Optima INVESTMENT RESEARCH

Forex Volatility

OPTIMA VOLATILITY PICTURE -- FOREX Thu 5/23/02

IMPLIED VOLATILITY OVERVIEW -- The JYU volatility was -.04 at 9.37 as the dollar index was -.44 at 112.33.

JY IMPLIED VOLATILITY -- JYU implied volatility finished -.04 at 9.37. The JYU futures contract finished -20 ticks at 8001. The short-term trend has shifted to neutral with yesterday's 1-month high settle. The intermediate-term trend is bearish as volatility has continued to trade lower since September of 1999. The long-term trend is neutral as the contract has traded sideways to lower over the past year.

MATURITY STRUCTURE OF IMPLIED VOLATILITY -- The maturity structure is inverted in shape. Imp vol: JYU was -.04 at 9.37.

RICH/CHEAP ANALYSIS -- The JY Volatility Cheapness Indices were lower with JYU at a mildly cheap 39.9.

SIGMA BOUNDARY -- A 1-standard deviation move today for JYU is +/-48 ticks.

SUPPORT/RESISTANCE LEVELS -- JAPANESE YEN IMPLIED VOLATILITY (JYU02)

15.75	13-1/4 month high (Apr 3 wkly-nrst H00)	9.42	1-month high (Tuesday)
11.72	Contract high (1/08/02)	***9.37**	**Previous (Wednesday)**
11.06	4-3/4 month high (1/22/02)	8.88	20-day implied volatility average
10.68	4-1/4 month high (2/11/02)	8.53	Contract low (Last Wednesday)
10.66	3-1/4 month high (2/27/02)	8.21	4-yr low weekly nrst (11/13/00 Z00)
10.57	2-1/2 month high (3/7/02)	7.07	6-year low (wkly-nrst 11/25/96 Z96)
10.05	1-1/2 month high (4/1&2/02)	6.59	12-year low (wkly-nrst 8/19/96 U96)
9.65	60-day implied volatility average		

Note: Call for a User Manual that has explanations of the volatility terms used above.

OPTIMA VOLATILITY SUMMARY - CURRENCY FUTURES

As of: 052202	JYM02	ECM02	SFM02	BPM02	CDM02	
Underlying Settle:	.8062s	.92520s	.6377s	1.4566s	.6518s	
Change:	-.0020	+.00620	+.0032	-.0008	+.0022	
:						
Implied Volatility	10.44s	9.18s	10.76s	5.60s	6.00s	
Change from Prev:	-.03	+.59	+.64	-.40	+.11	
last 20Days High:	10.47	9.43	10.76	6.25	6.00	
Avg:	8.72	8.63	9.54	5.74	5.64	
Low:	8.19	7.43	8.16	5.34	5.47	
last 60Days High:	10.96	9.43	10.76	6.64	6.25	
Avg:	9.42	8.48	9.16	6.00	5.85	
Low:	8.19	7.43	8.16	5.34	5.47	
:						
Historical 20 Day:	10.63%	10.45%	10.85%	5.61%	3.92%	
Volatility 30 Day:	9.56%	9.03%	9.37%	4.81%	3.60%	
50 Day:	9.34%	8.23%	8.99%	4.77%	4.71%	
100 Day:	10.75%	8.58%	9.03%	5.62%	4.98%	
200 Day:	9.86%	9.38%	10.29%	7.36%	5.05%	

Notes: Implied Volatility is interpolated for the at-the-money straddle.

OPTIMA VOLATILITY CHEAPNESS INDEX

Historical Volatility						
Max :	27.5	N/A	29.0	30.5	11.7	
Median :	8.9	N/A	11.1	8.8	4.4	
Min :	3.2	N/A	3.8	2.7	1.4	
Vol Cheapness Ind:	64.7	N/A	47.2	20.7	83.8	
change :	-.1	N/A	+6.9	-3.0	+1.0	
Last 20 sess :						
High :	64.8	N/A	47.2	23.7	83.8	
Avg :	47.1	N/A	35.1	18.1	78.4	
Low :	37.8	N/A	28.1	13.8	74.2	
Last 60 sess :						
High :	64.8	N/A	47.2	23.7	88.7	
Avg :	44.5	N/A	22.6	13.2	82.7	
Low :	32.4	N/A	13.1	7.4	74.2	
Days to Expiration	16	16	16	16	16	

Notes: VCI ranks implied vol on a percentile basis (100 max, 0 min) against historical vol for given days to expiration.

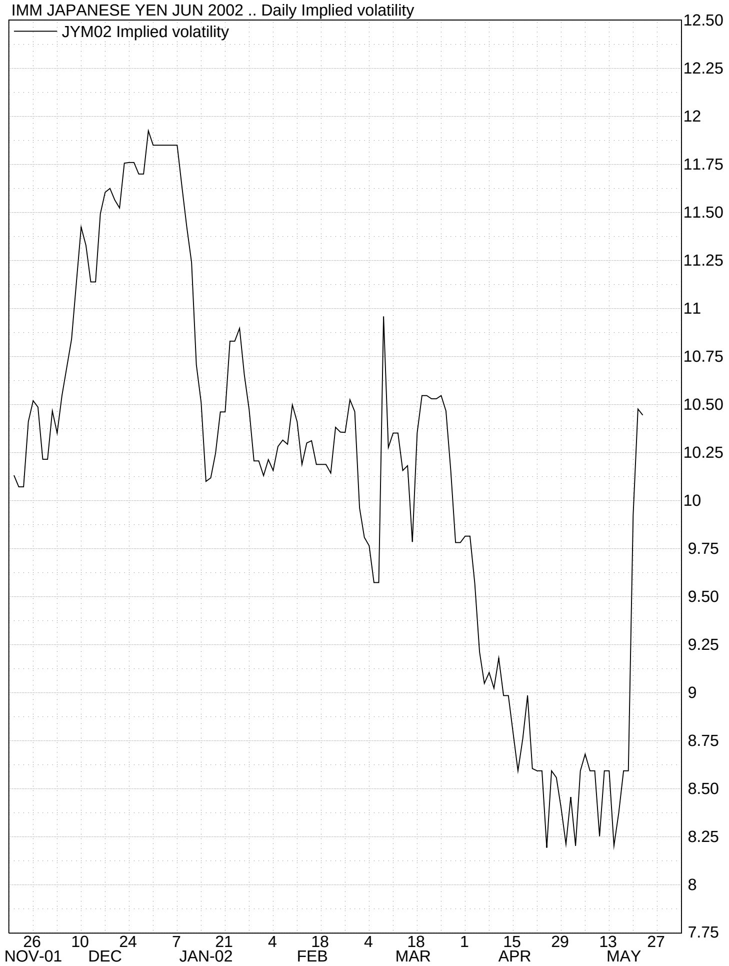
OPTIMA SIGMA BOUNDARY

Today: +1 Std Dev:	.0053	.00537	.0043	.0052	.0024	
-1 Std Dev:	.0053	.00534	.0043	.0052	.0024	
68% H:	.8115	.93057	.6420	1.4618	.6542	
L:	.8009	.91986	.6334	1.4514	.6493	
95% H:	.8168	.93594	.6463	1.4668	.6567	
L:	.7956	.91452	.6291	1.4464	.6469	
99% H:	.8221	.94131	.6507	1.4720	.6592	
L:	.7903	.90918	.6248	1.4412	.6444	
20Days +1 Std Dev:	N/A	N/A	N/A	N/A	N/A	
Out: -1 Std Dev:	N/A	N/A	N/A	N/A	N/A	
To +1 Std Dev:	.0178	.01797	.0145	.0172	.0082	
Expir- -1 Std Dev:	.0174	.01762	.0142	.0170	.0081	
ation 68% H:	.8240	.94317	.6522	1.4738	.6600	
L:	.7887	.90757	.6235	1.4396	.6436	
95% H:	.8418	.96114	.6667	1.4910	.6683	
L:	.7713	.88994	.6093	1.4226	.6355	
99% H:	.8597	.97911	.6813	1.5082	.6765	
L:	.7539	.87232	.5951	1.4056	.6274	

Notes: Shows probability of closing within price range based on implied volatility on sub-annual basis. Call for charts & info.

OPTIMA - CURRENCY OPTIONS PACKAGE

Optima Investment Research
IMM JAPANESE YEN JUN 2002 .. Daily Implied volatility



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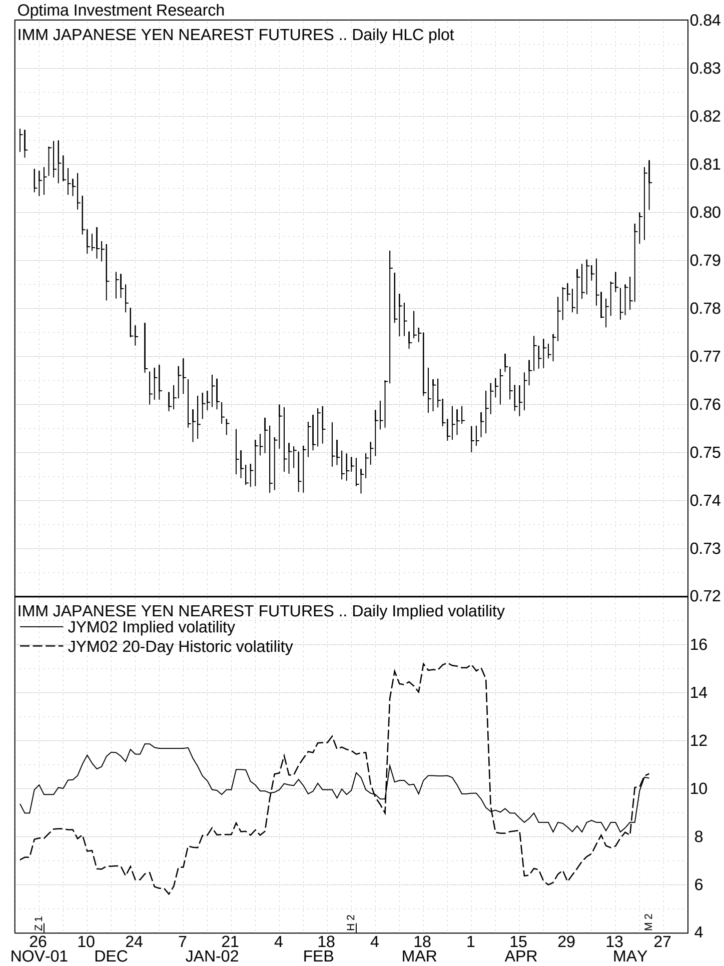

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IMM JAPANESE YEN SEP 2002 .. Daily Implied volatility

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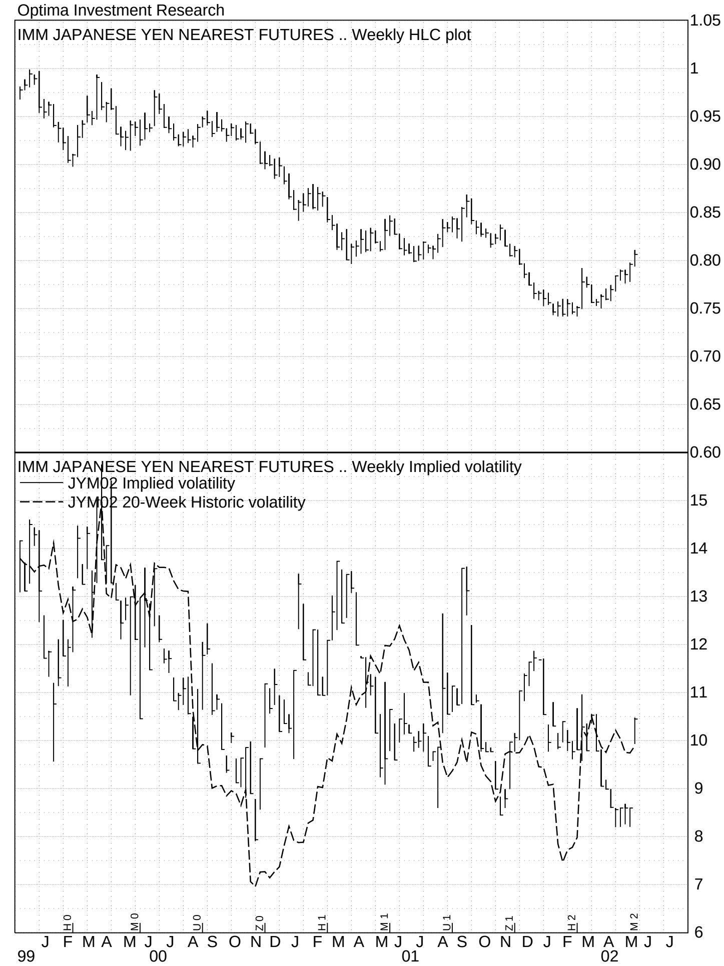

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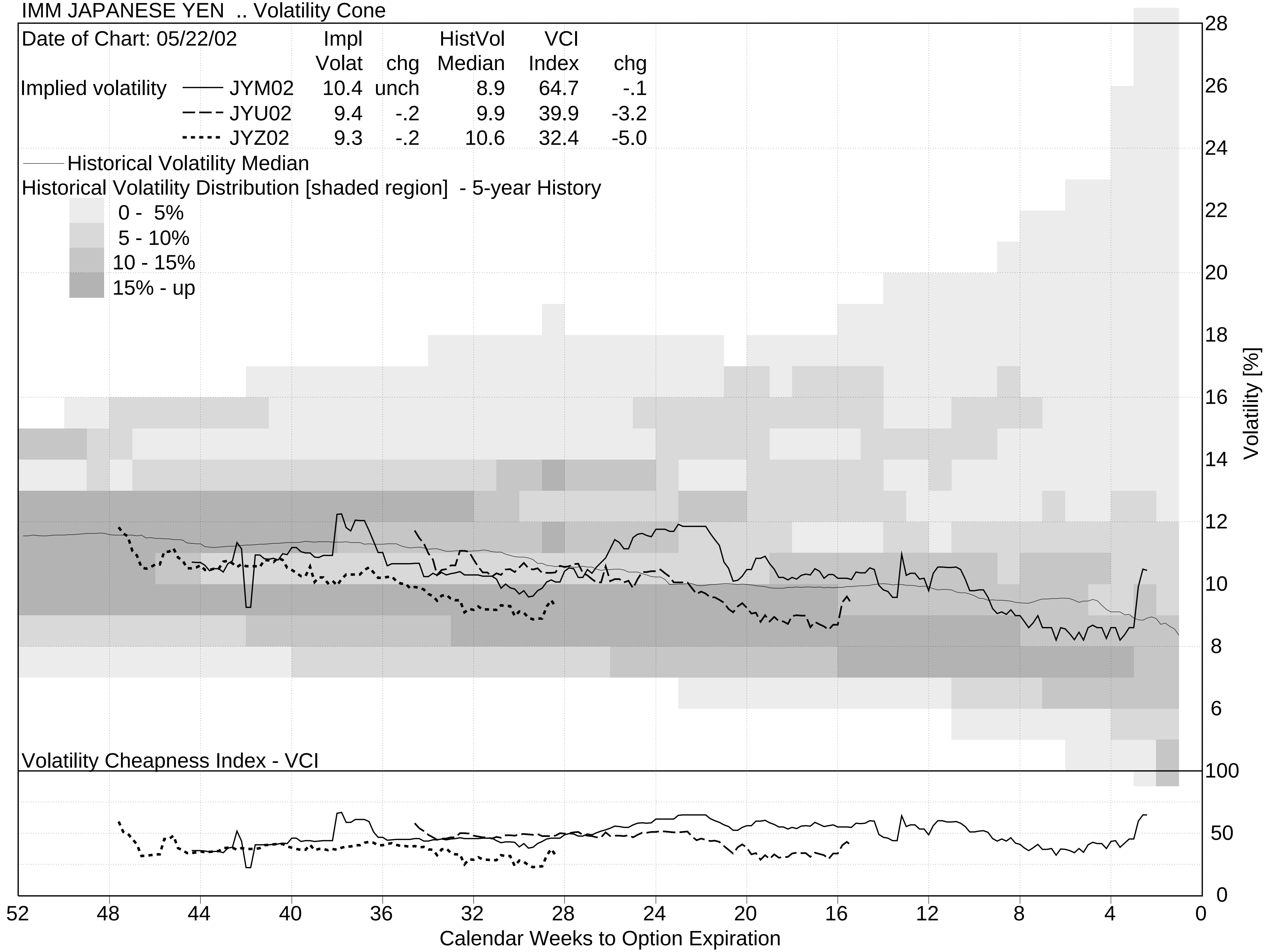
IMM JAPANESE YEN .. Volatility Cone



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YEN VOLATILITY CALENDAR SPREADS

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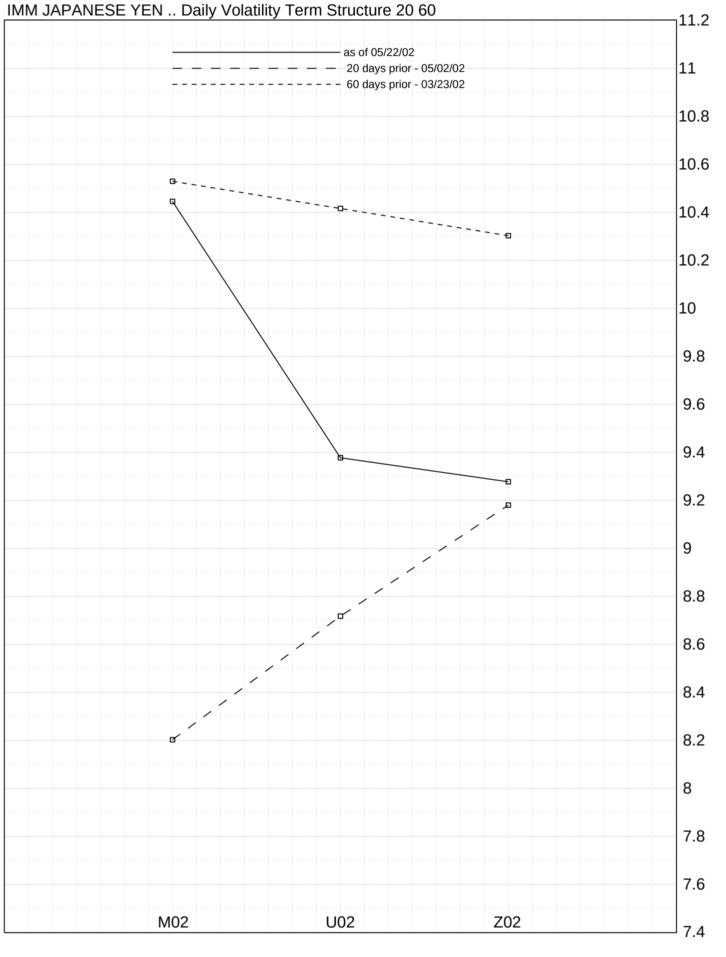
IMM JAPANESE YEN .. Daily Volatility Term Structure 20 60



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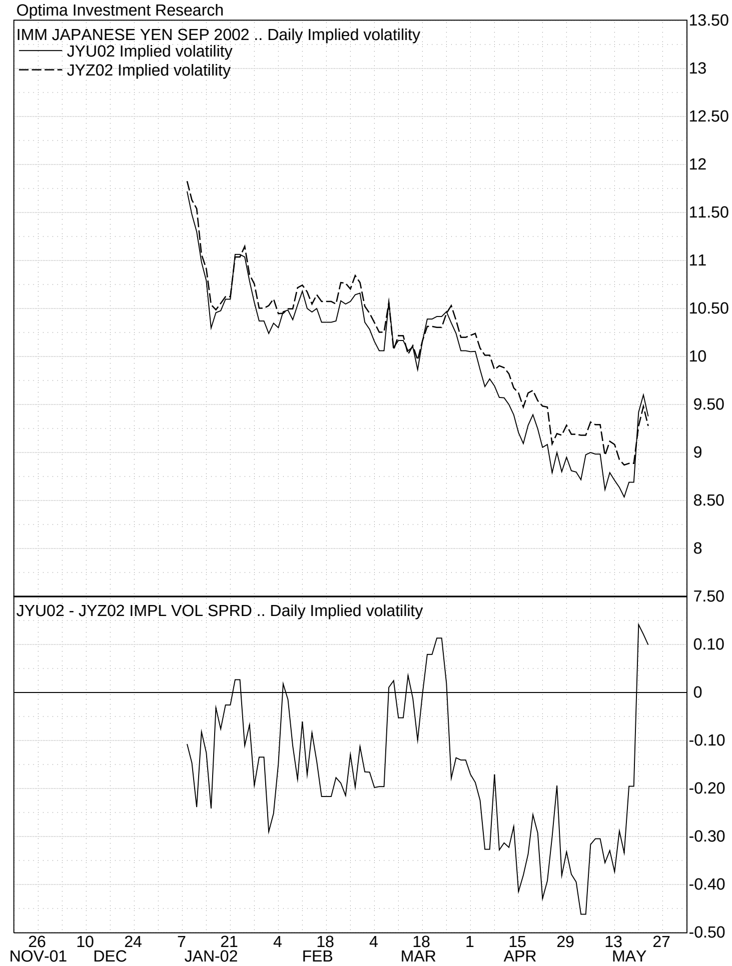

JUNE 02 IMM JAPANESE YEN OPTIONS

05/22/02 days to exp: 16 int. rate: 1.72% calc. imp vol of *: 10.45%

strike	last	imp vol	delta	gamma theta-7 vega prem	iv-skew
JYM02	0.8062				
0.8800C	0.00010s	12.50	.00	0.00070.0000020.0000040.000100	+2.05
0.8700C	0.00020s	17.19	.02	0.01520.0001700.0000840.000200	+6.74
0.8600C	0.00030s	15.63	.03	0.02220.0002200.0001110.000300	+5.18
0.8500C	0.00050s	14.84	.05	0.03840.0003900.0001780.000500	+4.40
0.8400C	0.00080s	14.06	.08	0.06480.0006750.0002770.000800	+3.62
0.8300C	0.00140s	12.50	.14	0.10330.0009450.0003850.001400	+2.05
0.8250C	0.00200s	12.11	.18	0.13050.0011920.0004650.002000	+1.66
0.8200C	0.00280s	11.72	.25	0.16000.0014470.0005440.002800	+1.27
0.8150C	0.00390s	10.94	.32	0.19400.0015920.0006100.003900	+.49
0.8100C	0.00550s	10.74*	.42	0.21560.0017580.0006610.005500	+.30
0.8050C	0.00760s	10.35*	.53	0.22740.0017330.0006710.006400	-.09
0.8000C	0.01040s	10.16	.65	0.21690.0015560.0006310.004200	-.29
0.7950C	0.01390s	10.35	.74	0.18390.0013070.0005530.002700	-.09
0.7900C	0.01790s	10.55	.82	0.14530.0009990.0004530.001700	+.10
0.7850C	0.02230s	10.94	.88	0.10830.0007370.0003570.001100	+.49
0.7800C	0.02690s	11.72	.91	0.08010.0005820.0002870.000700	+1.27
0.7750C	0.03170s	12.50	.94	0.05940.0004560.0002300.000500	+2.05
0.7700C	0.03650s	12.50	.96	0.03960.0002670.0001580.000300	+2.05
0.7650C	0.04140s	12.50	.98	0.02470.0001410.0001020.000200	+2.05
0.7600C	0.04640s	14.06	.98	0.02190.0001580.0001000.000200	+3.62
0.7550C	0.05130s	12.50	.99	0.00790.0000010.0000360.000100	+2.05
0.7500C	0.05630s	12.50	1.00	0.00400.0000000.0000000.000100	+2.05
0.7400C	0.06620s	.00	1.00	0.00000.0000000.0000000.000000	
0.7300C	0.07620s	.00	1.00	0.00000.0000000.0000000.000000	
0.7200C	0.08620s	12.50	1.00	0.00000.0000000.0000000.000000	+2.05
0.7000C	0.10620s	.00	1.00	0.00000.0000000.0000000.000000	
0.6900C	0.11620s	.00	1.00	0.00000.0000000.0000000.000000	
0.6700C	0.13620s	.00	1.00	0.00000.0000000.0000000.000000	
0.9600P	0.15380s	25.00	1.00	0.00040.0000000.0000000.000000	+14.55
0.9500P	0.14380s	25.00	1.00	0.00080.0000000.0000000.000000	+14.55
0.9300P	0.12380s	25.00	1.00	0.00240.0000000.0000000.000000	+14.55
0.9100P	0.10380s	25.00	.99	0.00690.0000790.0000550.000000	+14.55
0.9000P	0.09380s	12.50	1.00	0.00000.0000000.0000000.000000	+2.05
0.8900P	0.08380s	12.50	1.00	0.00020.0000000.0000000.000000	+2.05
0.8800P	0.07380s	12.50	1.00	0.00070.0000000.0000000.000000	+2.05
0.8700P	0.06390s	15.63	.99	0.01040.0000440.0000550.000100	+5.18
0.8600P	0.05400s	15.63	.97	0.02220.0002030.0001110.000200	+5.18
0.8500P	0.04430s	15.63	.94	0.04200.0004770.0002020.000500	+5.18
0.8400P	0.03460s	14.06	.92	0.06480.0006640.0002770.000800	+3.62
0.8300P	0.02520s	12.50	.86	0.10330.0009370.0003850.001400	+2.05
0.8200P	0.01660s	11.72	.75	0.16000.0014420.0005440.002800	+1.27
0.8150P	0.00180	.00	1.00	0.00000.0000000.0000000.007000	
0.8100P	0.00930s	10.74*	.58	0.21560.0017570.0006610.005500	+.30
0.8050P	0.00640s	10.35*	.47	0.22740.0017330.0006710.006400	-.09
0.8000P	0.00420s	10.16	.35	0.21690.0015580.0006310.004200	-.29
0.7950P	0.00270s	10.16	.25	0.18600.0012720.0005490.002700	-.29
0.7900P	0.00170s	10.55	.18	0.14530.0010040.0004530.001700	+.10
0.7850P	0.00110s	10.94	.12	0.10830.0007440.0003570.001100	+.49
0.7800P	0.00070s	10.94	.07	0.07500.0004640.0002550.000700	+.49
0.7750P	0.00050s	12.50	.06	0.05940.0004670.0002300.000500	+2.05
0.7700P	0.00035s	12.50	.04	0.03960.0002790.0001580.000350	+2.05
0.7650P	0.00025s	12.50	.02	0.02470.0001550.0001020.000250	+2.05
0.7600P	0.00020s	14.06	.02	0.02190.0001730.0001000.000200	+3.62
0.7550P	0.00015s	15.63	.02	0.01960.0001910.0000990.000150	+5.18
0.7500P	0.00010s	12.50	.00	0.00400.0000170.0000190.000100	+2.05
0.7450P	0.00020s	18.75	.02	0.01600.0002250.0000950.000200	+8.30
0.7400P	0.00010c	12.50	.00	0.00090.0000030.0000050.000100	+2.05
0.7350P	0.00010c	12.50	.00	0.00040.0000010.0000020.000100	+2.05

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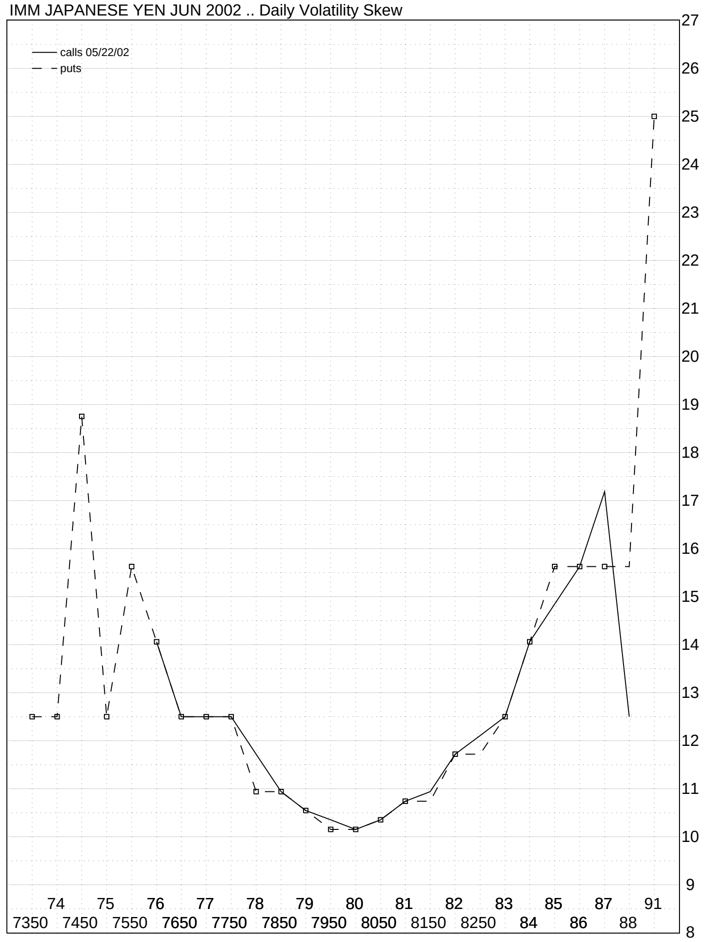
IMM JAPANESE YEN JUN 2002 .. Daily Volatility Skew



SEPTEMBER 02 IMM JAPANESE YEN OPTIONS

05/22/02 days to exp: 107 int. rate: 1.72% calc. imp vol of *: 9.38%

strike	last	imp vol	delta	gamma theta-7 vega prem	iv-skew
JYU02	0.8101				
0.8900C	0.00160s	11.72	.07	0.02700.0002280.0006630.001600	+2.34
0.8800C	0.00210s	11.33	.09	0.03350.0002660.0007860.002100	+1.95
0.8700C	0.00280s	10.94	.12	0.04150.0003090.0009280.002800	+1.56
0.8600C	0.00380s	10.74	.16	0.05120.0003700.0011060.003800	+1.37
0.8500C	0.00500s	10.35	.20	0.06200.0004180.0012750.005000	+.97
0.8400C	0.00680s	10.06	.26	0.07340.0004700.0014490.006800	+.68
0.8300C	0.00920s	9.86	.33	0.08370.0005170.0016040.009200	+.49
0.8200C	0.01230s	9.57*	.42	0.09250.0005380.0017080.012300	+.19
0.8100C	0.01630s	9.38*	.51	0.09650.0005380.0017400.016200	+.00
0.8000C	0.02160s	9.28	.61	0.09390.0005100.0016810.011500	-.10
0.7900C	0.02800s	9.38	.70	0.08430.0004630.0015390.007900	+.00
0.7800C	0.03540s	9.47	.77	0.07140.0003940.0013350.005300	+.10
0.7700C	0.04340s	9.57	.84	0.05700.0003150.0010990.003300	+.19
0.7600C	0.05210s	9.77	.89	0.04330.0002410.0008710.002000	+.39
0.7500C	0.06120s	9.77	.93	0.03080.0001610.0006400.001100	+.39
0.7400C	0.07070s	10.16	.95	0.02200.0001150.0004860.000600	+.78
0.8900P	0.08100s	11.33	.93	0.02580.0001770.0006200.001100	+1.95
0.8800P	0.07150s	11.13	.91	0.03300.0002300.0007640.001600	+1.76
0.8700P	0.06230s	10.94	.88	0.04150.0002890.0009280.002400	+1.56
0.8600P	0.05330s	10.55	.84	0.05110.0003390.0010870.003400	+1.17
0.8500P	0.04460s	10.25	.80	0.06210.0003980.0012670.004700	+.88
0.8400P	0.03650s	10.06	.73	0.07340.0004600.0014490.006600	+.68
0.8300P	0.02890s	9.77	.66	0.08440.0005040.0016010.009000	+.39
0.8200P	0.02210s	9.57*	.58	0.09250.0005350.0017080.012200	+.19
0.8100P	0.01620s	9.38*	.49	0.09650.0005380.0017400.016200	+.00
0.8000P	0.01160s	9.38	.39	0.09300.0005190.0016820.011600	+.00
0.7900P	0.00810s	9.38	.30	0.08430.0004700.0015390.008100	+.00
0.7800P	0.00550s	9.57	.22	0.07100.0004110.0013410.005500	+.19
0.7700P	0.00360s	9.57	.16	0.05700.0003280.0010990.003600	+.19
0.7600P	0.00240s	9.96	.11	0.04370.0002700.0008920.002400	+.58
0.7500P	0.00150s	10.16	.08	0.03210.0002040.0006850.001500	+.78
0.7400P	0.00100s	10.55	.05	0.02330.0001590.0005290.001000	+1.17

DECEMBER 02 IMM JAPANESE YEN OPTIONS

05/22/02 days to exp: 198 int. rate: 1.72% calc. imp vol of *: 9.28%

strike	last	imp vol	delta	gamma theta-7 vega prem	iv-skew
JYZ02	0.8149s				
0.9200C	0.00210s	11.13	.07	0.02100.0001630.0009240.002100	+1.86
0.9100C	0.00260s	10.94	.09	0.02490.0001870.0010610.002600	+1.66
0.9000C	0.00320s	10.55	.11	0.02890.0002030.0011810.003200	+1.27
0.8900C	0.00410s	10.55	.14	0.03420.0002410.0013760.004100	+1.27
0.8800C	0.00520s	10.35	.16	0.03970.0002690.0015500.005200	+1.07
0.8700C	0.00650s	10.16	.20	0.04570.0002990.0017290.006500	+.88
0.8600C	0.00810s	9.96	.24	0.05180.0003260.0019060.008100	+.68
0.8500C	0.01010s	9.67	.29	0.05830.0003460.0020650.010100	+.39
0.8400C	0.01270s	9.57	.34	0.06360.0003700.0022130.012700	+.29
0.8300C	0.01590s	9.47	.41	0.06770.0003850.0023190.015900	+.20
0.8200C	0.01970s	9.28*	.47	0.07090.0003850.0023690.019700	+.00
0.8100C	0.02440s	9.28*	.54	0.07050.0003820.0023550.019500	+.00
0.8000C	0.03000s	9.28	.61	0.06780.0003650.0022730.015100	+.00
0.7900C	0.03630s	9.33	.68	0.06270.0003380.0021290.011400	+.05
0.7800C	0.04340s	9.47	.74	0.05580.0003060.0019410.008500	+.20
0.7700C	0.05110s	9.57	.79	0.04840.0002660.0017200.006200	+.29
0.7600C	0.05930s	9.77	.83	0.04070.0002280.0014950.004400	+.49
0.7500C	0.06790s	9.96	.87	0.03340.0001880.0012720.003000	+.68
0.7400C	0.07690s	10.16	.90	0.02690.0001500.0010610.002000	+.88
0.7300C	0.08610s	10.35	.92	0.02120.0001150.0008690.001200	+1.07
0.7100C	0.10520s	11.33	.95	0.01390.0000770.0006330.000300	+2.05
0.6900C	0.12490s	12.50	.96	0.00950.0000000.0002790.000000	+3.22
0.6600C	0.15490s	12.50	.98	0.00340.0000000.0000000.000000	+3.22
0.9200P	0.10620s	10.94	.92	0.02060.0001200.0008920.001100	+1.66
0.8700P	0.06090s	9.96	.80	0.04590.0002700.0017070.005800	+.68
0.8500P	0.04470s	9.57	.71	0.05870.0003300.0020590.009600	+.29
0.8400P	0.03740s	9.47	.65	0.06420.0003570.0022100.012300	+.20
0.8300P	0.03080s	9.38	.59	0.06840.0003760.0023170.015700	+.10
0.8200P	0.02470s	9.28*	.52	0.07090.0003840.0023690.019600	+.00
0.8100P	0.01960s	9.28*	.45	0.07050.0003830.0023550.019600	+.00
0.8000P	0.01530s	9.28	.38	0.06780.0003700.0022730.015300	+.00
0.7900P	0.01180s	9.38	.31	0.06250.0003480.0021310.011800	+.10
0.7800P	0.00900s	9.57	.25	0.05550.0003220.0019480.009000	+.29
0.7700P	0.00680s	9.67	.20	0.04820.0002860.0017300.006800	+.39
0.7600P	0.00510s	9.86	.16	0.04060.0002500.0015070.005100	+.59
0.7500P	0.00380s	10.16	.12	0.03360.0002190.0012990.003800	+.88
0.7400P	0.00280s	10.35	.10	0.02720.0001840.0010900.002800	+1.07
0.7300P	0.00210s	10.55	.07	0.02170.0001510.0008990.002100	+1.27
0.7200P	0.00160s	10.94	.06	0.01740.0001300.0007560.001600	+1.66
0.7100P	0.00120s	11.33	.04	0.01390.0001110.0006330.001200	+2.05
0.7000P	0.00100s	11.72	.04	0.01100.0000940.0005280.001000	+2.44
0.6900P	0.00080s	12.11	.03	0.00880.0000800.0004380.000800	+2.83
0.6800P	0.00060s	12.50	.02	0.00700.0000670.0003630.000600	+3.22
0.6600P	0.00040s	13.28	.01	0.00440.0000470.0002470.000400	+4.00

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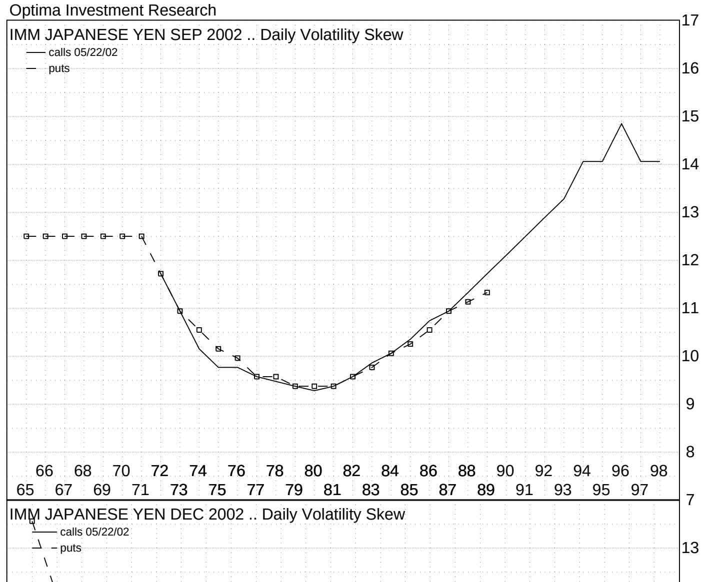

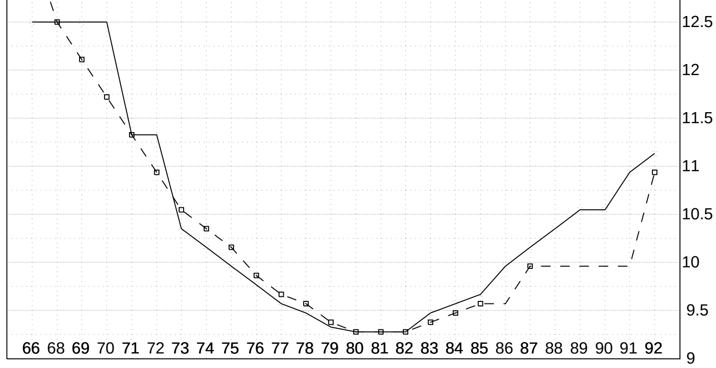

Optima Investment Research
IMM JAPANESE YEN JUN 2002 .. Sigma Boundary

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IMM JAPANESE YEN SEP 2002 .. Sigma Boundary

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OPTIMA - EUROFX OPTIONS PACKAGE

Optima Investment Research
IMM EURO FX JUN 2002 .. Daily Implied volatility

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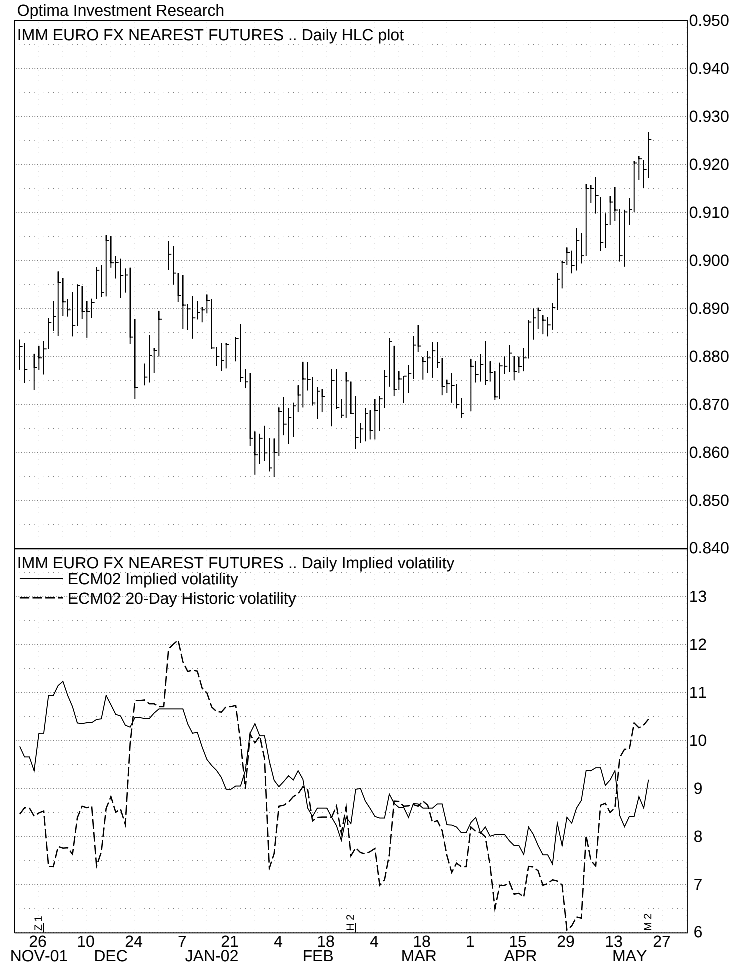
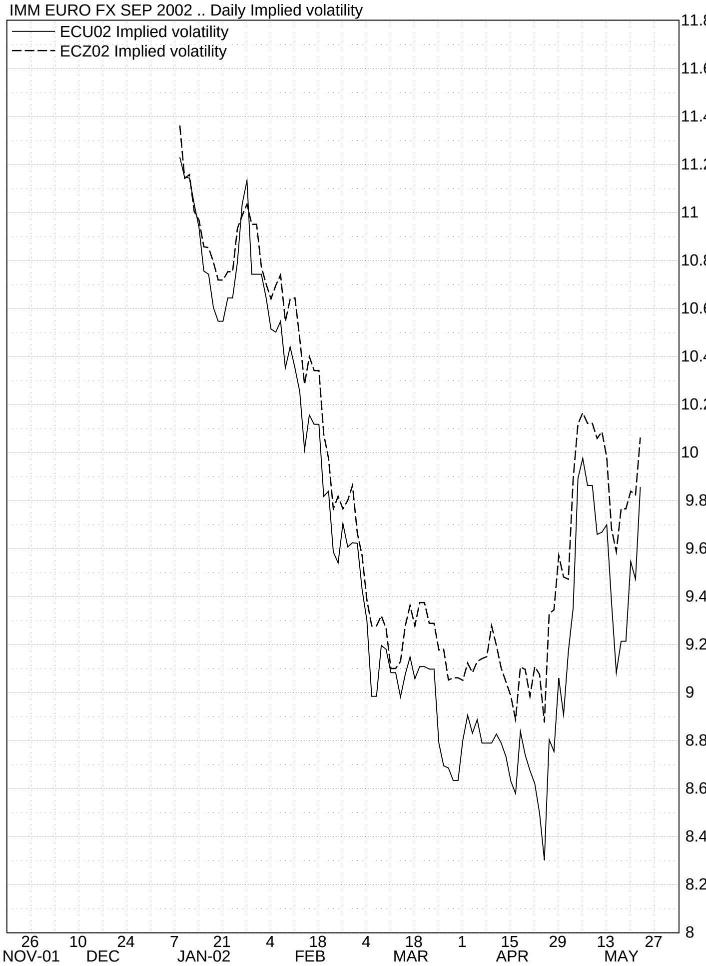
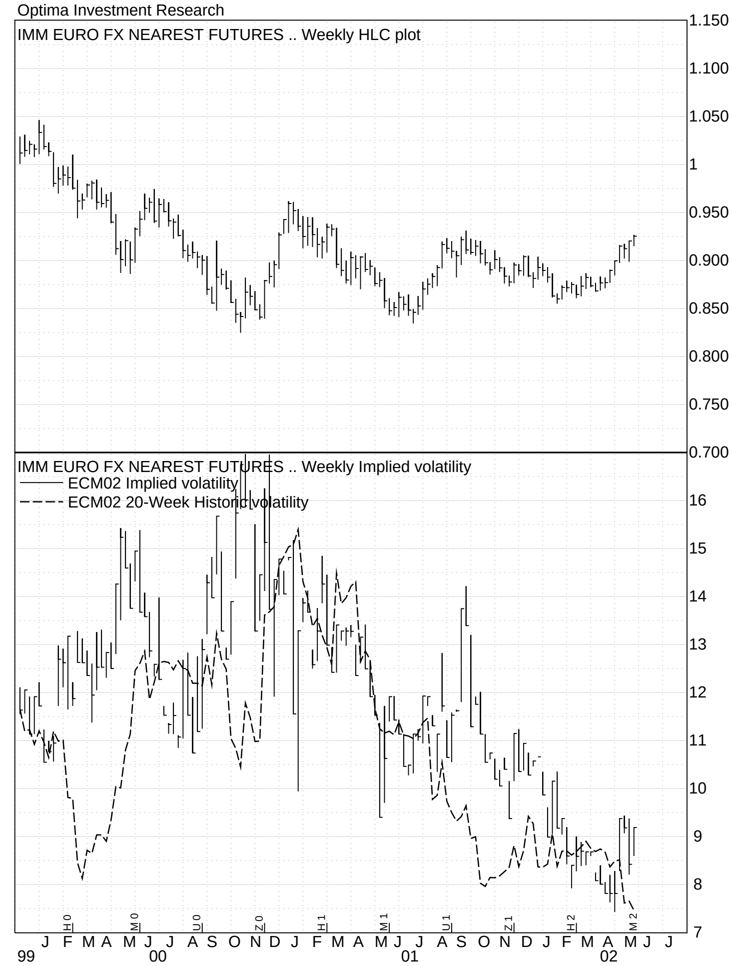


Optima Investment Research
IMM EURO FX SEP 2002 .. Daily Implied volatility



Optima Investment Research



EUROFX VOLATILITY CALENDAR SPREADS

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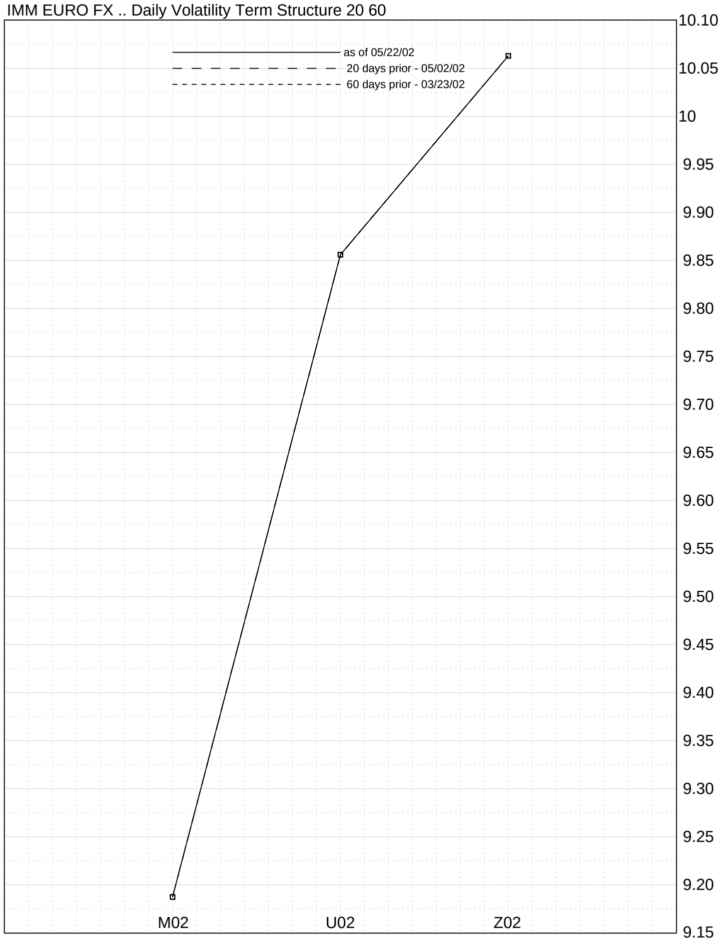
IMM EURO FX .. Daily Volatility Term Structure 20 60



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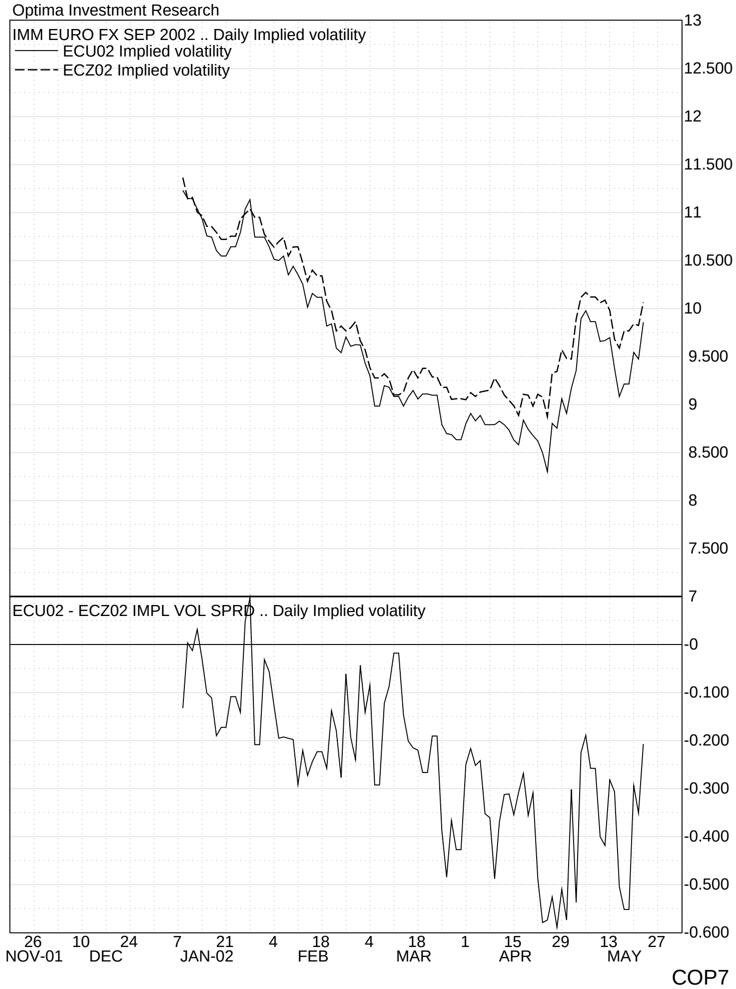

JUNE 02 IMM EURO FX OPTIONS

05/22/02 days to exp: 16 int. rate: 1.72% calc. imp vol of *: 9.19%

strike	last	imp vol	delta	gamma	theta-7	vega	prem	iv-skew
ECM02	0.92520							
0.98000C	0.00010s	12.50	.01	1.51090	.0001130	.0000850	.000100	+3.31
0.97000C	0.00030s	12.50	.04	3.29510	.0002980	.0001750	.000300	+3.31
0.96500C	0.00040s	11.72	.04	4.10940	.0003410	.0002030	.000400	+2.53
0.96000C	0.00060s	11.72	.07	5.76450	.0005250	.0002770	.000600	+2.53
0.95000C	0.00100s	10.16	.11	9.47080	.0007180	.0003870	.001000	+.97
0.94500C	0.00170s	10.16	.16	12.47220	.0010290	.0004970	.001700	+.97
0.94000C	0.00250s	9.96	.23	15.58890	.0013200	.0005980	.002500	+.77
0.93500C	0.00360s	9.77	.31	18.54950	.0015880	.0006880	.003600	+.58
0.93000C	0.00510s	9.38*	.40	21.25560	.0017310	.0007500	.005100	+.19
0.92500C	0.00720s	9.18*	.51	22.41360	.0017700	.0007720	.007000	-.01
0.92000C	0.00990s	8.98	.62	21.83770	.0016260	.0007400	.004700	-.20
0.91500C	0.01320s	8.98	.72	19.14690	.0013650	.0006570	.003000	-.20
0.91000C	0.01710s	9.38	.80	15.24690	.0011150	.0005550	.001900	+.19
0.90500C	0.02130s	9.38	.87	11.53440	.0007710	.0004310	.001100	+.19
0.90000C	0.02590s	9.38	.92	8.04690	.0004800	.0003120	.000700	+.19
0.89500C	0.03070s	10.16	.94	5.89610	.0003840	.0002510	.000500	+.97
0.89000C	0.03550s	10.94	.96	4.39590	.0003100	.0002040	.000300	+1.75
0.88500C	0.04040s	10.94	.97	2.80350	.0001690	.0001350	.000200	+1.75
0.88000C	0.04530s	10.94	.99	1.67780	.0000710	.0000850	.000100	+1.75
0.87500C	0.05020s	6.25	1.00	0.00360	.0000000	.0000000	.000000	-2.94
0.87000C	0.05520s	12.50	.99	1.00780	.0000320	.0000580	.000000	+3.31
0.86000C	0.06520s	12.50	1.00	0.32180	.0000000	.0000000	.000000	+3.31
0.85000C	0.07520s	12.50	1.00	0.08310	.0000000	.0000000	.000000	+3.31
0.84000C	0.08520s	.00	1.00	0.00000	.0000000	.0000000	.000000	
0.83000C	0.09520s	.00	1.00	0.00000	.0000000	.0000000	.000000	
0.77000C	0.15520s	.00	1.00	0.00000	.0000000	.0000000	.000000	
0.76000C	0.16520s	25.00	1.00	0.00640	.0000000	.0000000	.000000	+15.81
0.98000P	0.05490s	12.50	.98	1.51090	.0000810	.0000850	.000100	+3.31
0.97000P	0.04510s	12.50	.96	3.29510	.0002840	.0001750	.000300	+3.31
0.96000P	0.03540s	11.72	.93	5.76450	.0005130	.0002770	.000600	+2.53
0.95000P	0.02580s	10.16	.89	9.47080	.0007100	.0003870	.001000	+.97
0.94000P	0.01730s	9.96	.77	15.58890	.0013150	.0005980	.002500	+.77
0.93000P	0.00990s	9.38*	.60	21.25560	.0017300	.0007500	.005100	+.19
0.92500P	0.00700s	9.18*	.49	22.41360	.0017700	.0007720	.007000	-.01
0.92000P	0.00470s	8.98	.38	21.83770	.0016280	.0007400	.004700	-.20
0.91500P	0.00300s	8.98	.27	19.14690	.0013690	.0006570	.003000	-.20
0.91000P	0.00190s	9.18	.19	15.33470	.0010740	.0005480	.001900	-.01
0.90500P	0.00110s	9.38	.13	11.53440	.0007780	.0004310	.001100	+.19
0.90000P	0.00070s	9.38	.08	8.04690	.0004880	.0003120	.000700	+.19
0.89500P	0.00050s	10.16	.06	5.89610	.0003940	.0002510	.000500	+.97
0.89000P	0.00030s	10.94	.04	4.39590	.0003210	.0002040	.000300	+1.75
0.88500P	0.00020s	10.94	.03	2.80350	.0001830	.0001350	.000200	+1.75
0.88000P	0.00010s	6.25	.00	0.02110	.0000000	.0000020	.000100	-2.94
0.87500P	0.00010c	12.50	.02	1.65090	.0001280	.0000920	.000100	+3.31
0.87000P	0.00010c	12.50	.01	1.00780	.0000700	.0000580	.000100	+3.31
0.86500P	0.00020c	15.63	.02	1.53630	.0001930	.0001030	.000200	+6.44
0.86000P	0.00010	12.50	.00	0.32180	.0000180	.0000200	.000100	+3.31
0.85500P	0.00010	12.50	.00	0.16800	.0000080	.0000110	.000100	+3.31
0.85000P	0.00010c	12.50	.00	0.08310	.0000040	.0000060	.000100	+3.31

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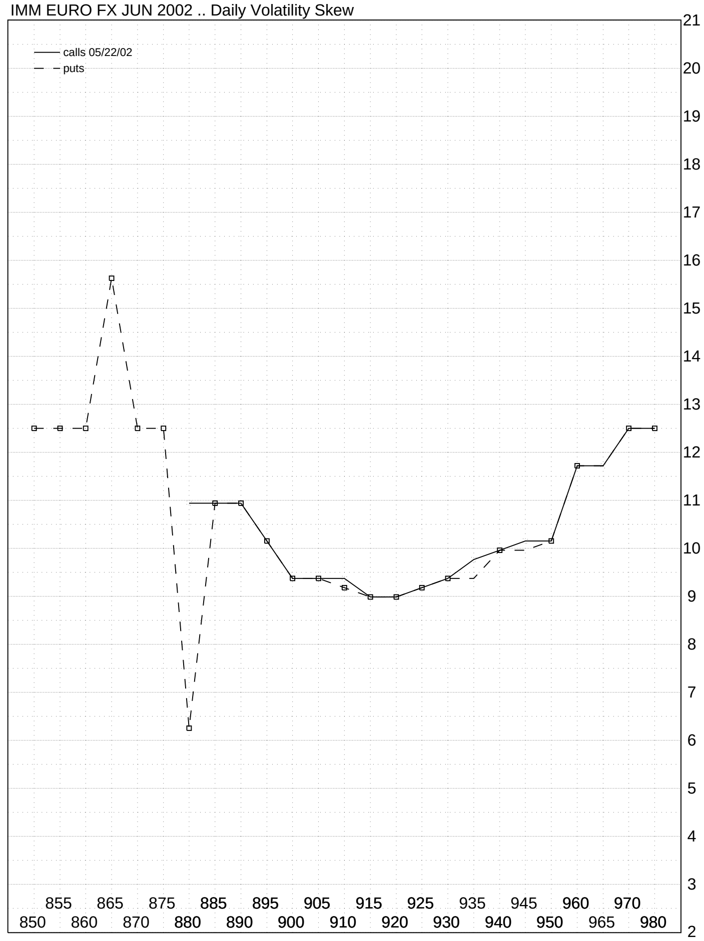
IMM EURO FX JUN 2002 .. Daily Volatility Skew



SEPTEMBER 02 IMM EURO FX OPTIONS

05/22/02 days to exp: 107 int. rate: 1.72% calc. imp vol of *: 9.86%

strike	last	imp vol	delta	gamma	theta-7	vega	prem	iv-skew
ECU02	0.92150							
1.00000C	0.00200s	10.74	.08	2.87170	.0002650	.0008360	.002000	+.89
0.99000C	0.00290s	10.74	.11	3.58880	.0003330	.0010240	.002900	+.89
0.98000C	0.00390s	10.55	.15	4.34980	.0003920	.0012010	.003900	+.69
0.97000C	0.00510s	10.35	.19	5.18520	.0004520	.0013870	.005100	+.50
0.96000C	0.00690s	10.16	.24	6.05850	.0005110	.0015700	.006900	+.30
0.95000C	0.00920s	10.16	.30	6.81980	.0005760	.0017480	.009200	+.30
0.94000C	0.01200s	9.96	.36	7.53420	.0006140	.0018800	.012000	+.10
0.93000C	0.01560s	9.86*	.44	7.98140	.0006380	.0019620	.015600	+.01
0.92000C	0.02020s	9.86*	.52	8.05280	.0006420	.0019770	.018700	+.01
0.91000C	0.02550s	9.77	.60	7.86770	.0006130	.0019180	.014000	-.09
0.90000C	0.03170s	9.77	.68	7.28470	.0005630	.0017870	.010200	-.09
0.89000C	0.03880s	9.86	.75	6.40970	.0005000	.0016050	.007300	+.01
0.88000C	0.04650s	9.96	.81	5.41610	.0004240	.0013890	.005000	+.10
0.87000C	0.05470s	9.96	.86	4.39360	.0003360	.0011480	.003200	+.10
0.86000C	0.06350s	9.96	.90	3.39670	.0002500	.0009080	.002000	+.10
0.94000P	0.03030s	9.86	.63	7.59860	.0006010	.0018780	.011800	+.01
0.93000P	0.02400s	9.77*	.56	8.05880	.0006280	.0019620	.015500	-.09
0.92000P	0.01870s	9.86*	.47	8.05280	.0006430	.0019770	.018700	+.01
0.91000P	0.01410s	9.77	.39	7.86770	.0006160	.0019180	.014100	-.09
0.90000P	0.01040s	9.86	.32	7.22670	.0005770	.0017900	.010400	+.01
0.89000P	0.00750s	9.86	.25	6.40970	.0005100	.0016050	.007500	+.01
0.88000P	0.00530s	9.96	.19	5.41610	.0004380	.0013890	.005300	+.10
0.87000P	0.00360s	9.96	.14	4.39360	.0003530	.0011480	.003600	+.10
0.86000P	0.00240s	10.16	.10	3.43710	.0002850	.0009330	.002400	+.30
0.85000P	0.00160s	10.16	.07	2.55740	.0002100	.0007130	.001600	+.30
0.84000P	0.00100s	10.16	.04	1.81090	.0001470	.0005210	.001000	+.30
0.83000P	0.00070s	10.55	.03	1.33780	.0001160	.0004070	.000700	+.69
0.82000P	0.00050s	10.94	.02	0.98400	.0000910	.0003160	.000500	+1.08
0.81000P	0.00030s	10.94	.01	0.63630	.0000580	.0002130	.000300	+1.08
0.80000P	0.00020s	10.94	.01	0.39170	.0000350	.0001370	.000200	+1.08
0.79000P	0.00010s	6.25	.00	0.00040	.0000000	.0000000	.000100	-3.61

DECEMBER 02 IMM EURO FX OPTIONS

05/22/02 days to exp: 198 int. rate: 1.72% calc. imp vol of *: 10.06%

strike	last	imp vol	delta	gamma	theta-7	vega	prem	iv-skew
ECZ02	0.91820s							
1.02000C	0.00360s	11.04	.10	2.41560	.0002350	.0013080	.003600	+.97
1.00000C	0.00550s	10.84	.15	3.17530	.0002990	.0016520	.005500	+.78
0.99000C	0.00670s	10.64	.18	3.59220	.0003270	.0018200	.006700	+.58
0.98000C	0.00820s	10.55	.21	4.02480	.0003600	.0020020	.008200	+.48
0.97000C	0.01010s	10.45	.25	4.45470	.0003920	.0021770	.010100	+.39
0.96000C	0.01220s	10.35	.29	4.86450	.0004200	.0023380	.012200	+.29
0.95000C	0.01490s	10.25	.34	5.23350	.0004430	.0024760	.014900	+.19
0.94000C	0.01790s	10.11	.39	5.56300	.0004570	.0025830	.017900	+.04
0.93000C	0.02180s	10.16	.44	5.70350	.0004730	.0026530	.021800	+.09
0.92000C	0.02600s	10.06*	.50	5.80990	.0004710	.0026720	.026000	+.00
0.91000C	0.03110s	10.06*	.56	5.73810	.0004630	.0026410	.022900	+.00
0.90000C	0.03660s	10.06	.61	5.54230	.0004450	.0025580	.018400	+.00
0.89000C	0.04280s	10.06	.67	5.23150	.0004170	.0024260	.014600	+.00
0.88000C	0.04950s	10.06	.72	4.82200	.0003810	.0022510	.011300	+.00
0.87000C	0.05670s	10.06	.77	4.33660	.0003380	.0020430	.008500	+.00
0.86000C	0.06450s	10.16	.81	3.79380	.0002960	.0018240	.006300	+.09
0.85000C	0.07260s	10.16	.85	3.24920	.0002470	.0015830	.004400	+.09
0.73000C	0.18820s	12.50	.99	0.18690	.0000000	.0000000	.000000	+2.44
1.00000P	0.08630s	10.64	.85	3.16600	.0002610	.0016220	.004500	+.58
0.95000P	0.04630s	10.21	.65	5.25350	.0004300	.0024740	.014500	+.14
0.94000P	0.03940s	10.06	.60	5.58740	.0004480	.0025820	.017600	+.00
0.93000P	0.03340s	10.11	.55	5.73030	.0004670	.0026520	.021600	+.04
0.92000P	0.02780s	10.06*	.49	5.80990	.0004710	.0026720	.026000	+.00
0.91000P	0.02300s	10.11*	.43	5.71070	.0004680	.0026410	.023000	+.04
0.90000P	0.01870s	10.11	.38	5.51740	.0004530	.0025590	.018700	+.04
0.89000P	0.01500s	10.16	.32	5.18990	.0004310	.0024290	.015000	+.09
0.88000P	0.01180s	10.16	.27	4.79060	.0003980	.0022580	.011800	+.09
0.87000P	0.00920s	10.16	.22	4.31670	.0003590	.0020520	.009200	+.09
0.86000P	0.00710s	10.25	.18	3.78500	.0003200	.0018350	.007100	+.19
0.85000P	0.00530s	10.25	.14	3.25080	.0002750	.0015970	.005300	+.19
0.84000P	0.00390s	10.35	.11	2.72950	.0002340	.0013730	.003900	+.29
0.83000P	0.00280s	10.35	.09	2.23090	.0001910	.0011420	.002800	+.29
0.82000P	0.00200s	10.35	.06	1.77380	.0001510	.0009260	.002000	+.29
0.81000P	0.00140s	10.55	.05	1.41360	.0001250	.0007650	.001400	+.48
0.80000P	0.00100s	10.55	.03	1.07150	.0000940	.0005940	.001000	+.48
0.79000P	0.00070s	10.55	.02	0.78850	.0000690	.0004490	.000700	+.48
0.78000P	0.00050s	10.94	.02	0.63340	.0000590	.0003780	.000500	+.87
0.77000P	0.00040s	10.94	.01	0.44920	.0000420	.0002760	.000400	+.87
0.75000P	0.00030s	12.50	.01	0.37720	.0000460	.0002590	.000300	+2.44
0.73000P	0.00010s	12.50	.01	0.18690	.0000220	.0001360	.000100	+2.44

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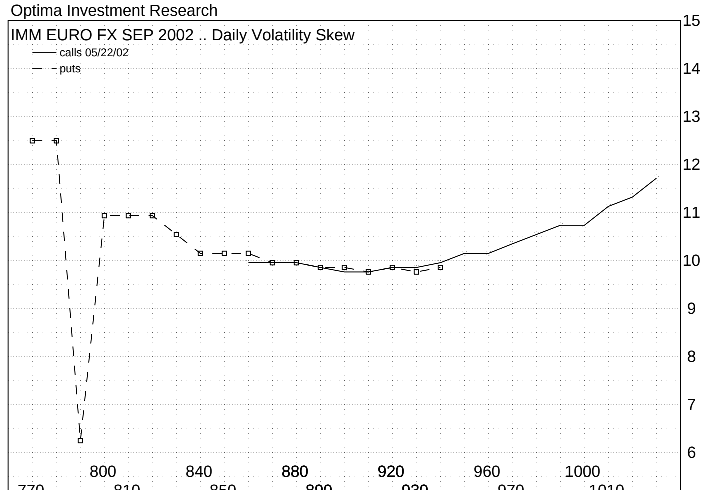

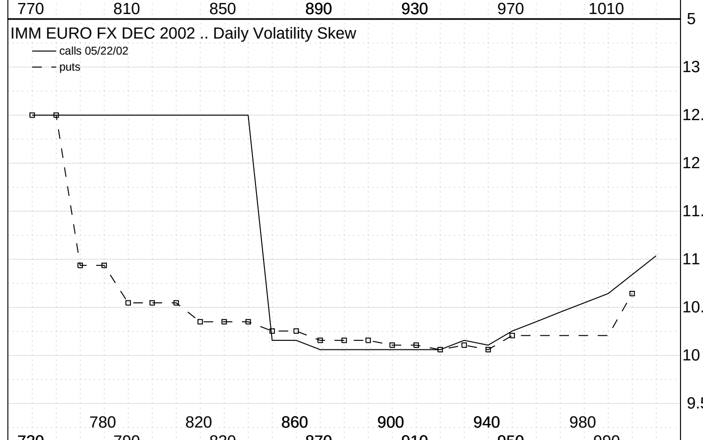

Optima Investment Research
IMM EURO FX JUN 2002 .. Sigma Boundary

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IMM EURO FX SEP 2002 .. Sigma Boundary

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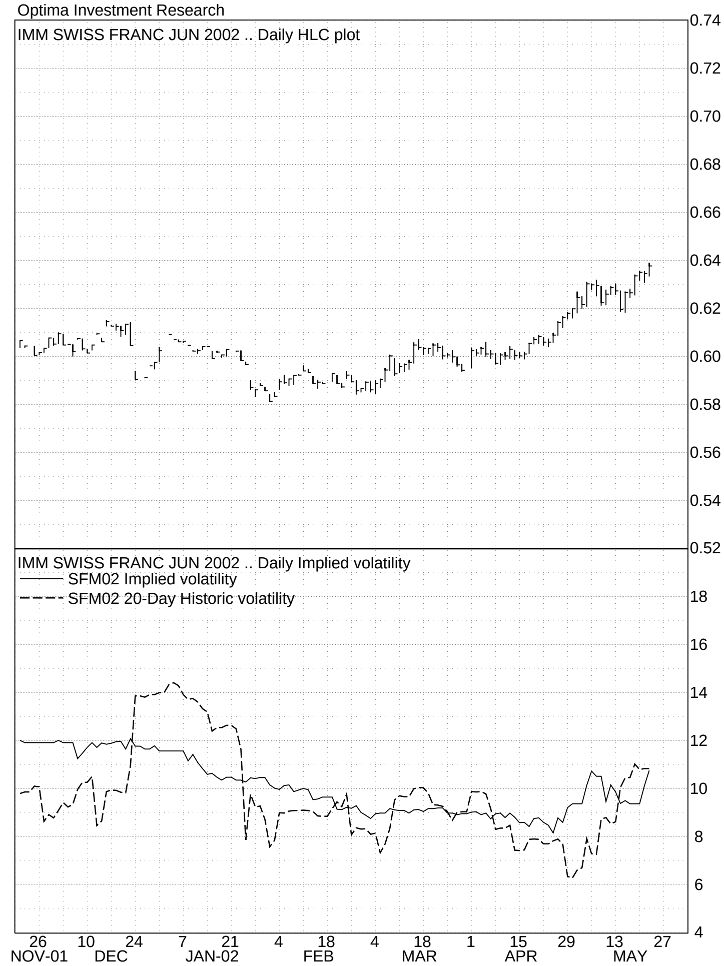
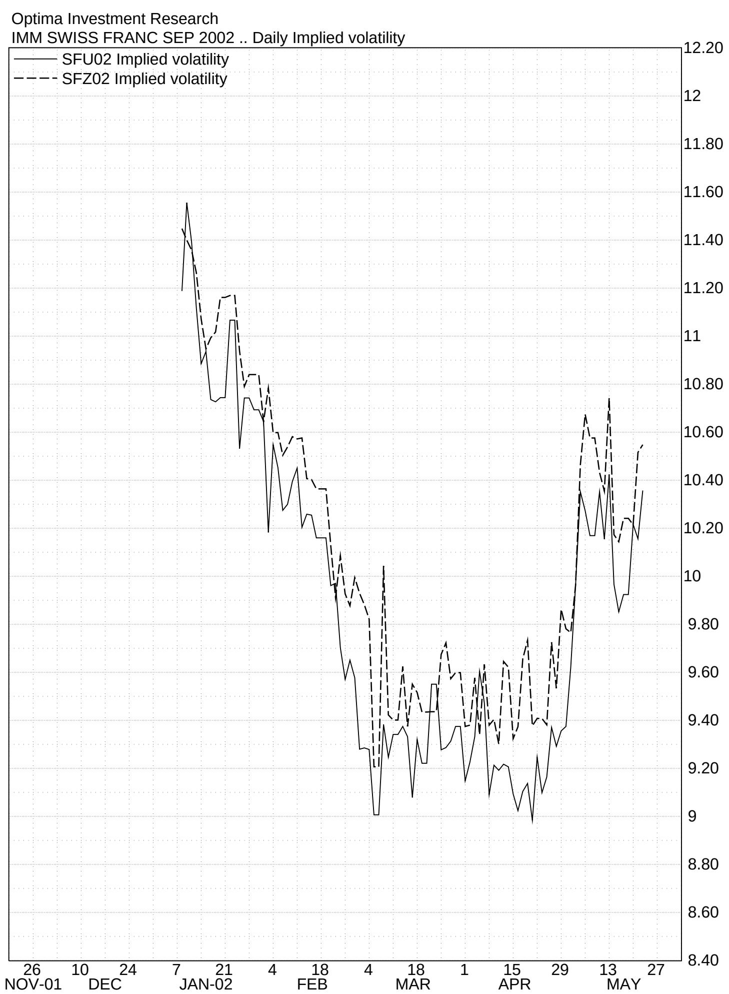
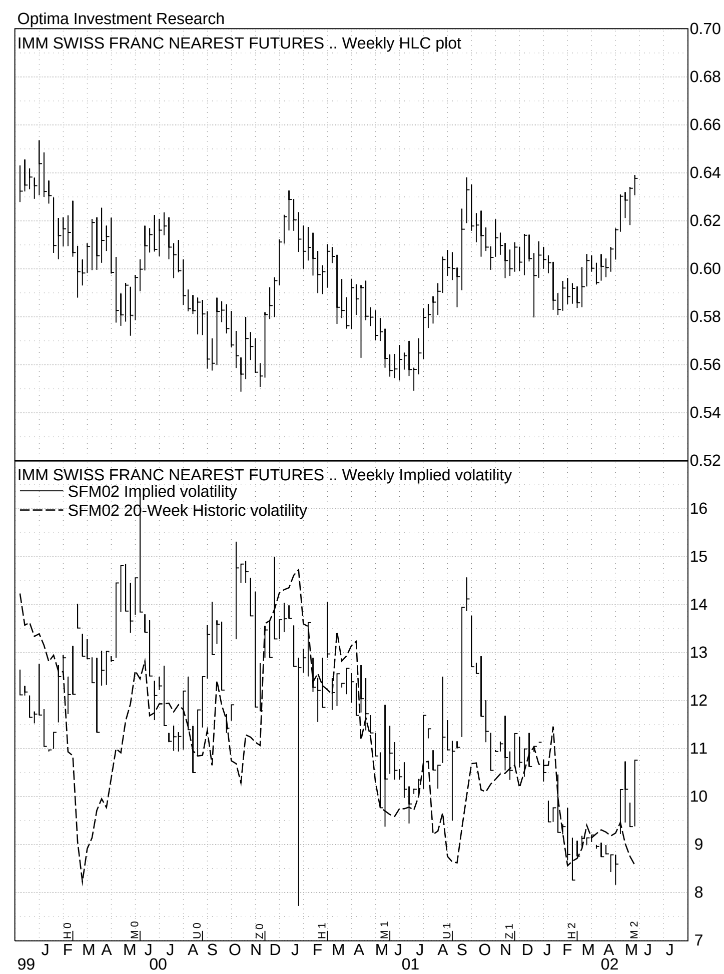
OPTIMA - SWISS FRANC OPTIONS PACKAGE







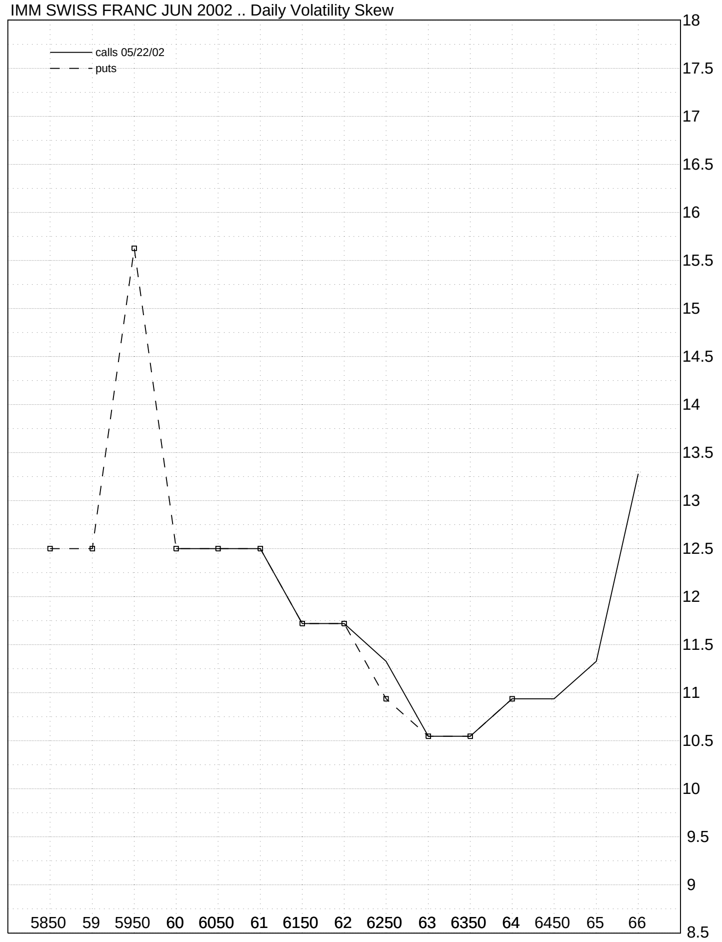
JUNE 02 IMM SWISS FRANC OPTIONS

05/22/02 days to exp: 16 int. rate: 1.72% calc. imp vol of *: 10.76%

strike	last	imp vol	delta	gamma	theta-7	vega	prem	iv-skew
SFM02	0.6377							
0.6600C	0.00090s	13.28	.11	0.10650	.0006580	.0002660	.000900	+2.52
0.6500C	0.00180s	11.33	.21	0.19240	.0009900	.0003990	.001800	+.57
0.6450C	0.00300s	10.94	.31	0.24260	.0012410	.0004780	.003000	+.18
0.6400C	0.00470s	10.94*	.44	0.27010	.0014330	.0005270	.004700	+.18
0.6350C	0.00700s	10.55*	.58	0.27730	.0013640	.0005220	.004300	-.21
0.6300C	0.01030s	10.55	.71	0.24180	.0011380	.0004610	.002600	-.21
0.6250C	0.01430s	11.33	.80	0.18210	.0009220	.0003790	.001600	+.57
0.6200C	0.01860s	11.72	.88	0.13010	.0006400	.0002860	.000900	+.96
0.6150C	0.02320s	11.72	.93	0.08400	.0003600	.0001910	.000500	+.96
0.6100C	0.02800s	12.50	.96	0.05540	.0002410	.0001380	.000300	+1.74
0.6050C	0.03290s	12.50	.98	0.03080	.0001090	.0000800	.000200	+1.74
0.6000C	0.03780s	12.50	.99	0.01540	.0000260	.0000420	.000100	+1.74
0.5900C	0.04770s	.00	1.00	0.00000	.0000000	.0000000	.000000	
0.5800C	0.05770s	.00	1.00	0.00000	.0000000	.0000000	.000000	
0.5600C	0.07770s	.00	1.00	0.00000	.0000000	.0000000	.000000	
0.6400P	0.00700s	10.94*	.56	0.27010	.0014320	.0005270	.004700	+.18
0.6350P	0.00440s	10.55*	.42	0.27730	.0013650	.0005220	.004400	-.21
0.6300P	0.00260s	10.55	.29	0.24180	.0011400	.0004610	.002600	-.21
0.6250P	0.00160s	10.94	.19	0.18370	.0008640	.0003700	.001600	+.18
0.6200P	0.00090s	11.72	.12	0.13010	.0006460	.0002860	.000900	+.96
0.6150P	0.00050s	11.72	.07	0.08400	.0003680	.0001910	.000500	+.96
0.6100P	0.00030s	12.50	.04	0.05540	.0002510	.0001380	.000300	+1.74
0.6050P	0.00020s	12.50	.02	0.03080	.0001200	.0000800	.000200	+1.74
0.6000P	0.00010s	12.50	.01	0.01540	.0000510	.0000420	.000100	+1.74
0.5950P	0.00020c	15.63	.02	0.01960	.0001130	.0000630	.000200	+4.87
0.5900P	0.00010c	12.50	.00	0.00280	.0000070	.0000090	.000100	+1.74
0.5850P	0.00010c	12.50	.00	0.00100	.0000020	.0000030	.000100	+1.74

Optima Investment Research

IMM SWISS FRANC JUN 2002 .. Daily Volatility Skew



SEPTEMBER 02 IMM SWISS FRANC OPTIONS

05/22/02 days to exp: 107 int. rate: 1.72% calc. imp vol of *: 10.36%

strike	last	imp vol	delta	gamma	theta-7	vega	prem	iv-skew
SFU02	0.6388							
0.6700C	0.00480s	11.13	.22	0.07720	.0003750	.0010550	.004800	+.78
0.6600C	0.00680s	10.74	.30	0.09270	.0004210	.0012080	.006800	+.38
0.6500C	0.00980s	10.55	.39	0.10480	.0004600	.0013270	.009800	+.19
0.6400C	0.01360s	10.35*	.50	0.11090	.0004680	.0013730	.013600	-.01
0.6300C	0.01900s	10.35*	.61	0.10670	.0004480	.0013250	.010200	-.01
0.6200C	0.02540s	10.45	.71	0.09410	.0003980	.0011900	.006600	+.09
0.6100C	0.03280s	10.55	.79	0.07670	.0003250	.0009950	.004000	+.19
0.6000C	0.04110s	10.55	.87	0.05770	.0002370	.0007680	.002300	+.19
0.5900C	0.05010s	10.94	.91	0.04100	.0001730	.0005780	.001300	+.58
0.6600P	0.02780s	10.74	.70	0.09270	.0004140	.0012080	.006600	+.38
0.6500P	0.02090s	10.55	.61	0.10480	.0004560	.0013270	.009700	+.19
0.6400P	0.01480s	10.35*	.50	0.11090	.0004680	.0013730	.013600	-.01
0.6300P	0.01030s	10.45*	.39	0.10580	.0004560	.0013260	.010300	+.09
0.6200P	0.00680s	10.55	.29	0.09350	.0004100	.0011930	.006800	+.19
0.6100P	0.00420s	10.55	.20	0.07670	.0003340	.0009950	.004200	+.19
0.6000P	0.00260s	10.74	.13	0.05790	.0002600	.0007820	.002600	+.38
0.5900P	0.00160s	10.94	.08	0.04100	.0001890	.0005780	.001600	+.58
0.5800P	0.00090s	11.33	.05	0.02790	.0001370	.0004190	.000900	+.97
0.5700P	0.00050s	11.72	.03	0.01840	.0000950	.0002940	.000500	+1.36
0.5600P	0.00030s	12.50	.02	0.01300	.0000750	.0002230	.000300	+2.14
0.5500P	0.00020s	12.50	.01	0.00740	.0000420	.0001330	.000200	+2.14
0.5400P	0.00010s	12.50	.01	0.00390	.0000220	.0000730	.000100	+2.14

DECEMBER 02 IMM SWISS FRANC OPTIONS

05/22/02 days to exp: 198 int. rate: 1.72% calc. imp vol of *: 10.55%

strike	last	imp vol	delta	gamma	theta-7	vega	prem	iv-skew
SFZ02	0.6401s							
0.6900C	0.00500s	10.94	.18	0.05150	.0002410	.0012990	.005000	+.39
0.6800C	0.00660s	10.74*	.23	0.06000	.0002710	.0014690	.006600	+.19
0.6300C	0.02480s	10.45*	.59	0.07790	.0003290	.0018110	.014700	-.10
0.6200C	0.03060s	10.35	.67	0.07300	.0003000	.0016920	.010500	-.20
0.6100C	0.03750s	10.45	.74	0.06430	.0002650	.0015200	.007400	-.10
0.6000C	0.04500s	10.45	.80	0.05450	.0002200	.0013060	.004900	-.10
0.6300P	0.01480s	10.55*	.40	0.07720	.0003350	.0018120	.014800	+.00
0.6200P	0.01080s	10.45	.32	0.07240	.0003090	.0016940	.010800	-.10
0.6100P	0.00780s	10.55	.25	0.06400	.0002790	.0015250	.007800	+.00
0.6000P	0.00540s	10.55	.19	0.05440	.0002370	.0013130	.005400	+.00
0.5300P	0.00040s	12.50	.02	0.00750	.0000440	.0002430	.000400	+1.95
0.5200P	0.00030s	12.50	.01	0.00470	.0000280	.0001600	.000300	+1.95

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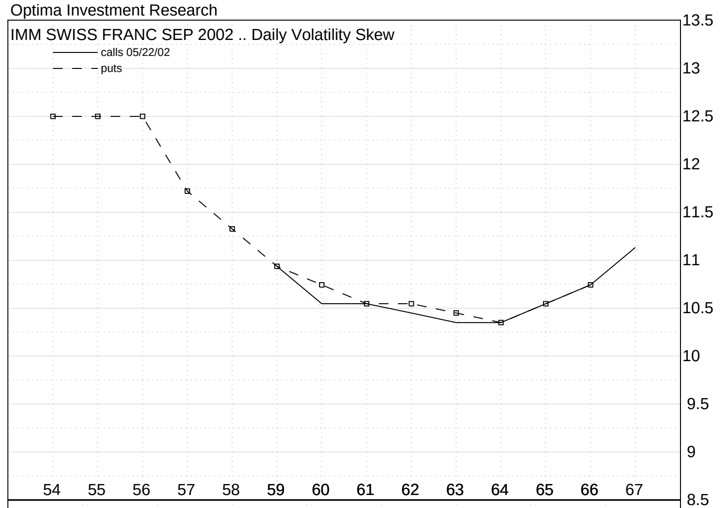
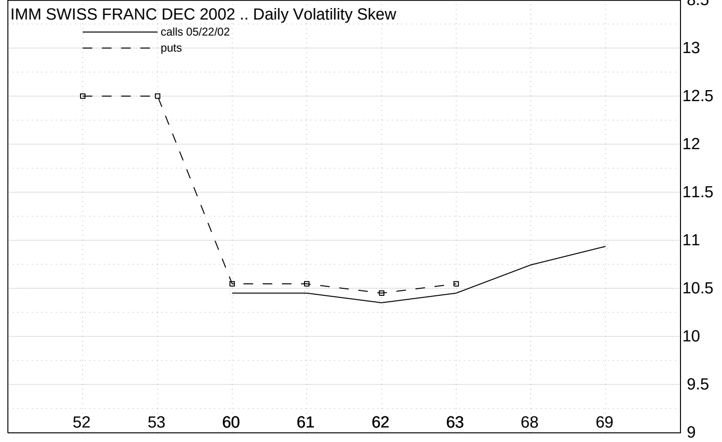
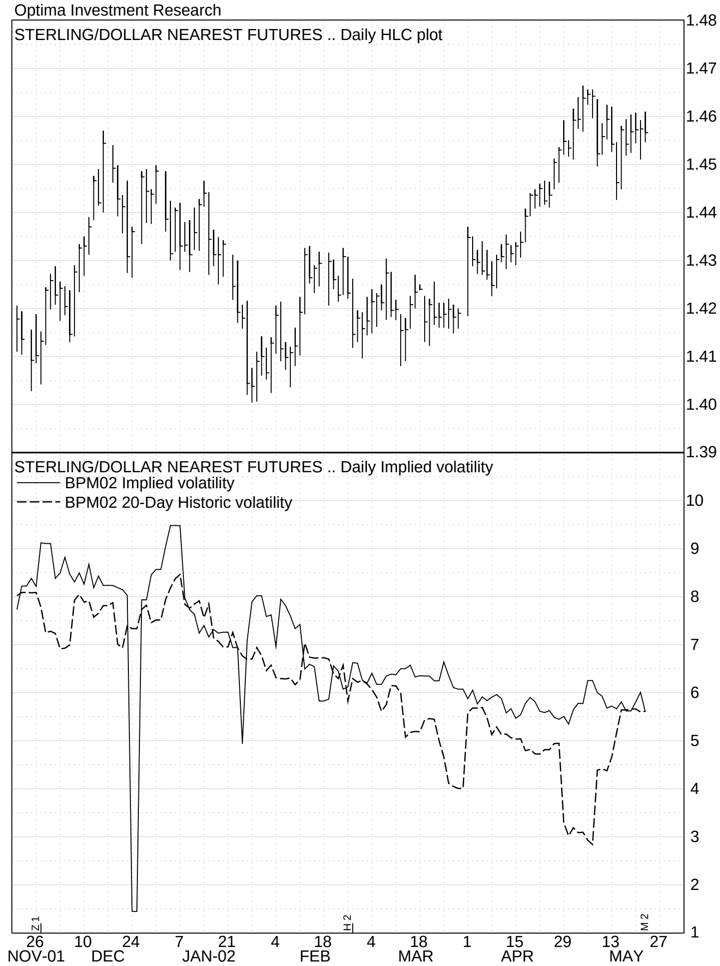




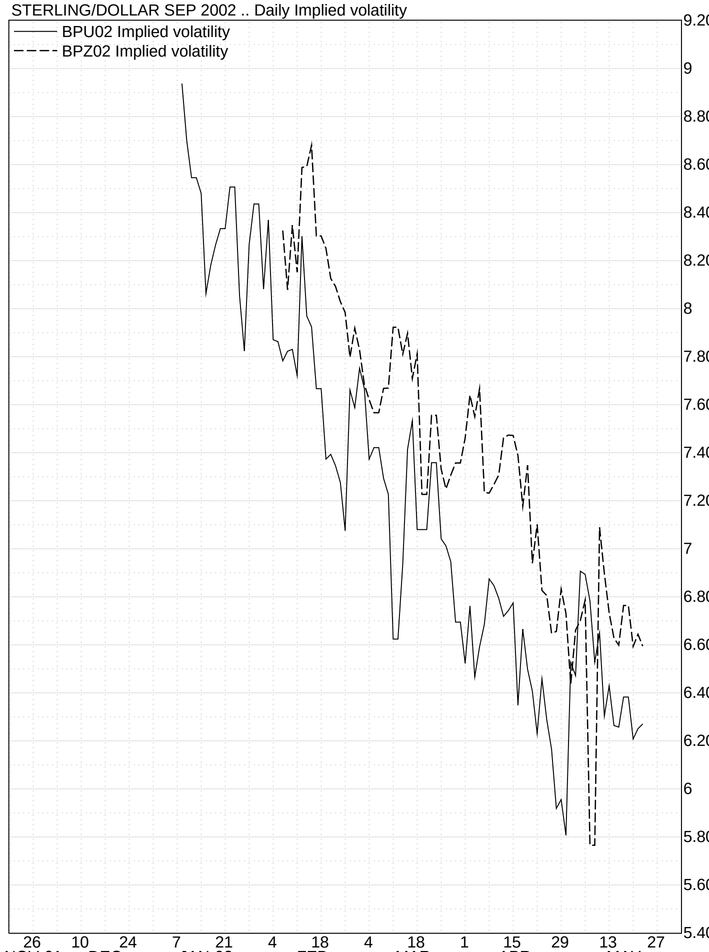
OPTIMA - BRITISH POUND OPTIONS PACKAGE

Optima Investment Research
STERLING/DOLLAR JUN 2002 .. Daily Implied volatility

Optima Investment Research



Optima Investment Research
STERLING/DOLLAR SEP 2002 .. Daily Implied volatility

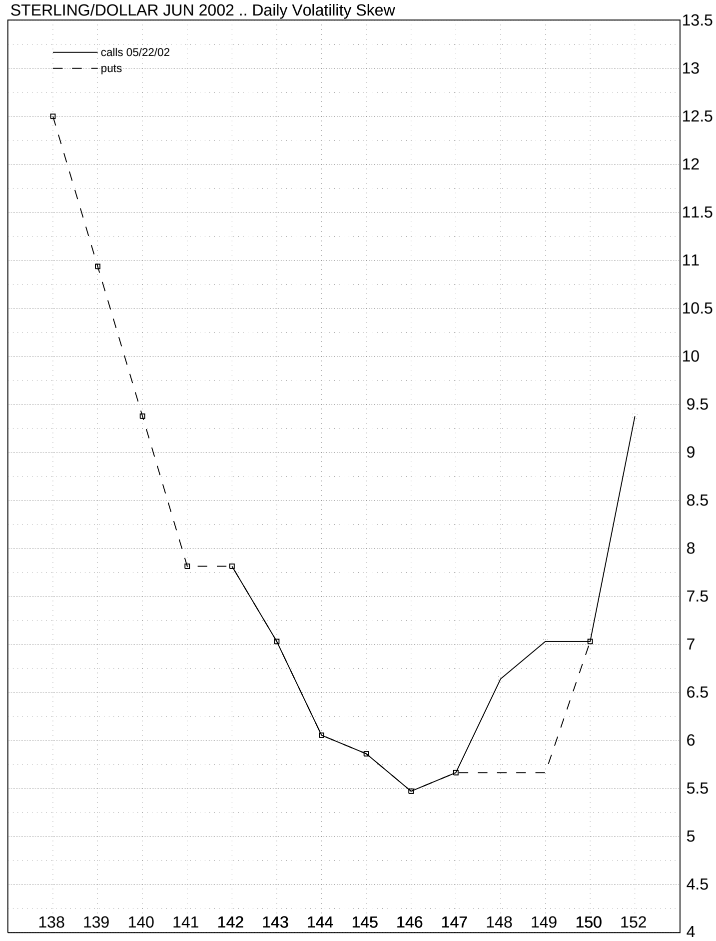


Optima Investment Research

JUNE 02 STERLING/DOLLAR OPTIONS
05/22/02 days to exp: 16 int. rate: 1.72% calc. imp vol of *: 5.60%

strike	last	imp vol	delta	gamma	theta-7	vega	prem	iv-skew
BPM02	1.4566							
1.5200C	0.0002c	9.38	.02	0.0135	0.00014	0.00015	0.00020	+3.77
1.5000C	0.0002s	7.03	.02	0.0258	0.00017	0.00022	0.00020	+1.43
1.4900C	0.0006s	7.03	.06	0.0574	0.00046	0.00044	0.00060	+1.43
1.4800C	0.0012s	6.64	.13	0.1029	0.00086	0.00069	0.00120	+1.04
1.4700C	0.0022s	5.66	.22	0.1721	0.00116	0.00095	0.00220	+.06
1.4600C	0.0050s	5.47*	.42	0.2344	0.00162	0.00120	0.00500	-.13
1.4500C	0.0108s	5.86*	.65	0.2078	0.00162	0.00114	0.00420	+.26
1.4400C	0.0184s	6.05	.82	0.1426	0.00106	0.00085	0.00180	+.45
1.4300C	0.0276s	7.03	.90	0.0841	0.00075	0.00061	0.00100	+1.43
1.4200C	0.0372s	7.81	.94	0.0492	0.00047	0.00041	0.00060	+2.21
1.4000C	0.0566s	.00	1.00	0.0000	0.00000	0.00000	-0.00000	
1.3800C	0.0766s	.00	1.00	0.0000	0.00000	0.00000	-0.00000	
1.3600C	0.0966s	.00	1.00	0.0000	0.00000	0.00000	-0.00000	
1.5400P	0.0834s	6.25	1.00	0.0000	0.00000	0.00000	0.00000	+.65
1.5200P	0.0634s	6.25	1.00	0.0011	0.00000	0.00000	0.00000	+.65
1.5000P	0.0436s	7.03	.98	0.0258	0.00015	0.00022	0.00020	+1.43
1.4700P	0.0156s	5.66	.78	0.1721	0.00116	0.00095	0.00220	+.06
1.4600P	0.0084s	5.47*	.58	0.2344	0.00162	0.00120	0.00500	-.13
1.4500P	0.0042s	5.86*	.35	0.2078	0.00162	0.00114	0.00420	+.26
1.4400P	0.0018s	6.05	.18	0.1426	0.00106	0.00085	0.00180	+.45
1.4300P	0.0010s	7.03	.10	0.0841	0.00076	0.00061	0.00100	+1.43
1.4200P	0.0006s	7.81	.06	0.0492	0.00048	0.00041	0.00060	+2.21
1.4100P	0.0002s	7.81	.02	0.0228	0.00018	0.00021	0.00020	+2.21
1.4000P	0.0002c	9.38	.02	0.0178	0.00020	0.00019	0.00020	+3.77
1.3900P	0.0002c	10.94	.02	0.0145	0.00022	0.00018	0.00020	+5.34
1.3800P	0.0002c	12.50	.02	0.0121	0.00024	0.00017	0.00020	+6.90

Optima Investment Research
STERLING/DOLLAR JUN 2002 .. Daily Volatility Skew



SEPTEMBER 02 STERLING/DOLLAR OPTIONS
05/22/02 days to exp: 107 int. rate: 1.72% calc. imp vol of *: 6.27%

strike	last	imp vol	delta	gamma	theta-7	vega	prem	iv-skew
BPU02	1.4482							
1.5800C	0.0004s	7.81	.02	0.0081	0.00009	0.00050	0.00040	+1.54
1.5600C	0.0010s	7.81	.04	0.0143	0.00017	0.00082	0.00100	+1.54
1.5400C	0.0016s	7.42	.07	0.0218	0.00024	0.00115	0.00160	+1.15
1.5200C	0.0024s	6.84	.10	0.0323	0.00030	0.00152	0.00240	+.56
1.5000C	0.0044s	6.54	.16	0.0481	0.00041	0.00207	0.00440	+.27
1.4800C	0.0084s	6.49	.27	0.0651	0.00056	0.00267	0.00840	+.22
1.4600C	0.0146s	6.35*	.41	0.0779	0.00064	0.00305	0.01460	+.08
1.4400C	0.0236s	6.20*	.57	0.0802	0.00062	0.00306	0.01540	-.07
1.4200C	0.0368s	6.35	.72	0.0670	0.00054	0.00268	0.00860	+.08
1.4000C	0.0524s	6.45	.83	0.0482	0.00039	0.00204	0.00420	+.17
1.5400P	0.0928s	7.23	.93	0.0210	0.00018	0.00109	0.00100	+.96
1.5200P	0.0738s	6.84	.90	0.0323	0.00028	0.00152	0.00200	+.56
1.5000P	0.0558s	6.45	.83	0.0481	0.00038	0.00204	0.00400	+.17
1.4800P	0.0400s	6.45	.72	0.0654	0.00054	0.00266	0.00820	+.17
1.4600P	0.0264s	6.40*	.58	0.0773	0.00064	0.00305	0.01460	+.13
1.4400P	0.0154s	6.20*	.42	0.0802	0.00063	0.00306	0.01540	-.07
1.4200P	0.0088s	6.40	.28	0.0667	0.00055	0.00268	0.00880	+.13
1.4000P	0.0046s	6.54	.16	0.0482	0.00041	0.00206	0.00460	+.27
1.3800P	0.0026s	7.03	.10	0.0315	0.00031	0.00151	0.00260	+.76
1.3600P	0.0016s	7.62	.06	0.0202	0.00023	0.00108	0.00160	+1.35
1.3400P	0.0008s	7.81	.03	0.0116	0.00014	0.00068	0.00080	+1.54
1.3200P	0.0006s	8.59	.02	0.0077	0.00011	0.00051	0.00060	+2.32
1.3000P	0.0004s	9.38	.02	0.0053	0.00009	0.00038	0.00040	+3.10
1.2800P	0.0002s	9.38	.01	0.0026	0.00004	0.00020	0.00020	+3.10

DECEMBER 02 STERLING/DOLLAR OPTIONS
05/22/02 days to exp: 198 int. rate: 1.72% calc. imp vol of *: 6.59%

strike	last	imp vol	delta	gamma	theta-7	vega	prem	iv-skew
BPZ02	1.4398s							
1.5400C	0.0038s	7.23	.11	0.0240	0.00025	0.00215	0.00380	+.63
1.5200C	0.0058s	7.03	.15	0.0315	0.00031	0.00267	0.00580	+.44
1.5000C	0.0086s	6.84	.21	0.0400	0.00037	0.00320	0.00860	+.24
1.4800C	0.0130s	6.74	.30	0.0481	0.00043	0.00372	0.01300	+.14
1.4600C	0.0192s	6.64	.39	0.0543	0.00047	0.00407	0.01920	+.05
1.4400C	0.0276s	6.59*	.50	0.0565	0.00048	0.00419	0.02760	+.00
1.4200C	0.0396s	6.88*	.61	0.0518	0.00048	0.00403	0.01980	+.29
1.4000C	0.0524s	6.88	.71	0.0458	0.00042	0.00362	0.01260	+.29
1.5200P	0.0850s	6.93	.84	0.0314	0.00027	0.00263	0.00480	+.34
1.5000P	0.0680s	6.74	.78	0.0401	0.00034	0.00318	0.00780	+.14
1.4800P	0.0526s	6.69	.70	0.0483	0.00042	0.00371	0.01240	+.09
1.4600P	0.0392s	6.64	.60	0.0543	0.00047	0.00407	0.01900	+.05
1.4400P	0.0278s	6.59*	.49	0.0565	0.00048	0.00419	0.02760	+.00
1.4200P	0.0200s	6.88*	.38	0.0518	0.00049	0.00403	0.02000	+.29
1.4000P	0.0130s	6.88	.28	0.0458	0.00043	0.00362	0.01300	+.29
1.3800P	0.0084s	7.03	.20	0.0371	0.00036	0.00306	0.00840	+.44
1.3600P	0.0054s	7.23	.13	0.0282	0.00029	0.00246	0.00540	+.63
1.3400P	0.0034s	7.42	.09	0.0204	0.00022	0.00189	0.00340	+.83
1.3200P	0.0022s	7.81	.06	0.0146	0.00017	0.00146	0.00220	+1.22
1.3000P	0.0012s	7.81	.04	0.0094	0.00011	0.00099	0.00120	+1.22

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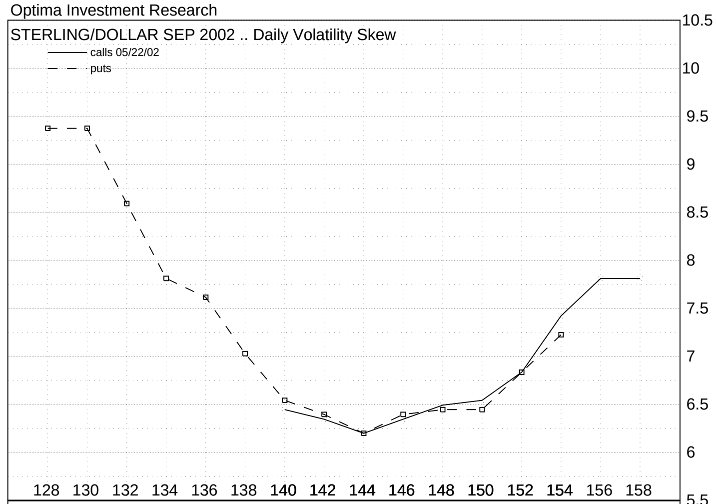
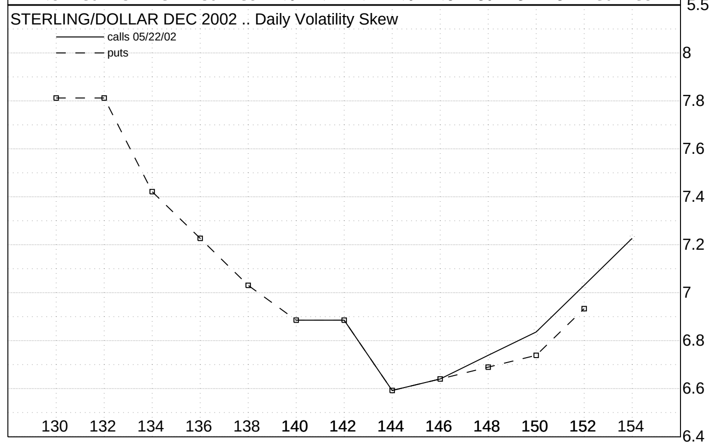
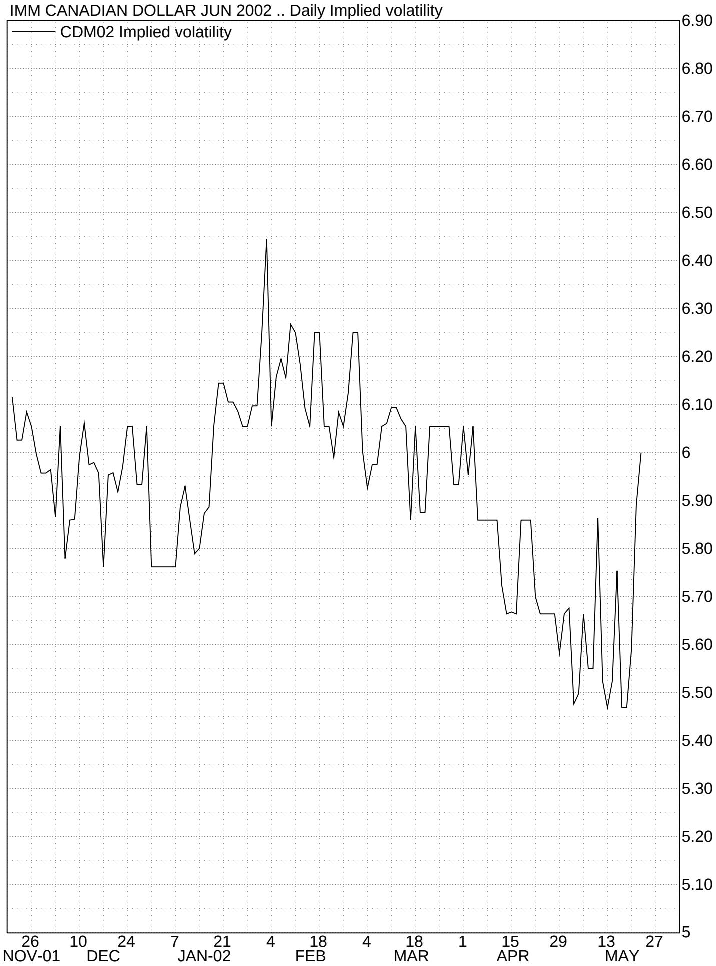




Optima Investment Research
IMM CANADIAN DOLLAR JUN 2002 .. Daily Implied volatility



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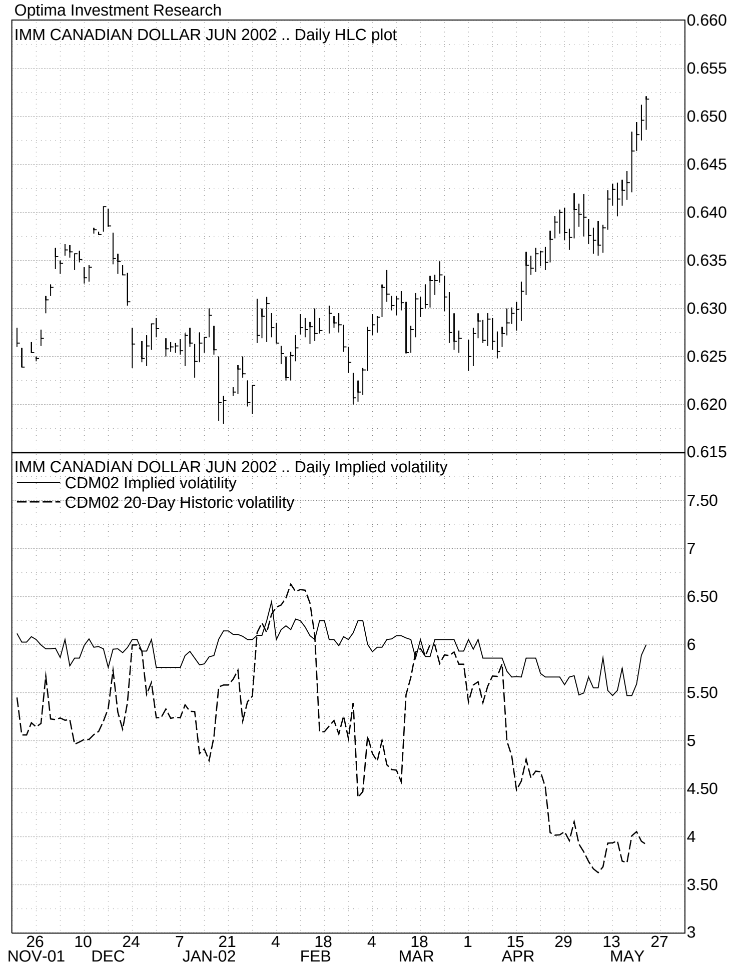
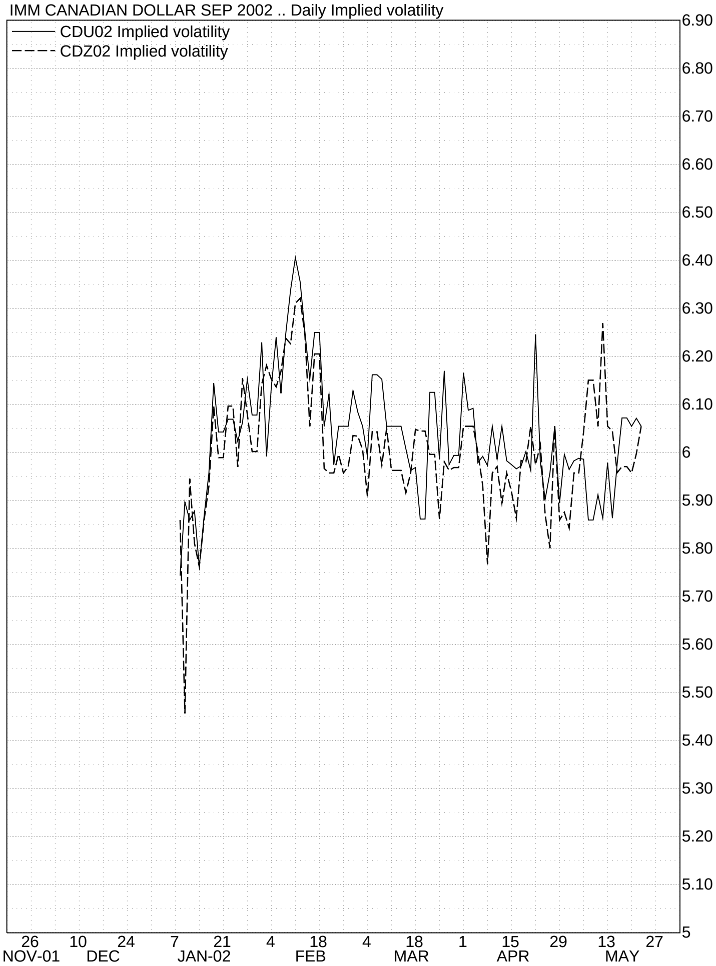
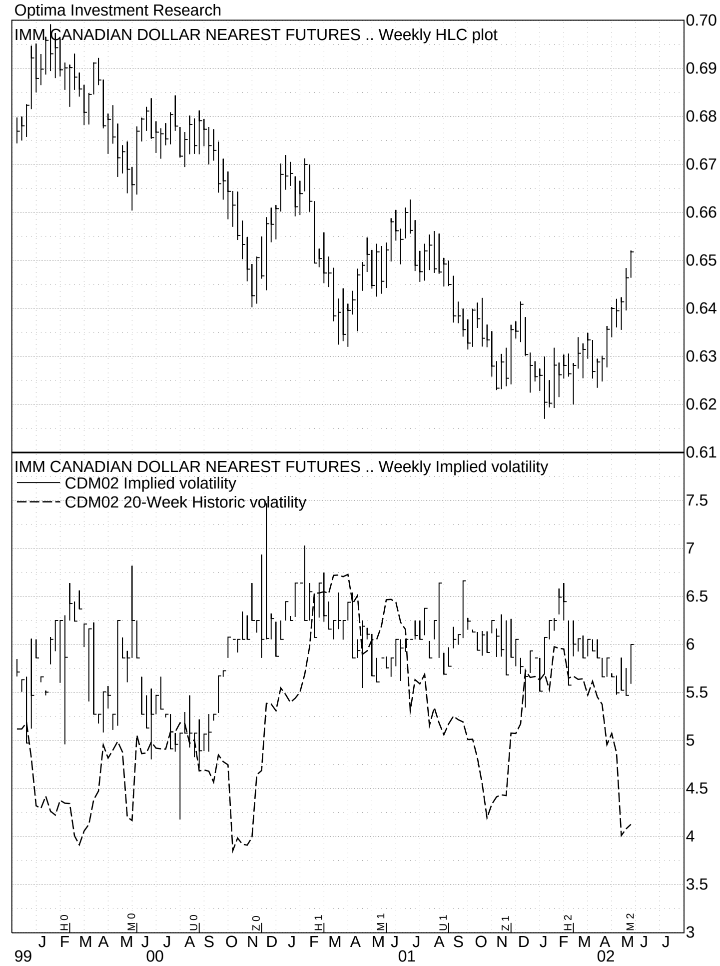


Optima Investment Research
IMM CANADIAN DOLLAR SEP 2002 .. Daily Implied volatility



Optima Investment Research



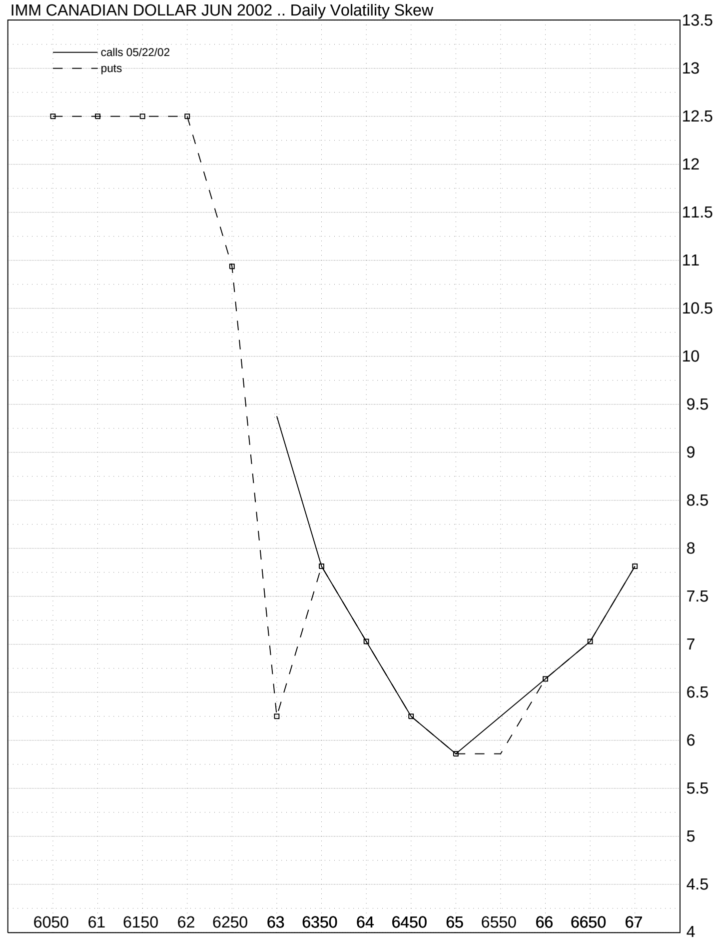
JUNE 02 IMM CANADIAN DOLLAR OPTIONS

05/22/02 days to exp: 16 int. rate: 1.72% calc. imp vol of *: 6.00%

strike	last	imp vol	delta	gamma	theta-7	vega	prem	iv-skew
CDM02	0.6518							
0.6700C	0.00020s	7.81	.05	0.0919	0.000171	0.000158	0.000200	+1.81
0.6650C	0.00040s	7.03	.09	0.1660	0.000286	0.000244	0.000400	+1.03
0.6600C	0.00090s	6.64	.19	0.2954	0.000532	0.000385	0.000900	+.64
0.6550C	0.00200s	6.25*	.36	0.4368	0.000776	0.000513	0.002000	+.25
0.6500C	0.00420s	5.86*	.59	0.4854	0.000768	0.000531	0.002400	-.14
0.6450C	0.00780s	6.25	.79	0.3372	0.000550	0.000410	0.001000	+.25
0.6400C	0.01230s	7.03	.89	0.1906	0.000340	0.000275	0.000500	+1.03
0.6350C	0.01710s	7.81	.94	0.1032	0.000194	0.000174	0.000300	+1.81
0.6300C	0.02190s	9.38	.96	0.0682	0.000171	0.000138	0.000100	+3.38
0.6250C	0.02680s	6.25	1.00	0.0027	0.000000	0.000000	0.000000	+.25
0.6200C	0.03180s	6.25	1.00	0.0003	0.000000	0.000000	0.000000	+.25
0.6750P	0.02320s	.00	1.00	0.0000	0.000000	0.000000	0.000000	
0.6700P	0.01840s	7.81	.95	0.0919	0.000165	0.000158	0.000200	+1.81
0.6650P	0.01360s	7.03	.91	0.1660	0.000282	0.000244	0.000400	+1.03
0.6600P	0.00910s	6.64	.81	0.2954	0.000529	0.000385	0.000900	+.64
0.6500P	0.00240s	5.86*	.41	0.4854	0.000769	0.000531	0.002400	-.14
0.6450P	0.00100s	6.25	.21	0.3372	0.000552	0.000410	0.001000	+.25
0.6400P	0.00050s	7.03	.11	0.1906	0.000344	0.000275	0.000500	+1.03
0.6350P	0.00030s	7.81	.05	0.1032	0.000199	0.000174	0.000300	+1.81
0.6300P	0.00010s	6.25	.00	0.0157	0.000012	0.000030	0.000100	+.25
0.6250P	0.00020c	10.94	.03	0.0487	0.000166	0.000115	0.000200	+4.94
0.6200P	0.00010	12.50	.03	0.0367	0.000157	0.000098	0.000100	+6.50
0.6150P	0.00010	12.50	.01	0.0193	0.000071	0.000054	0.000100	+6.50
0.6100P	0.00010c	12.50	.01	0.0092	0.000029	0.000027	0.000100	+6.50
0.6050P	0.00010c	12.50	.00	0.0039	0.000010	0.000012	0.000100	+6.50

Optima Investment Research

IMM CANADIAN DOLLAR JUN 2002 .. Daily Volatility Skew

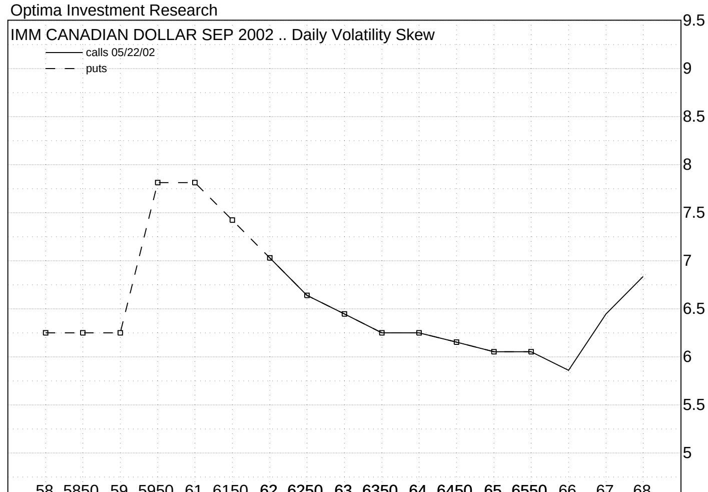


SEPTEMBER 02 IMM CANADIAN DOLLAR OPTIONS

05/22/02 days to exp: 107 int. rate: 1.72% calc. imp vol of *: 6.05%

strike	last	imp vol	delta	gamma	theta-7	vega	prem	iv-skew
CDU02	0.6505							
0.6800C	0.00140s	6.84	.12	0.0822	0.000154	0.000765	0.001400	+.78
0.6700C	0.00260s	6.45	.20	0.1240	0.000209	0.001041	0.002600	+.39
0.6600C	0.00440s	5.86	.33	0.1745	0.000245	0.001288	0.004400	-.20
0.6550C	0.00640s	6.05*	.42	0.1827	0.000274	0.001376	0.006400	+.00
0.6500C	0.00870s	6.05*	.51	0.1860	0.000279	0.001397	0.008200	+.00
0.6450C	0.01160s	6.15	.60	0.1766	0.000272	0.001353	0.006100	+.10
0.6400C	0.01480s	6.25	.69	0.1593	0.000251	0.001255	0.004300	+.20
0.6350C	0.01850s	6.25	.76	0.1382	0.000215	0.001110	0.003000	+.20
0.6300C	0.02250s	6.45	.82	0.1129	0.000183	0.000956	0.002000	+.39
0.6250C	0.02690s	6.64	.87	0.0896	0.000151	0.000801	0.001400	+.59
0.6200C	0.03150s	7.03	.90	0.0706	0.000130	0.000681	0.001000	+.98
0.6550P	0.01090s	6.05*	.57	0.1827	0.000273	0.001376	0.006400	+.00
0.6500P	0.00820s	6.05*	.48	0.1860	0.000279	0.001397	0.008200	+.00
0.6450P	0.00610s	6.15	.39	0.1766	0.000274	0.001353	0.006100	+.10
0.6400P	0.00440s	6.25	.31	0.1593	0.000254	0.001255	0.004400	+.20
0.6350P	0.00310s	6.25	.23	0.1382	0.000220	0.001110	0.003100	+.20
0.6300P	0.00220s	6.45	.17	0.1129	0.000190	0.000956	0.002200	+.39
0.6250P	0.00160s	6.64	.13	0.0896	0.000159	0.000801	0.001600	+.59
0.6200P	0.00120s	7.03	.10	0.0706	0.000140	0.000681	0.001200	+.98
0.6150P	0.00090s	7.42	.08	0.0557	0.000122	0.000577	0.000900	+1.37
0.6100P	0.00070s	7.81	.06	0.0440	0.000106	0.000487	0.000700	+1.76
0.5950P	0.00020s	7.81	.02	0.0149	0.000035	0.000188	0.000200	+1.76
0.5900P	0.00010s	6.25	.00	0.0027	0.000004	0.000039	0.000100	+.20
0.5850P	0.00010c	6.25	.00	0.0013	0.000002	0.000020	0.000100	+.20
0.5800P	0.00010c	6.25	.00	0.0005	0.000001	0.000010	0.000100	+.20

Optima Investment Research



DECEMBER 02 IMM CANADIAN DOLLAR OPTIONS

05/22/02 days to exp: 198 int. rate: 1.72% calc. imp vol of *: 6.05%

strike	last	imp vol	delta	gamma	theta-7	vega	prem	iv-skew
CDZ02	0.6493s							
0.6900C	0.00170s	6.64	.11	0.0592	0.000105	0.000997	0.001700	+.59
0.6800C	0.00270s	6.45	.17	0.0817	0.000136	0.001284	0.002700	+.39
0.6700C	0.00450s	6.25	.25	0.1064	0.000167	0.001571	0.004500	+.20
0.6600C	0.00720s	6.15	.36	0.1269	0.000193	0.001801	0.007200	+.10
0.6500C	0.01110s	6.05*	.49	0.1365	0.000201	0.001890	0.011100	+.00
0.6450C	0.01370s	6.05*	.56	0.1345	0.000197	0.001865	0.009400	+.00
0.6400C	0.01660s	6.05	.63	0.1286	0.000187	0.001794	0.007300	+.00
0.6350C	0.01990s	6.15	.69	0.1177	0.000175	0.001684	0.005600	+.10
0.6300C	0.02350s	6.15	.75	0.1060	0.000155	0.001538	0.004200	+.10
0.6250C	0.02750s	6.35	.79	0.0916	0.000141	0.001391	0.003200	+.29
0.6200C	0.03160s	6.45	.83	0.0781	0.000121	0.001227	0.002300	+.39
0.6550P	0.01480s	6.15	.56	0.1324	0.000200	0.001868	0.009100	+.10
0.6450P	0.00950s	6.05*	.43	0.1345	0.000198	0.001865	0.009500	+.00
0.6350P	0.00580s	6.15	.30	0.1177	0.000180	0.001684	0.005800	+.10
0.6300P	0.00450s	6.25	.25	0.1050	0.000165	0.001547	0.004500	+.20
0.6250P	0.00350s	6.45	.20	0.0911	0.000152	0.001402	0.003500	+.39
0.6200P	0.00270s	6.45	.16	0.0781	0.000130	0.001227	0.002700	+.39
0.6000P	0.00080s	7.03	.06	0.0353	0.000069	0.000658	0.000800	+.98
0.5950P	0.00060s	7.03	.04	0.0271	0.000053	0.000523	0.000600	+.98
0.5900P	0.00040s	7.03	.03	0.0203	0.000039	0.000406	0.000400	+.98