2y	2EU6	Fri, 09/16/16	EDU8	98.625	98.625	10-Jun-16	Jun 2018	98.690	25.2	20.6	-4.6	25.5	14.3	-11.1
2y	2EZ6	Fri, 12/16/16	EDZ8	98.555	98.500	16-Sep-16	Sep 2018	98.625	33.6	31.8	-1.8	28.3	19.5	-8.8
3y	3EH6	Fri, 03/11/16	EDH9	98.500	98.500	9-Mar-16	Mar 2019	98.565	2.9	6.5	163.9	3.2	0.0	-144.1
3y	3EJ6	Fri, 04/15/16	EDM9	98.440	98.500	9-Mar-16	May 2019	98.535	6.3	3.5	-6.8	12.5	0.0	-30.9
3y	3EM6	Fri, 06/10/16	EDM9	98.440	98.500	11-Mar-16	Mar 2019	98.500	15.5	2.9	-12.6	21.8	3.2	-18.6
3y	3EU6	Fri, 09/16/16	EDU9	98.375	98.375	10-Jun-16	Jun 2019	98.440	26.4	21.9	-4.4	26.6	15.7	-10.9
3y	3EZ6	Fri, 12/16/16	EDZ9	98.310	98.250	16-Sep-16	Sep 2019	98.375	35.5	33.3	-2.2	29.8	21.1	-8.7
4y	4EH6	Fri, 03/11/16	EDH0	98.255	98.250	9-Mar-16	Mar 2020	98.365	3.2	11.5	380.6	2.9	0.0	-132.7
4y	4EJ6	Fri, 04/15/16	EDM0	98.200	98.250	9-Mar-16	May 2020	98.335	9.8	8.5	-3.2	15.0	0.0	-37.1
4y	4EM6	Fri, 06/10/16	EDM0	98.200	98.250	11-Mar-16	Mar 2020	98.255	16.1	3.2	-12.9	21.3	2.9	-18.4
4y	4EU6	Fri, 09/16/16	EDU0	98.140	98.125	10-Jun-16	Jun 2020	98.200	27.3	22.4	-4.9	25.8	15.1	-10.6
4y	4EZ6	Fri, 12/16/16	EDZ0	98.080	98.125	16-Sep-16	Sep 2020	98.140	30.3	27.3	-3.0	34.8	25.8	-9.0

Source: Nomura research.

Fig. 14: USD Valuation of Bull and Bear Flatteners (3m carry)

Only highlighted trades stand out

Only highlighted trades stand out														
Trade	USD: 1y trade				Trade	USD: 2y trade				Trade	USD: 3y trade			
	Bull Flattener		Bear Flattener			Bull Flattener		Bear Flattener			Bull Flattener		Bear Flattener	
	Carry 3m [bps]	Carry 3m Percentile	Carry 3m [bps]	Carry 3m Percentile		Carry 3m [bps]	Carry 3m Percentile	Carry 3m [bps]	Carry 3m Percentile		Carry 3m [bps]	Carry 3m Percentile	Carry 3m [bps]	Carry 3m Percentile
0EH6 / EDH6	4	90	1	28										
0EJ6 / EDJ6	-11	5	4	86										
0EM6 / EDM6	-15	2	7	87										
0EU6 / EDU6	-4	8	2	42										
0EZ6 / EDZ6	0	51	0	39										
2EH6 / 0EH6	-1	35	1	58	2EH6 / EDH6	3	73	3	28					
2EJ6 / 0EJ6	-2	27	3	68	2EJ6 / EDJ6	-14	5	6	82					
2EM6 / 0EM6	-3	10	3	92	2EM6 / EDM6	-17	2	10	98					
2EU6 / 0EU6	-1	68	1	63	2EU6 / EDU6	-5	25	3	43					
2EZ6 / 0EZ6	-1	67	0	46	2EZ6 / EDZ6	-1	61	0	37					
3EH6 / 2EH6	-1	32	0	60	3EH6 / 0EH6	-2	35	2	57	3EH6 / EDH6	2	75	3	20
3EJ6 / 2EJ6	2	77	-3	18	3EJ6 / 0EJ6	0	34	0	54	3EJ6 / EDJ6	-11	5	4	82
3EM6 / 2EM6	-1	32	1	65	3EM6 / 0EM6	-4	10	4	73	3EM6 / EDM6	-18	2	11	98
3EU6 / 2EU6	0	67	0	68	3EU6 / 0EU6	-1	73	1	63	3EU6 / EDU6	-5	20	3	50
3EZ6 / 2EZ6	0	54	0	61	3EZ6 / 0EZ6	-1	72	0	56	3EZ6 / EDZ6	-1	61	0	39
4EH6 / 3EH6	0	80	0	54	4EH6 / 2EH6	-1	36	0	61	4EH6 / 0EH6	-1	44	1	58
4EJ6 / 3EJ6	-3	82	3	18	4EJ6 / 2EJ6	-1	82	0	18	4EJ6 / 0EJ6	-3	59	3	27
4EM6 / 3EM6	0	93	0	34	4EM6 / 2EM6	-1	37	0	64	4EM6 / 0EM6	-4	10	3	71
4EU6 / 3EU6	0	83	0	12	4EU6 / 2EU6	0	92	-1	63	4EU6 / 0EU6	-1	76	1	61
4EZ6 / 3EZ6	-1	57	0	70	4EZ6 / 2EZ6	-1	63	0	68	4EZ6 / 0EZ6	-2	70	1	57

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

Fig. 15: 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	Futures	Implied Fut. Px	PV	Aged Px	Rolldown	PV	Aged Px	Rolldown
0y	ERH6	Mon, 03/14/16	ERH6	100.245	100.250	9-Mar-16	Mar 2016	100.225	1.4	0.0	-25.5	2.1	2.5	6.4
0y	ERJ6	Mon, 04/18/16	ERM6	100.290	100.250	9-Mar-16	May 2016	100.265	5.8	1.5	-9.8	2.1	0.0	-4.7
0y	ERK6	Mon, 05/16/16	ERM6	100.290	100.250	9-Mar-16	Apr 2016	100.250	6.7	0.0	-9.0	2.9	0.0	-3.9
0y	ERM6	Mon, 06/13/16	ERM6	100.290	100.250	14-Mar-16	Mar 2016	100.245	7.7	1.4	-6.3	3.9	2.1	-1.8
0y	ERN6	Mon, 07/18/16	ERU6	100.325	100.375	18-Apr-16	Jun 2016	100.290	4.5	1.0	-3.5	9.7	9.7	0.0
0y	ERQ6	Mon, 08/15/16	ERU6	100.325	100.375	16-May-16	Jun 2016	100.290	5.1	1.7	-3.4	10.3	10.4	0.1
0y	ERU6	Mon, 09/19/16	ERU6	100.325	100.375	13-Jun-16	Jun 2016	100.290	5.8	2.6	-3.2	11.0	11.3	0.3
0y	ERZ6	Mon, 12/19/16	ERZ6	100.345	100.375	19-Sep-16	Sep 2016	100.325	8.9	5.8	-3.1	12.1	11.0	-1.1
1y	ORH6	Mon, 03/14/16	ERH7	100.340	100.375	9-Mar-16	Mar 2017	100.340	2.9	0.0	-52.9	6.4	3.5	-52.9
1y	ORJ6	Mon, 04/18/16	ERM7	100.335	100.375	9-Mar-16	May 2017	100.335	3.3	0.0	-7.6	7.6	4.0	-8.1
1y	ORK6	Mon, 05/16/16	ERM7	100.335	100.375	9-Mar-16	Apr 2017	100.340	4.8	0.0	-6.5	9.1	3.5	-7.5
1y	ORM6	Mon, 06/13/16	ERM7	100.335	100.375	14-Mar-16	Mar 2017	100.340	5.8	2.9	-2.9	10.0	6.4	-3.6
1y	ORN6	Mon, 07/18/16	ERU7	100.320	100.375	18-Apr-16	Jun 2017	100.335	6.3	3.3	-3.0	12.1	7.6	-4.5
1y	ORQ6	Mon, 08/15/16	ERU7	100.320	100.375	16-May-16	Jun 2017	100.335	7.3	4.8	-2.5	13.1	9.1	-4.0
1y	ORU6	Mon, 09/19/16	ERU7	100.320	100.375	13-Jun-16	Jun 2017	100.335	8.3	5.8	-2.5	14.0	10.0	-4.0
1y	ORZ6	Mon, 12/19/16	ERZ7	100.295	100.250	19-Sep-16	Sep 2017	100.320	16.0	14.8	-1.2	11.8	8.1	-3.7
2y	2RH6	Mon, 03/14/16	ERH8	100.265	100.250	9-Mar-16	Mar 2018	100.265	5.5	1.5	-72.8	4.2	0.0	-77.3
2y	2RJ6	Mon, 04/18/16	ERM8	100.225	100.250	9-Mar-16	May 2018	100.240	5.0	0.0	-11.4	7.7	1.0	-15.4
2y	2RK6	Mon, 05/16/16	ERM8	100.225	100.250	9-Mar-16	Apr 2018	100.255	7.0	0.5	-8.8	9.8	0.0	-13.1
2y	2RM6	Mon, 06/13/16	ERM8	100.225	100.250	14-Mar-16	Mar 2018	100.265	8.3	5.5	-2.8	11.0	4.2	-6.8
2y	2RN6	Mon, 07/18/16	ERU8	100.180	100.125	18-Apr-16	Jun 2018	100.225	13.8	12.4	-1.4	8.6	2.7	-5.9
2y	2RQ6	Mon, 08/15/16	ERU8	100.180	100.125	16-May-16	Jun 2018	100.225	15.1	14.3	-0.8	9.9	4.5	-5.3
2y	2RU6	Mon, 09/19/16	ERU8	100.180	100.125	13-Jun-16	Jun 2018	100.225	16.4	15.4	-1.0	11.2	5.7	-5.5
2y	2RZ6	Mon, 12/19/16	ERZ8	100.125	100.125	19-Sep-16	Sep 2018	100.180	16.7	16.4	-0.3	16.9	11.2	-5.8
3y	3RH6	Mon, 03/14/16	ERH9	100.070	100.125	9-Mar-16	Mar 2019	100.065	2.6	0.0	-48.1	8.4	6.0	-43.6
3y	3RJ6	Mon, 04/18/16	ERM9	100.005	100.000	9-Mar-16	May 2019	100.025	7.8	2.5	-12.1	7.3	0.0	-16.7
3y	3RK6	Mon, 05/16/16	ERM9	100.005	100.000	9-Mar-16	Apr 2019	100.045	10.1	4.5	-7.5	9.6	0.0	-12.9
3y	3RM6	Mon, 06/13/16	ERM9	100.005	100.000	14-Mar-16	Mar 2019	100.070	11.8	9.1	-2.7	11.3	2.4	-8.9
3y	3RN6	Mon, 07/18/16	ERU9	99.940	100.000	18-Apr-16	Jun 2019	100.005	10.3	7.8	-2.4	16.5	7.3	-9.2
3y	3RQ6	Mon, 08/15/16	ERU9	99.940	100.000	16-May-16	Jun 2019	100.005	11.6	10.1	-1.5	17.8	9.6	-8.2
3y	3RU6	Mon, 09/19/16	ERU9	99.940	100.000	13-Jun-16	Jun 2019	100.005	13.3	11.8	-1.5	19.5	11.3	-8.2
3y	3RZ6	Mon, 12/19/16	ERZ9	99.870	99.875	19-Sep-16	Sep 2019	99.940	19.5	19.7	0.2	20.3	13.4	-6.8
4y	4RH6	Mon, 03/14/16	ERH0	99.830	99.875	9-Mar-16	Mar 2020	99.830	3.2	0.0	-57.8	7.7	4.5	-57.8
4y	4RJ6	Mon, 04/18/16	ERM0	99.775	99.750	9-Mar-16	May 2020	99.800	9.5	5.0	-10.3	7.0	0.0	-16.1
4y	4RK6	Mon, 05/16/16	ERM0	99.775	99.750	9-Mar-16	Apr 2020	99.815	12.4	6.5	-7.9	9.9	0.0	-13.3
4y	4RM6	Mon, 06/13/16	ERM0	99.775	99.750	14-Mar-16	Mar 2020	99.830	14.6	10.2	-4.5	12.2	2.2	-10.0
4y	4RN6	Mon, 07/18/16	ERU0	99.710	99.750	18-Apr-16	Jun 2020	99.775	12.8	9.5	-3.3	16.9	7.0	-9.9
4y	4RQ6	Mon, 08/15/16	ERU0	99.710	99.750	16-May-16	Jun 2020	99.775	14.6	12.4	-2.2	18.7	9.9	-8.8
4y	4RU6	Mon, 09/19/16	ERU0	99.710	99.750	13-Jun-16	Jun 2020	99.775	16.3	14.6	-1.7	20.5	12.2	-8.3
4y	4RZ6	Mon, 12/19/16	ERZ0	99.625	99.625	19-Sep-16	Sep 2020	99.710	22.8	23.4	0.6	22.6	15.0	-7.6

Source: Nomura research.

Fig. 16: EUR Valuation of Bull and Bear Flatteners

Only highlighted trades stand out

Trade	EUR: 1y trade				Trade	EUR: 2y trade				Trade	EUR: 3y trade				
	Bull Flattener		Bear Flattener			Bull Flattener		Bear Flattener			Bull Flattener		Bear Flattener		
	Carry 3m [bps]	Carry 3m Percentile	Carry 3m [bps]	Carry 3m Percentile		Carry 3m [bps]	Carry 3m Percentile	Carry 3m [bps]	Carry 3m Percentile		Carry 3m [bps]	Carry 3m Percentile	Carry 3m [bps]	Carry 3m Percentile	
0RH6 / ERH6	-1	6	2	76											
0RJ6 / ERJ6	2	76	3	11											
0RK6 / ERK6	2	71	3	18											
0RM6 / ERM6	3	98	2	2											
0RN6 / ERN6	0	22	5	86											
0RQ6 / ERQ6	1	21	4	71											
0RU6 / ERU6	1	37	4	63											
0RZ6 / ERZ6	2	77	3	54											
2RH6 / ORH6	2	85	1	15		2RH6 / ERH6	0	68	3	16					
2RJ6 / ORJ6	0	34	4	19		2RJ6 / ERJ6	2	55	6	16					
2RK6 / ORK6	-1	21	4	34	2RK6 / ERK6	1	52	8	23						
2RM6 / ORM6	0	32	3	44	2RM6 / ERM6	3	97	5	3						
2RN6 / ORN6	2	81	1	22	2RN6 / ERN6	2	43	6	51						
2RQ6 / ORQ6	2	50	1	57	2RQ6 / ERQ6	3	36	5	79						
2RU6 / ORU6	2	82	1	13	2RU6 / ERU6	2	60	6	26						
2RZ6 / ORZ6	1	65	2	19	2RZ6 / ERZ6	3	77	5	39						
3RH6 / 2RH6	-1	5	4	95	3RH6 / ORH6	0	63	5	40	3RH6 / ERH6	-1	3	7	45	
3RJ6 / 2RJ6	3	92	0	8	3RJ6 / ORJ6	2	85	3	16	3RJ6 / ERJ6	5	87	6	13	
3RK6 / 2RK6	2	94	0	10	3RK6 / ORK6	1	85	4	16	3RK6 / ERK6	3	87	7	15	
3RM6 / 2RM6	0	48	2	66	3RM6 / ORM6	0	47	5	60	3RM6 / ERM6	4	95	7	8	
3RN6 / 2RN6	-1	49	3	100	3RN6 / ORN6	1	81	5	62	3RN6 / ERN6	1	35	9	89	
3RQ6 / 2RQ6	-1	100	3	100	3RQ6 / ORQ6	1	57	4	100	3RQ6 / ERQ6	2	43	8	100	
3RU6 / 2RU6	0	74	3	97	3RU6 / ORU6	1	89	4	40	3RU6 / ERU6	2	63	8	42	
3RZ6 / 2RZ6	0	93	1	54	3RZ6 / ORZ6	1	86	3	28	3RZ6 / ERZ6	3	88	6	35	
4RH6 / 3RH6	-1	56	-1	66	4RH6 / 2RH6	-2	19	3	94	4RH6 / ORH6	0	79	4	50	
4RJ6 / 3RJ6	0	66	0	42	4RJ6 / 2RJ6	2	81	-1	18	4RJ6 / ORJ6	2	82	3	21	
4RK6 / 3RK6	-1	29	0	55	4RK6 / 2RK6	1	81	0	32	4RK6 / ORK6	0	81	4	21	
4RM6 / 3RM6	-2	2	1	95	4RM6 / 2RM6	-2	31	3	71	4RM6 / ORM6	-2	5	6	79	
4RN6 / 3RN6	-1	41	1	43	4RN6 / 2RN6	-2	27	4	100	4RN6 / ORN6	0	51	5	51	
4RQ6 / 3RQ6	-1	7	1	86	4RQ6 / 2RQ6	-1	14	3	100	4RQ6 / ORQ6	0	29	5	100	
4RU6 / 3RU6	0	69	0	27	4RU6 / 2RU6	-1	71	3	89	4RU6 / ORU6	1	85	4	34	
4RZ6 / 3RZ6	0	68	1	65	4RZ6 / 2RZ6	1	84	2	68	4RZ6 / ORZ6	2	81	4	46	

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

Swaption Triangles

Fig. 17: 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	910.4	93%	17%	5%	2%	34%	66%	24%	71.88	26%	4.87	45%
2y10y20y	+2y10y-2y30y+12y20y	1,308.5	87%	21%	11%	1%	32%	84%	41%	60.54	19%	6.48	57%
2y10y5y	+2y10y-2y15y+12y5y	515.9	90%	17%	15%	2%	28%	62%	38%	76.04	17%	5.31	64%
2y1y1y	+2y1y-2y2y+3y1y	28.6	35%	-5%	47%	-29%	11%	-32%	100%	87.82	75%	-23.03	61%
2y1y2y	+2y1y-2y3y+3y2y	54.3	33%	0%	53%	54%	100%	-5%	100%	86.22	70%	-13.41	59%
2y1y30y	+2y1y-2y31y+3y30y	431.2	93%	36%	36%	0%	37%	195%	78%	69.75	19%	10.92	55%
2y1y5y	+2y1y-2y6y+3y5y	116.2	26%	18%	39%	-6%	37%	48%	97%	81.03	32%	1.94	65%
2y2y1y	+2y2y-2y3y+4y1y	47.0	21%	11%	55%	-5%	37%	18%	97%	88.56	45%	-7.37	53%
2y2y2y	+2y2y-2y4y+4y2y	89.3	28%	17%	47%	-2%	37%	29%	92%	86.03	48%	-3.00	47%
2y2y30y	+2y2y-2y32y+4y30y	734.4	93%	32%	17%	0%	29%	151%	70%	69.04	13%	9.86	51%
2y2y3y	+2y2y-2y5y+4y3y	128.7	35%	16%	31%	-5%	39%	40%	92%	83.97	35%	0.24	62%
2y2y5y	+2y2y-2y7y+4y5y	206.8	36%	19%	29%	-4%	30%	58%	90%	83.50	30%	2.73	48%
2y3y1y	+2y3y-2y4y+5y1y	62.1	21%	18%	39%	2%	43%	38%	89%	87.05	26%	2.09	41%
2y3y2y	+2y3y-2y5y+5y2y	119.2	28%	16%	29%	-2%	46%	46%	88%	84.64	22%	4.14	52%
2y3y30y	+2y3y-2y33y+5y30y	976.7	92%	29%	9%	0%	28%	129%	57%	68.09	12%	8.68	48%
2y3y5y	+2y3y-2y8y+5y5y	285.8	39%	18%	18%	-2%	33%	58%	67%	85.01	25%	2.62	32%
2y4y1y	+2y4y-2y5y+6y1y	73.9	36%	15%	17%	-2%	25%	48%	71%	84.55	20%	6.26	63%
2y5y10y	+2y5y-2y15y+7y10y	717.4	80%	19%	2%	1%	28%	72%	32%	80.97	26%	4.68	30%
2y5y20y	+2y5y-2y25y+7y20y	1,040.5	95%	25%	3%	1%	27%	98%	38%	68.99	17%	7.24	36%
2y5y2y	+2y5y-2y7y+7y2y	168.3	39%	19%	16%	2%	30%	56%	43%	85.50	19%	4.89	25%
2y5y30y	+2y5y-2y35y+7y30y	1,323.2	96%	26%	3%	1%	23%	108%	38%	65.87	20%	7.59	32%
2y5y5y	+2y5y-2y10y+7y5y	395.2	70%	19%	0%	1%	28%	62%	31%	84.19	28%	4.72	23%
2y7y20y	+2y7y-2y27y+9y20y	1,190.7	93%	24%	7%	2%	28%	92%	35%	65.47	18%	7.41	37%
2y8y20y	+2y8y-2y28y+10y20y	1,237.9	92%	23%	8%	2%	27%	90%	34%	63.66	20%	7.25	37%
5y10y10y	+5y10y-5y20y+15y10y	687.8	97%	8%	23%	1%	35%	122%	0%	67.70	34%	9.05	26%
5y10y20y	+5y10y-5y30y+15y20y	890.4	86%	12%	28%	1%	42%	175%	7%	53.42	24%	13.60	53%
5y10y5y	+5y10y-5y15y+15y5y	379.5	88%	10%	39%	3%	54%	119%	5%	70.25	20%	11.10	64%
5y1y1y	+5y1y-5y2y+6y1y	19.3	33%	21%	17%	12%	22%	-72%	93%	74.54	54%	-9.74	84%
5y1y2y	+5y1y-5y3y+6y2y	35.7	22%	30%	32%	17%	29%	-48%	94%	69.32	42%	3.49	73%
5y1y30y	+5y1y-5y31y+6y30y	289.1	95%	13%	11%	1%	17%	286%	72%	62.03	46%	18.63	39%
5y1y5y	+5y1y-5y6y+6y5y	84.1	58%	1%	10%	1%	11%	1%	89%	74.28	52%	8.69	49%
5y2y1y	+5y2y-5y3y+7y1y	31.8	38%	-12%	5%	-7%	5%	-4%	83%	73.17	45%	8.02	64%
5y2y2y	+5y2y-5y4y+7y2y	60.1	31%	12%	13%	6%	24%	15%	79%	70.48	34%	12.56	58%
5y2y30y	+5y2y-5y32y+7y30y	475.4	95%	14%	10%	1%	16%	265%	44%	61.20	47%	17.69	29%
5y2y3y	+5y2y-5y5y+7y3y	87.8	35%	15%	23%	8%	43%	30%	76%	69.08	23%	15.13	66%
5y2y5y	+5y2y-5y7y+7y5y	142.6	68%	16%	32%	7%	38%	59%	65%	75.52	47%	10.70	36%
5y3y1y	+5y3y-5y4y+8y1y	39.9	27%	22%	62%	11%	69%	56%	70%	71.74	29%	17.40	54%
5y3y2y	+5y3y-5y5y+8y2y	77.4	28%	21%	67%	11%	73%	68%	69%	69.71	17%	19.07	61%
5y3y30y	+5y3y-5y33y+8y30y	620.7	96%	16%	12%	3%	31%	249%	35%	59.86	41%	16.92	27%
5y3y5y	+5y3y-5y8y+8y5y	187.6	71%	17%	33%	8%	48%	93%	46%	75.12	33%	12.51	28%
5y4y1y	+5y4y-5y5y+9y1y	47.3	21%	20%	81%	11%	80%	86%	62%	70.38	8%	20.43	64%
5y5y10y	+5y5y-5y15y+10y10y	501.2	90%	11%	21%	3%	43%	133%	24%	74.98	18%	10.67	37%
5y5y20y	+5y5y-5y25y+10y20y	672.0	88%	14%	16%	2%	35%	201%	23%	60.58	27%	15.65	30%
5y5y2y	+5y5y-5y7y+10y2y	107.7	57%	16%	29%	6%	37%	110%	28%	73.15	12%	17.24	35%
5y5y30y	+5y5y-5y35y+10y30y	826.3	96%	15%	11%	2%	29%	233%	18%	57.09	37%	16.37	25%
5y5y5y	+5y5y-5y10y+10y5y	257.5	82%	14%	25%	4%	36%	128%	21%	73.27	24%	15.65	31%
5y7y20y	+5y7y-5y27y+12y20y	795.4	89%	12%	19%	1%	44%	189%	12%	58.22	22%	14.65	35%
5y8y20y	+5y8y-5y28y+13y20y	838.5	89%	12%	23%	1%	44%	183%	10%	56.93	23%	13.99	39%

Source: Nomura research. Stats are based on the recent 4-year history to 09 March 2016.

Fig. 18: 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	975.1	85%	15%	20%	-3%	25%	72%	53%	67.79	35%	4.71	63%
2y10y20y	+2y10y-2y30y+12y20y	1,432.2	87%	21%	30%	-2%	36%	92%	53%	57.12	52%	6.88	60%
2y1y1y	+2y1y-2y2y+3y1y	23.4	67%	-25%	13%	-28%	18%	-80%	52%	58.37	70%	-26.68	4%
2y1y2y	+2y1y-2y3y+3y2y	41.6	46%	-20%	14%	-30%	4%	-60%	62%	54.23	44%	-18.69	19%
2y1y4y	+2y1y-2y5y+3y4y	75.2	43%	-12%	11%	-33%	5%	-53%	56%	54.63	31%	-9.80	30%
2y1y7y	+2y1y-2y8y+3y7y	114.7	17%	1%	20%	-1%	20%	1%	66%	53.32	13%	4.86	67%
2y2y1y	+2y2y-2y3y+4y1y	38.6	48%	-4%	26%	-13%	15%	-55%	44%	60.61	60%	-17.23	8%
2y2y2y	+2y2y-2y4y+4y2y	71.8	41%	-4%	16%	-17%	2%	-35%	35%	58.38	39%	-12.37	23%
2y2y3y	+2y2y-2y5y+4y3y	102.8	41%	-2%	13%	-21%	2%	-37%	34%	59.86	42%	-10.60	21%
2y2y8y	+2y2y-2y10y+4y8y	236.9	29%	18%	22%	-9%	17%	40%	53%	60.27	21%	5.12	45%
2y3y1y	+2y3y-2y4y+5y1y	52.2	46%	7%	26%	-14%	9%	-24%	37%	63.15	42%	-8.39	15%
2y3y2y	+2y3y-2y5y+5y2y	95.5	36%	6%	96%	-33%	1%	-17%	32%	60.18	28%	-4.34	25%
2y4y1y	+2y4y-2y5y+6y1y	61.3	49%	29%	9%	-30%	8%	-6%	27%	64.12	49%	-2.57	10%
2y4y2y	+2y4y-2y6y+6y2y	109.1	16%	8%	16%	-4%	6%	8%	32%	59.61	18%	2.66	26%
2y5y10y	+2y5y-2y15y+7y10y	639.2	62%	20%	12%	-3%	19%	73%	55%	66.70	19%	7.32	61%
2y5y15y	+2y5y-2y20y+7y15y	792.3	55%	25%	27%	-3%	23%	98%	58%	60.06	13%	10.81	76%
2y5y25y	+2y5y-2y30y+7y25y	1,090.7	59%	31%	38%	0%	32%	130%	59%	56.58	19%	11.94	63%
2y5y5y	+2y5y-2y10y+7y5y	305.2	49%	17%	6%	-5%	20%	54%	34%	61.51	16%	7.80	47%
5y10y10y	+5y10y-5y20y+15y10y	863.6	96%	3%	10%	-4%	29%	109%	19%	68.96	84%	3.54	18%
5y10y20y	+5y10y-5y30y+15y20y	1,119.3	86%	6%	17%	-5%	38%	160%	26%	54.14	81%	9.86	25%
5y1y1y	+5y1y-5y2y+6y1y	20.6	70%	5%	8%	0%	11%	-96%	17%	74.65	84%	-42.96	6%
5y1y2y	+5y1y-5y3y+6y2y	33.7	66%	7%	3%	2%	5%	-96%	20%	57.32	76%	-21.78	4%
5y1y4y	+5y1y-5y5y+6y4y	61.7	72%	11%	27%	2%	35%	-83%	28%	53.65	70%	-8.82	5%
5y1y7y	+5y1y-5y8y+6y7y	98.2	80%	10%	39%	-5%	40%	-63%	43%	50.14	36%	8.04	29%
5y2y1y	+5y2y-5y3y+7y1y	30.2	77%	8%	19%	2%	15%	-87%	21%	61.98	81%	-18.60	6%
5y2y2y	+5y2y-5y4y+7y2y	54.7	70%	9%	30%	-1%	21%	-82%	16%	54.37	68%	-8.36	16%
5y2y3y	+5y2y-5y5y+7y3y	79.5	73%	16%	47%	-2%	44%	-75%	19%	59.36	76%	-10.09	7%
5y2y8y	+5y2y-5y10y+7y8y	181.0	64%	2%	19%	-3%	21%	24%	39%	56.78	63%	8.61	25%
5y3y1y	+5y3y-5y4y+8y1y	37.5	59%	18%	80%	8%	76%	-58%	27%	58.49	70%	-3.73	7%
5y3y2y	+5y3y-5y5y+8y2y	70.3	61%	19%	86%	5%	82%	-50%	21%	54.94	62%	0.89	12%
5y4y1y	+5y4y-5y5y+9y1y	44.0	53%	23%	6%	-3%	7%	-24%	25%	58.71	65%	2.85	9%
5y4y2y	+5y4y-5y6y+9y2y	85.3	61%	29%	10%	0%	28%	-14%	20%	55.72	51%	6.55	19%
5y5y10y	+5y5y-5y15y+10y10y	541.5	81%	5%	17%	-6%	23%	102%	34%	67.10	56%	6.92	32%
5y5y15y	+5y5y-5y20y+10y15y	665.3	85%	4%	10%	-6%	19%	149%	29%	59.67	44%	11.19	35%
5y5y25y	+5y5y-5y30y+10y25y	884.3	86%	3%	6%	-10%	13%	182%	25%	55.95	84%	12.56	31%
5y5y5y	+5y5y-5y10y+10y5y	228.3	65%	7%	11%	-7%	19%	80%	19%	56.56	33%	12.74	23%

Source: Nomura research. Stats are based on the recent 4-year history to 09 March 2016.

Mid-curve Calendar Spread Trades

Fig. 19: USD Mid-curve Calendar Spreads – Spot Struck

MidCurve Calendar Sprd	Term Carry/PV %		Fwd Vol		Spot-Fwd Vol Spread		Upper B/E Buffer (high B/E - Spot) %		Lower B/E Buffer (Spot- low B/E) %	
	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile
3m10y10y	22%	41.9%	76.0	24.2%	0.7	40.0%	0.35	26.8%	0.40	40.0%
3m10y20y	25%	48.8%	66.1	21.9%	0.9	43.9%	0.32	28.8%	0.43	39.6%
3m10y5y	21%	53.1%	80.6	20.0%	0.8	53.4%	0.38	35.7%	0.38	55.0%
3m1y10y	69%	59.0%	84.4	38.3%	0.3	54.7%	0.32	36.3%	0.34	55.4%
3m1y1y	82%	81.3%	66.4	60.6%	-1.6	79.0%	0.29	51.8%	0.28	87.8%
3m1y2y	83%	77.0%	72.5	48.8%	0.3	77.7%	0.33	41.6%	0.31	82.6%
3m1y30y	72%	62.9%	79.2	30.8%	1.4	62.2%	0.29	39.6%	0.36	53.7%
3m1y3y	80%	73.4%	76.5	42.2%	1.2	71.4%	0.34	38.0%	0.33	78.6%
3m1y5y	77%	70.1%	81.6	35.7%	1.3	64.2%	0.35	43.2%	0.36	72.7%
3m2y10y	48%	52.7%	85.2	29.5%	0.6	47.2%	0.34	32.7%	0.38	53.4%
3m2y1y	49%	60.0%	81.7	40.0%	-0.5	52.1%	0.36	30.1%	0.34	68.8%
3m2y2y	49%	42.6%	83.1	37.7%	-0.1	36.3%	0.35	19.3%	0.35	56.3%
3m2y30y	51%	57.0%	77.4	26.5%	1.4	57.3%	0.31	37.0%	0.40	51.4%
3m2y3y	54%	54.7%	83.4	34.7%	0.8	50.8%	0.38	32.4%	0.38	62.9%
3m2y5y	52%	57.7%	85.1	26.2%	1.1	54.7%	0.38	30.4%	0.39	60.3%
3m3y1y	38%	33.7%	88.9	32.7%	0.2	31.1%	0.39	10.4%	0.37	51.8%
3m3y2y	44%	53.4%	87.6	28.8%	1.1	43.2%	0.43	25.9%	0.42	59.6%
3m3y30y	42%	57.7%	75.6	21.3%	1.2	49.1%	0.31	35.7%	0.42	49.5%
3m3y5y	40%	47.2%	87.0	21.9%	0.6	37.3%	0.38	24.9%	0.40	55.7%
3m4y1y	41%	62.2%	89.2	22.6%	1.6	60.6%	0.49	36.3%	0.46	66.2%
3m5y10y	29%	48.5%	85.0	17.7%	0.6	40.6%	0.36	30.4%	0.41	50.1%
3m5y20y	32%	54.7%	75.2	15.0%	1.0	43.9%	0.33	35.7%	0.43	48.8%
3m5y2y	31%	52.4%	89.6	12.4%	0.8	29.5%	0.42	18.6%	0.41	54.7%
3m5y30y	33%	54.7%	72.4	16.7%	1.1	43.6%	0.31	35.7%	0.45	48.8%
3m5y5y	28%	34.4%	88.5	14.4%	0.4	23.2%	0.37	23.2%	0.39	39.0%
3m7y20y	28%	50.4%	71.9	18.6%	1.0	45.5%	0.33	35.0%	0.43	47.5%
3m8y20y	27%	53.1%	69.9	20.6%	1.0	46.8%	0.33	37.7%	0.44	47.2%
6m10y10y	33%	37.7%	75.3	23.9%	1.5	37.0%	0.51	20.9%	0.57	34.0%
6m10y20y	39%	48.1%	65.1	20.9%	1.9	47.8%	0.48	25.2%	0.63	39.0%
6m10y5y	32%	53.1%	79.8	18.6%	1.5	59.6%	0.55	29.5%	0.55	55.4%
6m1y10y	108%	49.8%	83.7	38.6%	1.1	48.1%	0.44	32.1%	0.47	55.4%
6m1y1y	104%	48.1%	70.4	61.6%	-5.6	65.5%	0.34	37.7%	0.33	73.7%
6m1y2y	121%	47.8%	73.4	50.1%	-0.6	70.8%	0.43	32.7%	0.40	80.0%
6m1y30y	117%	67.2%	77.2	26.5%	3.4	63.9%	0.41	40.9%	0.51	57.7%
6m1y3y	121%	52.7%	76.7	42.2%	0.9	65.5%	0.45	28.1%	0.43	73.1%
6m1y5y	121%	62.2%	80.7	32.7%	2.2	62.6%	0.47	35.0%	0.48	70.4%
6m2y10y	74%	45.5%	84.5	23.6%	1.4	45.2%	0.48	26.8%	0.53	53.4%
6m2y1y	73%	41.6%	82.5	40.0%	-1.4	48.8%	0.47	22.9%	0.45	58.3%
6m2y2y	74%	27.8%	83.4	37.7%	-0.4	37.0%	0.48	13.4%	0.47	46.8%
6m2y30y	82%	60.6%	75.7	21.9%	3.2	58.3%	0.44	36.0%	0.57	55.7%
6m2y3y	83%	53.4%	82.9	34.7%	1.4	50.4%	0.52	27.2%	0.52	59.0%
6m2y5y	79%	47.5%	84.5	25.9%	1.7	51.4%	0.51	20.6%	0.53	58.3%
6m3y1y	58%	22.9%	88.6	34.0%	0.5	30.8%	0.54	5.2%	0.51	46.2%
6m3y2y	67%	49.5%	86.7	28.8%	2.1	42.6%	0.59	18.3%	0.57	56.7%
6m3y30y	67%	58.6%	74.1	16.3%	2.7	50.4%	0.45	35.4%	0.61	53.1%
6m3y5y	62%	41.3%	86.4	22.6%	1.3	32.7%	0.54	20.0%	0.55	54.4%
6m4y1y	61%	56.7%	88.1	23.2%	2.8	59.3%	0.66	23.9%	0.62	63.9%
6m5y10y	45%	42.2%	84.3	19.6%	1.3	36.0%	0.51	26.5%	0.58	48.8%
6m5y20y	51%	51.4%	74.1	12.7%	2.1	43.2%	0.47	29.1%	0.62	50.4%
6m5y2y	45%	36.0%	89.2	12.1%	1.2	21.9%	0.57	14.4%	0.55	47.5%
6m5y30y	52%	54.0%	71.2	14.0%	2.3	43.2%	0.45	31.8%	0.65	51.4%
6m5y5y	43%	31.4%	87.9	16.0%	1.0	21.3%	0.54	17.0%	0.56	36.7%
6m7y20y	44%	48.8%	70.7	18.3%	2.1	42.9%	0.48	30.1%	0.64	49.1%
6m8y20y	42%	52.7%	68.8	19.0%	2.1	44.5%	0.49	34.0%	0.64	48.5%

Source: Nomura research. Percentiles are for a 4-year history to 09 March 2016.

Fig. 20: USD Mid-curve Calendar Spreads – Spot Struck

MidCurve Calendar Sprd	Term Carry/PV %		Fwd Vol		Spot-Fwd Vol Spread		Upper B/E Buffer (high B/E - Spot) %		Lower B/E Buffer (Spot- low B/E) %	
	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile
1y10y10y	49%	15.4%	74.1	26.2%	2.6	21.6%	0.72	6.5%	0.80	25.2%
1y10y20y	60%	25.9%	63.5	22.9%	3.5	31.1%	0.69	12.1%	0.89	31.1%
1y10y5y	49%	42.9%	78.4	18.6%	2.9	58.0%	0.79	14.4%	0.77	50.4%
1y1y10y	171%	35.4%	82.2	27.2%	2.6	47.5%	0.58	22.6%	0.63	54.0%
1y1y1y	131%	35.7%	76.1	55.0%	-11.3	67.5%	0.40	32.1%	0.38	64.2%
1y1y2y	155%	13.7%	77.7	48.8%	-4.9	57.0%	0.50	22.2%	0.47	57.7%
1y1y30y	186%	47.5%	74.8	24.2%	5.9	57.7%	0.55	31.2%	0.68	55.4%
1y1y3y	165%	19.0%	79.1	40.0%	-1.4	68.1%	0.54	19.0%	0.52	57.7%
1y1y5y	180%	35.0%	80.7	31.8%	2.3	64.9%	0.59	16.7%	0.61	64.5%
1y2y10y	116%	31.1%	83.4	20.9%	2.5	40.0%	0.65	17.7%	0.71	51.1%
1y2y1y	89%	7.2%	87.5	43.9%	-6.3	39.3%	0.55	4.2%	0.51	37.3%
1y2y2y	99%	6.5%	86.3	42.6%	-3.3	35.4%	0.59	5.2%	0.57	34.0%
1y2y30y	132%	43.6%	73.1	14.7%	5.8	50.4%	0.60	28.5%	0.79	53.4%
1y2y3y	118%	33.4%	83.8	33.7%	0.4	42.9%	0.66	11.4%	0.65	49.5%
1y2y5y	119%	27.5%	83.9	25.5%	2.4	44.5%	0.68	8.8%	0.69	49.1%
1y3y1y	87%	20.6%	88.6	30.4%	0.6	31.8%	0.71	1.9%	0.68	40.3%
1y3y2y	102%	31.1%	85.7	28.8%	3.1	39.0%	0.78	5.2%	0.76	48.1%
1y3y30y	107%	42.6%	71.8	11.4%	5.0	44.9%	0.62	25.9%	0.85	52.4%
1y3y5y	95%	25.9%	85.4	23.6%	2.2	32.4%	0.73	13.4%	0.75	49.8%
1y4y1y	93%	46.8%	86.5	21.9%	4.3	57.0%	0.89	8.5%	0.83	60.0%
1y5y10y	69%	31.1%	83.0	24.5%	2.7	29.8%	0.72	15.4%	0.81	45.9%
1y5y20y	79%	38.6%	72.2	10.8%	4.0	37.3%	0.67	21.3%	0.87	46.5%
1y5y2y	70%	25.9%	87.9	13.4%	2.5	22.6%	0.81	6.5%	0.77	39.3%
1y5y30y	82%	38.6%	69.2	13.4%	4.2	36.7%	0.63	21.9%	0.92	48.8%
1y5y5y	69%	23.6%	86.6	19.3%	2.4	20.6%	0.78	14.7%	0.80	33.1%
1y7y20y	69%	34.7%	68.9	18.3%	4.0	36.3%	0.68	17.7%	0.90	45.2%
1y8y20y	66%	37.0%	67.0	18.6%	3.9	37.7%	0.69	18.3%	0.91	44.2%

Source: Nomura research. Percentiles are for a 4-year history to 09 March 2016.

Fig. 21: USD Mid-curve calendar spread trades

MidCurve Calendar Sprd	Trade Package	1y Carry/PV %		Term Carry/PV %		Fwd Vol		Spot-Fwd Vol Spread		Upper B/E Buffer (high B/E - Spot) %		Lower B/E Buffer (Spot- low B/E) %	
		Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile
2y10y10y	-2y10y10y + 12y10y struck @ 10y10y fwd	19%	14.0%	78%	28.0%	71.9	25.6%	4.9	45.1%	1.05	9.7%	1.13	43.9%
2y10y20y	-2y10y20y + 12y20y struck @ 10y20y fwd	24%	35.4%	99%	46.3%	60.5	19.0%	6.5	57.1%	1.01	18.6%	1.30	50.9%
2y10y5y	-2y10y5y + 12y5y struck @ 10y5y fwd	19%	23.7%	76%	48.2%	76.0	16.7%	5.3	64.2%	1.12	11.2%	1.08	55.2%
2y1y1y	-2y1y1y + 3y1y struck @ 1y1y fwd	10%	4.6%	153%	26.4%	87.8	75.0%	-23.0	61.4%	0.43	26.8%	0.42	60.7%
2y1y2y	-2y1y2y + 3y2y struck @ 1y2y fwd	15%	15.9%	194%	18.6%	86.2	69.6%	-13.4	59.1%	0.57	23.3%	0.53	51.3%
2y1y30y	-2y1y30y + 3y30y struck @ 1y30y fwd	50%	45.1%	329%	49.0%	69.7	18.6%	10.9	55.2%	0.73	36.5%	0.92	63.8%
2y1y5y	-2y1y5y + 3y5y struck @ 1y5y fwd	36%	30.7%	280%	29.5%	81.0	31.5%	1.9	64.5%	0.75	12.8%	0.77	67.7%
2y2y1y	-2y2y1y + 4y1y struck @ 2y1y fwd	28%	11.6%	143%	8.5%	88.6	44.7%	-7.4	52.9%	0.73	14.0%	0.69	42.8%
2y2y2y	-2y2y2y + 4y2y struck @ 2y2y fwd	32%	8.5%	163%	7.7%	86.0	47.8%	-3.0	46.6%	0.80	6.2%	0.77	41.6%
2y2y30y	-2y2y30y + 4y30y struck @ 2y30y fwd	40%	37.3%	225%	45.9%	69.0	12.8%	9.9	51.3%	0.82	29.9%	1.08	63.4%
2y2y3y	-2y2y3y + 4y3y struck @ 2y3y fwd	29%	21.4%	181%	24.9%	84.0	35.0%	0.2	61.8%	0.85	3.1%	0.84	60.3%
2y2y5y	-2y2y5y + 4y5y struck @ 2y5y fwd	31%	11.2%	187%	21.7%	83.5	29.5%	2.7	47.8%	0.89	5.4%	0.90	60.7%
2y3y1y	-2y3y1y + 5y1y struck @ 3y1y fwd	30%	18.6%	144%	21.7%	87.1	26.0%	2.1	40.8%	0.98	5.4%	0.93	49.8%
2y3y2y	-2y3y2y + 5y2y struck @ 3y2y fwd	27%	20.2%	157%	35.4%	84.6	22.1%	4.1	52.1%	1.02	4.6%	0.98	63.0%
2y3y30y	-2y3y30y + 5y30y struck @ 3y30y fwd	35%	33.0%	179%	43.1%	68.1	11.6%	8.7	48.2%	0.86	27.2%	1.18	63.4%
2y3y5y	-2y3y5y + 5y5y struck @ 3y5y fwd	26%	12.0%	146%	25.2%	85.0	24.5%	2.6	31.5%	0.97	5.4%	0.98	59.1%
2y4y1y	-2y4y1y + 6y1y struck @ 4y1y fwd	25%	28.0%	141%	43.9%	84.6	20.2%	6.3	63.0%	1.16	9.7%	1.06	65.7%
2y5y10y	-2y5y10y + 7y10y struck @ 5y10y fwd	24%	15.1%	109%	31.1%	81.0	26.4%	4.7	29.9%	1.00	16.3%	1.12	53.6%
2y5y20y	-2y5y20y + 7y20y struck @ 5y20y fwd	29%	15.5%	131%	32.6%	69.0	17.1%	7.2	36.1%	0.94	13.6%	1.24	59.1%
2y5y2y	-2y5y2y + 7y2y struck @ 5y2y fwd	26%	22.9%	114%	24.1%	85.5	18.6%	4.9	25.2%	1.13	0.7%	1.06	44.3%
2y5y30y	-2y5y30y + 7y30y struck @ 5y30y fwd	30%	14.3%	136%	29.1%	65.9	19.8%	7.6	31.5%	0.90	11.6%	1.33	58.7%
2y5y5y	-2y5y5y + 7y5y struck @ 5y5y fwd	26%	8.9%	113%	26.0%	84.2	27.6%	4.7	22.9%	1.11	9.7%	1.12	48.2%
2y7y20y	-2y7y20y + 9y20y struck @ 7y20y fwd	27%	22.9%	115%	32.6%	65.5	17.8%	7.4	36.9%	0.99	16.7%	1.31	54.8%
2y8y20y	-2y8y20y + 10y20y struck @ 8y20y fwd	26%	25.2%	109%	34.6%	63.7	20.2%	7.3	36.5%	1.01	17.1%	1.33	50.9%
5y10y10y	-5y10y10y + 15y10y struck @ 10y10y fwd	9%	24.3%	142%	2.1%	67.7	34.4%	9.1	26.1%	1.62	0.0%	1.69	26.5%
5y10y20y	-5y10y20y + 15y20y struck @ 10y20y fwd	15%	35.8%	212%	21.8%	53.4	24.0%	13.6	53.0%	1.70	1.4%	2.15	55.9%
5y10y5y	-5y10y5y + 15y5y struck @ 10y5y fwd	11%	52.3%	148%	23.2%	70.2	19.7%	11.1	63.7%	1.80	0.0%	1.66	45.5%
5y1y1y	-5y1y1y + 6y1y struck @ 1y1y fwd	33%	44.9%	478%	20.1%	74.5	53.5%	-9.7	84.1%	0.78	52.8%	0.72	88.1%
5y1y2y	-5y1y2y + 6y2y struck @ 1y2y fwd	47%	53.0%	647%	16.1%	69.3	41.9%	3.5	72.7%	1.00	42.2%	0.90	77.4%
5y1y30y	-5y1y30y + 6y30y struck @ 1y30y fwd	20%	16.8%	690%	16.1%	62.0	46.2%	18.6	39.4%	1.00	20.0%	1.29	58.4%
5y1y5y	-5y1y5y + 6y5y struck @ 1y5y fwd	40%	40.8%	625%	4.3%	74.3	51.9%	8.7	48.7%	1.06	1.4%	1.08	74.9%
5y2y1y	-5y2y1y + 7y1y struck @ 2y1y fwd	37%	47.6%	450%	18.6%	73.2	44.8%	8.0	64.1%	1.29	41.5%	1.18	70.2%
5y2y2y	-5y2y2y + 7y2y struck @ 2y2y fwd	41%	73.8%	499%	21.1%	70.5	34.4%	12.6	57.7%	1.35	30.4%	1.28	64.8%
5y2y30y	-5y2y30y + 7y30y struck @ 2y30y fwd	19%	16.1%	478%	11.8%	61.2	47.3%	17.7	29.0%	1.17	11.4%	1.58	55.9%
5y2y3y	-5y2y3y + 7y3y struck @ 2y3y fwd	43%	86.3%	532%	34.4%	69.1	22.9%	15.1	65.9%	1.40	20.4%	1.36	70.9%
5y2y5y	-5y2y5y + 7y5y struck @ 2y5y fwd	29%	45.1%	428%	6.4%	75.5	46.9%	10.7	35.8%	1.33	2.5%	1.33	58.7%
5y3y1y	-5y3y1y + 8y1y struck @ 3y1y fwd	38%	81.0%	420%	24.3%	71.7	28.6%	17.4	54.4%	1.54	23.2%	1.55	67.0%
5y3y2y	-5y3y2y + 8y2y struck @ 3y2y fwd	41%	90.6%	445%	38.3%	69.7	17.2%	19.1	60.5%	1.64	16.4%	1.59	69.1%
5y3y30y	-5y3y30y + 8y30y struck @ 3y30y fwd	19%	21.1%	388%	11.4%	59.9	41.2%	16.9	27.2%	1.29	4.6%	1.81	57.3%
5y3y5y	-5y3y5y + 8y5y struck @ 3y5y fwd	26%	57.7%	347%	12.1%	75.1	32.9%	12.5	27.9%	1.55	2.5%	1.55	56.9%
5y4y1y	-5y4y1y + 9y1y struck @ 4y1y fwd	36%	97.1%	383%	50.1%	70.4	8.2%	20.4	63.7%	1.73	11.4%	1.73	70.2%
5y5y10y	-5y5y10y + 10y10y struck @ 5y10y fwd	14%	42.6%	218%	21.5%	75.0	18.2%	10.7	37.2%	1.55	4.6%	1.71	57.3%
5y5y20y	-5y5y20y + 10y20y struck @ 5y20y fwd	17%	27.2%	287%	18.9%	60.6	26.5%	15.7	30.1%	1.50	3.5%	2.01	64.1%
5y5y2y	-5y5y2y + 10y2y struck @ 5y2y fwd	22%	45.8%	292%	30.1%	73.1	11.8%	17.2	34.7%	1.92	1.4%	1.76	50.5%
5y5y30y	-5y5y30y + 10y30y struck @ 5y30y fwd	18%	22.9%	307%	10.7%	57.1	36.5%	16.4	24.7%	1.44	2.1%	2.20	63.0%
5y5y5y	-5y5y5y + 10y5y struck @ 5y5y fwd	20%	37.6%	276%	25.0%	73.3	24.3%	15.6	31.1%	1.91	2.8%	1.88	62.3%
5y7y20y	-5y7y20y + 12y20y struck @ 7y20y fwd	14%	32.9%	240%	11.8%	58.2	22.2%	14.6	35.1%	1.59	4.6%	2.11	61.2%
5y8y20y	-5y8y20y + 13y20y struck @ 8y20y fwd	14%	35.8%	224%	10.7%	56.9	23.2%	14.0	39.4%	1.61	3.9%	2.12	57.7%

Source: Nomura research. Stats are based on the recent 4-year history to 09 March 2016.

Fig. 22: EUR Mid-curve Calendar Spreads – Spot Struck

MidCurve Calendar Sprd	Term Carry/PV %		Fwd Vol		Spot-Fwd Vol Spread		Upper B/E Buffer (high B/E - Spot) %		Lower B/E Buffer (Spot- low B/E) %	
	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile
1y10y10y	61%	53.9%	69.3	40.1%	3.2	54.6%	0.80	45.0%	0.82	57.2%
1y10y20y	70%	52.3%	60.0	49.3%	4.0	52.6%	0.74	47.6%	0.84	53.9%
1y1y2y	116%	21.7%	44.2	29.2%	-8.6	19.0%	-0.13	0.6%	0.20	30.2%
1y1y4y	180%	31.9%	47.0	20.7%	-2.1	35.5%	0.08	0.6%	0.31	31.2%
1y1y7y	208%	74.0%	55.5	23.3%	2.7	68.0%	0.46	26.3%	0.43	39.8%
1y2y1y	37%	21.7%	53.2	38.1%	-9.8	12.8%	0.07	0.6%	0.27	35.8%
1y2y2y	94%	27.6%	52.4	21.0%	-6.3	27.9%	0.05	0.6%	0.31	30.9%
1y2y30y	148%	67.7%	67.8	36.8%	7.7	69.4%	0.64	55.2%	0.73	55.2%
1y2y3y	99%	27.3%	54.4	19.7%	-5.2	29.9%	0.17	0.6%	0.34	29.9%
1y2y8y	142%	64.8%	62.1	20.7%	3.3	54.2%	0.61	33.8%	0.56	48.3%
1y3y1y	52%	20.3%	58.9	32.8%	-4.2	22.3%	0.32	10.8%	0.40	32.8%
1y3y2y	86%	24.6%	58.9	20.0%	-3.0	23.3%	0.29	0.9%	0.42	28.6%
1y4y1y	53%	14.4%	63.9	28.9%	-2.3	10.5%	0.55	13.1%	0.50	29.9%
1y4y2y	93%	35.5%	61.4	12.8%	0.8	26.3%	0.55	4.2%	0.57	34.5%
1y5y10y	92%	62.5%	69.3	20.7%	4.7	52.6%	0.79	45.7%	0.78	52.9%
1y5y15y	104%	70.7%	64.4	17.1%	6.5	63.4%	0.81	52.3%	0.83	53.9%
1y5y25y	103%	63.4%	61.9	14.8%	6.6	56.5%	0.74	51.3%	0.83	54.2%
1y5y3y	101%	67.4%	63.1	11.1%	4.0	30.2%	0.81	21.0%	0.72	53.6%
1y5y5y	103%	68.4%	64.6	16.1%	4.7	43.4%	0.85	30.9%	0.76	49.3%
3m10y10y	27%	68.7%	71.4	43.4%	1.1	67.4%	0.41	58.2%	0.44	64.4%
3m10y20y	31%	65.7%	62.7	39.8%	1.3	63.8%	0.38	57.8%	0.45	61.5%
3m1y2y	83%	72.0%	35.7	28.6%	-0.2	56.5%	-0.13	0.6%	0.16	43.7%
3m1y4y	96%	88.8%	43.0	26.9%	1.9	79.6%	0.08	0.6%	0.21	47.6%
3m1y7y	86%	89.4%	55.8	27.6%	2.3	84.2%	0.28	54.2%	0.25	56.9%
3m2y1y	41%	71.3%	42.3	26.9%	1.1	38.1%	0.07	0.6%	0.28	74.6%
3m2y2y	58%	77.6%	46.2	24.3%	-0.2	45.0%	0.05	0.6%	0.22	46.0%
3m2y30y	59%	73.6%	72.7	49.0%	2.8	74.0%	0.34	67.4%	0.40	64.4%
3m2y3y	57%	75.6%	49.2	20.7%	0.0	45.0%	0.17	8.2%	0.23	43.0%
3m2y8y	56%	74.3%	64.1	26.6%	1.3	72.0%	0.32	49.3%	0.30	53.6%
3m3y1y	25%	40.1%	54.4	27.6%	0.3	15.4%	0.30	28.9%	0.28	58.5%
3m3y2y	46%	72.3%	55.6	17.4%	0.2	34.2%	0.29	27.9%	0.27	45.7%
3m4y1y	22%	27.3%	61.2	24.6%	0.4	8.5%	0.34	25.3%	0.31	51.9%
3m4y2y	40%	72.3%	61.7	15.7%	0.6	41.7%	0.34	25.9%	0.31	52.6%
3m5y10y	37%	70.0%	72.7	25.0%	1.4	65.1%	0.39	60.8%	0.40	57.5%
3m5y15y	41%	73.0%	68.9	26.3%	1.9	70.0%	0.40	65.7%	0.43	59.5%
3m5y25y	41%	69.7%	66.5	24.3%	2.0	68.7%	0.37	62.5%	0.44	58.8%
3m5y3y	39%	77.6%	66.0	12.1%	1.2	60.5%	0.39	46.7%	0.36	60.5%
3m5y5y	39%	72.6%	68.0	13.1%	1.3	64.1%	0.41	57.5%	0.38	58.8%
6m10y10y	41%	65.7%	70.6	41.4%	2.0	64.1%	0.58	51.9%	0.61	61.5%
6m10y20y	46%	58.2%	61.7	40.4%	2.3	54.9%	0.53	50.0%	0.62	57.5%
6m1y1y	15%	25.0%	36.8	47.8%	-5.1	22.1%	-0.06	1.3%	0.17	48.0%
6m1y2y	87%	20.3%	39.8	31.2%	-4.2	17.4%	-0.13	0.6%	0.16	30.5%
6m1y4y	124%	67.4%	44.8	26.6%	0.1	53.2%	0.08	0.6%	0.25	31.5%
6m1y7y	129%	83.2%	55.7	27.9%	2.5	77.9%	0.37	41.4%	0.33	49.0%
6m2y1y	34%	27.6%	46.9	31.2%	-3.5	13.8%	0.07	0.6%	0.26	49.0%
6m2y2y	73%	35.1%	48.3	24.0%	-2.3	29.2%	0.05	0.6%	0.26	33.8%
6m2y30y	91%	70.0%	71.0	45.0%	4.5	70.3%	0.46	63.1%	0.54	58.8%
6m2y3y	74%	37.1%	51.0	21.0%	-1.7	30.5%	0.17	2.3%	0.28	32.2%
6m2y8y	85%	68.7%	63.5	26.9%	1.9	62.8%	0.44	40.7%	0.41	50.9%
6m3y1y	36%	23.6%	55.9	28.2%	-1.2	15.4%	0.32	17.1%	0.34	41.1%
6m3y2y	62%	39.4%	56.6	17.7%	-0.8	27.6%	0.29	7.2%	0.34	32.8%
6m4y1y	33%	17.4%	62.1	26.6%	-0.6	6.9%	0.42	17.7%	0.38	33.8%
6m4y2y	59%	53.6%	61.7	15.1%	0.6	29.2%	0.46	20.0%	0.41	39.4%
6m5y10y	58%	68.4%	71.4	22.0%	2.6	63.8%	0.56	54.6%	0.56	55.2%
6m5y15y	65%	73.0%	67.3	21.0%	3.6	68.4%	0.57	60.1%	0.60	56.9%
6m5y25y	64%	68.7%	64.9	23.0%	3.6	65.7%	0.52	53.6%	0.60	55.2%
6m5y3y	61%	73.0%	65.0	12.1%	2.1	45.7%	0.56	33.5%	0.51	57.2%
6m5y5y	62%	72.3%	66.8	14.8%	2.5	57.8%	0.59	44.0%	0.54	54.9%

Source: Nomura research. Percentiles are for a 4-year history to 09 March 2016.

Fig. 23: EUR Mid-curve calendar spread trades

MidCurve Calendar Sprd	Trade Package	1y Carry/PV %		Term Carry/PV %		Fwd Vol		Spot-Fwd Vol Spread		Upper B/E Buffer (high B/E - Spot) %		Lower B/E Buffer (Spot- low B/E) %	
		Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile	Current	Percentile
2y10y10y	-2y10y10y + 12y10y struck @ 10y10y fwd	17%	22.9%	88%	62.2%	67.8	35.4%	4.7	63.4%	1.05	40.8%	1.06	66.1%
2y10y20y	-2y10y20y + 12y20y struck @ 10y20y fwd	25%	33.0%	111%	57.5%	57.1	51.7%	6.9	60.3%	1.03	41.2%	1.14	62.6%
2y1y1y	-2y1y1y + 3y1y struck @ 1y1y fwd	-9%	11.2%	201%	10.8%	58.4	70.0%	-26.7	3.5%	-0.06	1.5%	0.15	41.6%
2y1y2y	-2y1y2y + 3y2y struck @ 1y2y fwd	8%	10.8%	134%	15.1%	54.2	43.9%	-18.7	18.6%	-0.13	0.7%	0.22	34.6%
2y1y4y	-2y1y4y + 3y4y struck @ 1y4y fwd	15%	3.5%	222%	21.7%	54.6	31.1%	-9.8	29.9%	0.08	0.7%	0.34	33.8%
2y1y7y	-2y1y7y + 3y7y struck @ 1y7y fwd	57%	55.2%	385%	79.7%	53.3	12.8%	4.9	66.9%	0.46	3.1%	0.57	48.2%
2y2y1y	-2y2y1y + 4y1y struck @ 2y1y fwd	12%	8.1%	169%	8.5%	60.6	59.5%	-17.2	8.1%	0.07	0.7%	0.32	36.9%
2y2y2y	-2y2y2y + 4y2y struck @ 2y2y fwd	17%	1.9%	127%	19.8%	58.4	39.2%	-12.4	23.3%	0.05	0.7%	0.38	32.2%
2y2y3y	-2y2y3y + 4y3y struck @ 2y3y fwd	19%	1.9%	138%	18.6%	59.9	41.6%	-10.6	21.4%	0.17	0.7%	0.42	31.5%
2y2y8y	-2y2y8y + 4y8y struck @ 2y8y fwd	42%	31.9%	244%	54.8%	60.3	20.6%	5.1	45.1%	0.81	27.2%	0.75	43.9%
2y3y1y	-2y3y1y + 5y1y struck @ 3y1y fwd	20%	1.9%	169%	16.3%	63.2	42.0%	-8.4	14.7%	0.32	0.7%	0.51	35.0%
2y3y2y	-2y3y2y + 5y2y struck @ 3y2y fwd	30%	12.4%	144%	23.7%	60.2	28.4%	-4.3	25.2%	0.29	0.7%	0.58	32.6%
2y4y1y	-2y4y1y + 6y1y struck @ 4y1y fwd	31%	7.7%	169%	23.3%	64.1	49.4%	-2.6	10.1%	0.55	1.5%	0.70	33.4%
2y4y2y	-2y4y2y + 6y2y struck @ 4y2y fwd	38%	22.5%	168%	45.5%	59.6	17.8%	2.7	26.0%	0.55	1.9%	0.82	40.4%
2y5y10y	-2y5y10y + 7y10y struck @ 5y10y fwd	28%	43.1%	146%	65.7%	66.7	18.6%	7.3	61.0%	1.08	45.5%	1.03	62.2%
2y5y15y	-2y5y15y + 7y15y struck @ 5y15y fwd	35%	68.0%	175%	81.7%	60.1	13.2%	10.8	75.8%	1.12	61.4%	1.11	65.3%
2y5y25y	-2y5y25y + 7y25y struck @ 5y25y fwd	40%	58.7%	183%	63.8%	56.6	18.6%	11.9	63.4%	1.06	59.5%	1.16	63.8%
2y5y5y	-2y5y5y + 7y5y struck @ 5y5y fwd	35%	38.1%	174%	75.8%	61.5	16.3%	7.8	47.0%	1.19	26.0%	1.03	61.0%
5y10y10y	-5y10y10y + 15y10y struck @ 10y10y fwd	2%	1.1%	118%	14.0%	69.0	84.0%	3.5	17.5%	1.29	8.9%	1.27	26.8%
5y10y20y	-5y10y20y + 15y20y struck @ 10y20y fwd	6%	8.5%	181%	24.1%	54.1	80.9%	9.9	24.5%	1.41	21.0%	1.49	31.5%
5y1y1y	-5y1y1y + 6y1y struck @ 1y1y fwd	8%	17.8%	310%	7.7%	74.6	83.7%	-43.0	6.3%	-0.06	1.5%	0.22	40.8%
5y1y2y	-5y1y2y + 6y2y struck @ 1y2y fwd	21%	7.8%	363%	2.3%	57.3	76.1%	-21.8	4.2%	-0.13	0.7%	0.37	33.9%
5y1y4y	-5y1y4y + 6y4y struck @ 1y4y fwd	22%	12.8%	579%	6.6%	53.7	69.6%	-8.8	5.0%	0.08	0.7%	0.52	31.5%
5y1y7y	-5y1y7y + 6y7y struck @ 1y7y fwd	13%	1.5%	854%	19.4%	50.1	35.7%	8.0	28.7%	0.46	1.9%	0.76	37.3%
5y2y1y	-5y2y1y + 7y1y struck @ 2y1y fwd	19%	10.8%	416%	5.0%	62.0	81.3%	-18.6	6.2%	0.07	0.7%	0.57	50.1%
5y2y2y	-5y2y2y + 7y2y struck @ 2y2y fwd	20%	9.7%	410%	11.6%	54.4	67.7%	-8.4	15.5%	0.05	0.7%	0.70	36.1%
5y2y3y	-5y2y3y + 7y3y struck @ 2y3y fwd	16%	11.2%	356%	10.1%	59.4	76.2%	-10.1	7.0%	0.17	0.7%	0.69	32.2%
5y2y8y	-5y2y8y + 7y8y struck @ 2y8y fwd	6%	1.1%	497%	20.2%	56.8	63.4%	8.6	25.2%	0.81	4.2%	1.02	36.1%
5y3y1y	-5y3y1y + 8y1y struck @ 3y1y fwd	27%	35.0%	464%	13.6%	58.5	70.0%	-3.7	7.0%	0.32	0.7%	0.93	47.8%
5y3y2y	-5y3y2y + 8y2y struck @ 3y2y fwd	26%	36.9%	409%	11.6%	54.9	61.8%	0.9	12.0%	0.29	0.7%	0.98	34.6%
5y4y1y	-5y4y1y + 9y1y struck @ 4y1y fwd	22%	39.6%	420%	20.6%	58.7	64.9%	2.8	8.5%	0.55	1.5%	1.18	41.2%
5y4y2y	-5y4y2y + 9y2y struck @ 4y2y fwd	18%	21.7%	376%	17.5%	55.7	50.9%	6.6	19.0%	0.55	1.9%	1.21	38.1%
5y5y10y	-5y5y10y + 10y10y struck @ 5y10y fwd	2%	10.5%	217%	30.3%	67.1	56.4%	6.9	32.2%	1.36	21.4%	1.27	33.8%
5y5y15y	-5y5y15y + 10y15y struck @ 5y15y fwd	2%	5.8%	258%	32.6%	59.7	43.5%	11.2	35.4%	1.39	24.9%	1.35	34.6%
5y5y25y	-5y5y25y + 10y25y struck @ 5y25y fwd	2%	3.1%	273%	27.5%	56.0	83.7%	12.6	31.0%	1.31	24.4%	1.40	36.0%
5y5y5y	-5y5y5y + 10y5y struck @ 5y5y fwd	7%	8.5%	345%	32.6%	56.6	33.4%	12.7	23.3%	1.20	8.1%	1.44	33.4%

Source: Nomura research. Stats are based on the recent 4-year history to 09 March 2016.

Appendix A-1

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