J.P.Morgan

US Fixed Income Strategy
J.P. Morgan Securities LLC
New York, Nov 15, 2024

Global Interest Rate Volatility Analytics Package

For Business: November 18, 2024

Developed Markets:

Emerging Markets:

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European Rates Strategy

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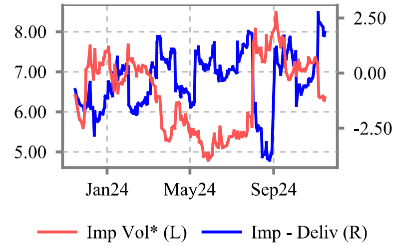
USD Short-Dated Swaption Volatility Report

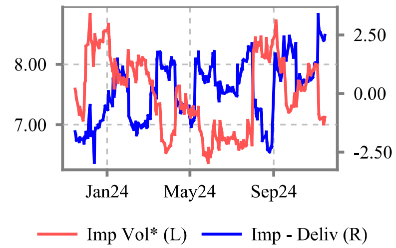
Options on 1Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	5.6	-1.7	-0.3	4.7	3.9	5.6	23.9	1.8	6.4	52 %
3M	6.4	-0.7	-0.1	5.4	4.5	6.5	17.9	3.9	8.2	76 %
6M	7.1	-0.1	0.0	5.9	4.9	6.9	15.0	7.0	9.8	100 %
1Y	7.5	0.1	-0.4	5.8	5.1	6.5	12.4	8.4	10.6	100 %



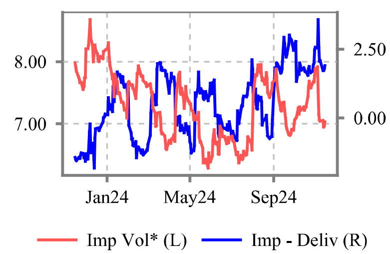
Options on 2Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	6.9	-1.3	-0.5	5.0	4.3	5.9	22.0	3.0	7.8	62 %
3M	7.1	-0.4	-0.4	5.4	4.6	6.2	15.8	5.1	8.8	82 %
6M	7.3	0.0	-0.2	5.7	4.9	6.3	12.9	7.1	9.6	96 %
1Y	7.5	0.2	0.1	5.9	5.1	5.9	11.2	7.9	9.9	100 %



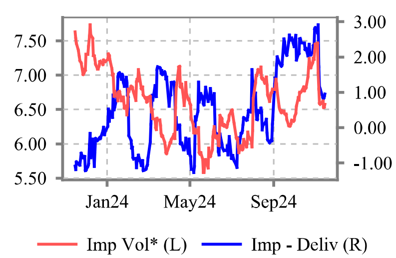
Options on 5Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	7.0	-0.9	-0.1	6.0	4.9	5.2	15.1	3.8	7.7	63 %
3M	7.0	-0.2	-0.1	6.2	5.1	5.3	11.4	5.3	8.2	73 %
6M	7.0	0.1	0.0	6.5	5.3	5.3	10.5	6.2	8.5	88 %
1Y	7.0	0.2	0.5	6.9	5.6	5.2	9.7	6.9	8.6	99 %



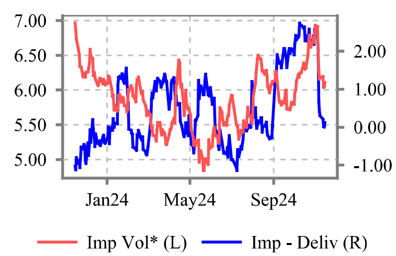
Options on 10Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	6.5	-1.0	0.1	6.8	5.5	4.8	11.4	3.6	6.9	62 %
3M	6.6	-0.2	0.2	7.0	5.6	4.9	9.4	4.7	7.2	70 %
6M	6.6	0.1	0.6	7.1	5.7	4.9	9.0	5.6	7.4	78 %
1Y	6.6	0.2	0.9	7.4	5.9	4.9	8.4	6.2	7.5	95 %

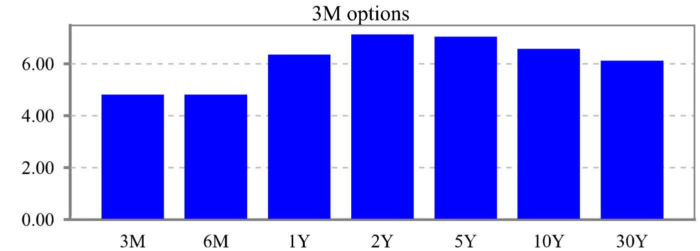


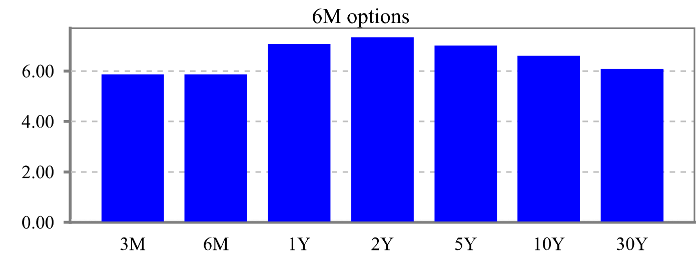
Options on 30Y swaps

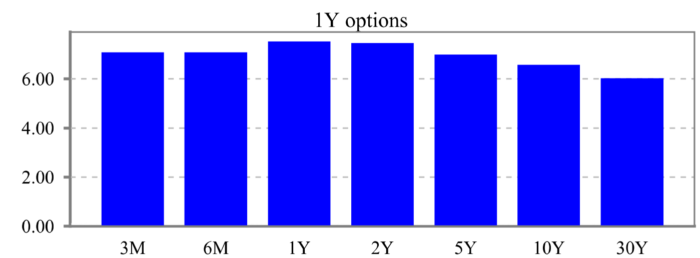
	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	6.1	-1.0	0.3	7.4	6.0	4.7	8.8	3.5	5.9	46 %
3M	6.1	-0.2	0.5	7.5	6.0	4.7	7.8	4.3	6.0	43 %
6M	6.1	0.0	0.8	7.5	6.0	4.7	7.1	5.0	6.1	59 %
1Y	6.0	0.1	1.0	7.7	6.1	4.8	6.8	5.5	6.2	70 %

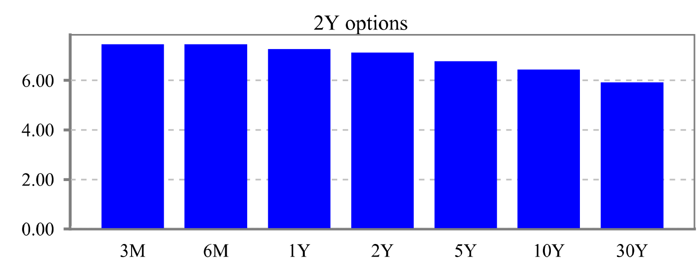


Maturity term structure for 3M, 6M, 1Y and 2Y options; bp/day









* For Swaptions:
Imp Vol: implied vol of 3M options
Deliv Vol: 1M deliv vol on 3M fwd swap rate

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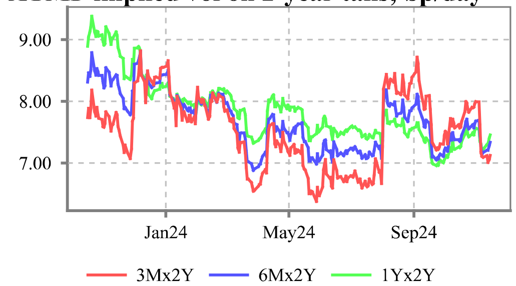
USD Swaptions – Outright ATM and OTM payers & receivers

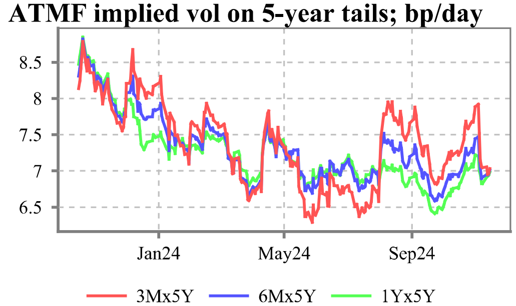
	ATMF Receiver				25-delta Receiver				10-delta Receiver			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	4.00	7.12	42.3	0.0	3.66	7.61	0.0	0.0	3.25	8.28	0.0	0.0
3Mx3Y	3.94	7.20	62.9	0.0	3.59	7.62	0.0	0.0	3.19	8.21	0.0	0.0
3Mx5Y	3.89	7.03	98.6	0.0	3.53	7.29	0.0	0.0	3.16	7.71	0.0	0.0
3Mx10Y	3.90	6.57	168.2	0.0	3.54	6.62	0.0	0.0	3.21	6.85	0.0	0.0
3Mx30Y	3.75	6.11	335.8	0.0	3.40	6.10	0.0	0.0	3.10	6.28	0.0	0.0
6Mx2Y	3.94	7.34	60.7	0.0	3.45	7.78	0.0	0.0	2.78	8.62	0.0	0.0
6Mx3Y	3.90	7.30	88.9	0.0	3.40	7.67	0.0	0.0	2.76	8.40	0.0	0.0
6Mx5Y	3.86	7.01	137.2	0.0	3.37	7.23	0.0	0.0	2.81	7.71	0.0	0.0
6Mx10Y	3.89	6.59	235.5	0.0	3.39	6.63	0.0	0.0	2.93	6.92	0.0	0.0
6Mx30Y	3.74	6.08	466.7	0.0	3.24	6.01	0.0	0.0	2.82	6.19	0.0	0.0
1Yx2Y	3.87	7.46	86.0	0.0	3.13	7.80	0.0	0.0	2.18	8.50	0.0	0.0
1Yx3Y	3.85	7.33	124.7	0.0	3.10	7.59	0.0	0.0	2.18	8.20	0.0	0.0
1Yx5Y	3.84	6.98	190.7	0.0	3.10	7.08	0.0	0.0	2.24	7.51	0.0	0.0
1Yx10Y	3.88	6.57	327.4	0.0	3.15	6.50	0.0	0.0	2.36	6.81	0.0	0.0
1Yx30Y	3.72	6.03	646.1	0.0	2.98	5.91	0.0	0.0	2.24	6.13	0.0	0.0

	ATMF Payer				25-delta Payer				10-delta Payer			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	4.00	7.12	42.3	0.0	4.38	0.00	0.0	0.0	0.00	0.00	0.0	0.0
3Mx3Y	3.94	7.20	62.9	0.0	4.32	0.00	0.0	0.0	0.00	0.00	0.0	0.0
3Mx5Y	3.89	7.03	98.6	0.0	4.24	0.00	0.0	0.0	0.00	0.00	0.0	0.0
3Mx10Y	3.90	6.57	168.2	0.0	4.21	0.00	0.0	0.0	0.00	0.00	0.0	0.0
3Mx30Y	3.75	6.11	335.8	0.0	4.01	0.00	0.0	0.0	0.00	0.00	0.0	0.0
6Mx2Y	3.94	7.34	60.7	0.0	4.45	0.00	0.0	0.0	0.00	0.00	0.0	0.0
6Mx3Y	3.90	7.30	88.9	0.0	4.40	0.00	0.0	0.0	0.00	0.00	0.0	0.0
6Mx5Y	3.86	7.01	137.2	0.0	4.33	0.00	0.0	0.0	0.00	0.00	0.0	0.0
6Mx10Y	3.89	6.59	235.5	0.0	4.30	0.00	0.0	0.0	0.00	0.00	0.0	0.0
6Mx30Y	3.74	6.08	466.7	0.0	4.08	0.00	0.0	0.0	0.00	0.00	0.0	0.0
1Yx2Y	3.87	7.46	86.0	0.0	4.59	0.00	0.0	0.0	0.00	0.00	0.0	0.0
1Yx3Y	3.85	7.33	124.7	0.0	4.53	0.00	0.0	0.0	0.00	0.00	0.0	0.0
1Yx5Y	3.84	6.98	190.7	0.0	4.46	0.00	0.0	0.0	0.00	0.00	0.0	0.0
1Yx10Y	3.88	6.57	327.4	0.0	4.41	0.00	0.0	0.0	0.00	0.00	0.0	0.0
1Yx30Y	3.72	6.03	646.1	0.0	4.13	0.00	0.0	0.0	0.00	0.00	0.0	0.0

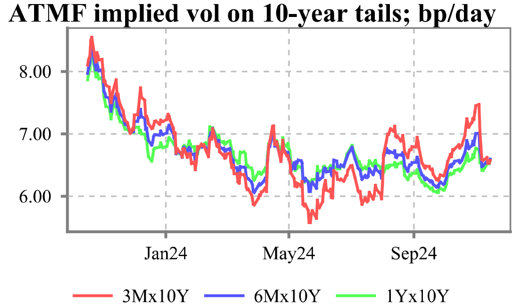
ATMF implied vol on 2-year tails; bp/day



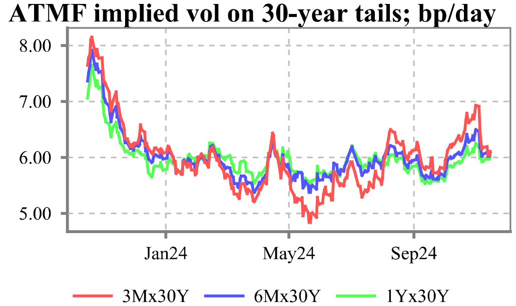
ATMF implied vol on 5-year tails; bp/day



ATMF implied vol on 10-year tails; bp/day



ATMF implied vol on 30-year tails; bp/day



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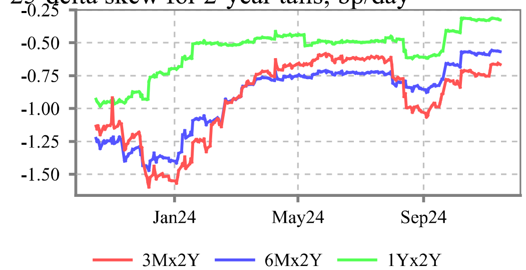
USD Swaptions – Spreads and 1x2s

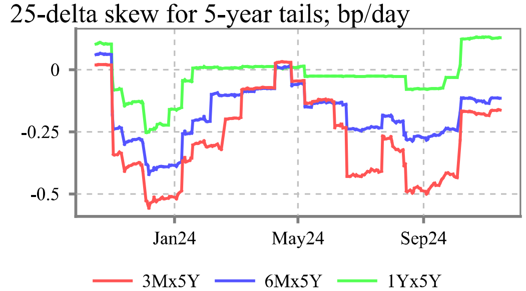
	Spot Yield			ATMF	25-delta receiver spread				Premium-neutral receiver 1x2s			
Structure	Current	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	4.38	5.16	3.62	4.00	3.66	2	21.7	-1.5	N/A	0	47	3.5
3Mx3Y	4.30	4.92	3.48	3.94	3.59	14	33.4	-1.4	N/A	0	48	3.7
3Mx5Y	4.22	4.68	3.40	3.89	3.53	69	55.9	-1.3	N/A	0	50	3.8
3Mx10Y	4.20	4.54	3.45	3.90	3.54	6	102.8	-1.4	N/A	0	52	3.9
3Mx30Y	4.05	4.29	3.41	3.75	3.40	0	214.9	-1.4	N/A	0	54	3.5
6Mx2Y	4.38	5.16	3.62	3.94	3.45	0	31.6	-1.0	N/A	0	48	2.5
6Mx3Y	4.30	4.92	3.48	3.90	3.40	0	48.1	-1.0	N/A	0	49	2.6
6Mx5Y	4.22	4.68	3.40	3.86	3.37	0	79.3	-0.9	N/A	0	51	2.6
6Mx10Y	4.20	4.54	3.45	3.89	3.39	0	146.0	-0.8	N/A	0	53	2.7
6Mx30Y	4.05	4.29	3.41	3.74	3.24	0	311.4	-1.0	N/A	0	56	2.3
1Yx2Y	4.38	5.16	3.62	3.87	3.13	0	47.9	-0.6	N/A	0	50	1.7
1Yx3Y	4.30	4.92	3.48	3.85	3.10	0	71.9	-0.6	N/A	0	51	1.7
1Yx5Y	4.22	4.68	3.40	3.84	3.10	0	116.7	-0.6	N/A	0	53	1.7
1Yx10Y	4.20	4.54	3.45	3.88	3.15	0	212.8	-0.5	N/A	0	55	1.7
1Yx30Y	4.05	4.29	3.41	3.72	2.98	0	450.2	-0.6	N/A	0	58	1.4

	Spot Yield			ATMF	25-delta payer spread				Premium-neutral payer 1x2s			
Structure	Spot	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	4.38	5.16	3.62	4.00	4.38	58	26.5	-0.3	N/A	0	-53	6.1
3Mx3Y	4.30	4.92	3.48	3.94	4.32	67	38.2	-0.5	N/A	0	-52	5.6
3Mx5Y	4.22	4.68	3.40	3.89	4.24	74	56.6	-0.6	N/A	0	-50	4.9
3Mx10Y	4.20	4.54	3.45	3.90	4.21	81	88.8	-0.5	N/A	0	-48	4.4
3Mx30Y	4.05	4.29	3.41	3.75	4.01	85	168.3	-0.3	N/A	0	-46	4.0
6Mx2Y	4.38	5.16	3.62	3.94	4.45	60	37.1	-0.2	N/A	0	-52	4.1
6Mx3Y	4.30	4.92	3.48	3.90	4.40	67	52.9	-0.4	N/A	0	-51	3.8
6Mx5Y	4.22	4.68	3.40	3.86	4.33	82	77.0	-0.4	N/A	0	-49	3.3
6Mx10Y	4.20	4.54	3.45	3.89	4.30	87	119.1	-0.4	N/A	0	-47	2.9
6Mx30Y	4.05	4.29	3.41	3.74	4.08	87	211.5	-0.2	N/A	0	-44	2.7
1Yx2Y	4.38	5.16	3.62	3.87	4.59	68	49.5	-0.1	N/A	0	-50	2.4
1Yx3Y	4.30	4.92	3.48	3.85	4.53	73	69.3	-0.1	N/A	0	-49	2.3
1Yx5Y	4.22	4.68	3.40	3.84	4.46	90	98.8	-0.1	N/A	0	-47	2.0
1Yx10Y	4.20	4.54	3.45	3.88	4.41	93	152.1	-0.1	N/A	0	-45	1.7
1Yx30Y	4.05	4.29	3.41	3.72	4.13	97	262.1	0.0	N/A	0	-42	1.7

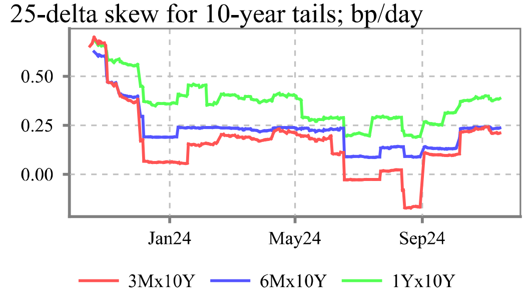
25-delta skew for 2-year tails; bp/day



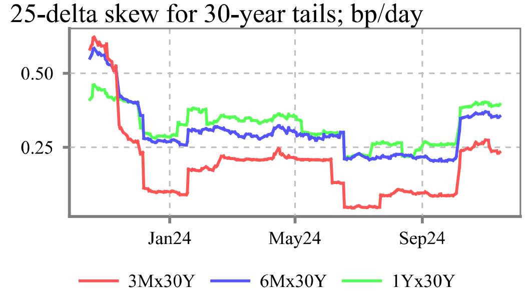
25-delta skew for 5-year tails; bp/day



25-delta skew for 10-year tails; bp/day



25-delta skew for 30-year tails; bp/day



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SOFR Implied and delivered directionality report - USD

	Implied vol; bp/day		Directionality*; % Implied		Deliv	(Imp - Deliv)	Implied weights; %		Weighted curve**; bp			3M regression stats***	
Trades	**Short**	**Long**	**Current**	**3M Lagged**	**Levels**	**Levels**	**Short**	**Long**	**3M fwd**	**Spot**	**3M Carry**	**Beta**	**Rsq**
1s/3s	6.35	7.20	12 %	10 %	-0 %	-0 %	100 %	88 %	-63		10	9 %	9 %
1s/5s	6.35	7.03	10 %	6 %	19 %	19 %	100 %	90 %	-60		13	10 %	7 %
1s/10s	6.35	6.57	3 %	-4 %	12 %	12 %	100 %	97 %	-35		14	9 %	3 %
1s/30s	6.35	6.57	-4 %	-16 %	1 %	1 %	100 %	104 %	-22		15	6 %	1 %
2s/5s	6.35	7.03	-1 %	-6 %	-1 %	-1 %	100 %	101 %	-6		5	1 %	1 %
2s/7s	7.12	7.03	-1 %	-6 %	-5 %	-5 %	100 %	104 %	4		6	-0 %	0 %
2s/10s	7.12	6.57	-4 %	-10 %	-11 %	-11 %	100 %	108 %	22		7	-2 %	0 %
2s/20s	7.12	6.57	-8 %	-17 %	-22 %	-22 %	100 %	113 %	43		8	-9 %	4 %
2s/30s	7.12	6.57	-17 %	-30 %	-27 %	-27 %	100 %	117 %	37		7	-9 %	3 %
3s/5s	7.12	7.03	-2 %	-5 %	-4 %	-4 %	100 %	102 %	4		3	-1 %	2 %
3s/7s	7.20	6.84	-5 %	-10 %	-9 %	-9 %	100 %	105 %	14		4	-3 %	5 %
3s/10s	7.20	6.57	-9 %	-17 %	-16 %	-16 %	100 %	109 %	32		5	-6 %	7 %
3s/20s	7.20	6.30	-14 %	-24 %	-28 %	-28 %	100 %	114 %	53		5	-13 %	15 %
3s/30s	7.20	6.11	-18 %	-29 %	-33 %	-33 %	100 %	118 %	47		5	-15 %	12 %
5s/10s	7.20	6.57	-7 %	-11 %	-12 %	-12 %	100 %	107 %	28		2	-5 %	19 %
5s/20s	7.03	6.30	-12 %	-17 %	-25 %	-25 %	100 %	112 %	48		2	-13 %	27 %
5s/30s	7.03	6.11	-15 %	-23 %	-30 %	-30 %	100 %	115 %	43		2	-15 %	21 %
10s/30s	7.03	6.11	-8 %	-11 %	-17 %	-17 %	100 %	108 %	14		0	-10 %	28 %
TU/FV	7.35	7.33	-0 %	-6 %	18 %	18 %	100 %	100 %	7	3	4	18 %	43 %
TU/TY	7.35	6.83	-5 %	-15 %	13 %	13 %	100 %	105 %	37	28	8	18 %	31 %
FV/TY	7.33	6.83	-6 %	-9 %	-7 %	-7 %	100 %	106 %	34	30	4	-1 %	2 %
Fronts/reds							100 %						
Fronts/greens							100 %						
Fronts/blues							100 %						
Reds/greens							100 %						
Reds/blues							100 %						
Greens/blues							100 %						

* Implied directionality is defined as: (1 - (Implied vol on short maturity/Implied vol on long maturity)). We use 3M epxiry swaptions and front futures options (rolled 20D before option expiry).
Delivered directionality is defined as: (1 - 3M beta obtained from regressing short maturity yields to long maturity yields). For swaps, we use 3M forward swap curve for the calculation of delivered directionality and regression stats. For futures, we use the futures yield.
** Curve weighted by the implied weights listed in the adjacent column.
*** 3M regression stats obtained from regressing the weighted curve (using the weights in the adjacent columns on the left) with long maturity yields.

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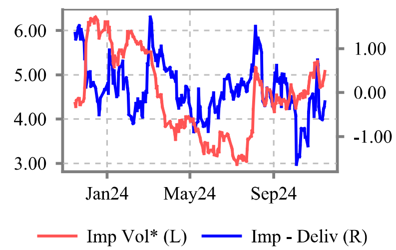
EUR Short-Dated Swaption Volatility Report

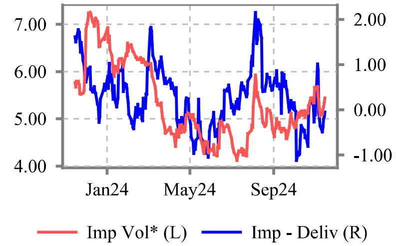
Options on 1Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	4.9	0.4	1.2	4.2	4.4	4.0	14.7	0.6	4.5	30 %
3M	5.1	0.6	1.4	5.2	5.3	4.9	11.3	3.0	6.0	46 %
6M	5.3	0.5	1.7	5.8	5.8	5.5	10.8	4.6	7.4	78 %
1Y	5.4	0.3	1.3	5.9	6.0	5.5	10.8	5.8	8.2	100 %



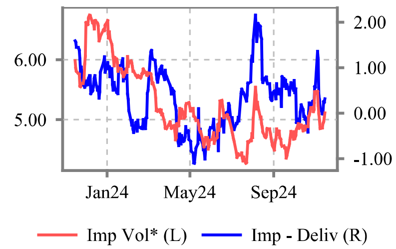
Options on 2Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	5.4	0.2	1.1	4.9	4.9	4.5	13.6	1.2	5.8	50 %
3M	5.4	0.4	1.4	5.4	5.5	5.1	11.8	3.9	6.8	63 %
6M	5.5	0.4	1.5	5.6	5.7	5.3	11.1	4.9	7.6	84 %
1Y	5.5	0.3	0.3	5.5	5.5	5.1	10.2	5.5	7.8	100 %



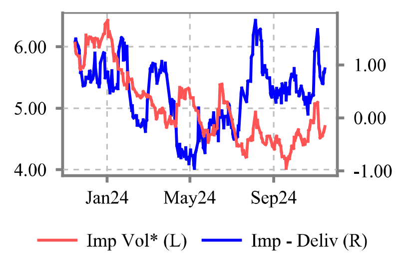
Options on 5Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	5.1	0.1	0.9	4.7	4.6	4.3	14.2	1.8	6.2	67 %
3M	5.1	0.3	1.1	4.9	4.8	4.5	11.2	3.8	6.7	79 %
6M	5.1	0.3	0.7	4.9	4.8	4.5	10.2	4.5	7.1	88 %
1Y	5.1	0.3	-0.2	4.7	4.7	4.4	9.2	5.0	7.2	96 %



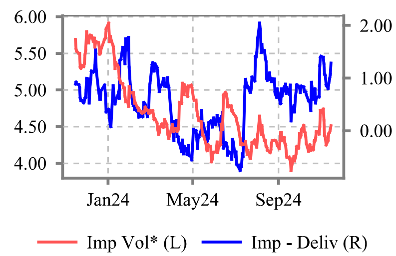
Options on 10Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	4.6	0.0	0.4	3.6	3.7	3.7	11.8	1.9	5.8	74 %
3M	4.7	0.3	0.4	3.7	3.8	3.8	9.3	3.5	6.2	81 %
6M	4.8	0.4	0.2	3.7	3.8	3.8	9.0	4.0	6.5	88 %
1Y	4.9	0.4	-0.1	3.6	3.7	3.8	8.2	4.6	6.6	93 %

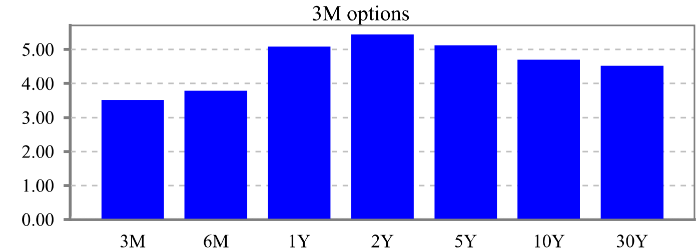


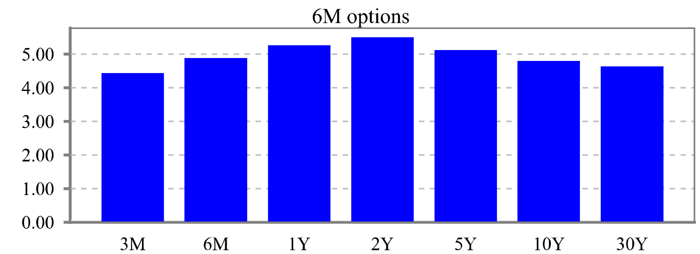
Options on 30Y swaps

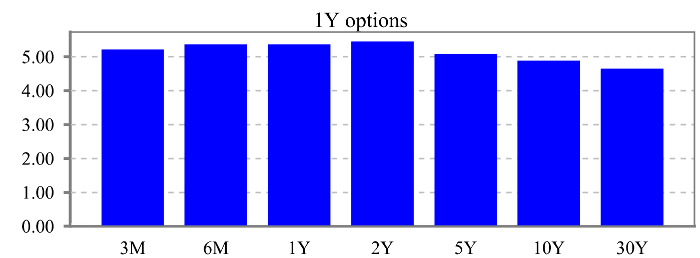
	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	4.4	0.1	0.5	2.9	3.2	3.4	9.6	2.3	5.1	69 %
3M	4.5	0.3	0.8	2.9	3.2	3.4	7.6	3.2	5.3	71 %
6M	4.6	0.4	0.9	2.9	3.3	3.4	7.3	3.7	5.5	74 %
1Y	4.7	0.4	0.4	3.0	3.3	3.5	6.9	4.1	5.6	83 %

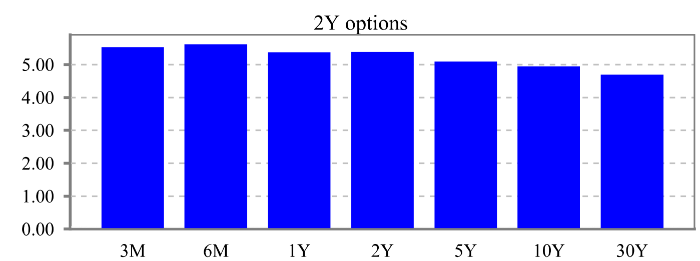


Maturity term structure for 3M, 6M, 1Y and 2Y options; bp/day









* For Swaptions:
Imp Vol: implied vol of 3M options
Deliv Vol: 1M deliv vol on 3M fwd swap rate

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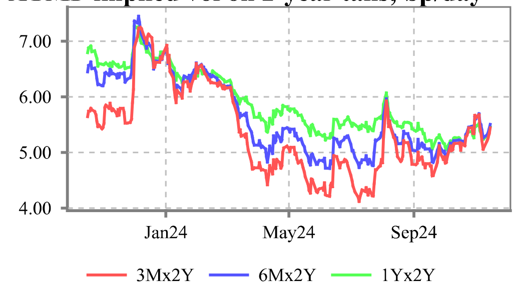
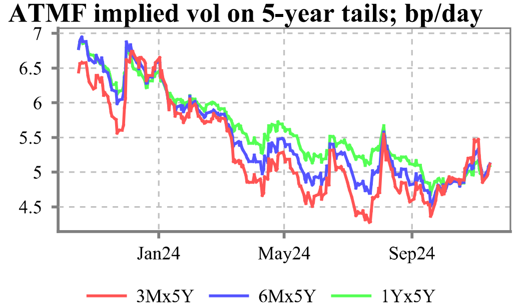
EUR Swaptions – Outright ATM and OTM payers & receivers

	ATMF Receiver				25-delta Receiver				10-delta Receiver			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	2.12	5.44	33.2	0.0	1.85	5.68	0.0	0.0	1.54	6.11	0.0	0.0
3Mx3Y	2.14	5.37	48.8	0.0	1.88	5.58	0.0	0.0	1.58	5.99	0.0	0.0
3Mx5Y	2.19	5.12	75.8	0.0	1.94	5.28	0.0	0.0	1.66	5.63	0.0	0.0
3Mx10Y	2.30	4.70	131.9	0.0	2.05	4.78	0.0	0.0	1.81	5.03	0.0	0.0
3Mx30Y	2.05	4.51	309.3	0.0	1.81	4.65	0.0	0.0	1.57	4.94	0.0	0.0
6Mx2Y	2.08	5.50	46.7	0.0	1.68	5.71	0.0	0.0	1.28	6.07	0.0	0.0
6Mx3Y	2.12	5.38	67.8	0.0	1.74	5.57	0.0	0.0	1.35	5.90	0.0	0.0
6Mx5Y	2.18	5.12	105.6	0.0	1.81	5.28	0.0	0.0	1.45	5.58	0.0	0.0
6Mx10Y	2.29	4.80	187.4	0.0	1.93	4.87	0.0	0.0	1.60	5.10	0.0	0.0
6Mx30Y	2.04	4.63	441.3	0.0	1.67	4.77	0.0	0.0	1.34	5.05	0.0	0.0
1Yx2Y	2.10	5.46	66.1	0.0	1.53	5.58	0.0	0.0	1.01	5.85	0.0	0.0
1Yx3Y	2.15	5.29	95.2	0.0	1.59	5.40	0.0	0.0	1.08	5.66	0.0	0.0
1Yx5Y	2.21	5.09	149.3	0.0	1.67	5.18	0.0	0.0	1.17	5.43	0.0	0.0
1Yx10Y	2.31	4.88	271.2	0.0	1.78	4.88	0.0	0.0	1.31	5.07	0.0	0.0
1Yx30Y	2.03	4.65	631.2	0.0	1.48	4.74	0.0	0.0	1.01	4.98	0.0	0.0

ATMF implied vol on 2-year tails; bp/day

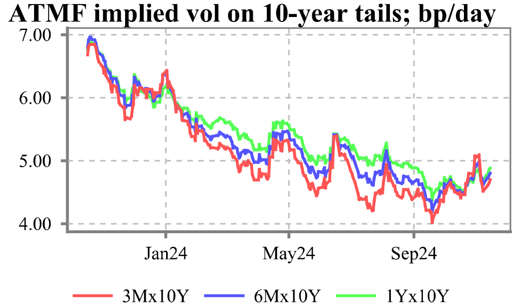


ATMF implied vol on 5-year tails; bp/day

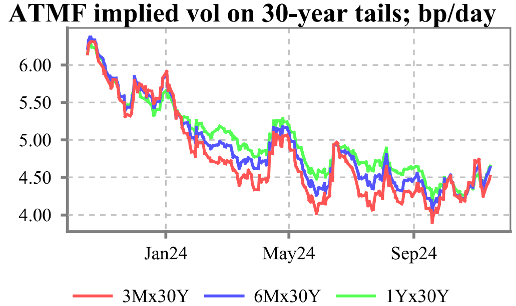


	ATMF Payer				25-delta Payer				10-delta Payer			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	2.12	5.44	33.2	0.0	2.41	0.00	0.0	0.0	4.20	7.45	0.0	0.0
3Mx3Y	2.14	5.37	48.8	0.0	2.42	0.00	0.0	0.0	4.25	7.48	0.0	0.0
3Mx5Y	2.19	5.12	75.8	0.0	2.45	0.00	0.0	0.0	4.39	7.51	0.0	0.0
3Mx10Y	2.30	4.70	131.9	0.0	2.52	0.00	0.0	0.0	4.68	7.64	0.0	0.0
3Mx30Y	2.05	4.51	309.3	0.0	2.27	0.00	0.0	0.0	0.00	0.00	0.0	0.0
6Mx2Y	2.08	5.50	46.7	0.0	2.47	7.18	0.0	0.0	3.84	6.60	0.0	0.0
6Mx3Y	2.12	5.38	67.8	0.0	2.50	7.17	0.0	0.0	3.90	6.55	0.0	0.0
6Mx5Y	2.18	5.12	105.6	0.0	2.54	0.00	0.0	0.0	3.99	6.46	0.0	0.0
6Mx10Y	2.29	4.80	187.4	0.0	2.61	0.00	0.0	0.0	4.17	6.51	0.0	0.0
6Mx30Y	2.04	4.63	441.3	0.0	2.34	0.00	0.0	0.0	3.97	6.27	0.0	0.0
1Yx2Y	2.10	5.46	66.1	0.0	2.63	6.71	0.0	0.0	3.97	6.36	0.0	0.0
1Yx3Y	2.15	5.29	95.2	0.0	2.65	6.60	0.0	0.0	4.01	6.24	0.0	0.0
1Yx5Y	2.21	5.09	149.3	0.0	2.68	6.51	0.0	0.0	4.07	6.11	0.0	0.0
1Yx10Y	2.31	4.88	271.2	0.0	2.75	0.00	0.0	0.0	4.23	6.22	0.0	0.0
1Yx30Y	2.03	4.65	631.2	0.0	2.42	0.00	0.0	0.0	3.92	5.81	0.0	0.0

ATMF implied vol on 10-year tails; bp/day



ATMF implied vol on 30-year tails; bp/day



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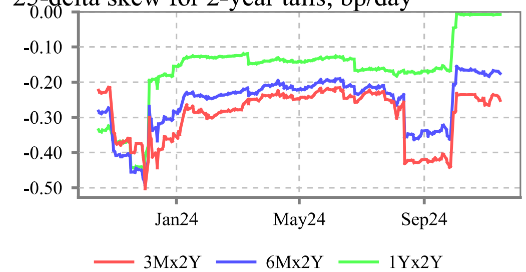
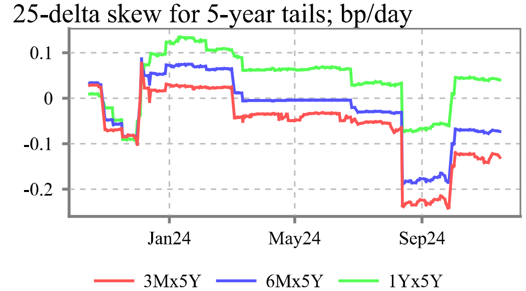
EUR Swaptions – Spreads and 1x2s

	Spot Yield			ATMF	25-delta receiver spread				Premium-neutral receiver 1x2s			
Structure	Current	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	2.22	3.41	2.21	2.12	1.85	0	19.7	-1.8	N/A	0	46	1.9
3Mx3Y	2.19	3.22	2.17	2.14	1.88	0	29.2	-1.4	N/A	0	46	2.5
3Mx5Y	2.21	3.02	2.16	2.19	1.94	0	46.4	-1.1	N/A	0	47	2.9
3Mx10Y	2.29	2.92	2.28	2.30	2.05	0	84.1	-1.0	N/A	0	49	3.0
3Mx30Y	2.06	2.61	2.06	2.05	1.81	0	194.5	-1.1	N/A	0	50	2.9
6Mx2Y	2.22	3.41	2.21	2.08	1.68	0	28.2	-0.7	N/A	0	47	2.0
6Mx3Y	2.19	3.22	2.17	2.12	1.74	0	41.3	-0.6	N/A	0	48	2.0
6Mx5Y	2.21	3.02	2.16	2.18	1.81	0	65.8	-0.5	N/A	0	48	2.1
6Mx10Y	2.29	2.92	2.28	2.29	1.93	0	122.0	-0.5	N/A	0	50	2.2
6Mx30Y	2.06	2.61	2.06	2.04	1.67	0	287.2	-0.7	N/A	0	52	1.9
1Yx2Y	2.22	3.41	2.21	2.10	1.53	0	40.7	-0.1	N/A	0	49	1.9
1Yx3Y	2.19	3.22	2.17	2.15	1.59	0	59.0	-0.1	N/A	0	50	1.7
1Yx5Y	2.21	3.02	2.16	2.21	1.67	0	93.8	-0.2	N/A	0	50	1.7
1Yx10Y	2.29	2.92	2.28	2.31	1.78	0	178.2	-0.3	N/A	0	52	1.7
1Yx30Y	2.06	2.61	2.06	2.03	1.48	0	422.1	-0.5	N/A	0	54	1.3

25-delta skew for 2-year tails; bp/day

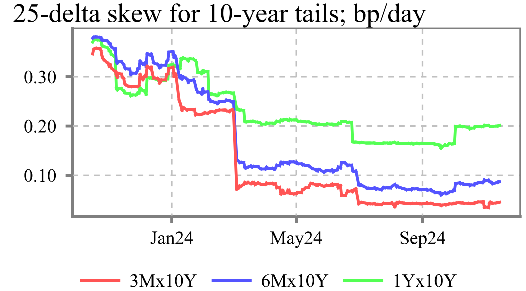


25-delta skew for 5-year tails; bp/day

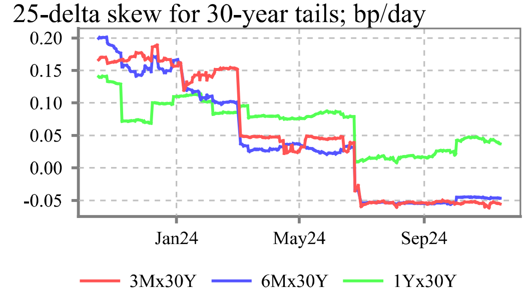


	Spot Yield			ATMF	25-delta payer spread				Premium-neutral payer 1x2s			
Structure	Spot	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	2.22	3.41	2.21	2.12	2.41	23	19.1	-0.2	N/A	0	-54	5.3
3Mx3Y	2.19	3.22	2.17	2.14	2.42	39	27.7	-0.7	N/A	0	-54	4.5
3Mx5Y	2.21	3.02	2.16	2.19	2.45	44	41.3	-0.8	N/A	0	-53	4.0
3Mx10Y	2.29	2.92	2.28	2.30	2.52	56	69.7	-0.9	N/A	0	-51	3.5
3Mx30Y	2.06	2.61	2.06	2.05	2.27	23	167.5	-0.8	N/A	0	-50	3.4
6Mx2Y	2.22	3.41	2.21	2.08	2.47	33	26.7	-0.5	N/A	0	-53	2.6
6Mx3Y	2.19	3.22	2.17	2.12	2.50	46	38.4	-0.5	N/A	0	-52	2.3
6Mx5Y	2.21	3.02	2.16	2.18	2.54	58	58.5	-0.6	N/A	0	-52	2.2
6Mx10Y	2.29	2.92	2.28	2.29	2.61	60	98.1	-0.5	N/A	0	-50	2.0
6Mx30Y	2.06	2.61	2.06	2.04	2.34	48	229.9	-0.4	N/A	0	-48	2.2
1Yx2Y	2.22	3.41	2.21	2.10	2.63	40	35.7	-0.4	N/A	0	-51	1.0
1Yx3Y	2.19	3.22	2.17	2.15	2.65	56	50.7	-0.4	N/A	0	-50	1.1
1Yx5Y	2.21	3.02	2.16	2.21	2.68	62	78.4	-0.4	N/A	0	-50	1.2
1Yx10Y	2.29	2.92	2.28	2.31	2.75	75	133.3	-0.3	N/A	0	-48	1.3
1Yx30Y	2.06	2.61	2.06	2.03	2.42	62	304.9	-0.1	N/A	0	-46	1.4

25-delta skew for 10-year tails; bp/day



25-delta skew for 30-year tails; bp/day



J.P. Morgan Securities Inc.
European Rates Strategy
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Implied and delivered directionality report - EUR

	Implied vol; bp/day		Directionality*; % Implied		Deliv	(Imp - Deliv)	Implied weights; %		Weighted curve**; bp			3M regression stats****	
Trades	Short	Long	Current	3M Lagged	Levels	Levels	Short	Long	3M fwd	Spot	3M Carry***	Beta	Rsqr
1s/3s	5.1	5.4	5 %	11 %	-54 %	60 %	100 %	95 %	-14	-36	21	-60 %	30 %
1s/5s	5.1	5.1	1 %	9 %	-78 %	79 %	100 %	99 %	0	-24	24	-79 %	21 %
1s/10s	5.1	4.7	-8 %	2 %	-115 %	107 %	100 %	108 %	31	4	26	-107 %	19 %
1s/30s	5.1	4.5	-13 %	-4 %	-41 %	29 %	100 %	113 %	15	-12	27	-29 %	2 %
2s/5s	5.4	5.1	-6 %	-2 %	-53 %	47 %	100 %	106 %	21	13	8	-47 %	34 %
2s/7s	5.4	4.9	-10 %	-5 %	-72 %	63 %	100 %	110 %	34	24	9	-63 %	29 %
2s/10s	5.4	4.7	-16 %	-9 %	-80 %	65 %	100 %	116 %	54	43	10	-65 %	20 %
2s/20s	5.4	4.6	-19 %	-14 %	-27 %	8 %	100 %	119 %	58	48	11	-8 %	0 %
2s/30s	5.4	4.5	-20 %	-16 %	13 %	-33 %	100 %	120 %	36	26	11	33 %	5 %
3s/5s	5.4	5.1	-5 %	-3 %	-28 %	23 %	100 %	105 %	15	12	3	-23 %	41 %
3s/7s	5.4	4.9	-8 %	-5 %	-46 %	38 %	100 %	108 %	28	23	5	-38 %	33 %
3s/10s	5.4	4.7	-14 %	-10 %	-52 %	37 %	100 %	114 %	48	42	6	-37 %	16 %
3s/20s	5.4	4.6	-17 %	-15 %	2 %	-19 %	100 %	117 %	52	47	6	19 %	2 %
3s/30s	5.4	4.5	-19 %	-17 %	37 %	-56 %	100 %	119 %	31	25	6	56 %	17 %
5s/10s	5.1	4.7	-9 %	-7 %	-24 %	15 %	100 %	109 %	31	29	2	-15 %	9 %
5s/20s	5.1	4.6	-12 %	-12 %	20 %	-32 %	100 %	112 %	35	33	2	32 %	11 %
5s/30s	5.1	4.5	-13 %	-14 %	49 %	-62 %	100 %	113 %	15	12	2	62 %	31 %
10s/30s	4.7	4.5	-4 %	-6 %	42 %	-46 %	100 %	104 %	-15	-15	0	46 %	42 %

Structure	Left wing	Body	Right wing	Current	3M Lagged	Levels	Levels	Body	Wings	Spot	Fwd	3M carry***	Beta	Rsqr
1s/2s/3s	5.1	5.4	5.4	4 %	4 %	-4 %	8 %	100 %	52 %	-19	-13	6	-8 %	23 %
1s/3s/5s	5.1	5.4	5.1	5 %	6 %	-14 %	19 %	100 %	53 %	-25	-15	10	-20 %	20 %
2s/5s/7s	5.4	5.1	4.9	-2 %	-0 %	-21 %	19 %	100 %	49 %	1	4	3	-19 %	30 %
2s/5s/10s	5.4	5.1	4.7	1 %	2 %	-13 %	14 %	100 %	50 %	-7	-4	3	-14 %	17 %
2s/7s/12s	5.4	4.9	4.7	-2 %	0 %	-32 %	30 %	100 %	49 %	1	5	4	-29 %	26 %
2s/10s/30s	5.4	4.7	4.5	-6 %	-3 %	-42 %	36 %	100 %	47 %	27	32	5	-34 %	19 %
3s/7s/15s	5.4	4.9	4.6	-1 %	0 %	-14 %	13 %	100 %	50 %	0	1	2	-13 %	17 %
5s/10s/30s	5.1	4.7	4.5	-2 %	-1 %	-8 %	5 %	100 %	49 %	21	22	1	-5 %	3 %
10s/20s/30s	4.7	4.6	4.5	-0 %	-1 %	4 %	-4 %	100 %	50 %	11	11	0	4 %	12 %

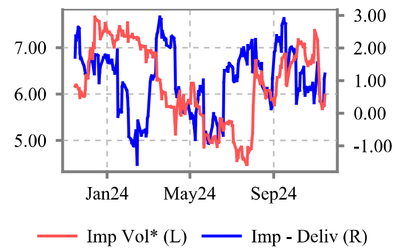
* Implied directionality is defined as: Curves: (1 - (Implied vol on short maturity/Implied vol on long maturity)). Flies: (1 - (0.5*(implied vol of the left wing + implied vol of the right wing)/(implied vol of the body)). We use 3M epxiry swaptions.
Delivered directionality is defined as: Curves: (1 - 3M beta obtained from regressing short maturity yields to long maturity yields). Flies: Delivered directionality is defined as the 3M beta obtained from regressing the 50:50 fly with the body of the fly
** Curves weighted by the implied weights listed in the adjacent column. Flies weighted by the implied weights listed in the adjacent column. These weights make the fly premium-neutral at inception.
*** Carry for curve flatteners and long body in the fly
**** Curves: 3M regression stats obtained from regressing the weighted curve (using the weights in the adjacent columns on the left) with long maturity yields; Flies: Regression stats obtained from regressing the weighted fly (see above for defintion) with the body of the fly.

Fabio Bassi (44 20) 7134 1989 Khagendra Gupta (44 20) 7134 0486

GBP Short-Dated Swaption Volatility Report

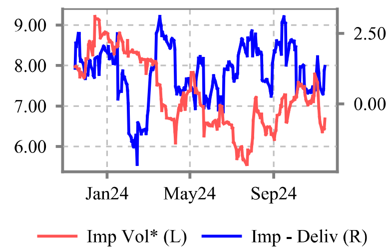
Options on 1Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	5.0	-1.9	-0.3	2.5	4.1	4.5	23.8	1.8	6.2	55 %
3M	6.0	-0.9	0.1	3.3	4.8	5.4	16.3	4.0	7.8	64 %
6M	6.8	-0.3	0.5	4.3	5.5	6.2	14.3	5.5	9.4	86 %
1Y	7.1	0.0	0.5	5.9	6.2	6.6	13.4	7.5	10.8	100 %



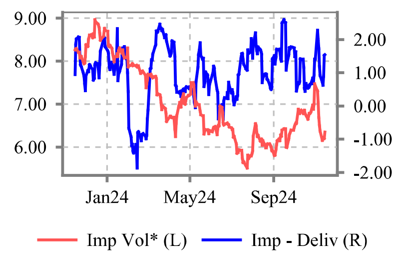
Options on 2Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	6.0	-1.5	-0.5	4.1	4.9	5.4	24.5	2.6	7.7	69 %
3M	6.7	-0.6	0.0	4.6	5.3	5.8	17.0	4.5	8.8	77 %
6M	7.0	-0.3	0.3	5.4	5.8	6.2	14.6	5.7	9.8	86 %
1Y	7.1	0.0	0.2	6.3	6.1	6.2	12.6	7.2	10.3	100 %



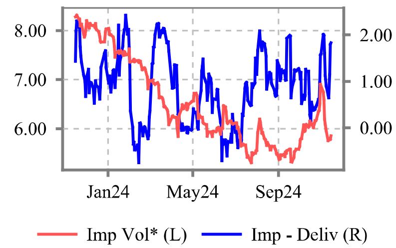
Options on 5Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	5.9	-1.1	-0.3	5.1	4.7	5.2	22.5	3.0	7.5	72 %
3M	6.3	-0.4	0.0	5.2	4.8	5.3	15.3	4.5	8.1	78 %
6M	6.5	-0.2	0.1	5.5	4.9	5.4	12.8	5.4	8.6	85 %
1Y	6.5	0.0	-0.3	5.6	4.9	5.3	10.7	6.3	8.8	95 %



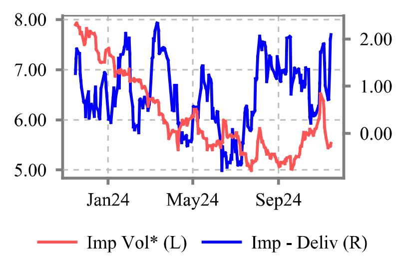
Options on 10Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	5.7	-0.6	0.1	4.3	4.0	4.7	21.3	3.1	7.0	71 %
3M	5.9	-0.2	0.0	4.3	4.0	4.8	14.6	4.2	7.5	82 %
6M	6.0	0.0	0.1	4.4	4.1	4.8	12.2	5.1	7.9	84 %
1Y	6.1	0.0	-0.3	4.5	4.1	4.8	10.2	5.7	8.1	93 %

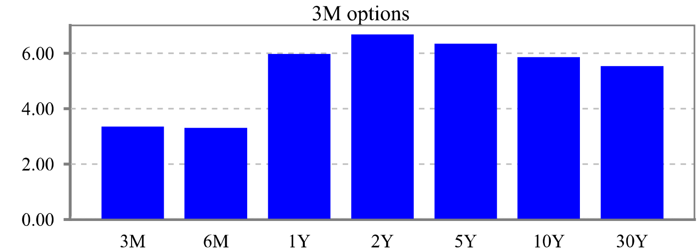


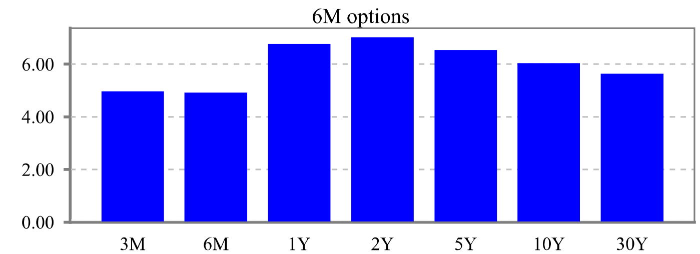
Options on 30Y swaps

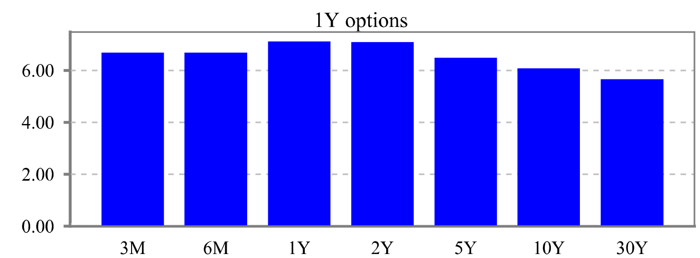
	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	5.4	-0.6	0.2	3.5	3.4	4.3	26.3	3.2	6.7	68 %
3M	5.5	-0.2	0.1	3.5	3.4	4.3	17.2	3.8	7.2	76 %
6M	5.6	-0.1	0.2	3.5	3.5	4.3	13.5	4.7	7.6	82 %
1Y	5.7	0.0	-0.3	3.6	3.5	4.3	10.7	5.2	8.0	92 %

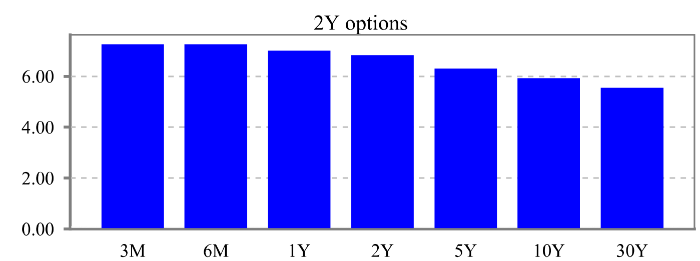


Maturity term structure for 3M, 6M, 1Y and 2Y options; bp/day









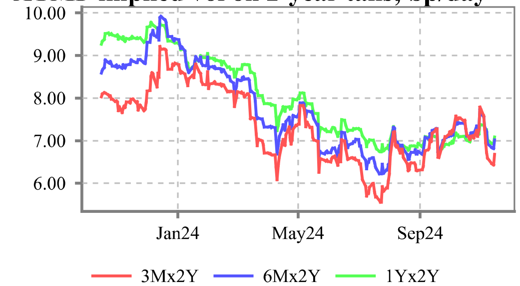
* For Swaptions:
Imp Vol: implied vol of 3M options
Deliv Vol: 1M deliv vol on 3M fwd swap rate

GBP Swaptions – Outright ATM and OTM payers & receivers

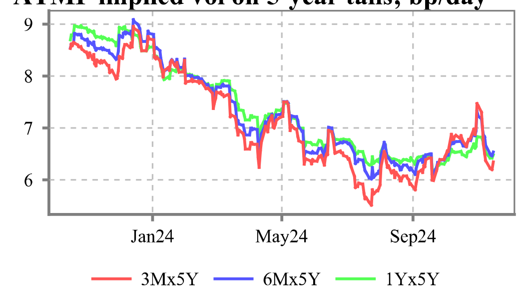
	ATMF Receiver				25-delta Receiver				10-delta Receiver			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	4.19	6.68	39.3	0.0	3.85	6.94	0.0	0.0	3.50	7.41	0.0	0.0
3Mx3Y	4.11	6.62	57.3	0.0	3.77	6.85	0.0	0.0	3.42	7.28	0.0	0.0
3Mx5Y	4.02	6.35	88.3	0.0	3.68	6.51	0.0	0.0	3.35	6.86	0.0	0.0
3Mx10Y	4.02	5.86	148.6	0.0	3.70	6.00	0.0	0.0	3.40	6.32	0.0	0.0
3Mx30Y	4.09	5.53	295.4	0.0	3.78	5.71	0.0	0.0	3.48	6.06	0.0	0.0
6Mx2Y	4.13	7.02	57.3	0.0	3.64	7.23	0.0	0.0	3.13	7.68	0.0	0.0
6Mx3Y	4.06	6.88	82.5	0.0	3.57	7.06	0.0	0.0	3.08	7.47	0.0	0.0
6Mx5Y	3.99	6.54	125.8	0.0	3.51	6.65	0.0	0.0	3.04	6.99	0.0	0.0
6Mx10Y	4.01	6.04	211.9	0.0	3.56	6.16	0.0	0.0	3.12	6.49	0.0	0.0
6Mx30Y	4.08	5.64	416.9	0.0	3.63	5.81	0.0	0.0	3.21	6.16	0.0	0.0
1Yx2Y	4.04	7.09	81.1	0.0	3.32	7.24	0.0	0.0	2.74	7.57	0.0	0.0
1Yx3Y	3.99	6.83	115.1	0.0	3.28	6.95	0.0	0.0	2.72	7.25	0.0	0.0
1Yx5Y	3.94	6.48	175.6	0.0	3.25	6.55	0.0	0.0	2.71	6.78	0.0	0.0
1Yx10Y	4.00	6.07	299.9	0.0	3.33	6.10	0.0	0.0	2.81	6.27	0.0	0.0
1YX30Y	4.07	5.66	588.2	0.0	3.38	5.75	0.0	0.0	2.88	5.96	0.0	0.0

	ATMF Payer				25-delta Payer				10-delta Payer			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	4.19	6.68	39.3	0.0	4.54	0.00	0.0	0.0	6.01	8.37	0.0	0.0
3Mx3Y	4.11	6.62	57.3	0.0	4.45	0.00	0.0	0.0	5.95	8.47	0.0	0.0
3Mx5Y	4.02	6.35	88.3	0.0	4.34	0.00	0.0	0.0	5.90	8.55	0.0	0.0
3Mx10Y	4.02	5.86	148.6	0.0	4.31	0.00	0.0	0.0	6.00	8.31	0.0	0.0
3Mx30Y	4.09	5.53	295.4	0.0	4.35	0.00	0.0	0.0	6.20	8.03	0.0	0.0
6Mx2Y	4.13	7.02	57.3	0.0	4.61	8.60	0.0	0.0	5.93	8.13	0.0	0.0
6Mx3Y	4.06	6.88	82.5	0.0	4.53	8.60	0.0	0.0	5.87	8.09	0.0	0.0
6Mx5Y	3.99	6.54	125.8	0.0	4.42	8.56	0.0	0.0	5.80	7.96	0.0	0.0
6Mx10Y	4.01	6.04	211.9	0.0	4.41	8.07	0.0	0.0	5.81	7.43	0.0	0.0
6Mx30Y	4.08	5.64	416.9	0.0	4.44	0.00	0.0	0.0	5.90	6.95	0.0	0.0
1Yx2Y	4.04	7.09	81.1	0.0	4.68	0.00	0.0	0.0	6.14	8.37	0.0	0.0
1Yx3Y	3.99	6.83	115.1	0.0	4.60	0.00	0.0	0.0	6.06	8.14	0.0	0.0
1Yx5Y	3.94	6.48	175.6	0.0	4.52	0.00	0.0	0.0	5.98	7.83	0.0	0.0
1Yx10Y	4.00	6.07	299.9	0.0	4.53	0.00	0.0	0.0	5.99	7.30	0.0	0.0
1YX30Y	4.07	5.66	588.2	0.0	4.52	0.00	0.0	0.0	5.99	6.72	0.0	0.0

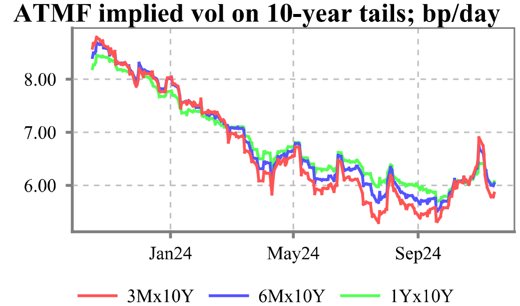
ATMF implied vol on 2-year tails; bp/day



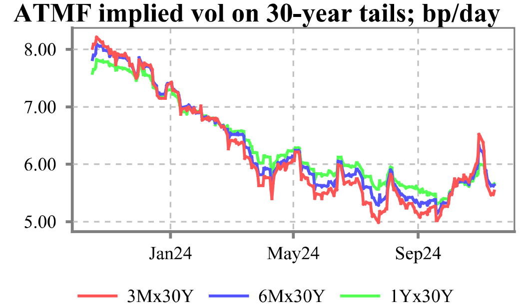
ATMF implied vol on 5-year tails; bp/day



ATMF implied vol on 10-year tails; bp/day



ATMF implied vol on 30-year tails; bp/day

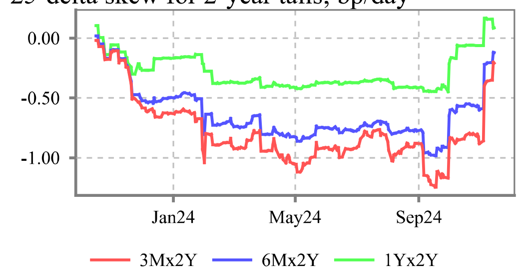


GBP Swaptions – Spreads and 1x2s

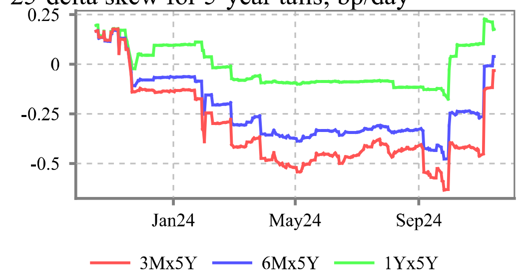
	Spot Yield			ATMF	25-delta receiver spread				Premium-neutral receiver 1x2s			
Structure	Current	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	4.26	4.79	3.73	4.19	3.85	6	24.1	-2.4	N/A	0	47	3.3
3Mx3Y	4.16	4.55	3.55	4.11	3.77	16	35.6	-2.1	N/A	0	47	3.5
3Mx5Y	4.04	4.25	3.41	4.02	3.68	28	56.5	-1.9	N/A	0	48	3.7
3Mx10Y	4.01	4.11	3.42	4.02	3.70	36	95.4	-1.3	N/A	0	49	3.7
3Mx30Y	4.08	4.17	3.58	4.09	3.78	26	191.1	-1.3	N/A	0	50	3.5
6Mx2Y	4.26	4.79	3.73	4.13	3.64	0	34.4	-1.3	N/A	0	48	2.1
6Mx3Y	4.16	4.55	3.55	4.06	3.57	61	50.2	-1.2	N/A	0	49	2.2
6Mx5Y	4.04	4.25	3.41	3.99	3.51	51	78.8	-1.0	N/A	0	49	2.3
6Mx10Y	4.01	4.11	3.42	4.01	3.56	8	133.5	-0.7	N/A	0	50	2.5
6Mx30Y	4.08	4.17	3.58	4.08	3.63	15	269.5	-0.7	N/A	0	52	2.2
1Yx2Y	4.26	4.79	3.73	4.04	3.32	0	48.9	-0.7	N/A	0	50	1.3
1Yx3Y	4.16	4.55	3.55	3.99	3.28	0	70.5	-0.6	N/A	0	51	1.3
1Yx5Y	4.04	4.25	3.41	3.94	3.25	0	111.0	-0.5	N/A	0	52	1.4
1Yx10Y	4.01	4.11	3.42	4.00	3.33	0	196.1	-0.5	N/A	0	53	1.7
1Yx30Y	4.08	4.17	3.58	4.07	3.38	0	399.1	-0.5	N/A	0	55	1.5

	Spot Yield			ATMF	25-delta payer spread				Premium-neutral payer 1x2s			
Structure	Spot	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	4.26	4.79	3.73	4.19	4.54	85	22.2	-0.9	N/A	0	-53	6.5
3Mx3Y	4.16	4.55	3.55	4.11	4.45	94	32.1	-1.0	N/A	0	-53	6.0
3Mx5Y	4.04	4.25	3.41	4.02	4.34	100	48.2	-1.0	N/A	0	-52	5.3
3Mx10Y	4.01	4.11	3.42	4.02	4.31	100	81.0	-1.1	N/A	0	-51	4.3
3Mx30Y	4.08	4.17	3.58	4.09	4.35	100	158.1	-0.9	N/A	0	-50	3.9
6Mx2Y	4.26	4.79	3.73	4.13	4.61	85	31.5	-0.2	N/A	0	-52	4.2
6Mx3Y	4.16	4.55	3.55	4.06	4.53	99	45.2	-0.3	N/A	0	-51	3.8
6Mx5Y	4.04	4.25	3.41	3.99	4.42	100	67.4	-0.4	N/A	0	-51	3.4
6Mx10Y	4.01	4.11	3.42	4.01	4.41	100	114.6	-0.5	N/A	0	-50	2.8
6Mx30Y	4.08	4.17	3.58	4.08	4.44	100	221.1	-0.5	N/A	0	-48	2.5
1Yx2Y	4.26	4.79	3.73	4.04	4.68	93	41.3	0.1	N/A	0	-50	2.4
1Yx3Y	4.16	4.55	3.55	3.99	4.60	100	58.3	0.1	N/A	0	-49	2.2
1Yx5Y	4.04	4.25	3.41	3.94	4.52	100	87.8	0.0	N/A	0	-48	2.0
1Yx10Y	4.01	4.11	3.42	4.00	4.53	100	148.7	-0.2	N/A	0	-47	1.7
1Yx30Y	4.08	4.17	3.58	4.07	4.52	100	280.0	-0.1	N/A	0	-45	1.6

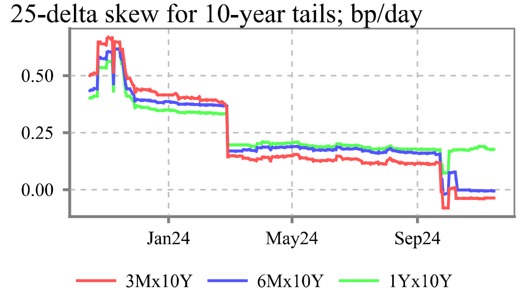
25-delta skew for 2-year tails; bp/day



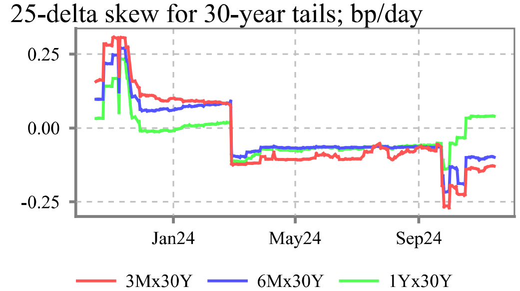
25-delta skew for 5-year tails; bp/day



25-delta skew for 10-year tails; bp/day



25-delta skew for 30-year tails; bp/day



Fabio Bassi (44 20) 7134 1989
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Implied and delivered directionality report - GBP

	Implied vol; bp/day		Directionality*; % Implied		Deliv	(Imp - Deliv)	Implied weights; %		Weighted curve**; bp			3M regression stats****	
Trades	Short	Long	Current	3M Lagged	Levels	Levels	Short	Long	3M fwd	Spot	3M Carry***	Beta	Rsqr
1s/3s	6.0	6.6	10 %	4 %	47 %	-38 %	100 %	90 %	-59	-69	10	38 %	56 %
1s/5s	6.0	6.3	6 %	-0 %	54 %	-48 %	100 %	94 %	-52	-64	12	48 %	60 %
1s/10s	6.0	5.9	-2 %	-8 %	57 %	-59 %	100 %	102 %	-20	-35	15	59 %	60 %
1s/30s	6.0	5.5	-8 %	-15 %	56 %	-64 %	100 %	108 %	13	-3	16	64 %	52 %
2s/5s	6.7	6.3	-5 %	-7 %	15 %	-21 %	100 %	105 %	4	-1	5	21 %	36 %
2s/7s	6.7	6.1	-9 %	-10 %	17 %	-25 %	100 %	109 %	15	8	6	25 %	35 %
2s/10s	6.7	5.9	-14 %	-15 %	15 %	-29 %	100 %	114 %	40	32	8	29 %	33 %
2s/20s	6.7	5.7	-17 %	-18 %	10 %	-27 %	100 %	117 %	67	59	9	27 %	21 %
2s/30s	6.7	5.5	-21 %	-22 %	7 %	-27 %	100 %	121 %	76	67	8	27 %	17 %
3s/5s	6.6	6.3	-4 %	-5 %	4 %	-8 %	100 %	104 %	8	6	2	8 %	22 %
3s/7s	6.6	6.1	-8 %	-8 %	4 %	-11 %	100 %	108 %	18	14	4	11 %	20 %
3s/10s	6.6	5.9	-13 %	-12 %	1 %	-14 %	100 %	113 %	43	38	6	14 %	17 %
3s/20s	6.6	5.7	-16 %	-16 %	-6 %	-10 %	100 %	116 %	71	65	6	10 %	5 %
3s/30s	6.6	5.5	-20 %	-20 %	-11 %	-9 %	100 %	120 %	79	73	6	9 %	3 %
5s/10s	6.3	5.9	-8 %	-7 %	-5 %	-3 %	100 %	108 %	34	31	3	3 %	4 %
5s/20s	6.3	5.7	-11 %	-11 %	-14 %	3 %	100 %	111 %	60	57	4	-3 %	1 %
5s/30s	6.3	5.5	-15 %	-14 %	-20 %	6 %	100 %	115 %	68	65	4	-6 %	3 %
10s/30s	5.9	5.5	-6 %	-6 %	-16 %	10 %	100 %	106 %	32	31	1	-10 %	30 %

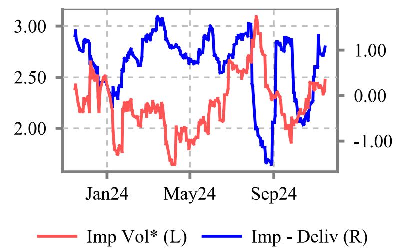
Structure	Left wing	Body	Right wing	Current	3M Lagged	Levels	Levels	Body	Wings	Spot	Fwd	3M carry***	Beta	Rsqr
1s/2s/3s	6.0	6.7	6.6	6 %	4 %	14 %	-9 %	100 %	53 %	-30	-27	3	9 %	68 %
1s/3s/5s	6.0	6.6	6.3	7 %	4 %	23 %	-16 %	100 %	54 %	-40	-36	4	17 %	72 %
2s/5s/7s	6.7	6.3	6.1	-1 %	-3 %	9 %	-10 %	100 %	49 %	-4	-3	2	10 %	45 %
2s/5s/10s	6.7	6.3	5.9	1 %	-1 %	11 %	-10 %	100 %	51 %	-15	-14	1	10 %	59 %
2s/7s/12s	6.7	6.1	5.8	-2 %	-4 %	13 %	-14 %	100 %	49 %	-9	-7	2	14 %	48 %
2s/10s/30s	6.7	5.9	5.5	-4 %	-5 %	16 %	-20 %	100 %	48 %	1	5	3	19 %	58 %
3s/7s/15s	6.6	6.1	5.8	-1 %	-2 %	8 %	-9 %	100 %	50 %	-10	-9	1	8 %	57 %
5s/10s/30s	6.3	5.9	5.5	-1 %	-0 %	5 %	-7 %	100 %	49 %	1	2	1	7 %	80 %
10s/20s/30s	5.9	5.7	5.5	0 %	0 %	-2 %	2 %	100 %	50 %	8	9	0	-2 %	24 %

* Implied directionality is defined as: Curves: (1 - (Implied vol on short maturity/Implied vol on long maturity)). Flies: (1 - (0.5*(implied vol of the left wing + implied vol of the right wing)/(implied vol of the body)). We use 3M epxiry swaptions.
Delivered directionality is defined as: Curves: (1 - 3M beta obtained from regressing short maturity yields to long maturity yields). Flies: Delivered directionality is defined as the 3M beta obtained from regressing the 50:50 fly with the body of the fly
** Curves weighted by the implied weights listed in the adjacent column. Flies weighted by the implied weights listed in the adjacent column. These weights make the fly premium-neutral at inception.
*** Carry for curve flatteners and long body in the fly
**** Curves: 3M regression stats obtained from regressing the weighted curve (using the weights in the adjacent columns on the left) with long maturity yields; Flies: Regression stats obtained from regressing the weighted fly (see above for defintion) with the body of the fly.

JPY Short-Dated Swaption Volatility Report

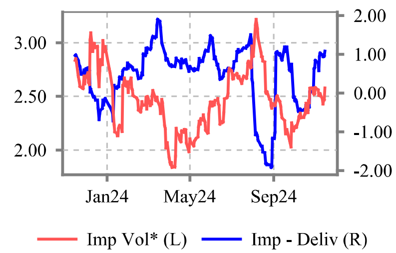
Options on 1Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	1.8	0.2	-0.1	1.5	1.2	1.6	3.2	0.1	0.9	9 %
3M	2.5	0.3	0.4	1.7	1.4	1.9	2.7	0.2	1.2	3 %
6M	2.7	0.1	-0.2	1.7	1.5	2.0	2.4	0.5	1.5	0 %
1Y	2.7	0.0	-1.2	1.7	1.6	2.1	2.6	1.4	2.1	0 %



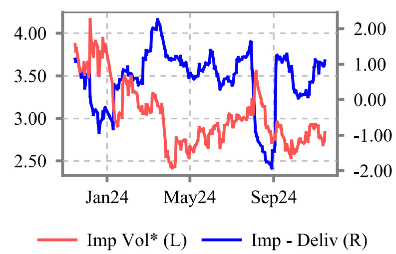
Options on 2Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	2.0	0.1	-0.2	1.5	1.4	1.8	4.0	0.2	1.3	18 %
3M	2.6	0.3	0.3	1.7	1.5	2.0	3.0	0.4	1.6	10 %
6M	2.8	0.1	-0.4	1.7	1.6	2.1	2.6	0.8	1.9	0 %
1Y	2.7	0.0	-1.3	1.8	1.7	2.1	2.7	1.6	2.3	4 %



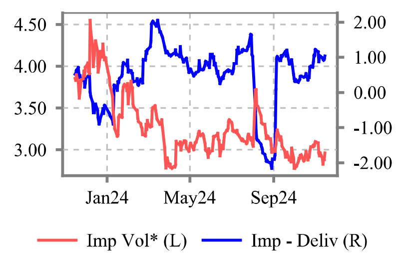
Options on 5Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	2.3	-0.2	-0.8	1.7	1.7	2.0	4.8	0.3	2.0	30 %
3M	2.8	0.1	-0.3	1.7	1.7	2.0	3.9	0.6	2.2	28 %
6M	2.9	0.1	-0.9	1.8	1.8	2.1	3.2	1.2	2.4	12 %
1Y	2.8	0.0	-1.4	1.8	1.9	2.1	3.2	1.9	2.8	61 %



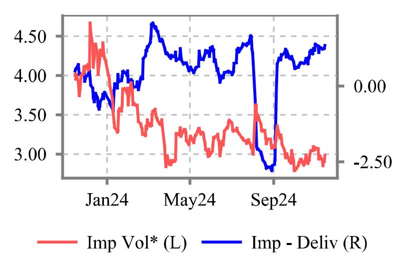
Options on 10Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	2.5	-0.3	-1.3	1.8	1.9	2.1	6.0	0.4	2.5	37 %
3M	3.0	0.1	-0.7	1.9	1.9	2.1	4.7	0.8	2.7	34 %
6M	2.9	0.1	-1.1	1.9	1.9	2.2	3.8	1.6	2.9	50 %
1Y	2.7	0.0	-1.4	1.9	2.0	2.2	3.6	2.2	3.1	90 %



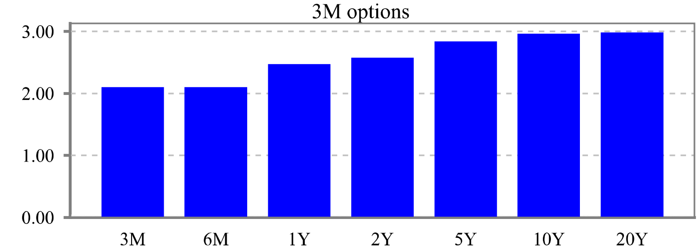
Options on 20Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	2.6	-0.2	-1.4	1.5	1.6	1.9	7.3	0.5	2.7	46 %
3M	3.0	0.1	-0.8	1.5	1.6	2.0	4.7	1.0	3.0	42 %
6M	2.9	0.1	-1.1	1.5	1.7	2.0	3.9	2.2	3.1	58 %
1Y	2.7	0.0	-1.3	1.5	1.7	2.0	3.7	2.5	3.3	93 %

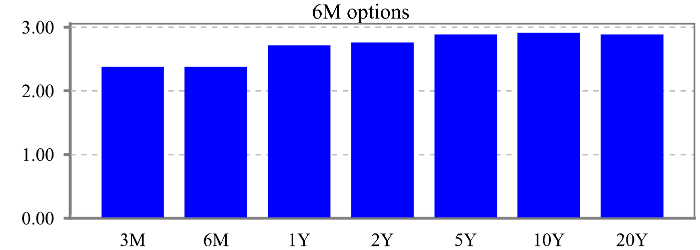


Maturity term structure for 3M, 6M, 1Y and 2Y options; bp/day

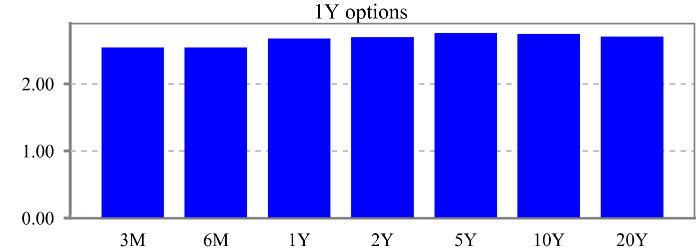
3M options



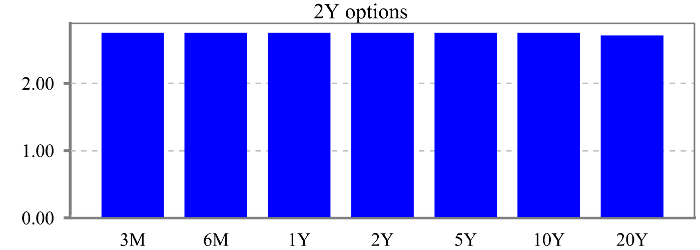
6M options



1Y options



2Y options



* For Swaptions:
Imp Vol: implied vol of 3M options
Deliv Vol: 1M deliv vol on 3M fwd swap rate

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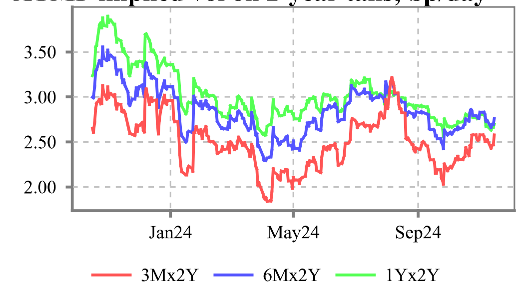
Srinivasan Ramaswamy (415)-315-8117

JPY Swaptions – Outright ATM and OTM payers & receivers

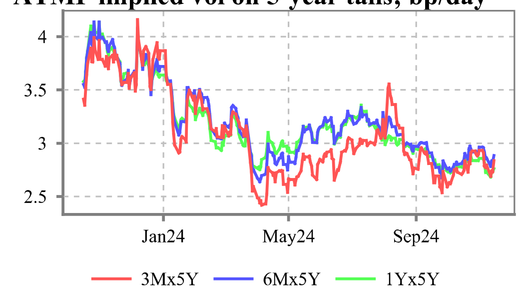
	ATMF Receiver				25-delta Receiver				10-delta Receiver			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	0.67	2.58	15.8	0.0	0.51	2.41	0.0	0.0	0.43	2.31	0.0	0.0
3Mx3Y	0.73	2.68	24.6	0.0	0.56	2.55	0.0	0.0	0.48	2.48	0.0	0.0
3Mx5Y	0.81	2.84	42.9	0.0	0.64	2.78	0.0	0.0	0.51	2.77	0.0	0.0
3Mx10Y	1.09	2.96	87.1	0.0	0.92	2.94	0.0	0.0	0.77	2.95	0.0	0.0
3Mx20Y	1.66	2.98	161.1	0.0	1.48	2.96	0.0	0.0	1.32	2.96	0.0	0.0
6Mx2Y	0.71	2.76	23.6	0.0	0.50	2.50	0.0	0.0	0.32	2.41	0.0	0.0
6Mx3Y	0.76	2.81	35.9	0.0	0.54	2.57	0.0	0.0	0.36	2.49	0.0	0.0
6Mx5Y	0.84	2.88	61.0	0.0	0.61	2.72	0.0	0.0	0.42	2.65	0.0	0.0
6Mx10Y	1.13	2.91	119.6	0.0	0.90	2.82	0.0	0.0	0.70	2.82	0.0	0.0
6Mx20Y	1.68	2.89	217.7	0.0	1.46	2.84	0.0	0.0	1.25	2.83	0.0	0.0
1Yx2Y	0.77	2.70	33.1	0.0	0.46	2.38	0.0	0.0	0.29	2.27	0.0	0.0
1Yx3Y	0.81	2.72	49.9	0.0	0.49	2.44	0.0	0.0	0.31	2.34	0.0	0.0
1Yx5Y	0.89	2.76	83.5	0.0	0.57	2.54	0.0	0.0	0.37	2.46	0.0	0.0
1Yx10Y	1.19	2.75	161.3	0.0	0.87	2.61	0.0	0.0	0.65	2.58	0.0	0.0
1Yx20Y	1.73	2.71	291.1	0.0	1.41	2.63	0.0	0.0	1.17	2.61	0.0	0.0

	ATMF Payer				25-delta Payer				10-delta Payer			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	0.67	2.58	15.8	0.0	0.82	0.00	0.0	0.0	0.00	0.00	0.0	0.0
3Mx3Y	0.73	2.68	24.6	0.0	0.88	0.00	0.0	0.0	0.00	0.00	0.0	0.0
3Mx5Y	0.81	2.84	42.9	0.0	0.97	0.00	0.0	0.0	0.00	0.00	0.0	0.0
3Mx10Y	1.09	2.96	87.1	0.0	1.26	0.00	0.0	0.0	0.00	0.00	0.0	0.0
3Mx20Y	1.66	2.98	161.1	0.0	1.82	0.00	0.0	0.0	0.00	0.00	0.0	0.0
6Mx2Y	0.71	2.76	23.6	0.0	0.89	0.00	0.0	0.0	0.00	0.00	0.0	0.0
6Mx3Y	0.76	2.81	35.9	0.0	0.94	0.00	0.0	0.0	0.00	0.00	0.0	0.0
6Mx5Y	0.84	2.88	61.0	0.0	1.03	0.00	0.0	0.0	0.00	0.00	0.0	0.0
6Mx10Y	1.13	2.91	119.6	0.0	1.33	0.00	0.0	0.0	0.00	0.00	0.0	0.0
6Mx20Y	1.68	2.89	217.7	0.0	1.88	0.00	0.0	0.0	0.00	0.00	0.0	0.0
1Yx2Y	0.77	2.70	33.1	0.0	0.98	0.00	0.0	0.0	2.90	5.23	0.0	0.0
1Yx3Y	0.81	2.72	49.9	0.0	1.02	0.00	0.0	0.0	2.92	5.12	0.0	0.0
1Yx5Y	0.89	2.76	83.5	0.0	1.11	0.00	0.0	0.0	2.97	4.90	0.0	0.0
1Yx10Y	1.19	2.75	161.3	0.0	1.43	0.00	0.0	0.0	3.21	4.25	0.0	0.0
1Yx20Y	1.73	2.71	291.1	0.0	1.97	0.00	0.0	0.0	3.79	4.01	0.0	0.0

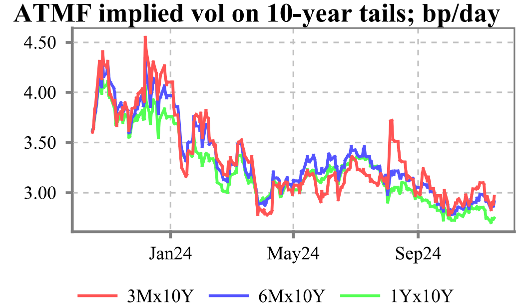
ATMF implied vol on 2-year tails; bp/day



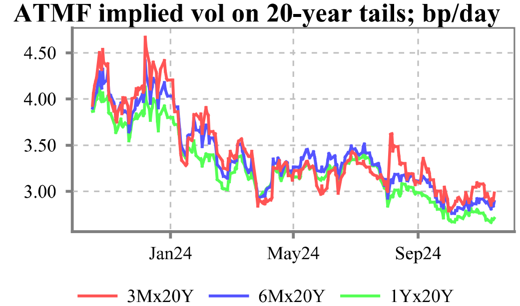
ATMF implied vol on 5-year tails; bp/day



ATMF implied vol on 10-year tails; bp/day



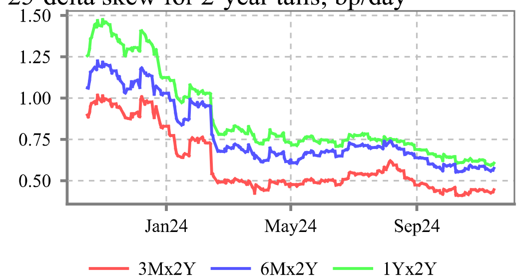
ATMF implied vol on 20-year tails; bp/day



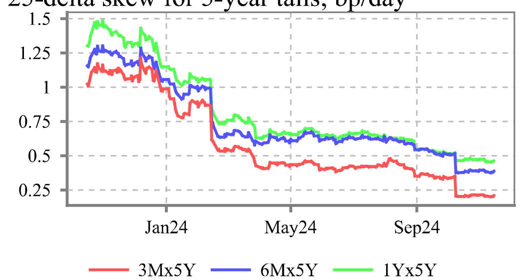
JPY Swaptions – Spreads and 1x2s

	Spot Yield			ATMF	25-delta receiver spread				Premium-neutral receiver 1x2s			
Structure	Current	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	0.62	0.62	0.36	0.67	0.51	92	9.4	N/A	N/A	0	55	N/A
3Mx3Y	0.68	0.68	0.43	0.73	0.56	85	14.5	N/A	N/A	0	54	N/A
3Mx5Y	0.77	0.77	0.51	0.81	0.64	50	25.0	N/A	N/A	0	52	N/A
3Mx10Y	1.06	1.10	0.78	1.09	0.92	36	50.8	N/A	N/A	0	52	N/A
3Mx20Y	1.63	1.63	1.24	1.66	1.48	43	95.2	N/A	N/A	0	52	N/A
6Mx2Y	0.62	0.62	0.36	0.71	0.50	84	16.1	N/A	N/A	0	57	N/A
6Mx3Y	0.68	0.68	0.43	0.76	0.54	69	24.3	N/A	N/A	0	56	N/A
6Mx5Y	0.77	0.77	0.51	0.84	0.61	38	40.6	N/A	N/A	0	55	N/A
6Mx10Y	1.06	1.10	0.78	1.13	0.90	36	77.2	N/A	N/A	0	53	N/A
6Mx20Y	1.63	1.63	1.24	1.68	1.46	37	140.1	N/A	N/A	0	53	N/A
1Yx2Y	0.62	0.62	0.36	0.77	0.46	74	23.9	N/A	N/A	0	58	N/A
1Yx3Y	0.68	0.68	0.43	0.81	0.49	28	35.6	N/A	N/A	0	58	N/A
1Yx5Y	0.77	0.77	0.51	0.89	0.57	16	58.1	N/A	N/A	0	57	N/A
1Yx10Y	1.06	1.10	0.78	1.19	0.87	19	108.7	N/A	N/A	0	55	N/A
1Yx20Y	1.63	1.63	1.24	1.73	1.41	26	194.4	N/A	N/A	0	54	N/A

25-delta skew for 2-year tails; bp/day

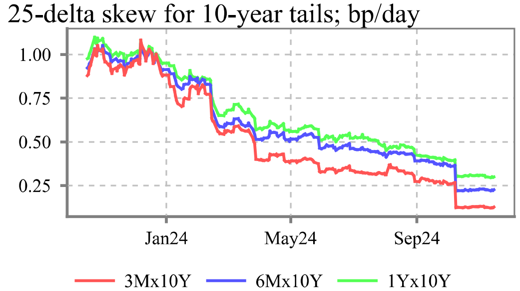


25-delta skew for 5-year tails; bp/day

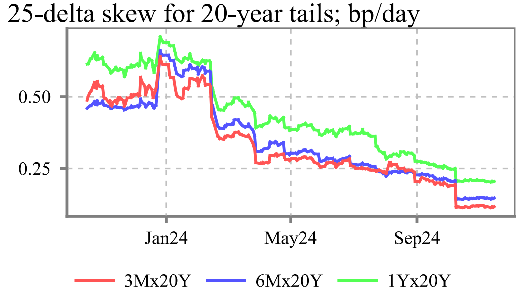


	Spot Yield			ATMF	25-delta payer spread				Premium-neutral payer 1x2s			
Structure	Spot	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	0.62	0.62	0.36	0.67	0.82	100	7.3	N/A	N/A	0	-45	N/A
3Mx3Y	0.68	0.68	0.43	0.73	0.88	100	11.8	N/A	N/A	0	-46	N/A
3Mx5Y	0.77	0.77	0.51	0.81	0.97	100	22.0	N/A	N/A	0	-48	N/A
3Mx10Y	1.06	1.10	0.78	1.09	1.26	100	46.2	N/A	N/A	0	-48	N/A
3Mx20Y	1.63	1.63	1.24	1.66	1.82	100	84.9	N/A	N/A	0	-48	N/A
6Mx2Y	0.62	0.62	0.36	0.71	0.89	100	10.0	N/A	N/A	0	-43	N/A
6Mx3Y	0.68	0.68	0.43	0.76	0.94	100	15.9	N/A	N/A	0	-44	N/A
6Mx5Y	0.77	0.77	0.51	0.84	1.03	100	29.4	N/A	N/A	0	-45	N/A
6Mx10Y	1.06	1.10	0.78	1.13	1.33	100	62.6	N/A	N/A	0	-47	N/A
6Mx20Y	1.63	1.63	1.24	1.68	1.88	100	115.9	N/A	N/A	0	-47	N/A
1Yx2Y	0.62	0.62	0.36	0.77	0.98	100	13.0	N/A	N/A	0	-42	N/A
1Yx3Y	0.68	0.68	0.43	0.81	1.02	100	20.4	N/A	N/A	0	-42	N/A
1Yx5Y	0.77	0.77	0.51	0.89	1.11	100	36.6	N/A	N/A	0	-43	N/A
1Yx10Y	1.06	1.10	0.78	1.19	1.43	100	79.4	N/A	N/A	0	-45	N/A
1Yx20Y	1.63	1.63	1.24	1.73	1.97	100	147.0	N/A	N/A	0	-46	N/A

25-delta skew for 10-year tails; bp/day



25-delta skew for 20-year tails; bp/day



Implied and delivered directionality report - JPY

	Implied vol; bp/day		Directionality*; % Implied		Deliv	(Imp - Deliv)	Implied weights; %		Weighted curve**; bp			3M regression stats****	
Trades	Short	Long	Current	3M Lagged	Levels	Levels	Short	Long	3M fwd	Spot	3M Carry***	Beta	Rsqr
1s/3s	2.5	2.7	8 %	7 %	-3 %	11 %	100 %	92 %	7	12	-5	-11 %	28 %
1s/5s	2.5	2.8	13 %	14 %	-3 %	16 %	100 %	87 %	11	17	-6	-16 %	30 %
1s/10s	2.5	3.0	17 %	18 %	-4 %	20 %	100 %	83 %	32	38	-6	-20 %	20 %
1s/20s	2.5	3.0	17 %	18 %	17 %	1 %	100 %	83 %	78	84	-7	-1 %	0 %
2s/5s	2.6	2.8	9 %	10 %	-1 %	10 %	100 %	91 %	6	9	-2	-10 %	30 %
2s/7s	2.6	2.9	11 %	12 %	-2 %	13 %	100 %	89 %	14	16	-3	-13 %	21 %
2s/10s	2.6	3.0	13 %	15 %	-3 %	16 %	100 %	87 %	28	30	-3	-16 %	18 %
2s/20s	2.6	3.0	14 %	15 %	20 %	-7 %	100 %	86 %	76	79	-3	7 %	5 %
3s/5s	2.7	2.8	5 %	7 %	-1 %	6 %	100 %	95 %	4	5	-1	-6 %	26 %
3s/7s	2.7	2.9	7 %	9 %	-2 %	9 %	100 %	93 %	12	13	-1	-9 %	18 %
3s/10s	2.7	3.0	9 %	11 %	-3 %	12 %	100 %	91 %	26	28	-1	-12 %	17 %
3s/20s	2.7	3.0	10 %	11 %	21 %	-11 %	100 %	90 %	76	78	-2	11 %	12 %
5s/10s	2.8	3.0	4 %	5 %	-4 %	8 %	100 %	96 %	24	24	0	-8 %	17 %
5s/20s	2.8	3.0	5 %	5 %	21 %	-16 %	100 %	95 %	77	78	-1	16 %	28 %
10s/20s	3.0	3.0	1 %	-0 %	25 %	-24 %	100 %	99 %	55	56	-1	24 %	51 %

Structure	Left wing	Body	Right wing	Current	3M Lagged	Levels	Levels	Body	Wings	Spot	Fwd	3M carry***	Beta	Rsqr
1s/2s/3s	2.5	2.6	2.7	0 %	-0 %	-1 %	1 %	100 %	50 %	2	1	-1	-1 %	3 %
1s/3s/5s	2.5	2.7	2.8	1 %	1 %	-1 %	2 %	100 %	51 %	4	2	-2	-2 %	4 %
2s/5s/7s	2.6	2.8	2.9	4 %	4 %	1 %	2 %	100 %	52 %	0	-1	-1	-2 %	21 %
2s/5s/10s	2.6	2.8	3.0	2 %	2 %	3 %	-0 %	100 %	51 %	-8	-10	-1	0 %	1 %
2s/7s/12s	2.6	2.9	3.0	4 %	4 %	-1 %	5 %	100 %	52 %	-6	-8	-1	-5 %	17 %
2s/10s/20s	2.6	3.0	3.0	6 %	7 %	-12 %	18 %	100 %	53 %	-14	-15	-1	-19 %	29 %
3s/7s/15s	2.7	2.9	3.0	2 %	3 %	-5 %	7 %	100 %	51 %	-17	-18	0	-7 %	22 %
5s/10s/20s	2.8	3.0	3.0	2 %	3 %	-13 %	14 %	100 %	51 %	-16	-16	0	-15 %	29 %

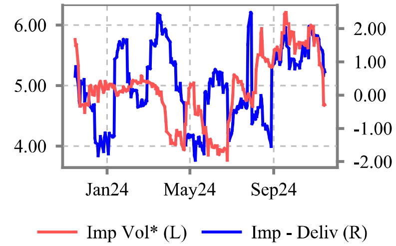
* Implied directionality is defined as: Curves: (1 - (Implied vol on short maturity/Implied vol on long maturity)). Flies: (1 - (0.5*(implied vol of the left wing + implied vol of the right wing)/(implied vol of the body)). We use 3M epxiry swaptions.
Delivered directionality is defined as: Curves: (1 - 3M beta obtained from regressing short maturity yields to long maturity yields). Flies: Delivered directionality is defined as the 3M beta obtained from regressing the 50:50 fly with the body of the fly
** Curves weighted by the implied weights listed in the adjacent column. Flies weighted by the implied weights listed in the adjacent column. These weights make the fly premium-neutral at inception.
*** Carry for curve flatteners and long body in the fly
**** Curves: 3M regression stats obtained from regressing the weighted curve (using the weights in the adjacent columns on the left) with long maturity yields; Flies: Regression stats obtained from regressing the weighted fly (see above for defintion) with the body of the fly.

Fabio Bassi (44 20) 7134 1989
Khagendra Gupta (44 20) 7134 0486

AUD Short-Dated Swaption Volatility Report

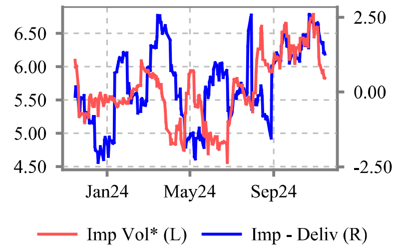
Options on 1Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	4.0	-0.9	-0.6	2.6	3.0	3.3	13.0	1.8	5.5	69 %
3M	4.7	-1.0	-0.7	3.4	4.0	4.2	11.0	3.8	6.8	79 %
6M	5.5	-0.4	-0.3	4.3	4.9	5.0	10.4	5.1	7.6	90 %
1Y	6.2	0.3	1.5	5.0	5.2	5.3	9.8	6.1	8.0	100 %



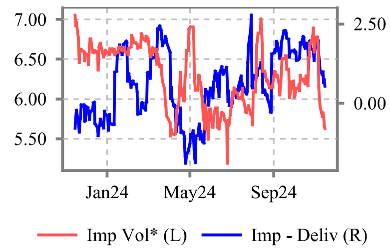
Options on 2Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	5.3	-1.0	-0.2	3.8	4.0	4.2	12.2	2.6	6.4	66 %
3M	5.8	-0.5	0.0	4.3	4.6	4.7	10.5	4.6	7.2	65 %
6M	6.0	-0.1	0.0	4.8	5.1	5.1	10.2	5.5	7.7	90 %
1Y	6.0	0.2	1.0	5.5	5.6	5.4	9.7	6.4	8.1	100 %



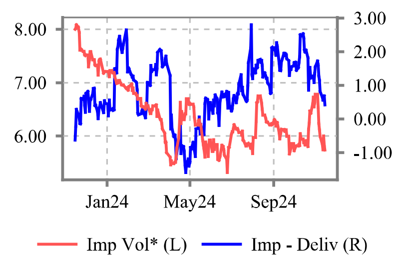
Options on 5Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	5.5	-1.2	-1.0	4.3	4.9	4.5	11.5	2.9	6.8	70 %
3M	5.6	-0.6	-1.4	4.5	5.1	4.7	10.1	4.6	7.1	82 %
6M	5.8	0.0	-1.3	4.7	5.3	4.8	9.7	5.1	7.4	94 %
1Y	5.7	0.2	-0.8	4.8	5.4	4.9	8.8	5.9	7.5	100 %



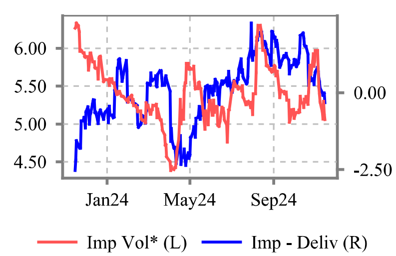
Options on 10Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	6.2	-0.5	0.0	4.3	5.2	4.5	10.9	3.0	6.5	54 %
3M	5.7	-0.1	-1.0	4.4	5.3	4.6	9.4	4.3	6.8	79 %
6M	5.6	0.1	-1.2	4.5	5.4	4.6	9.2	4.9	7.1	89 %
1Y	5.5	0.1	-1.2	4.6	5.5	4.7	8.4	5.6	7.2	100 %

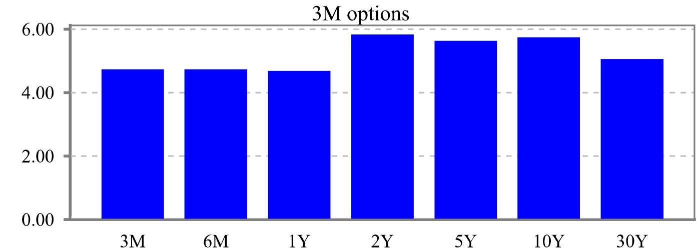


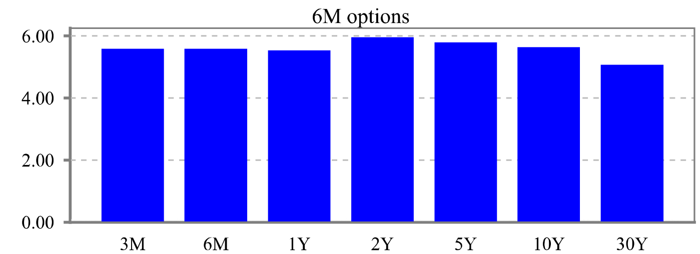
Options on 30Y swaps

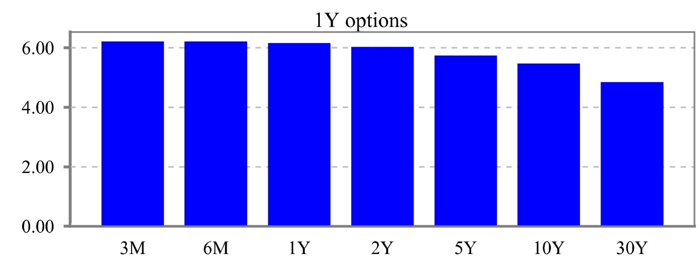
	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	5.4	-0.8	-0.4	4.3	5.3	4.5	10.1	3.0	6.1	64 %
3M	5.1	-0.2	-1.1	4.4	5.4	4.5	8.3	4.0	6.3	86 %
6M	5.1	0.0	-1.1	4.4	5.4	4.6	8.2	4.6	6.5	94 %
1Y	4.8	0.0	-1.3	4.5	5.5	4.6	7.4	5.3	6.6	100 %

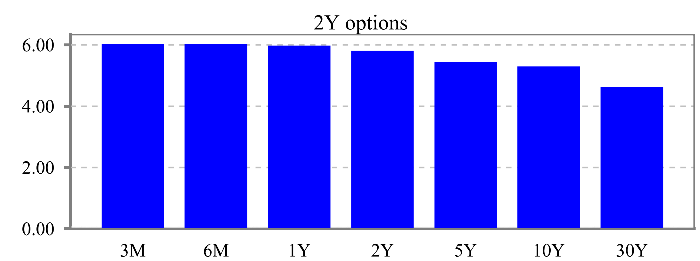


Maturity term structure for 3M, 6M, 1Y and 2Y options; bp/day









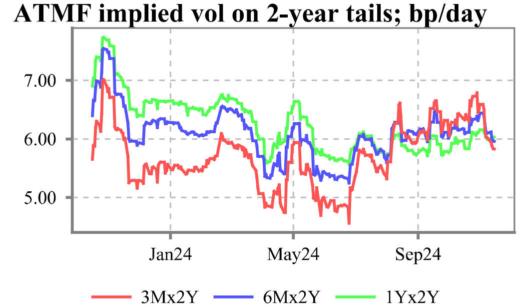
* For Swaptions:
Imp Vol: implied vol of 3M options
Deliv Vol: 1M deliv vol on 3M fwd swap rate

AUD Swaptions – Outright ATM and OTM payers & receivers

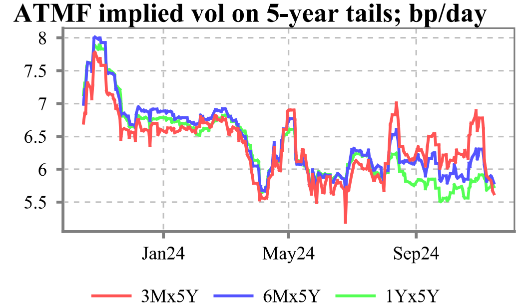
	ATMF Receiver				25-delta Receiver				10-delta Receiver			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	4.30	5.83	34.5	0.0	4.01	6.09	0.0	0.0	3.68	6.60	0.0	0.0
3Mx3Y	4.29	5.88	51.2	0.0	4.00	6.10	0.0	0.0	3.67	6.56	0.0	0.0
3Mx5Y	4.36	5.63	78.5	0.0	4.07	5.75	0.0	0.0	3.77	6.10	0.0	0.0
3Mx10Y	4.62	5.74	144.4	0.0	4.31	5.76	0.0	0.0	4.03	5.94	0.0	0.0
3Mx30Y	4.62	5.06	260.5	0.0	4.32	4.94	0.0	0.0	4.10	4.95	0.0	0.0
6Mx2Y	4.25	5.96	49.1	0.0	3.84	6.23	0.0	0.0	3.38	6.73	0.0	0.0
6Mx3Y	4.26	5.98	72.4	0.0	3.85	6.20	0.0	0.0	3.40	6.66	0.0	0.0
6Mx5Y	4.36	5.79	112.3	0.0	3.94	5.92	0.0	0.0	3.53	6.27	0.0	0.0
6Mx10Y	4.63	5.64	197.0	0.0	4.20	5.65	0.0	0.0	3.82	5.83	0.0	0.0
6Mx30Y	4.61	5.07	362.9	0.0	4.19	4.95	0.0	0.0	3.88	4.97	0.0	0.0
1Yx2Y	4.22	6.03	69.8	0.0	3.61	6.27	0.0	0.0	3.04	6.66	0.0	0.0
1Yx3Y	4.26	5.91	100.8	0.0	3.66	6.10	0.0	0.0	3.10	6.45	0.0	0.0
1Yx5Y	4.39	5.74	156.3	0.0	3.79	5.84	0.0	0.0	3.26	6.11	0.0	0.0
1Yx10Y	4.67	5.47	268.2	0.0	4.06	5.48	0.0	0.0	3.57	5.63	0.0	0.0
1Yx30Y	4.61	4.84	486.6	0.0	4.02	4.73	0.0	0.0	3.59	4.74	0.0	0.0

	ATMF Payer				25-delta Payer				10-delta Payer			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	4.30	5.83	34.5	0.0	4.60	0.00	0.0	0.0	6.19	7.18	0.0	0.0
3Mx3Y	4.29	5.88	51.2	0.0	4.58	0.00	0.0	0.0	6.18	7.48	0.0	0.0
3Mx5Y	4.36	5.63	78.5	0.0	4.63	0.00	0.0	0.0	6.33	7.84	0.0	0.0
3Mx10Y	4.62	5.74	144.4	0.0	4.90	0.00	0.0	0.0	6.54	7.38	0.0	0.0
3Mx30Y	4.62	5.06	260.5	0.0	4.85	0.00	0.0	0.0	6.77	7.14	0.0	0.0
6Mx2Y	4.25	5.96	49.1	0.0	4.67	7.13	0.0	0.0	6.01	6.75	0.0	0.0
6Mx3Y	4.26	5.98	72.4	0.0	4.68	7.40	0.0	0.0	6.05	6.96	0.0	0.0
6Mx5Y	4.36	5.79	112.3	0.0	4.75	7.76	0.0	0.0	6.18	7.17	0.0	0.0
6Mx10Y	4.63	5.64	197.0	0.0	5.02	7.13	0.0	0.0	6.41	6.69	0.0	0.0
6Mx30Y	4.61	5.07	362.9	0.0	4.93	0.00	0.0	0.0	6.44	6.34	0.0	0.0
1Yx2Y	4.22	6.03	69.8	0.0	4.80	6.91	0.0	0.0	6.17	6.67	0.0	0.0
1Yx3Y	4.26	5.91	100.8	0.0	4.82	6.96	0.0	0.0	6.22	6.68	0.0	0.0
1Yx5Y	4.39	5.74	156.3	0.0	4.92	0.00	0.0	0.0	6.37	6.78	0.0	0.0
1Yx10Y	4.67	5.47	268.2	0.0	5.17	6.49	0.0	0.0	6.59	6.22	0.0	0.0
1Yx30Y	4.61	4.84	486.6	0.0	5.01	0.00	0.0	0.0	6.50	5.74	0.0	0.0

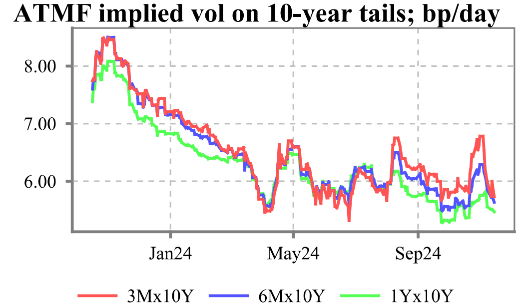
ATMF implied vol on 2-year tails; bp/day



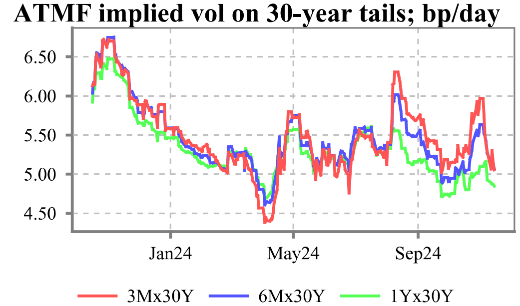
ATMF implied vol on 5-year tails; bp/day



ATMF implied vol on 10-year tails; bp/day



ATMF implied vol on 30-year tails; bp/day



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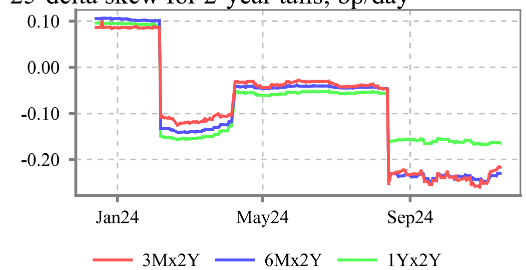
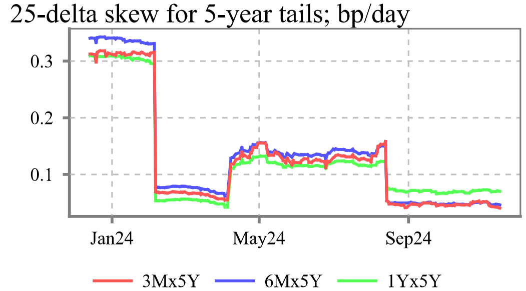
AUD Swaptions – Spreads and 1x2s

	Spot Yield			ATMF	25-delta receiver spread				Premium-neutral receiver 1x2s			
Structure	Current	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	4.36	4.60	3.75	4.30	4.01	37	18.7	-1.6	N/A	0	49	3.6
3Mx3Y	4.32	4.48	3.61	4.29	4.00	38	28.4	-1.4	N/A	0	50	3.8
3Mx5Y	4.36	4.42	3.62	4.36	4.07	44	45.5	-1.1	N/A	0	51	3.7
3Mx10Y	4.62	4.66	3.91	4.62	4.31	44	88.9	-0.9	N/A	0	52	3.5
3Mx30Y	4.62	4.68	3.98	4.62	4.32	41	173.0	-1.1	N/A	0	54	2.9
6Mx2Y	4.36	4.60	3.75	4.25	3.84	9	26.7	-0.8	N/A	0	49	2.1
6Mx3Y	4.32	4.48	3.61	4.26	3.85	30	40.3	-0.8	N/A	0	50	2.3
6Mx5Y	4.36	4.42	3.62	4.36	3.94	48	65.3	-0.6	N/A	0	51	2.7
6Mx10Y	4.62	4.66	3.91	4.63	4.20	35	122.6	-0.5	N/A	0	52	2.4
6Mx30Y	4.62	4.68	3.98	4.61	4.19	32	244.1	-0.8	N/A	0	55	2.1
1Yx2Y	4.36	4.60	3.75	4.22	3.61	0	39.1	-0.4	N/A	0	50	1.8
1Yx3Y	4.32	4.48	3.61	4.26	3.66	3	57.7	-0.3	N/A	0	51	1.8
1Yx5Y	4.36	4.42	3.62	4.39	3.79	25	93.4	-0.1	N/A	0	52	1.9
1Yx10Y	4.62	4.66	3.91	4.67	4.06	21	170.4	0.0	N/A	0	53	1.6
1Yx30Y	4.62	4.68	3.98	4.61	4.02	3	337.5	-0.3	N/A	0	56	1.0

25-delta skew for 2-year tails; bp/day

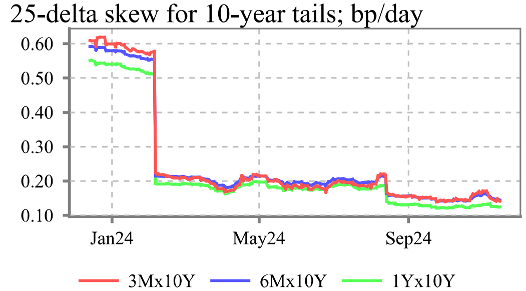


25-delta skew for 5-year tails; bp/day

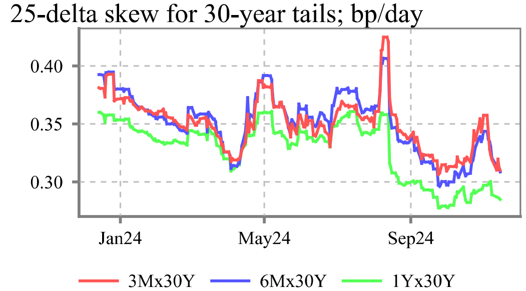


		Spot Yield		ATMF	25-delta payer spread				Premium-neutral payer 1x2s			
Structure	Spot	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	4.36	4.60	3.75	4.30	4.60	100	20.3	-0.4	N/A	0	-51	5.5
3Mx3Y	4.32	4.48	3.61	4.29	4.58	100	29.5	-0.7	N/A	0	-50	4.9
3Mx5Y	4.36	4.42	3.62	4.36	4.63	100	43.4	-1.0	N/A	0	-49	3.8
3Mx10Y	4.62	4.66	3.91	4.62	4.90	100	80.3	-0.9	N/A	0	-48	3.2
3Mx30Y	4.62	4.68	3.98	4.62	4.85	100	135.1	-0.6	N/A	0	-46	3.1
6Mx2Y	4.36	4.60	3.75	4.25	4.67	100	28.6	-0.3	N/A	0	-51	3.4
6Mx3Y	4.32	4.48	3.61	4.26	4.68	100	41.3	-0.4	N/A	0	-50	3.0
6Mx5Y	4.36	4.42	3.62	4.36	4.75	100	61.3	-0.6	N/A	0	-49	2.5
6Mx10Y	4.62	4.66	3.91	4.63	5.02	100	107.8	-0.6	N/A	0	-48	2.0
6Mx30Y	4.62	4.68	3.98	4.61	4.93	100	183.6	-0.3	N/A	0	-45	2.2
1Yx2Y	4.36	4.60	3.75	4.22	4.80	100	40.0	-0.2	N/A	0	-50	1.9
1Yx3Y	4.32	4.48	3.61	4.26	4.82	100	56.4	-0.3	N/A	0	-49	1.5
1Yx5Y	4.36	4.42	3.62	4.39	4.92	100	83.5	-0.3	N/A	0	-48	1.1
1Yx10Y	4.62	4.66	3.91	4.67	5.17	100	144.7	-0.3	N/A	0	-47	0.9
1Yx30Y	4.62	4.68	3.98	4.61	5.01	100	235.9	-0.1	N/A	0	-44	1.0

25-delta skew for 10-year tails; bp/day



25-delta skew for 30-year tails; bp/day



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Implied and delivered directionality report - AUD

	Implied vol; bp/day		Directionality*; % Implied		Deliv	(Imp - Deliv)	Implied weights; %		Weighted curve**; bp			3M regression stats****	
Trades	Short	Long	Current	3M Lagged	Levels	Levels	Short	Long	3M fwd	Spot	3M Carry***	Beta	Rsqr
1s/3s	4.7	5.9	20 %	14 %	37 %	-17 %	100 %	80 %	-99	-108	9	17 %	93 %
1s/5s	4.7	5.6	17 %	14 %	39 %	-22 %	100 %	83 %	-79	-90	11	22 %	95 %
1s/10s	4.7	5.7	18 %	15 %	38 %	-19 %	100 %	82 %	-64	-76	12	19 %	86 %
1s/30s	4.7	5.1	7 %	9 %	33 %	-26 %	100 %	93 %	-13	-24	11	26 %	79 %
2s/5s	5.8	5.6	-4 %	4 %	14 %	-18 %	100 %	104 %	22	16	6	18 %	89 %
2s/7s	5.8	5.7	-3 %	4 %	14 %	-17 %	100 %	103 %	31	24	7	17 %	80 %
2s/10s	5.8	5.7	-2 %	5 %	12 %	-14 %	100 %	102 %	40	33	7	14 %	62 %
2s/20s	5.8	5.4	-9 %	2 %	9 %	-18 %	100 %	109 %	89	83	6	18 %	58 %
2s/30s	5.8	5.1	-15 %	-2 %	6 %	-21 %	100 %	115 %	103	97	6	21 %	55 %
3s/5s	5.9	5.6	-4 %	0 %	4 %	-8 %	100 %	104 %	26	23	3	8 %	83 %
3s/7s	5.9	5.7	-4 %	0 %	3 %	-7 %	100 %	104 %	36	32	4	7 %	53 %
3s/10s	5.9	5.7	-2 %	1 %	1 %	-3 %	100 %	102 %	45	41	4	3 %	12 %
3s/20s	5.9	5.4	-10 %	-2 %	-3 %	-7 %	100 %	110 %	94	91	3	7 %	19 %
3s/30s	5.9	5.1	-16 %	-6 %	-6 %	-10 %	100 %	116 %	108	105	3	10 %	22 %
5s/10s	5.6	5.7	2 %	1 %	-3 %	5 %	100 %	98 %	18	17	1	-5 %	41 %
5s/20s	5.6	5.4	-5 %	-2 %	-7 %	2 %	100 %	105 %	65	65	1	-2 %	3 %
5s/30s	5.6	5.1	-11 %	-6 %	-11 %	-1 %	100 %	111 %	78	78	0	1 %	0 %
10s/30s	5.7	5.1	-13 %	-7 %	-8 %	-6 %	100 %	113 %	61	63	-1	6 %	21 %

Structure	Left wing	Body	Right wing	Current	3M Lagged	Levels	Levels	Body	Wings	Spot	Fwd	3M carry***	Beta	Rsqr
1s/2s/3s	4.7	5.8	5.9	9 %	3 %	8 %	1 %	100 %	55 %	-52	-51	2	-1 %	11 %
1s/3s/5s	4.7	5.9	5.6	12 %	7 %	17 %	-4 %	100 %	57 %	-74	-71	3	5 %	70 %
2s/5s/7s	5.8	5.6	5.7	-2 %	3 %	8 %	-10 %	100 %	49 %	4	6	2	10 %	94 %
2s/5s/10s	5.8	5.6	5.7	-3 %	4 %	9 %	-12 %	100 %	49 %	-1	2	2	11 %	96 %
2s/7s/12s	5.8	5.7	5.7	-1 %	3 %	9 %	-10 %	100 %	49 %	1	4	3	10 %	92 %
2s/10s/30s	5.8	5.7	5.1	5 %	4 %	10 %	-5 %	100 %	53 %	-12	-7	4	5 %	60 %
3s/7s/15s	5.9	5.7	5.5	-1 %	1 %	4 %	-4 %	100 %	50 %	-4	-2	2	4 %	84 %
5s/10s/30s	5.6	5.7	5.1	7 %	2 %	2 %	5 %	100 %	54 %	-21	-19	1	-5 %	64 %
10s/20s/30s	5.7	5.4	5.1	-1 %	0 %	0 %	-1 %	100 %	50 %	18	18	0	1 %	15 %

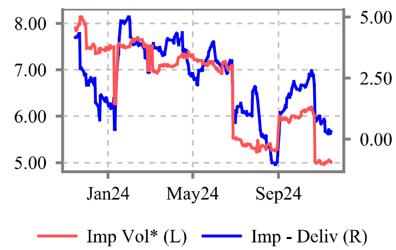
* Implied directionality is defined as: Curves: (1 - (Implied vol on short maturity/Implied vol on long maturity)). Flies: (1 - (0.5*(implied vol of the left wing + implied vol of the right wing)/(implied vol of the body)). We use 3M epxiry swaptions
Delivered directionality is defined as: Curves: (1 - 3M beta obtained from regressing short maturity yields to long maturity yields). Flies: Delivered directionality is defined as the 3M beta obtained from regressing the 50:50 fly with the body of the fly
** Curves weighted by the implied weights listed in the adjacent column. Flies weighted by the implied weights listed in the adjacent column. These weights make the fly premium-neutral at inception.
*** Carry for curve flatteners and long body in the fly
**** Curves: 3M regression stats obtained from regressing the weighted curve (using the weights in the adjacent columns on the left) with long maturity yields; Flies: Regression stats obtained from regressing the weighted fly (see above for defintion) with the body of the fly.

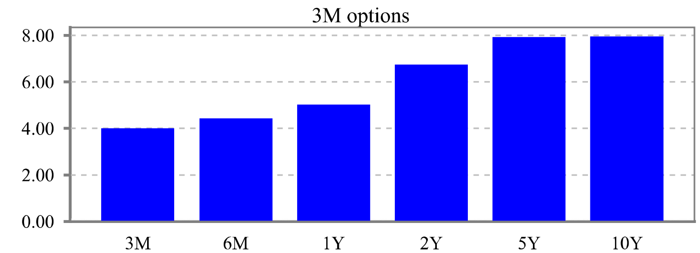
ZAR Short-Dated Swaption Volatility Report

Maturity term structure for 3M, 6M, 1Y and 2Y options; bp/day

Options on 1Y swaps

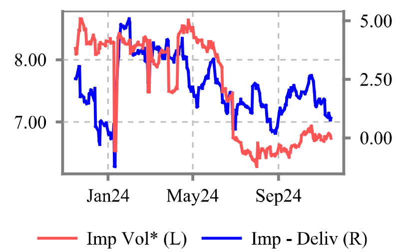
	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	5.0	-0.1	-0.4	3.7	3.6	3.4	10.1	1.8	4.5	34 %
3M	5.0	-1.2	-1.2	4.6	4.7	4.3	9.6	3.3	5.9	67 %
6M	7.0	-0.2	-0.2	5.8	5.9	5.2	9.6	4.9	7.2	59 %
1Y	7.0	-1.4	-1.9	7.2	7.1	6.2	10.4	6.5	8.8	92 %

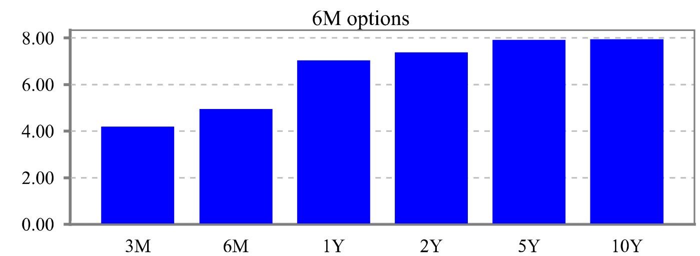




Options on 2Y swaps

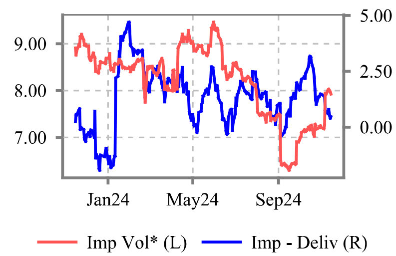
	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	6.2	-0.1	-0.3	5.5	5.3	4.7	11.1	2.8	6.2	42 %
3M	6.7	-0.2	-0.2	5.9	5.9	5.2	10.3	4.2	7.2	63 %
6M	7.4	-0.2	-0.3	6.6	6.6	5.8	10.3	5.8	8.1	70 %
1Y	7.2	-1.2	-1.7	7.7	7.5	6.4	10.8	6.9	9.3	94 %

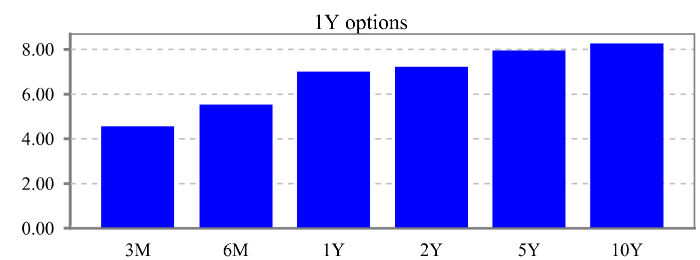




Options on 5Y swaps

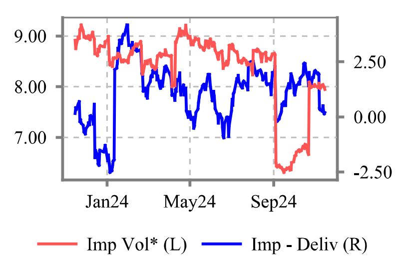
	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	7.4	0.2	0.4	8.0	7.2	5.9	15.7	3.6	8.0	55 %
3M	7.9	0.7	0.3	8.2	7.4	6.2	12.1	5.6	8.7	60 %
6M	7.9	-0.2	-0.9	8.6	7.8	6.5	11.6	6.7	9.3	76 %
1Y	8.0	-0.2	-1.3	9.2	8.3	6.8	11.5	7.6	10.0	96 %

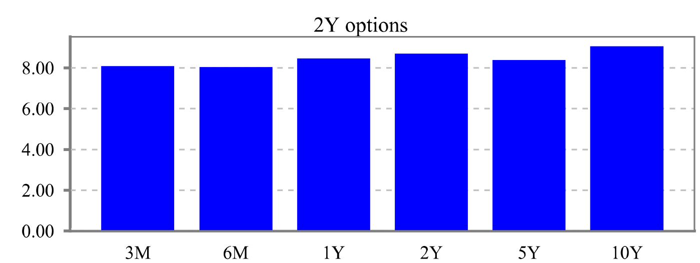




Options on 10Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	7.4	0.7	0.0	8.2	7.5	6.2	16.7	4.2	8.1	59 %
3M	7.9	1.1	0.0	8.4	7.7	6.3	12.5	5.8	8.6	61 %
6M	7.9	-0.2	-1.4	8.7	8.0	6.6	11.4	6.9	9.1	77 %
1Y	8.3	-0.3	-1.5	9.2	8.3	6.8	11.0	7.8	9.7	92 %





* For Swaptions:
Imp Vol: implied vol of 3M options
Deliv Vol: 1M deliv vol on 3M fwd swap rate

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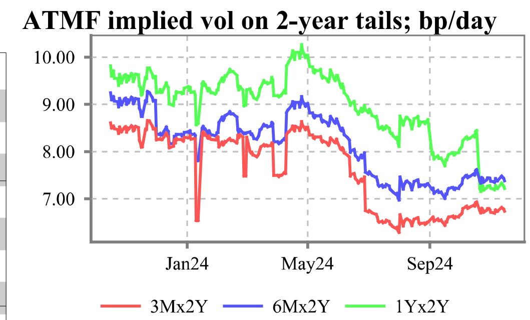
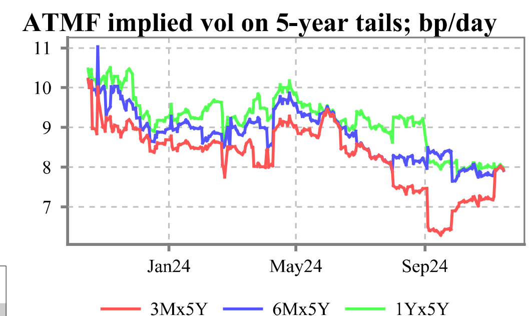
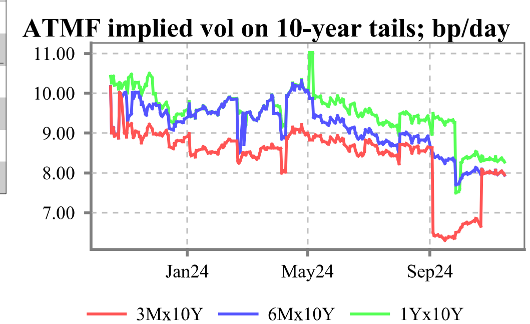
ZAR Swaptions – Outright ATM and OTM payers & receivers

	ATMF Receiver				25-delta Receiver				10-delta Receiver			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	7.35	6.74	39.2	0.0	7.00	6.36	0.0	0.0	6.72	6.31	0.0	0.0
3Mx3Y	7.45	6.86	57.8	0.0	7.10	6.47	0.0	0.0	6.80	6.41	0.0	0.0
3Mx5Y	7.82	7.92	103.8	0.0	7.41	7.44	0.0	0.0	7.09	7.35	0.0	0.0
3Mx10Y	8.84	7.95	171.4	0.0	8.42	7.47	0.0	0.0	8.10	7.38	0.0	0.0
6Mx2Y	7.34	7.38	58.8	0.0	6.84	6.84	0.0	0.0	6.43	6.65	0.0	0.0
6Mx3Y	7.48	7.54	86.8	0.0	6.96	6.98	0.0	0.0	6.54	6.81	0.0	0.0
6Mx5Y	7.89	7.91	141.2	0.0	7.34	7.33	0.0	0.0	6.91	7.18	0.0	0.0
6Mx10Y	8.92	7.94	232.8	0.0	8.35	7.37	0.0	0.0	7.92	7.22	0.0	0.0
1Yx2Y	7.42	7.22	78.8	0.0	6.73	6.59	0.0	0.0	6.26	6.32	0.0	0.0
1Yx3Y	7.61	7.50	118.5	0.0	6.89	6.83	0.0	0.0	6.41	6.55	0.0	0.0
1Yx5Y	8.09	7.95	194.5	0.0	7.30	7.05	0.0	0.0	6.84	6.67	0.0	0.0
1Yx10Y	9.12	8.27	330.2	0.0	8.27	7.33	0.0	0.0	7.81	6.96	0.0	0.0





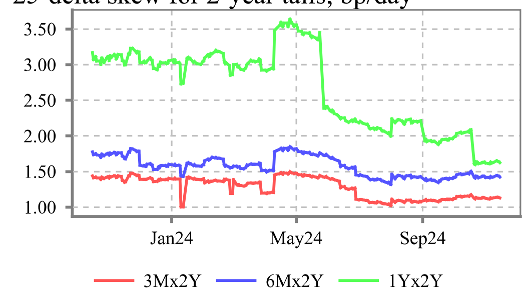
	ATMF Payer				25-delta Payer				10-delta Payer			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	7.35	6.74	39.2	0.0	7.69	0.00	0.0	0.0	9.37	11.26	0.0	0.0
3Mx3Y	7.45	6.86	57.8	0.0	7.79	0.00	0.0	0.0	9.47	11.37	0.0	0.0
3Mx5Y	7.82	7.92	103.8	0.0	8.21	0.00	0.0	0.0	9.87	12.58	0.0	0.0
3Mx10Y	8.84	7.95	171.4	0.0	9.22	0.00	0.0	0.0	10.88	12.42	0.0	0.0
6Mx2Y	7.34	7.38	58.8	0.0	7.87	0.00	0.0	0.0	9.53	10.99	0.0	0.0
6Mx3Y	7.48	7.54	86.8	0.0	8.01	0.00	0.0	0.0	9.69	11.26	0.0	0.0
6Mx5Y	7.89	7.91	141.2	0.0	8.43	0.00	0.0	0.0	10.16	11.89	0.0	0.0
6Mx10Y	8.92	7.94	232.8	0.0	9.43	0.00	0.0	0.0	11.17	11.72	0.0	0.0
1Yx2Y	7.42	7.22	78.8	0.0	8.18	0.00	0.0	0.0	9.99	10.44	0.0	0.0
1Yx3Y	7.61	7.50	118.5	0.0	8.39	0.00	0.0	0.0	0.00	0.00	0.0	0.0
1Yx5Y	8.09	7.95	194.5	0.0	8.87	0.00	0.0	0.0	0.00	0.00	0.0	0.0
1Yx10Y	9.12	8.27	330.2	0.0	9.86	0.00	0.0	0.0	0.00	0.00	0.0	0.0



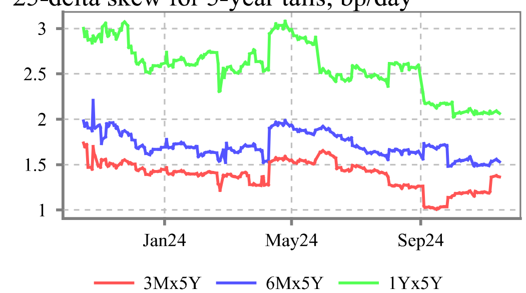
ZAR Swaptions – Spreads and 1x2s

	Spot Yield			ATMF	25-delta receiver spread				Premium-neutral receiver 1x2s			
Structure	Current	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	7.44	8.24	7.09	7.35	7.00	0	23.7	-2.5	N/A	0	55	4.1
3Mx3Y	7.49	8.32	7.05	7.45	7.10	48	35.3	-1.1	N/A	0	55	2.8
3Mx5Y	7.79	8.74	7.31	7.82	7.41	5	64.6	-1.9	N/A	0	55	6.4
3Mx10Y	8.79	9.90	8.36	8.84	8.42	43	108.2	-1.6	N/A	0	55	7.0
6Mx2Y	7.44	8.24	7.09	7.34	6.84	0	36.6	-1.2	N/A	0	54	3.7
6Mx3Y	7.49	8.32	7.05	7.48	6.96	0	54.3	-1.0	N/A	0	54	4.2
6Mx5Y	7.79	8.74	7.31	7.89	7.34	48	88.8	-0.2	N/A	0	54	4.5
6Mx10Y	8.79	9.90	8.36	8.92	8.35	0	149.2	-0.1	N/A	0	55	4.6
1Yx2Y	7.44	8.24	7.09	7.42	6.73	0	49.8	0.0	N/A	0	53	2.7
1Yx3Y	7.49	8.32	7.05	7.61	6.89	0	75.9	0.3	N/A	0	53	3.3
1Yx5Y	7.79	8.74	7.31	8.09	7.30	0	130.5	0.8	N/A	0	55	4.3
1Yx10Y	8.79	9.90	8.36	9.12	8.27	0	226.0	0.5	N/A	0	56	4.4

25-delta skew for 2-year tails; bp/day

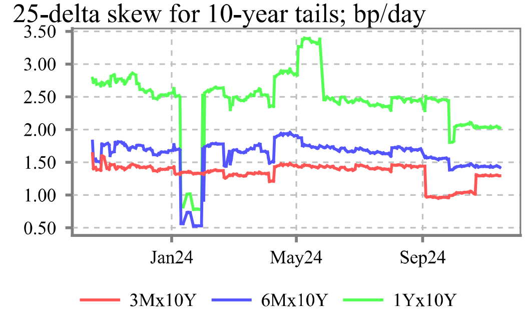


25-delta skew for 5-year tails; bp/day



	Spot Yield			ATMF	25-delta payer spread				Premium-neutral payer 1x2s			
Structure	Spot	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	7.44	8.24	7.09	7.35	7.69	71	20.4	0.2	N/A	0	-45	6.4
3Mx3Y	7.49	8.32	7.05	7.45	7.79	73	29.8	-0.2	N/A	0	-45	3.3
3Mx5Y	7.79	8.74	7.31	7.82	8.21	83	51.9	-1.7	N/A	0	-45	4.8
3Mx10Y	8.79	9.90	8.36	8.84	9.22	80	84.7	-1.8	N/A	0	-45	4.5
6Mx2Y	7.44	8.24	7.09	7.34	7.87	81	31.1	-0.6	N/A	0	-46	3.7
6Mx3Y	7.49	8.32	7.05	7.48	8.01	87	44.8	-0.9	N/A	0	-46	3.3
6Mx5Y	7.79	8.74	7.31	7.89	8.43	87	70.4	-1.2	N/A	0	-46	1.9
6Mx10Y	8.79	9.90	8.36	8.92	9.43	86	112.7	-1.1	N/A	0	-45	1.8
1Yx2Y	7.44	8.24	7.09	7.42	8.18	96	41.1	-0.6	N/A	0	-47	0.7
1Yx3Y	7.49	8.32	7.05	7.61	8.39	100	60.8	-1.0	N/A	0	-47	0.7
1Yx5Y	7.79	8.74	7.31	8.09	8.87	100	92.2	-1.0	N/A	0	-45	0.5
1Yx10Y	8.79	9.90	8.36	9.12	9.86	99	145.7	-0.8	N/A	0	-44	0.8

25-delta skew for 10-year tails; bp/day



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Implied and delivered directionality report - ZAR

	Implied vol; bp/day		Directionality*; % Implied		Deliv	(Imp - Deliv)	Implied weights; %		Weighted curve**; bp			3M regression stats****	
Trades	Short	Long	Current	3M Lagged	Levels	Levels	Short	Long	3M fwd	Spot	3M Carry***	Beta	Rsqr
1s/3s	5.0	6.9	27 %	22 %	52 %	-26 %	100 %	73 %	-194	-209	15	26 %	68 %
1s/5s	5.0	7.9	37 %	28 %	58 %	-21 %	100 %	63 %	-244	-264	20	21 %	60 %
1s/10s	5.0	7.9	37 %	38 %	56 %	-19 %	100 %	63 %	-181	-202	21	19 %	52 %
2s/5s	6.7	7.9	15 %	12 %	24 %	-9 %	100 %	85 %	-71	-82	11	9 %	38 %
2s/7s	6.7	7.9	15 %	14 %	23 %	-9 %	100 %	85 %	-30	-43	13	9 %	24 %
2s/10s	6.7	7.9	15 %	24 %	22 %	-7 %	100 %	85 %	14	1	13	7 %	10 %
2s/20s	6.7	8.2	17 %	27 %	22 %	-5 %	100 %	83 %	40	30	10	5 %	6 %
3s/5s	6.9	7.9	13 %	8 %	10 %	3 %	100 %	87 %	-69	-75	6	-3 %	13 %
3s/7s	6.9	7.9	13 %	10 %	10 %	4 %	100 %	87 %	-27	-35	8	-4 %	6 %
3s/10s	6.9	7.9	14 %	20 %	8 %	5 %	100 %	86 %	17	10	8	-5 %	6 %
3s/20s	6.9	8.2	16 %	24 %	9 %	7 %	100 %	84 %	43	38	5	-7 %	11 %
5s/10s	7.9	7.9	0 %	13 %	-3 %	3 %	100 %	100 %	100	97	3	-3 %	3 %
5s/20s	7.9	8.2	3 %	17 %	-3 %	5 %	100 %	97 %	130	131	-1	-5 %	9 %

Structure	Left wing	Body	Right wing	Current	3M Lagged	Levels	Levels	Body	Wings	Spot	Fwd	3M carry***	Beta	Rsqr
1s/2s/3s	5.0	6.7	6.9	12 %	7 %	13 %	-1 %	100 %	57 %	-111	-107	4	1 %	2 %
1s/3s/5s	5.0	6.9	7.9	6 %	6 %	20 %	-15 %	100 %	53 %	-65	-60	5	16 %	69 %
2s/5s/7s	6.7	7.9	7.9	8 %	5 %	13 %	-5 %	100 %	54 %	-69	-64	4	6 %	35 %
2s/5s/10s	6.7	7.9	7.9	7 %	-2 %	15 %	-8 %	100 %	54 %	-97	-92	4	8 %	37 %
2s/7s/12s	6.7	7.9	6.6	15 %	1 %	13 %	2 %	100 %	59 %	-151	-144	7	-3 %	13 %
3s/7s/15s	6.9	7.9	7.2	11 %	-2 %	6 %	5 %	100 %	56 %	-118	-113	5	-6 %	38 %

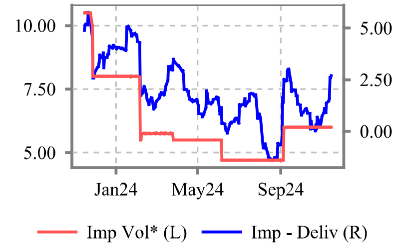
* Implied directionality is defined as: Curves: (1 - (Implied vol on short maturity/Implied vol on long maturity)). Flies: (1 - (0.5*(implied vol of the left wing + implied vol of the right wing)/(implied vol of the body)). We use 3M epxiry swaptions.
Delivered directionality is defined as: Curves: (1 - 3M beta obtained from regressing short maturity yields to long maturity yields). Flies: Delivered directionality is defined as the 3M beta obtained from regressing the 50:50 fly with the body of the fly
** Curves weighted by the implied weights listed in the adjacent column. Flies weighted by the implied weights listed in the adjacent column. These weights make the fly premium-neutral at inception.
*** Carry for curve flatteners and long body in the fly
**** Curves: 3M regression stats obtained from regressing the weighted curve (using the weights in the adjacent columns on the left) with long maturity yields; Flies: Regression stats obtained from regressing the weighted fly (see above for defintion) with the body of the fly.

Fabio Bassi (44 20) 7134 1989   Khagendra Gupta (44 20) 7134 0486

ILS Short-Dated Swaption Volatility Report

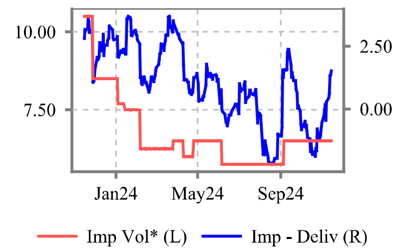
Options on 1Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	6.0	0.0	1.2	1.4	2.5	3.2	15.6	0.5	4.6	19 %
3M	6.0	0.0	1.1	2.1	3.3	4.3	10.9	2.1	6.2	40 %
6M	6.5	0.0	1.2	3.4	4.4	5.6	9.7	4.6	7.5	68 %
1Y	7.5	0.0	0.7	5.5	6.5	7.7	10.5	7.1	9.3	96 %



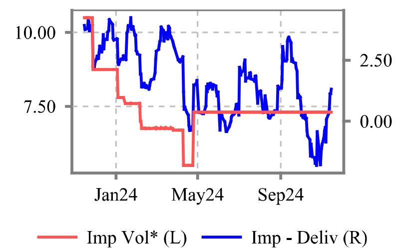
Options on 2Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	6.0	0.0	1.2	3.4	4.5	5.3	16.9	1.3	6.1	40 %
3M	6.5	0.0	1.0	3.8	5.0	5.9	11.5	3.0	7.1	50 %
6M	6.8	0.0	1.1	4.4	5.5	6.6	9.8	4.8	7.8	73 %
1Y	7.7	0.0	0.7	4.9	6.3	7.4	9.4	6.6	8.4	88 %



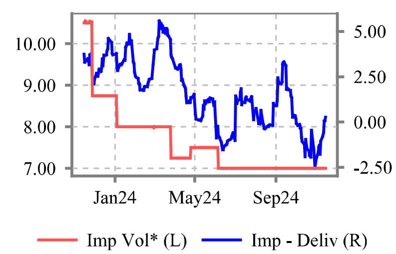
Options on 5Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	6.7	0.0	-0.3	4.2	5.7	6.0	16.1	2.2	6.3	37 %
3M	7.3	0.0		4.4	6.0	6.3	10.4	3.3	6.9	39 %
6M	8.2	0.0	1.2	4.6	6.3	6.5	8.7	4.4	7.3	23 %
1Y	7.6	0.0	0.8	4.9	6.8	6.8	8.7	6.3	7.7	53 %

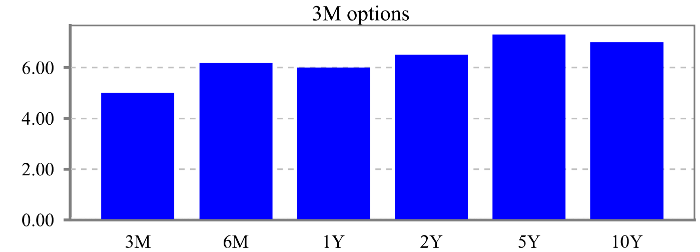


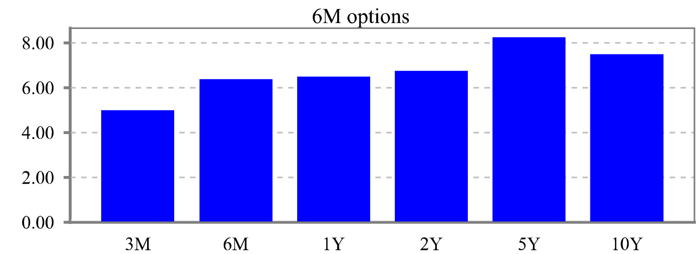
Options on 10Y swaps

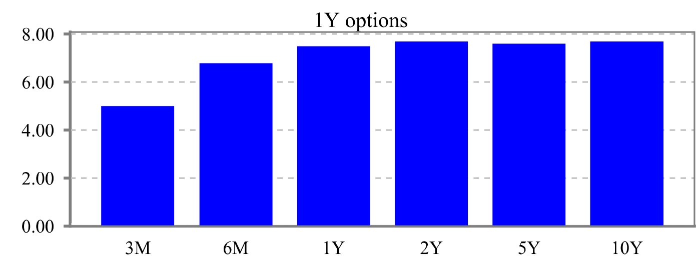
	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	7.0	0.0	-0.3	4.2	6.6	6.4	14.5	2.1	6.2	30 %
3M	7.0	0.0	-0.3	4.3	6.7	6.5	9.6	3.3	6.6	36 %
6M	7.5	0.0	-0.3	4.4	6.9	6.7	8.3	4.3	6.9	39 %
1Y	7.7	0.0	0.8	4.6	7.2	6.9	8.0	6.2	7.2	24 %

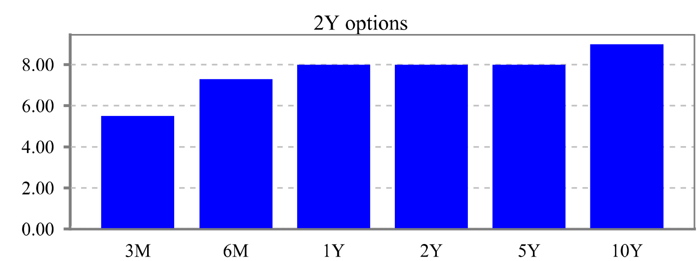


Maturity term structure for 3M, 6M, 1Y and 2Y options; bp/day







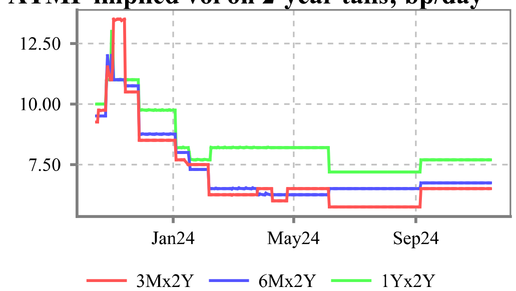


* For Swaptions:
Imp Vol: implied vol of 3M options
Deliv Vol: 1M deliv vol on 3M fwd swap rate

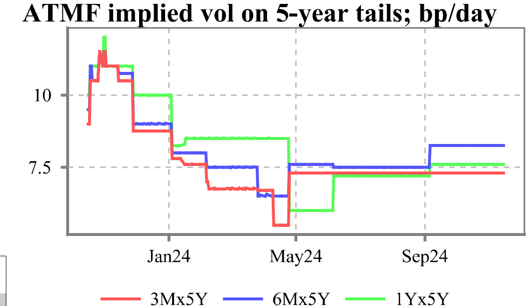
ILS Swaptions – Outright ATM and OTM payers & receivers

	ATMF Receiver				25-delta Receiver				10-delta Receiver			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	4.36	6.50	38.2	0.0	3.99	6.09	0.0	0.0	3.71	5.89	0.0	0.0
3Mx3Y	4.34	6.77	58.5	0.0	3.95	6.34	0.0	0.0	3.67	6.15	0.0	0.0
3Mx5Y	4.39	7.30	100.9	0.0	3.97	6.92	0.0	0.0	3.66	6.78	0.0	0.0
3Mx10Y	4.58	7.00	173.9	0.0	4.19	7.02	0.0	0.0	3.85	7.23	0.0	0.0
6Mx2Y	4.31	6.75	55.1	0.0	3.78	6.32	0.0	0.0	3.38	6.12	0.0	0.0
6Mx3Y	4.32	7.25	87.0	0.0	3.74	6.79	0.0	0.0	3.33	6.60	0.0	0.0
6Mx5Y	4.38	8.25	158.3	0.0	3.70	6.98	0.0	0.0	3.35	6.44	0.0	0.0
6Mx10Y	4.59	7.50	258.5	0.0	3.98	7.06	0.0	0.0	3.56	6.97	0.0	0.0
1Yx2Y	4.25	7.70	87.4	0.0	3.37	7.04	0.0	0.0	2.91	6.75	0.0	0.0
1Yx3Y	4.29	7.67	128.2	0.0	3.41	7.01	0.0	0.0	2.95	6.73	0.0	0.0
1Yx5Y	4.39	7.60	202.6	0.0	3.50	6.95	0.0	0.0	3.05	6.69	0.0	0.0
1Yx10Y	4.61	7.70	368.4	0.0	3.71	7.20	0.0	0.0	3.25	7.08	0.0	0.0

ATMF implied vol on 2-year tails; bp/day

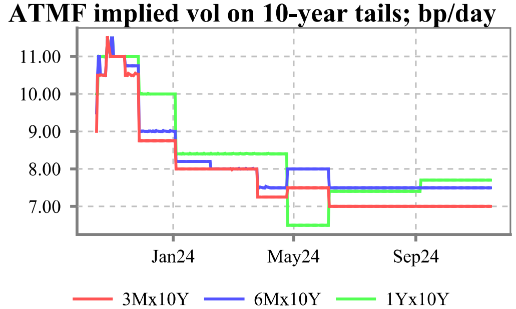


ATMF implied vol on 5-year tails; bp/day



	ATMF Payer				25-delta Payer				10-delta Payer			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	4.36	6.50	38.2	0.0	4.66	0.00	0.0	0.0	6.28	9.64	0.0	0.0
3Mx3Y	4.34	6.77	58.5	0.0	4.65	0.00	0.0	0.0	6.26	9.98	0.0	0.0
3Mx5Y	4.39	7.30	100.9	0.0	4.72	0.00	0.0	0.0	6.30	10.46	0.0	0.0
3Mx10Y	4.58	7.00	173.9	0.0	4.91	0.00	0.0	0.0	6.44	9.30	0.0	0.0
6Mx2Y	4.31	6.75	55.1	0.0	4.74	0.00	0.0	0.0	6.30	9.11	0.0	0.0
6Mx3Y	4.32	7.25	87.0	0.0	4.76	0.00	0.0	0.0	6.36	9.71	0.0	0.0
6Mx5Y	4.38	8.25	158.3	0.0	4.78	0.00	0.0	0.0	6.74	12.79	0.0	0.0
6Mx10Y	4.59	7.50	258.5	0.0	5.00	0.00	0.0	0.0	6.70	10.44	0.0	0.0
1Yx2Y	4.25	7.70	87.4	0.0	4.88	0.00	0.0	0.0	6.71	10.08	0.0	0.0
1Yx3Y	4.29	7.67	128.2	0.0	4.91	0.00	0.0	0.0	6.75	10.08	0.0	0.0
1Yx5Y	4.39	7.60	202.6	0.0	4.98	0.00	0.0	0.0	6.83	10.07	0.0	0.0
1Yx10Y	4.61	7.70	368.4	0.0	5.14	0.00	0.0	0.0	7.06	10.42	0.0	0.0

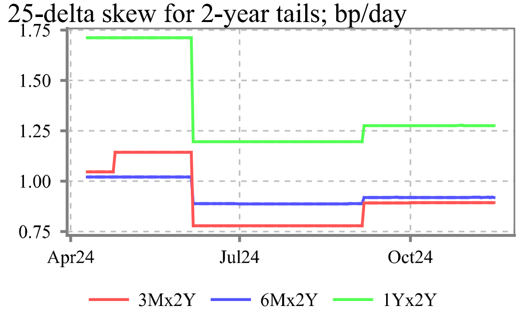
ATMF implied vol on 10-year tails; bp/day



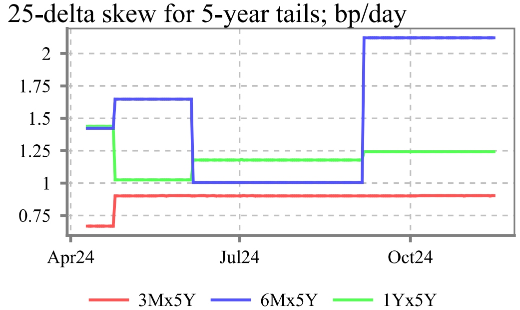
ILS Swaptions – Spreads and 1x2s

	Spot Yield			ATMF	25-delta receiver spread				Premium-neutral receiver 1x2s			
Structure	Current	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	4.43	4.60	3.96	4.36	3.99	3	25.1	-2.6	N/A	0	57	4.4
3Mx3Y	4.39	4.59	3.91	4.34	3.95	3	38.2	-2.5	N/A	0	57	4.9
3Mx5Y	4.42	4.67	3.98	4.39	3.97	0	65.3	-2.5	N/A	0	57	5.6
3Mx10Y	4.61	4.89	4.24	4.58	4.19	0	102.2	-1.7	N/A	0	55	5.0
6Mx2Y	4.43	4.60	3.96	4.31	3.78	0	36.8	-1.5	N/A	0	57	2.5
6Mx3Y	4.39	4.59	3.91	4.32	3.74	0	58.0	-1.6	N/A	0	57	3.3
6Mx5Y	4.42	4.67	3.98	4.38	3.70	0	118.1	-2.7	N/A	0	62	4.5
6Mx10Y	4.61	4.89	4.24	4.59	3.98	0	171.5	-1.7	N/A	0	59	3.9
1Yx2Y	4.43	4.60	3.96	4.25	3.37	0	61.4	-1.4	N/A	0	58	2.6
1Yx3Y	4.39	4.59	3.91	4.29	3.41	0	90.0	-1.0	N/A	0	58	2.4
1Yx5Y	4.42	4.67	3.98	4.39	3.50	0	142.4	0.3	N/A	0	59	1.5
1Yx10Y	4.61	4.89	4.24	4.61	3.71	0	252.6	-0.6	N/A	0	60	2.5

25-delta skew for 2-year tails; bp/day

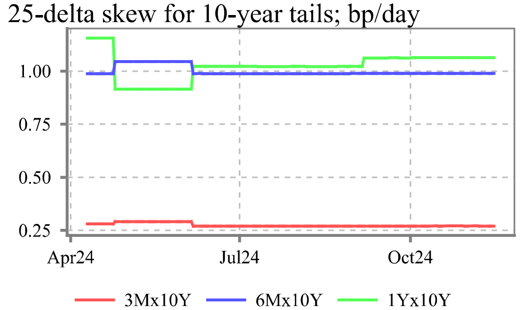


25-delta skew for 5-year tails; bp/day



		Spot Yield		ATMF	25-delta payer spread				Premium-neutral payer 1x2s			
Structure	Spot	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	4.43	4.60	3.96	4.36	4.66	100	20.1	-0.1	N/A	0	-43	5.8
3Mx3Y	4.39	4.59	3.91	4.34	4.65	100	30.6	-0.5	N/A	0	-43	5.6
3Mx5Y	4.42	4.67	3.98	4.39	4.72	100	52.9	-0.8	N/A	0	-43	5.7
3Mx10Y	4.61	4.89	4.24	4.58	4.91	100	100.7	-1.0	N/A	0	-45	4.6
6Mx2Y	4.43	4.60	3.96	4.31	4.74	100	27.7	-0.1	N/A	0	-43	3.9
6Mx3Y	4.39	4.59	3.91	4.32	4.76	100	43.2	-0.3	N/A	0	-43	3.9
6Mx5Y	4.42	4.67	3.98	4.38	4.78	100	58.7	0.1	N/A	0	-38	4.6
6Mx10Y	4.61	4.89	4.24	4.59	5.00	100	118.6	-0.2	N/A	0	-41	3.6
1Yx2Y	4.43	4.60	3.96	4.25	4.88	100	39.9	0.0	N/A	0	-42	3.3
1Yx3Y	4.39	4.59	3.91	4.29	4.91	100	57.7	0.0	N/A	0	-42	2.5
1Yx5Y	4.42	4.67	3.98	4.39	4.98	100	88.7	-0.7	N/A	0	-41	1.3
1Yx10Y	4.61	4.89	4.24	4.61	5.14	100	148.6	-0.1	N/A	0	-40	2.0

25-delta skew for 10-year tails; bp/day



J.P. Morgan Securities Inc.
European Rates Strategy
Fabio Bassi (44 20) 7134 1989
Khagendra Gupta (44 20) 7134 0486

Implied and delivered directionality report - ILS

	Implied vol; bp/day		Directionality*; % Implied		Deliv	(Imp - Deliv)	Implied weights; %		Weighted curve**; bp			3M regression stats****	
Trades	Short	Long	Current	3M Lagged	Levels	Levels	Short	Long	3M fwd	Spot	3M Carry***	Beta	Rsqr
1s/3s	6.0	6.8	11 %	25 %	24 %	-12 %	100 %	89 %	-66	-70	4	12 %	27 %
1s/5s	6.0	7.3	18 %	36 %	21 %	-3 %	100 %	82 %	-90	-96	6	3 %	1 %
1s/10s	6.0	7.0	14 %	33 %	10 %	4 %	100 %	86 %	-58	-64	7	-4 %	1 %
2s/5s	6.5	7.3	11 %	21 %	-2 %	13 %	100 %	89 %	-45	-49	4	-13 %	35 %
2s/7s	6.5	7.0	7 %	18 %	-8 %	15 %	100 %	93 %	-21	-26	5	-15 %	27 %
2s/10s	6.5	7.0	7 %	18 %	-15 %	22 %	100 %	93 %	-10	-15	5	-22 %	30 %
2s/20s	6.5	6.5	-0 %	12 %	-16 %	16 %	100 %	100 %	49	44	5	-16 %	7 %
3s/5s	6.8	7.3	7 %	14 %	-5 %	12 %	100 %	93 %	-27	-29	2	-12 %	52 %
3s/7s	6.8	7.0	3 %	10 %	-11 %	15 %	100 %	97 %	-2	-5	3	-15 %	33 %
3s/10s	6.8	7.0	3 %	10 %	-19 %	22 %	100 %	97 %	9	6	3	-22 %	33 %
3s/20s	6.8	6.5	-4 %	4 %	-19 %	15 %	100 %	104 %	71	68	3	-15 %	7 %
5s/10s	7.3	7.0	-4 %	-4 %	-14 %	10 %	100 %	104 %	39	38	1	-10 %	17 %
5s/20s	7.3	6.5	-12 %	-12 %	-16 %	3 %	100 %	112 %	106	105	1	-3 %	1 %

Structure	Left wing	Body	Right wing	Current	3M Lagged	Levels	Levels	Body	Wings	Spot	Fwd	3M carry***	Beta	Rsqr
1s/2s/3s	6.0	6.5	6.8	2 %	5 %	9 %	-7 %	100 %	51 %	-14	-15	0	7 %	50 %
1s/3s/5s	6.0	6.8	7.3	2 %	4 %	15 %	-13 %	100 %	51 %	-19	-18	1	13 %	63 %
2s/5s/7s	6.5	7.3	7.0	8 %	13 %	3 %	5 %	100 %	54 %	-40	-38	2	-5 %	30 %
2s/5s/10s	6.5	7.3	7.0	8 %	13 %	7 %	1 %	100 %	54 %	-47	-45	2	-1 %	0 %
2s/7s/12s	6.5	7.0	6.7	6 %	11 %	1 %	5 %	100 %	53 %	-34	-32	2	-5 %	16 %
3s/7s/15s	6.8	7.0	6.6	4 %	8 %	1 %	4 %	100 %	52 %	-30	-29	1	-4 %	17 %

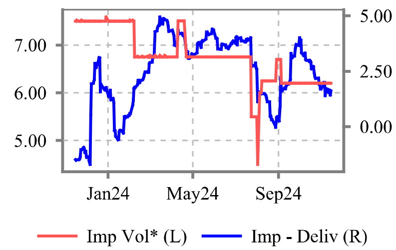
* Implied directionality is defined as: Curves: (1 - (Implied vol on short maturity/Implied vol on long maturity)). Flies: (1 - (0.5*(implied vol of the left wing + implied vol of the right wing)/(implied vol of the body)). We use 3M epxiry swaptions
Delivered directionality is defined as: Curves: (1 - 3M beta obtained from regressing short maturity yields to long maturity yields). Flies: Delivered directionality is defined as the 3M beta obtained from regressing the 50:50 fly with the body of the fly
** Curves weighted by the implied weights listed in the adjacent column. Flies weighted by the implied weights listed in the adjacent column. These weights make the fly premium-neutral at inception.
*** Carry for curve flatteners and long body in the fly
**** Curves: 3M regression stats obtained from regressing the weighted curve (using the weights in the adjacent columns on the left) with long maturity yields; Flies: Regression stats obtained from regressing the weighted fly (see above for defintion) with the body of the fly.

Fabio Bassi (44 20) 7134 1989 Khagendra Gupta (44 20) 7134 0486

PLN Short-Dated Swaption Volatility Report

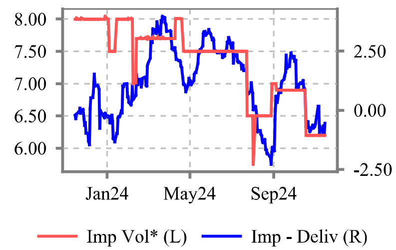
Options on 1Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	6.0	0.0	-0.3	3.6	3.4	2.8	16.6	1.5	6.0	46 %
3M	6.2	0.0	-0.4	4.2	4.6	4.1	18.3	2.7	8.7	58 %
6M	7.0	0.0	0.0	8.5	7.2	6.4	18.1	4.8	10.8	76 %
1Y	7.8	0.0	0.3	9.7	9.4	8.9	18.7	8.4	13.4	100 %



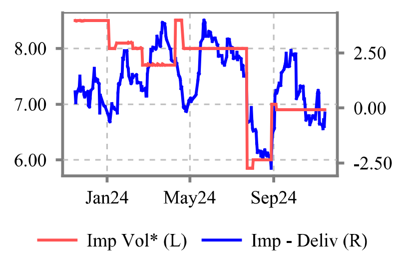
Options on 2Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	7.5	1.5	1.5	6.7	6.3	5.8	23.4	3.6	9.1	55 %
3M	6.2	-0.7	-1.4	6.9	6.7	6.3	20.3	4.8	10.6	85 %
6M	7.2	0.0	-0.3	8.8	8.0	7.2	19.1	6.2	11.6	80 %
1Y	7.7	0.0	-0.1	9.0	8.4	7.7	17.1	7.6	12.0	98 %



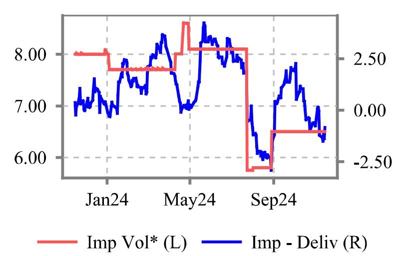
Options on 5Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	7.5	1.5	1.0	7.7	7.0	6.3	23.9	3.7	9.5	60 %
3M	6.9	0.0	-0.3	7.7	7.1	6.5	18.5	5.3	10.3	75 %
6M	7.2	0.0	-0.2	8.5	7.7	6.9	18.2	6.2	11.0	78 %
1Y	7.2	0.0	-0.3	8.6	8.1	7.2	16.4	7.2	11.5	100 %



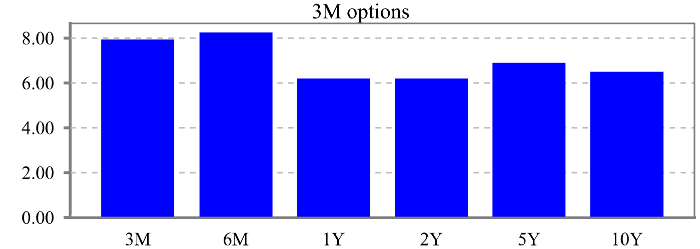
Options on 10Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	7.5	1.5	0.9	7.5	7.3	6.3	22.7	3.8	9.3	57 %
3M	6.5	0.0	-0.5	7.5	7.3	6.4	17.2	5.2	9.9	80 %
6M	6.7	0.0	-0.4	7.9	7.6	6.6	17.2	6.0	10.4	82 %
1Y	6.8	0.0	-0.4	8.1	7.8	6.8	15.4	6.9	10.8	100 %

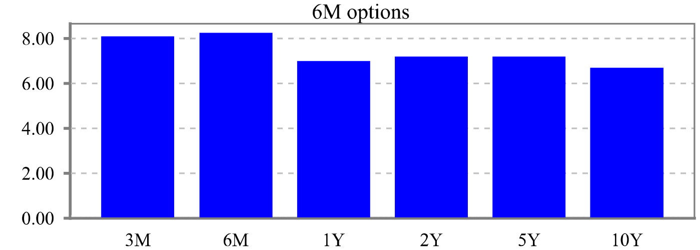


Maturity term structure for 3M, 6M, 1Y and 2Y options; bp/day

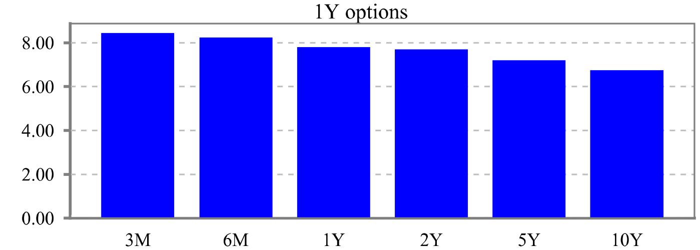
3M options



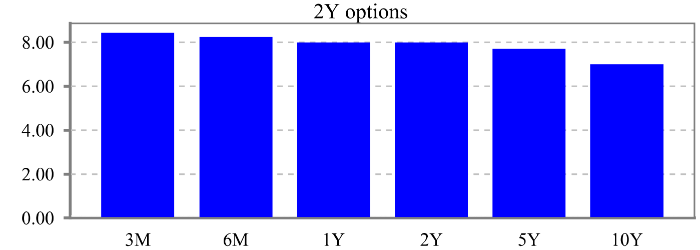
6M options



1Y options



2Y options



* For Swaptions:
Imp Vol: implied vol of 3M options
Deliv Vol: 1M deliv vol on 3M fwd swap rate

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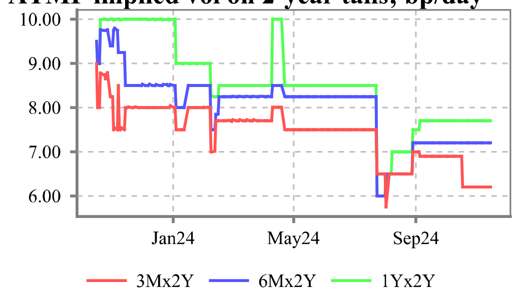
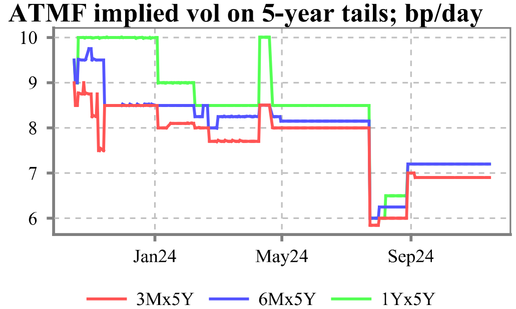
PLN Swaptions – Outright ATM and OTM payers & receivers

	ATMF Receiver				25-delta Receiver				10-delta Receiver			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	4.76	6.20	36.3	0.0	4.80	6.18	0.0	0.0	4.79	6.19	0.0	0.0
3Mx3Y	4.60	6.43	55.4	0.0	4.71	6.51	0.0	0.0	4.70	6.50	0.0	0.0
3Mx5Y	4.62	6.90	95.2	0.0	4.78	7.03	0.0	0.0	4.77	7.03	0.0	0.0
3Mx10Y	4.84	6.50	161.8	0.0	5.05	6.67	0.0	0.0	5.04	6.67	0.0	0.0
6Mx2Y	4.52	7.20	58.5	0.0	4.89	7.27	0.0	0.0	4.88	7.27	0.0	0.0
6Mx3Y	4.46	7.20	86.1	0.0	4.47	7.20	0.0	0.0	4.47	7.20	0.0	0.0
6Mx5Y	4.55	7.20	138.0	0.0	4.64	7.27	0.0	0.0	4.64	7.27	0.0	0.0
6Mx10Y	4.81	6.70	231.5	0.0	4.98	6.87	0.0	0.0	4.98	6.86	0.0	0.0
1Yx2Y	4.31	7.70	87.1	0.0	4.99	8.17	0.0	0.0	4.99	8.16	0.0	0.0
1Yx3Y	4.36	7.53	125.6	0.0	4.73	7.78	0.0	0.0	4.72	7.78	0.0	0.0
1Yx5Y	4.52	7.20	191.8	0.0	4.55	7.22	0.0	0.0	4.55	7.22	0.0	0.0
1Yx10Y	4.82	6.75	324.0	0.0	4.96	6.89	0.0	0.0	4.96	6.89	0.0	0.0

ATMF implied vol on 2-year tails; bp/day

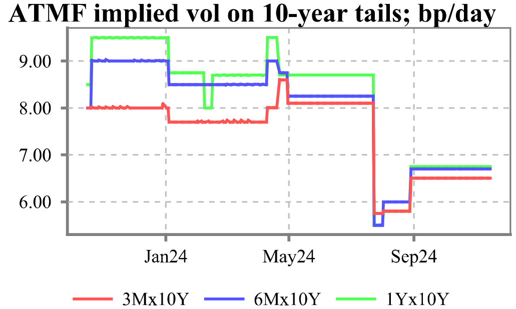


ATMF implied vol on 5-year tails; bp/day



	ATMF Payer				25-delta Payer				10-delta Payer			
Structure	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry	Strike	Imp Vol	Premium	1M carry
3Mx2Y	4.76	6.20	36.3	0.0	4.82	6.08	0.0	0.0	5.43	6.12	0.0	0.0
3Mx3Y	4.60	6.43	55.4	0.0	4.75	6.84	0.0	0.0	5.27	7.04	0.0	0.0
3Mx5Y	4.62	6.90	95.2	0.0	4.81	7.33	0.0	0.0	5.28	7.53	0.0	0.0
3Mx10Y	4.84	6.50	161.8	0.0	5.07	6.70	0.0	0.0	5.42	7.05	0.0	0.0
6Mx2Y	4.52	7.20	58.5	0.0	4.92	0.00	0.0	0.0	0.00	0.00	0.0	0.0
6Mx3Y	4.46	7.20	86.1	0.0	4.47	0.00	0.0	0.0	5.49	8.11	0.0	0.0
6Mx5Y	4.55	7.20	138.0	0.0	4.67	7.83	0.0	0.0	5.53	8.08	0.0	0.0
6Mx10Y	4.81	6.70	231.5	0.0	5.00	7.40	0.0	0.0	5.71	7.77	0.0	0.0
1Yx2Y	4.31	7.70	87.1	0.0	5.01	8.18	0.0	0.0	5.01	8.18	0.0	0.0
1Yx3Y	4.36	7.53	125.6	0.0	4.75	8.37	0.0	0.0	4.76	7.80	0.0	0.0
1Yx5Y	4.52	7.20	191.8	0.0	4.56	8.09	0.0	0.0	4.56	7.23	0.0	0.0
1Yx10Y	4.82	6.75	324.0	0.0	4.98	0.00	0.0	0.0	4.99	6.92	0.0	0.0

ATMF implied vol on 10-year tails; bp/day



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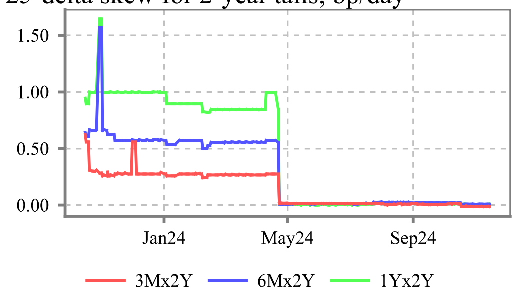
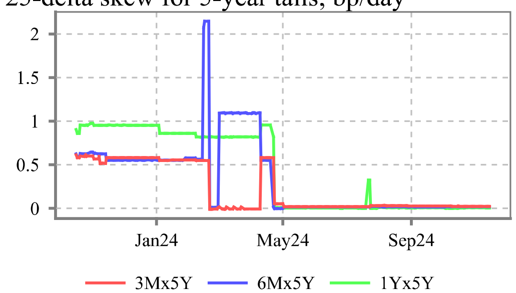
PLN Swaptions – Spreads and 1x2s

	Spot Yield			ATMF	25-delta receiver spread				Premium-neutral receiver 1x2s			
Structure	Current	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	4.95	5.60	4.76	4.76	4.80	22	-4.2	0.8	N/A	0	-61	0.5
3Mx3Y	4.72	5.36	4.43	4.60	4.71	33	-18.0	0.7	N/A	0	-118	1.9
3Mx5Y	4.67	5.28	4.27	4.62	4.78	46	-42.6	0.0	N/A	0	-251	3.4
3Mx10Y	4.86	5.39	4.37	4.84	5.05	63	-100.3	-0.4	N/A	0	-597	3.3
6Mx2Y	4.95	5.60	4.76	4.52	4.89	12	-40.5	1.5	N/A	0	-35	1.1
6Mx3Y	4.72	5.36	4.43	4.46	4.47	33	-1.0	0.1	N/A	0	-80	2.0
6Mx5Y	4.67	5.28	4.27	4.55	4.64	37	-23.1	0.2	N/A	0	-165	2.4
6Mx10Y	4.86	5.39	4.37	4.81	4.98	54	-79.4	0.0	N/A	0	-382	2.7
1Yx2Y	4.95	5.60	4.76	4.31	4.99	30	-79.8	0.1	N/A	0	-34	1.4
1Yx3Y	4.72	5.36	4.43	4.36	4.73	33	-58.7	0.0	N/A	0	-74	2.0
1Yx5Y	4.67	5.28	4.27	4.52	4.55	33	-7.1	0.0	N/A	0	-156	1.9
1Yx10Y	4.86	5.39	4.37	4.82	4.96	50	-67.4	-0.1	N/A	0	-404	2.0

25-delta skew for 2-year tails; bp/day

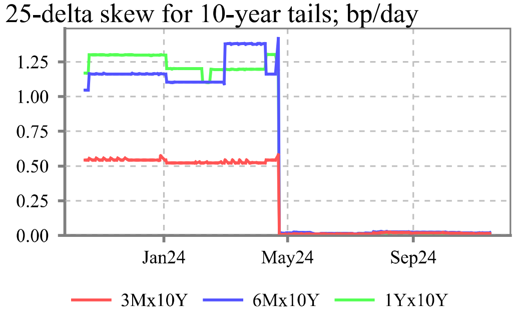


25-delta skew for 5-year tails; bp/day



	Spot Yield			ATMF	25-delta payer spread				Premium-neutral payer 1x2s			
Structure	Spot	6M max	6M min	Yield	Outstrike	6M %-tile	Premium	1M carry	Outstrike	6M %-tile	Delta	1M carry
3Mx2Y	4.95	5.60	4.76	4.76	4.82	5	5.0	1.2	N/A	0	-161	6.9
3Mx3Y	4.72	5.36	4.43	4.60	4.75	33	15.3	0.6	N/A	0	-218	5.6
3Mx5Y	4.67	5.28	4.27	4.62	4.81	46	31.7	0.0	N/A	0	-351	5.1
3Mx10Y	4.86	5.39	4.37	4.84	5.07	66	66.9	-0.3	N/A	0	-697	3.8
6Mx2Y	4.95	5.60	4.76	4.52	4.92	18	27.7	1.6	N/A	0	-135	8.1
6Mx3Y	4.72	5.36	4.43	4.46	4.47	9	1.1	0.1	N/A	0	-180	6.1
6Mx5Y	4.67	5.28	4.27	4.55	4.67	37	19.8	0.2	N/A	0	-265	4.4
6Mx10Y	4.86	5.39	4.37	4.81	5.00	59	57.6	0.1	N/A	0	-482	3.4
1Yx2Y	4.95	5.60	4.76	4.31	5.01	30	43.9	0.3	N/A	0	-134	3.7
1Yx3Y	4.72	5.36	4.43	4.36	4.75	33	39.5	0.1	N/A	0	-174	2.7
1Yx5Y	4.67	5.28	4.27	4.52	4.56	37	6.4	0.0	N/A	0	-256	2.0
1Yx10Y	4.86	5.39	4.37	4.82	4.98	52	48.7	0.0	N/A	0	-504	1.7

25-delta skew for 10-year tails; bp/day



J.P. Morgan Securities Inc.
European Rates Strategy
Fabio Bassi (44 20) 7134 1989
Khagendra Gupta (44 20) 7134 0486

Implied and delivered directionality report - PLN

	Implied vol; bp/day		Directionality*; % Implied		Deliv	(Imp - Deliv)	Implied weights; %		Weighted curve**; bp			3M regression stats****	
Trades	Short	Long	Current	3M Lagged	Levels	Levels	Short	Long	3M fwd	Spot	3M Carry***	Beta	Rsqr
1s/3s	6.2	6.4	4 %	1 %	86 %	-83 %	100 %	96 %	-78	-95	17	83 %	92 %
1s/5s	6.2	6.9	10 %	-4 %	92 %	-81 %	100 %	90 %	-106	-130	24	81 %	94 %
1s/10s	6.2	6.5	5 %	-8 %	95 %	-90 %	100 %	95 %	-60	-86	27	90 %	95 %
2s/5s	6.2	6.9	10 %	-8 %	42 %	-32 %	100 %	90 %	-60	-74	15	32 %	66 %
2s/7s	6.2	6.7	7 %	-8 %	46 %	-39 %	100 %	93 %	-40	-56	17	39 %	71 %
2s/10s	6.2	6.5	5 %	-12 %	49 %	-44 %	100 %	95 %	-13	-31	18	44 %	73 %
2s/20s	6.2	6.0	-3 %	-8 %	50 %	-53 %	100 %	103 %	48	29	18	53 %	79 %
3s/5s	6.4	6.9	7 %	-6 %	20 %	-13 %	100 %	93 %	-29	-36	7	13 %	51 %
3s/7s	6.4	6.7	4 %	-6 %	25 %	-21 %	100 %	96 %	-8	-17	9	21 %	61 %
3s/10s	6.4	6.5	1 %	-9 %	27 %	-26 %	100 %	99 %	19	9	10	26 %	63 %
3s/20s	6.4	6.0	-7 %	-6 %	28 %	-35 %	100 %	107 %	82	72	11	35 %	73 %
5s/10s	6.9	6.5	-6 %	-3 %	8 %	-14 %	100 %	106 %	52	48	3	14 %	59 %
5s/20s	6.9	6.0	-15 %	0 %	9 %	-24 %	100 %	115 %	120	116	4	24 %	70 %

Structure	Left wing	Body	Right wing	Current	3M Lagged	Levels	Levels	Body	Wings	Spot	Fwd	3M carry***	Beta	Rsqr
1s/2s/3s	6.2	6.2	6.4	-2 %	3 %	24 %	-26 %	100 %	49 %	-7	-7	0	26 %	95 %
1s/3s/5s	6.2	6.4	6.9	-2 %	3 %	32 %	-34 %	100 %	49 %	-28	-23	5	34 %	98 %
2s/5s/7s	6.2	6.9	6.7	7 %	-4 %	19 %	-12 %	100 %	53 %	-50	-44	7	13 %	68 %
2s/5s/10s	6.2	6.9	6.5	8 %	-2 %	18 %	-10 %	100 %	54 %	-65	-59	6	11 %	72 %
2s/7s/12s	6.2	6.7	5.3	15 %	2 %	22 %	-8 %	100 %	59 %	-104	-95	9	9 %	41 %
3s/7s/15s	6.4	6.7	5.5	11 %	1 %	11 %	-0 %	100 %	56 %	-70	-66	4	0 %	0 %

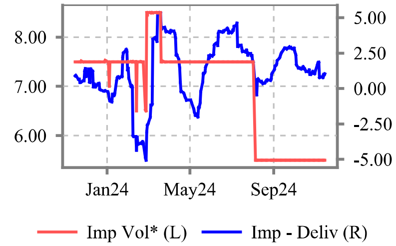
* Implied directionality is defined as: Curves: (1 - (Implied vol on short maturity/Implied vol on long maturity)). Flies: (1 - (0.5*(implied vol of the left wing + implied vol of the right wing)/(implied vol of the body)). We use 3M epxiry swaptions.
Delivered directionality is defined as: Curves: (1 - 3M beta obtained from regressing short maturity yields to long maturity yields). Flies: Delivered directionality is defined as the 3M beta obtained from regressing the 50:50 fly with the body of the fly
** Curves weighted by the implied weights listed in the adjacent column. Flies weighted by the implied weights listed in the adjacent column. These weights make the fly premium-neutral at inception.
*** Carry for curve flatteners and long body in the fly
**** Curves: 3M regression stats obtained from regressing the weighted curve (using the weights in the adjacent columns on the left) with long maturity yields; Flies: Regression stats obtained from regressing the weighted fly (see above for defintion) with the body of the fly.

Fabio Bassi (44 20) 7134 1989 Khagendra Gupta (44 20) 7134 0486

CZK Short-Dated Swaption Volatility Report

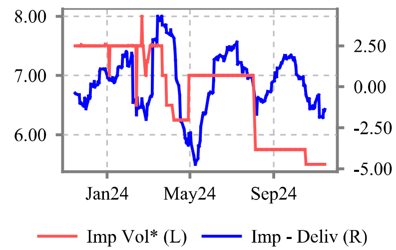
Options on 1Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	5.3	0.3	-0.6	3.3	3.2	2.6	11.7	1.7	5.3	46 %
3M	5.5	0.0	-0.8	4.9	4.5	3.8	14.1	3.7	7.6	87 %
6M	6.5	0.3	-0.6	6.9	6.8	5.4	14.5	5.6	9.8	96 %
1Y	7.0	0.0	-0.8	9.6	9.3	7.5	17.4	8.2	12.8	100 %



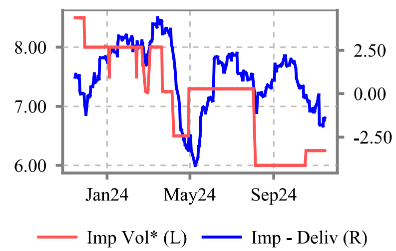
Options on 2Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	7.0	1.8	1.9	6.4	6.2	5.0	18.4	2.7	8.4	64 %
3M	5.5	-0.2	-1.1	7.4	6.9	5.6	16.7	5.3	9.7	98 %
6M	6.8	0.2	-0.3	8.2	7.8	6.3	16.6	6.2	10.8	97 %
1Y	7.0	0.0	-0.8	9.0	8.4	6.9	15.3	7.2	11.2	100 %



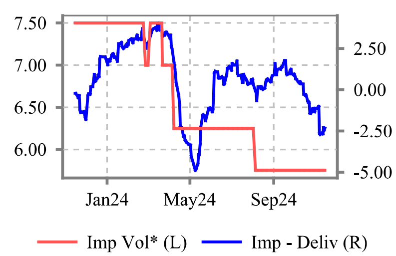
Options on 5Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	7.0	1.0	0.8	8.1	7.4	5.8	19.2	3.3	8.4	64 %
3M	6.2	0.2	-0.5	8.4	7.6	6.1	15.1	4.7	9.0	82 %
6M	6.8	0.3	-0.4	8.8	8.1	6.4	15.1	6.0	9.5	88 %
1Y	7.0	0.0	-0.8	9.3	8.5	6.7	13.3	6.7	9.8	87 %



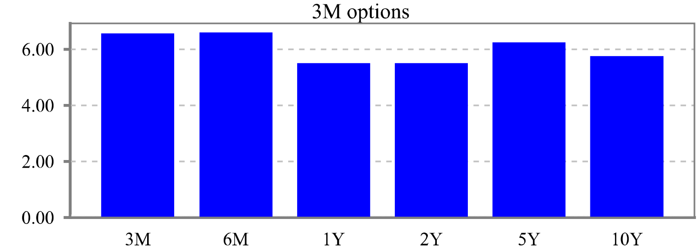
Options on 10Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M	5.5	0.0	-0.8	8.5	7.9	6.1	17.7	3.3	7.9	77 %
3M	5.8	0.0	-0.8	8.6	8.1	6.2	14.2	4.2	8.3	82 %
6M	6.3	0.0	-0.8	8.8	8.3	6.4	13.6	5.7	8.7	92 %
1Y	6.8	0.0	-0.8	9.1	8.6	6.6	12.0	6.3	8.9	69 %

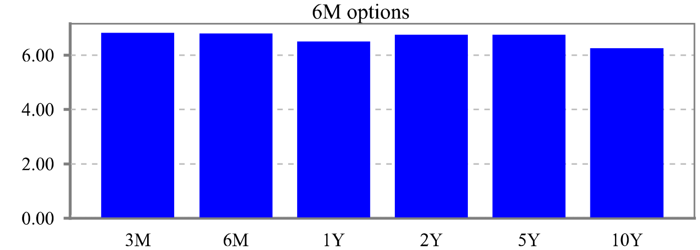


Maturity term structure for 3M, 6M, 1Y and 2Y options; bp/day

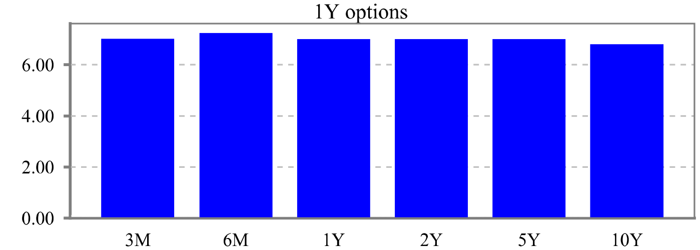
3M options



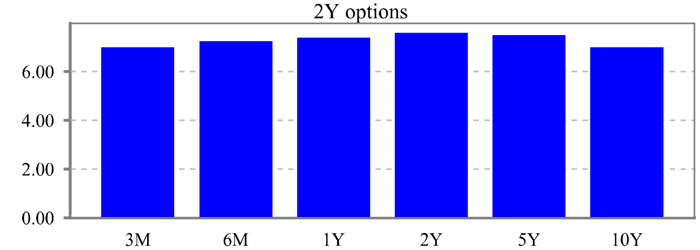
6M options



1Y options



2Y options



* For Swaptions:
Imp Vol: implied vol of 3M options
Deliv Vol: 1M deliv vol on 3M fwd swap rate

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Implied and delivered directionality report - CZK

	Implied vol; bp/day		Directionality*; % Implied		Deliv	(Imp - Deliv)	Implied weights; %		Weighted curve**; bp			3M regression stats****	
Trades	Short	Long	Current	3M Lagged	Levels	Levels	Short	Long	3M fwd	Spot	3M Carry***	Beta	Rsqr
1s/3s	5.5	5.8	4 %	6 %	70 %	-66 %	100 %	96 %	-18	-28	10	66 %	74 %
1s/5s	5.5	6.2	12 %	8 %	78 %	-66 %	100 %	88 %	-42	-54	12	66 %	75 %
1s/10s	5.5	5.8	4 %	4 %	81 %	-76 %	100 %	96 %	0	-14	13	76 %	77 %
2s/5s	5.5	6.2	12 %	4 %	26 %	-14 %	100 %	88 %	-39	-44	4	14 %	30 %
2s/7s	5.5	6.0	8 %	0 %	29 %	-21 %	100 %	92 %	-21	-26	5	21 %	40 %
2s/10s	5.5	5.8	4 %	0 %	27 %	-23 %	100 %	96 %	3	-3	6	23 %	35 %
2s/20s	5.5	5.8	4 %	0 %	31 %	-26 %	100 %	96 %	8	3	6	26 %	35 %
3s/5s	5.8	6.2	8 %	3 %	11 %	-3 %	100 %	92 %	-25	-27	2	3 %	6 %
3s/7s	5.8	6.0	4 %	-1 %	14 %	-9 %	100 %	96 %	-6	-9	3	9 %	24 %
3s/10s	5.8	5.8	0 %	-1 %	11 %	-11 %	100 %	100 %	19	15	4	11 %	17 %
3s/20s	5.8	5.8	0 %	-1 %	14 %	-14 %	100 %	100 %	24	21	3	14 %	17 %
5s/10s	6.2	5.8	-9 %	-4 %	-2 %	-7 %	100 %	109 %	47	46	1	7 %	19 %
5s/20s	6.2	5.8	-9 %	-4 %	0 %	-9 %	100 %	109 %	54	52	1	9 %	16 %

Structure	Left wing	Body	Right wing	Current	3M Lagged	Levels	Levels	Body	Wings	Spot	Fwd	3M carry***	Beta	Rsqr
1s/2s/3s	5.5	5.5	5.8	-2 %	1 %	22 %	-24 %	100 %	49 %	4	6	3	23 %	78 %
1s/3s/5s	5.5	5.8	6.2	-2 %	1 %	30 %	-32 %	100 %	49 %	1	4	4	31 %	84 %
2s/5s/7s	5.5	6.2	6.0	8 %	4 %	13 %	-5 %	100 %	54 %	-34	-32	2	5 %	20 %
2s/5s/10s	5.5	6.2	5.8	10 %	4 %	15 %	-5 %	100 %	56 %	-48	-46	2	6 %	33 %
2s/7s/12s	5.5	6.0	7.2	-6 %	-13 %	18 %	-24 %	100 %	47 %	16	18	2	23 %	86 %
3s/7s/15s	5.8	6.0	6.7	-3 %	-9 %	9 %	-12 %	100 %	48 %	7	9	1	12 %	83 %

* Implied directionality is defined as: Curves: (1 - (Implied vol on short maturity/Implied vol on long maturity)). Flies: (1 - (0.5*(implied vol of the left wing + implied vol of the right wing)/(implied vol of the body)). We use 3M epxiry swaptions.
Delivered directionality is defined as: Curves: (1 - 3M beta obtained from regressing short maturity yields to long maturity yields). Flies: Delivered directionality is defined as the 3M beta obtained from regressing the 50:50 fly with the body of the fly
** Curves weighted by the implied weights listed in the adjacent column. Flies weighted by the implied weights listed in the adjacent column. These weights make the fly premium-neutral at inception.
*** Carry for curve flatteners and long body in the fly
**** Curves: 3M regression stats obtained from regressing the weighted curve (using the weights in the adjacent columns on the left) with long maturity yields; Flies: Regression stats obtained from regressing the weighted fly (see above for defintion) with the body of the fly.

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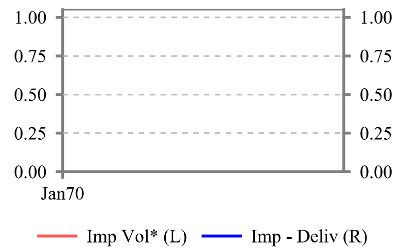
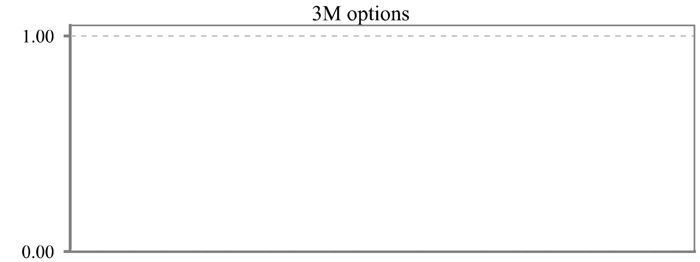
TRY Short-Dated Swaption Volatility Report

Options on 1Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M										0 %
3M										0 %
6M										0 %
1Y										0 %

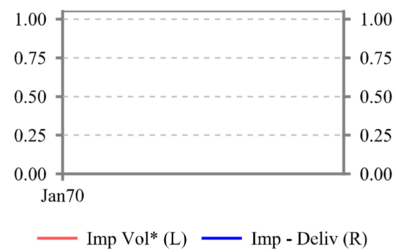


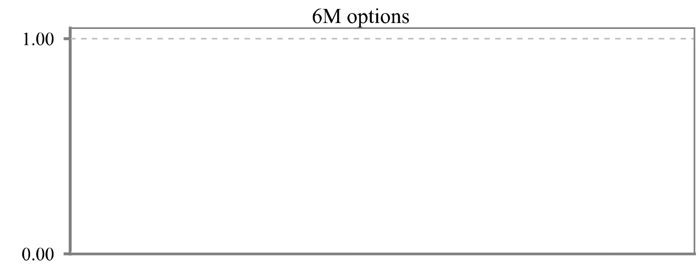
Maturity term structure for 3M, 6M, 1Y and 2Y options; bp/day



Options on 2Y swaps

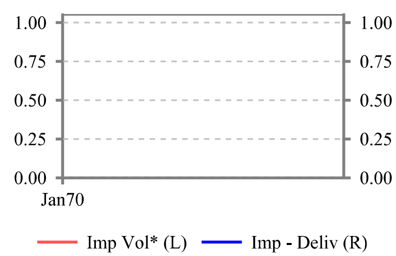
	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M										0 %
3M										0 %
6M										0 %
1Y										0 %

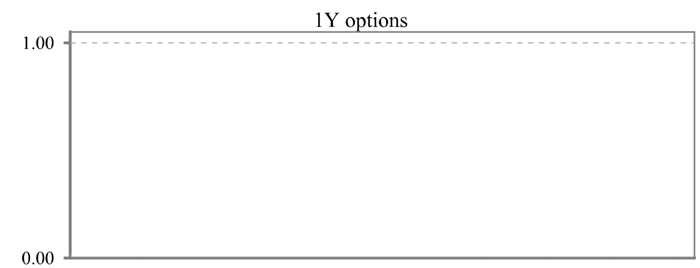




Options on 5Y swaps

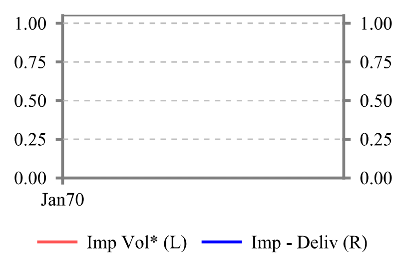
	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M										0 %
3M										0 %
6M										0 %
1Y										0 %

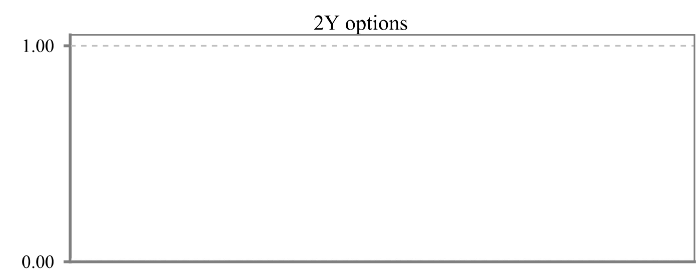




Options on 10Y swaps

	Imp Vol (bp/day)			Deliv Vol (bp/day)			Deliv vol 3Y Cone; bp/day			
Exp	Curr	1M Chg	6M Zscore	10D	1M	3M	Max	Min	Avg	% Hist > Imp
1M										0 %
3M										0 %
6M										0 %
1Y										0 %





* For Swaptions:
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Deliv Vol: 1M deliv vol on 3M fwd swap rate

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Implied and delivered directionality report - TRY

	Implied vol; bp/day		Directionality*; % Implied		Directionality*; % Deliv	(Imp - Deliv)	Implied weights; %		Weighted curve**; bp			3M regression stats****	
Trades	Short	Long	Current	3M Lagged	Levels	Levels	Short	Long	3M fwd	Spot	3M Carry***	Beta	Rsqr
1s/3s					118 %		100 %						
1s/5s					180 %		100 %						
1s/10s					185 %		100 %						
2s/5s					74 %		100 %						
2s/7s					79 %		100 %						
2s/10s					77 %		100 %						
2s/20s					82 %		100 %						
3s/5s					29 %		100 %						
3s/7s					32 %		100 %						
3s/10s					30 %		100 %						
3s/20s					36 %		100 %						
5s/10s					1 %		100 %						
5s/20s					7 %		100 %						

Structure	Left wing	Body	Right wing	Current	3M Lagged	Levels	Levels	Body	Wings	Spot	Fwd	3M carry***	Beta	Rsqr
1s/2s/3s						-3 %		100 %						
1s/3s/5s						58 %		100 %						
2s/5s/7s						36 %		100 %						
2s/5s/10s						37 %		100 %						
2s/7s/12s						41 %		100 %						
3s/7s/15s						18 %		100 %						

* Implied directionality is defined as: Curves: (1 - (Implied vol on short maturity/Implied vol on long maturity)). Flies: (1 - (0.5*(implied vol of the left wing + implied vol of the right wing)/(implied vol of the body)). We use 3M epxiry swaptions.
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**** Curves: 3M regression stats obtained from regressing the weighted curve (using the weights in the adjacent columns on the left) with long maturity yields; Flies: Regression stats obtained from regressing the weighted fly (see above for defintion) with the body of the fly.

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