

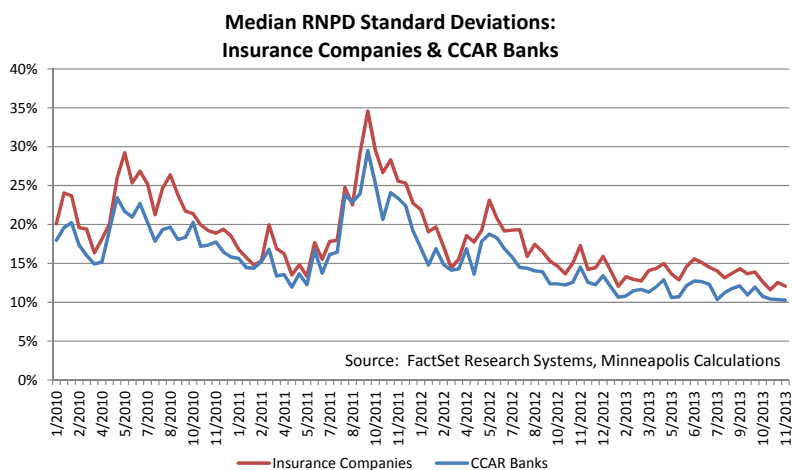
FEDERAL RESERVE BANK OF MINNEAPOLIS
BANKING AND POLICY STUDIES

Minneapolis Options Report – November 28th

Banks & Insurance Companies

Banks and insurance company stocks continued to rally over the past two weeks outperforming the S&P 500 (+0.9%) again. The average CCAR bank rose 3%. The average price of the five insurance companies we follow rose 1.4%.

We saw only minor changes in RNPDs derived from options on bank and insurance company stocks last week. As expected, volumes were light. RNPD standard deviations and skews remained largely unchanged with a bias toward lower tail risk and less negative skew. Stock performance has been strong over the past two weeks



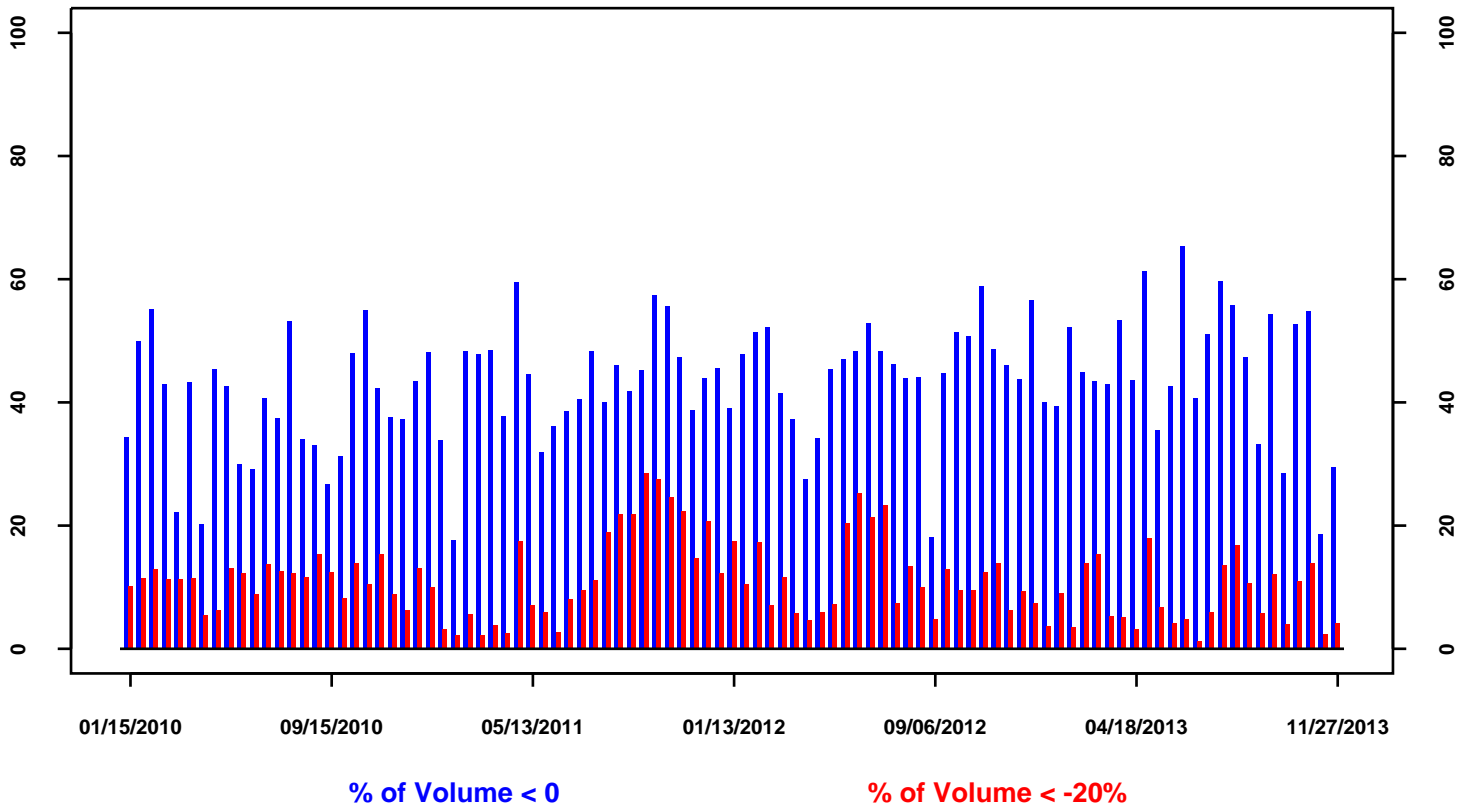
Other Commodity Markets

Trading levels in options on the other commodity markets we follow were light last week. The exception was trading in options on exchange rate futures. We continued to see strong very high levels of activity in the Dollar-Pound market.

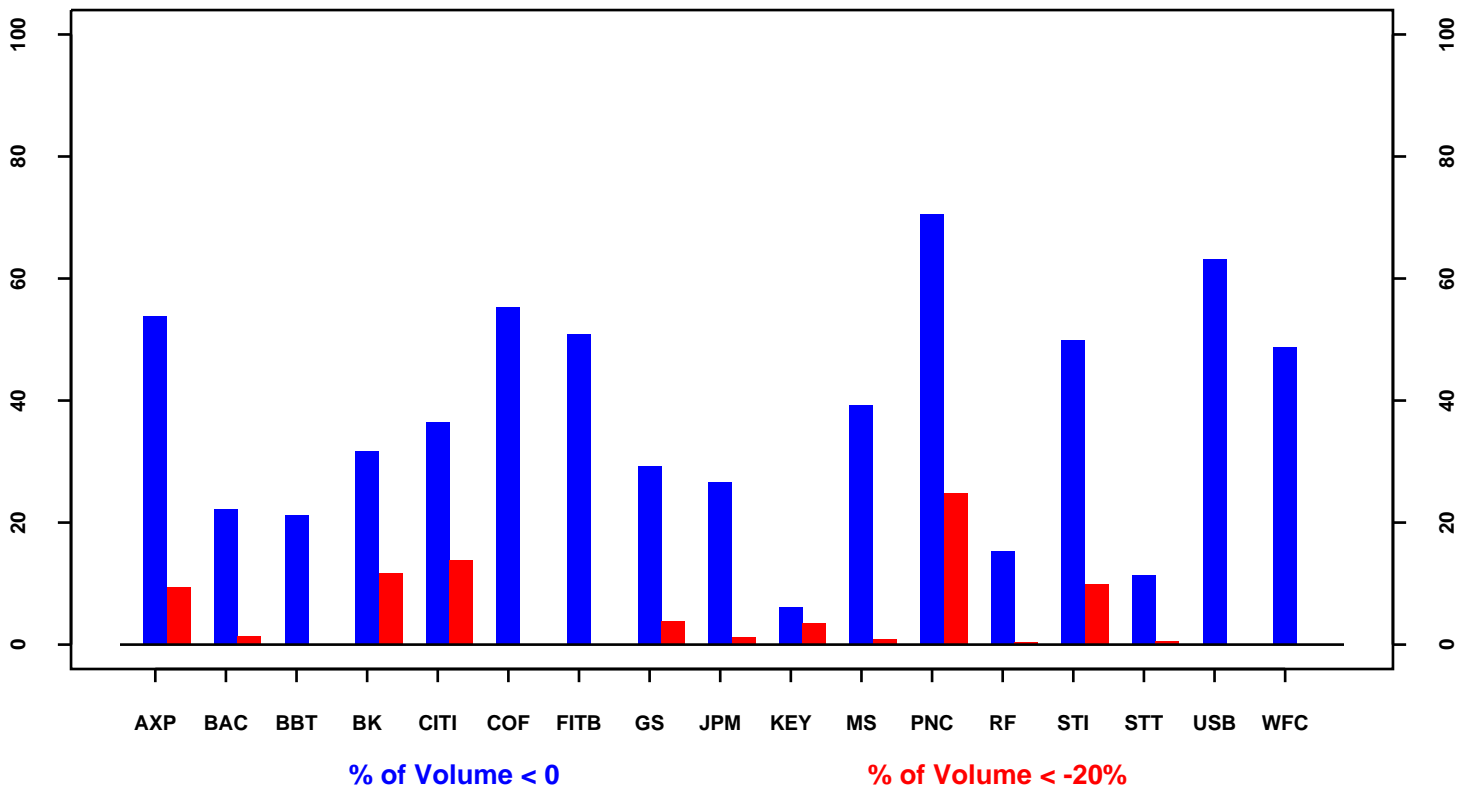
Additional note:

- Trading in options on Dollar-Pound futures was the second highest we have recorded. Tail risk as measured by RNPD standard deviations rose in all three exchange rate markets we follow. (See *Exchange Rate Reports*)

Aggregate Volumes for Options on CCAR Banks

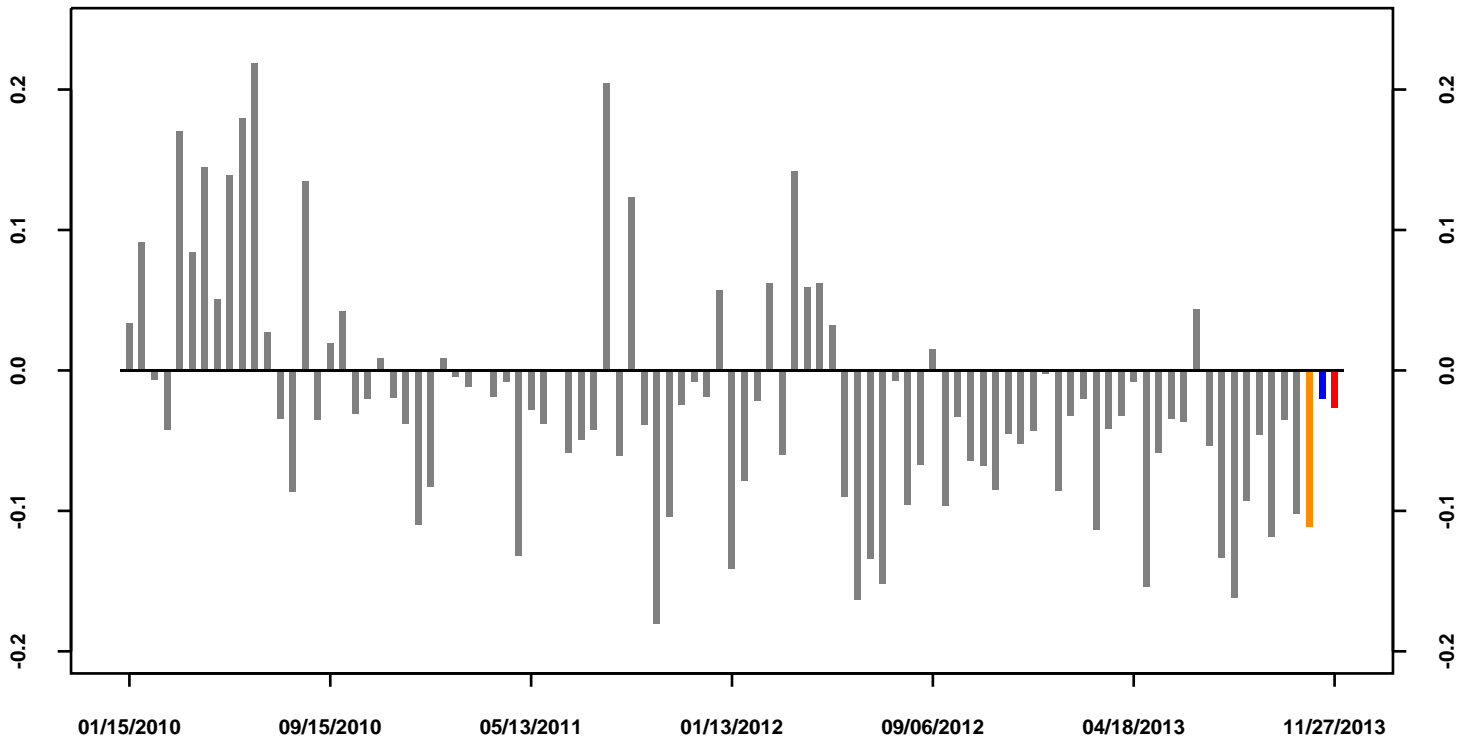


Volumes for Options on CCAR Banks

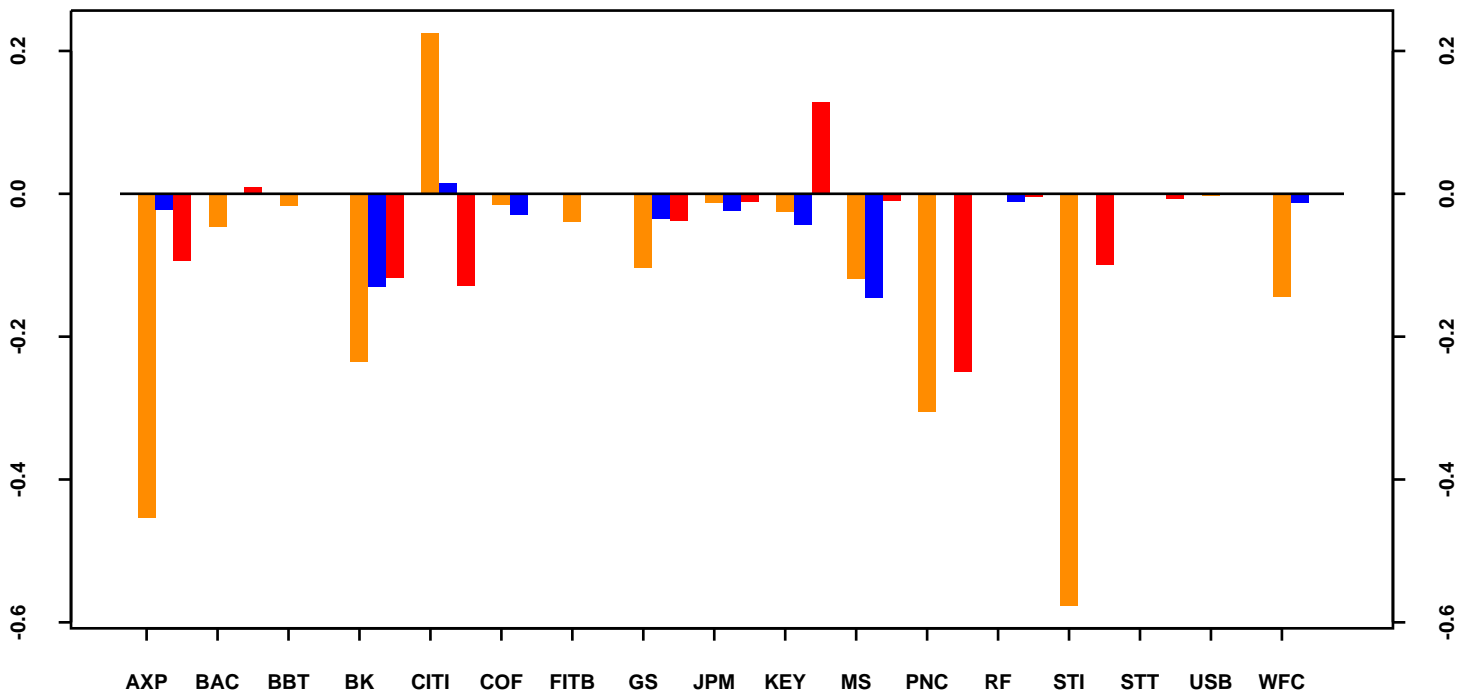


Aggregate Volume Skew--CCAR Banks

(% of volume traded in deep out-of-the-money calls LESS % of volume traded in deep out-of-the-money puts)



CCAR Bank Volume Skew -- Last Three Periods



10/31/2013

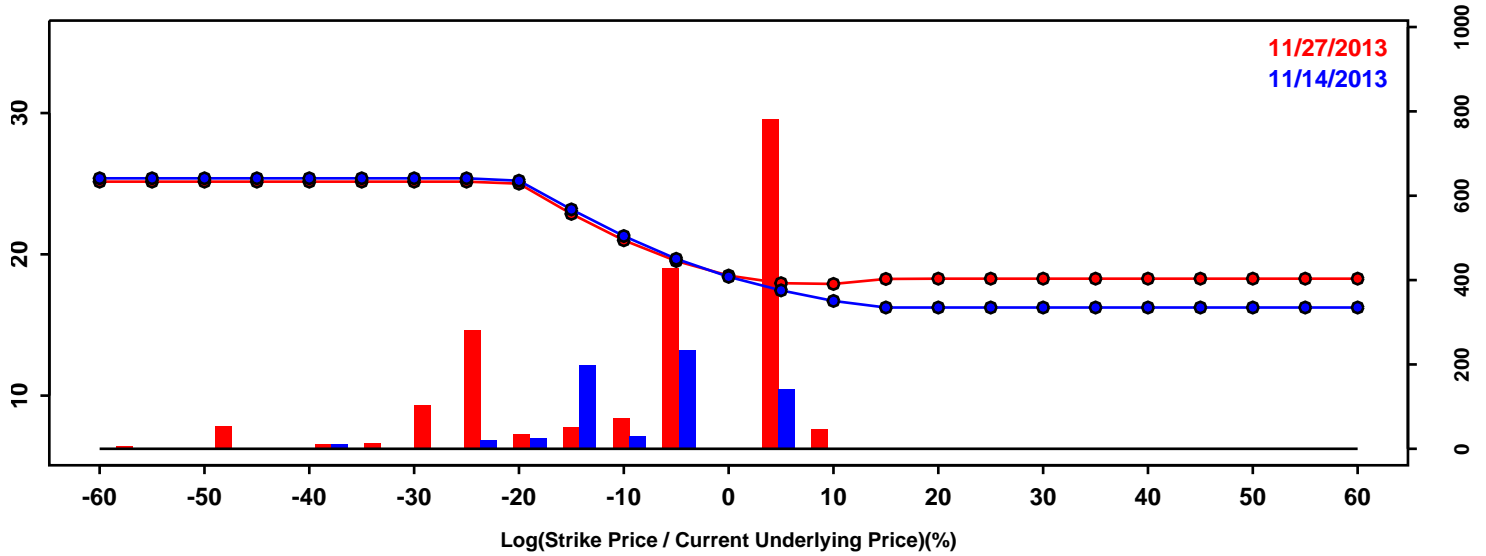
11/14/2013

11/27/2013

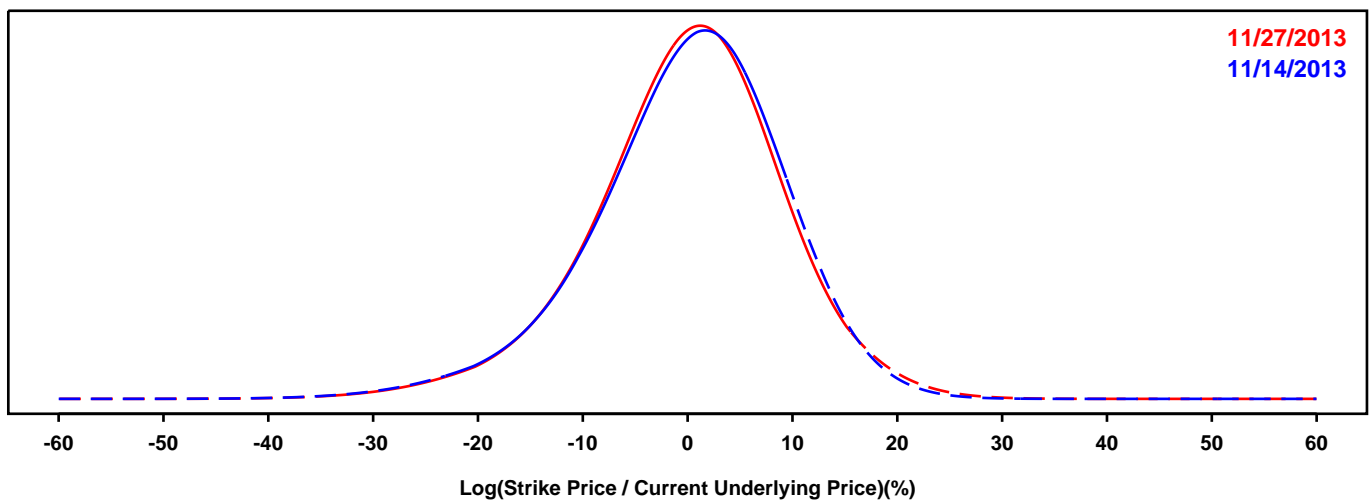
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AMERICAN EXPRESS

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

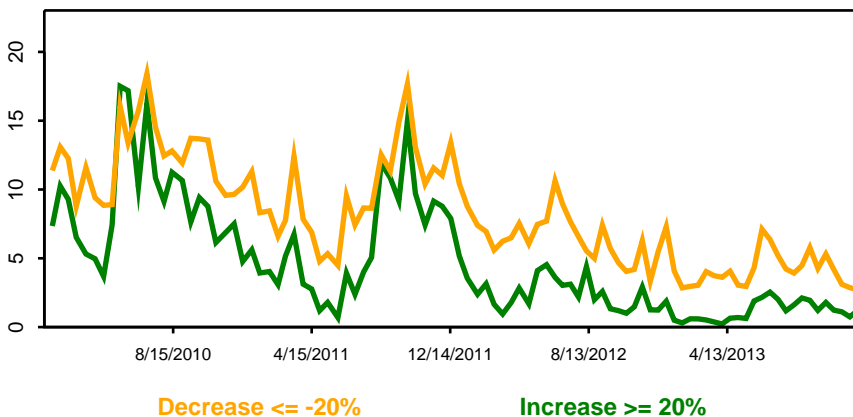
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

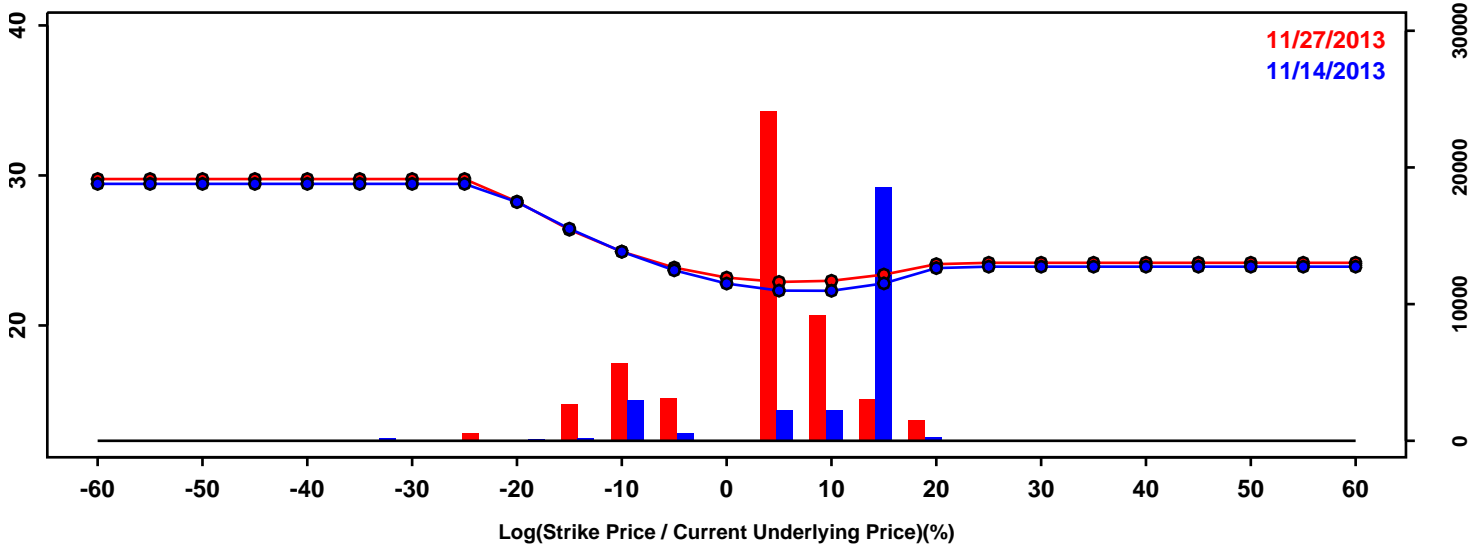


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-11.82%	-11.73%	0.08%
50th Pct	0.69%	0.42%	-0.27%
90th Pct	10.99%	11.00%	0.01%
Mean	0.01%	-0.03%	-0.04%
Std Dev	9.24%	9.26%	0.02%
Skew	-0.53	-0.39	0.14
Kurtosis	0.81	0.83	0.02

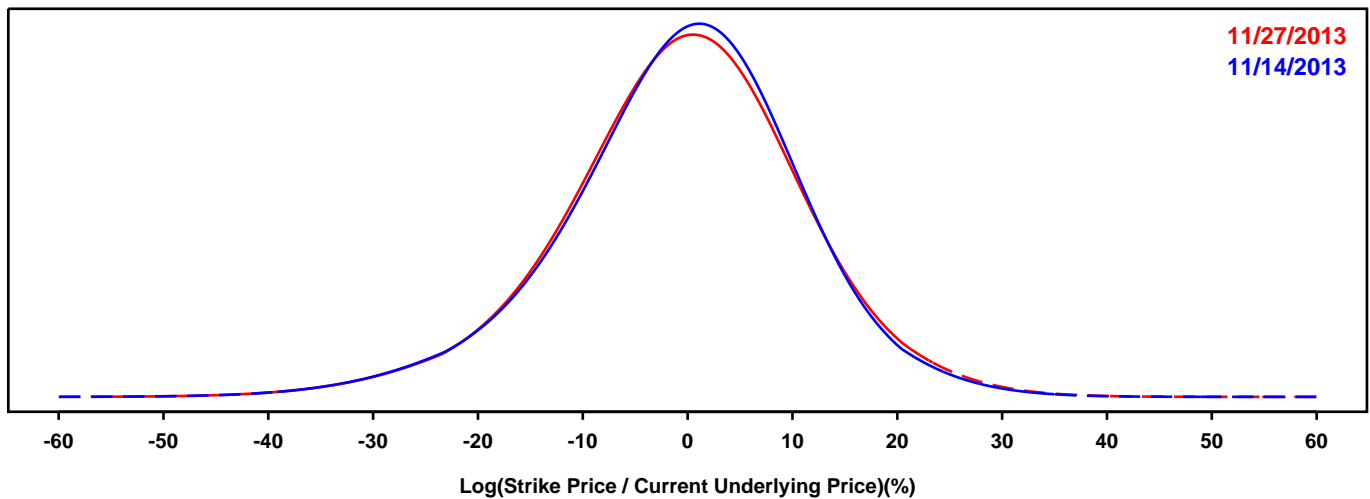
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BANK OF AMERICA

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

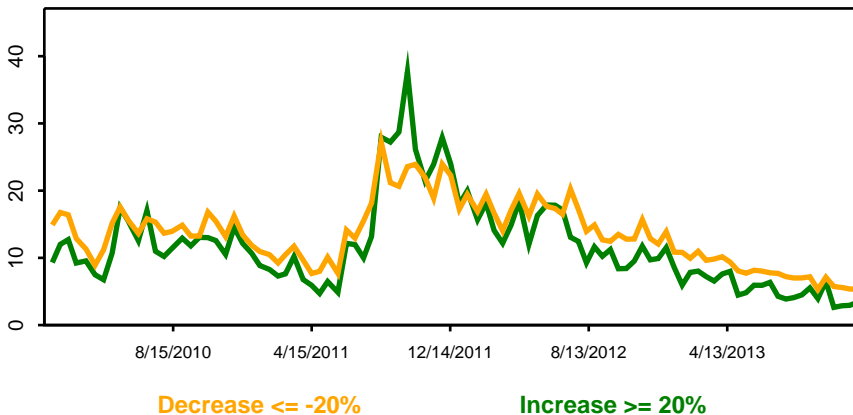
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

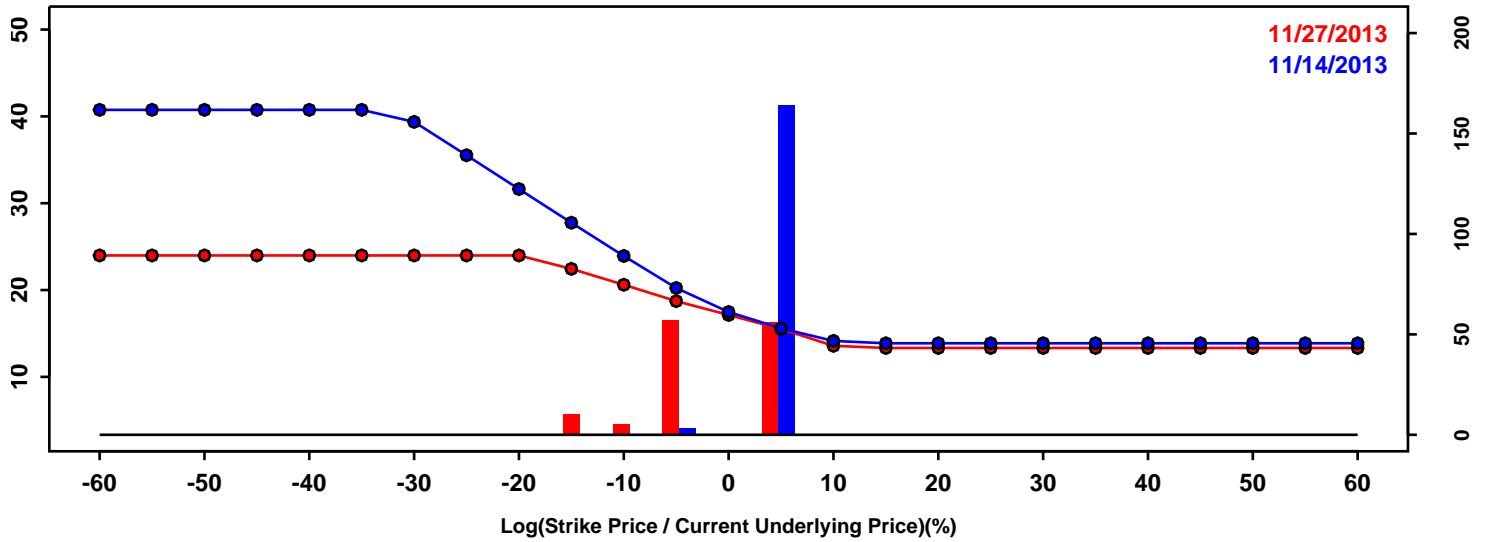


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-15.11%	-15.15%	-0.04%
50th Pct	0.09%	-0.09%	-0.18%
90th Pct	13.09%	13.57%	0.48%
Mean	-0.52%	-0.51%	0.02%
Std Dev	11.47%	11.66%	0.19%
Skew	-0.34	-0.27	0.07
Kurtosis	0.74	0.68	-0.07

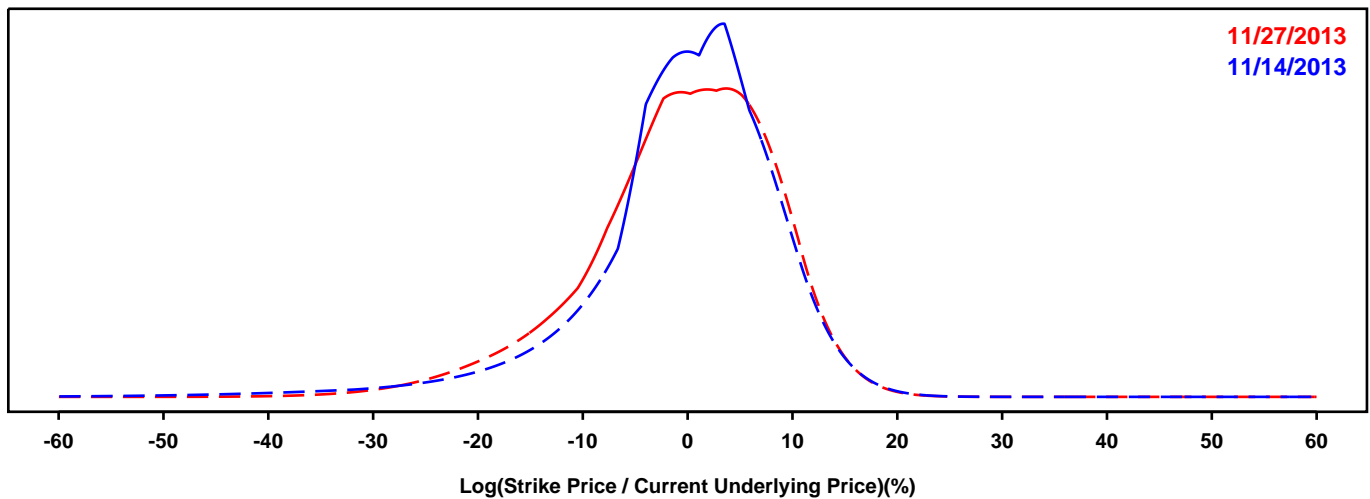
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BB&T

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

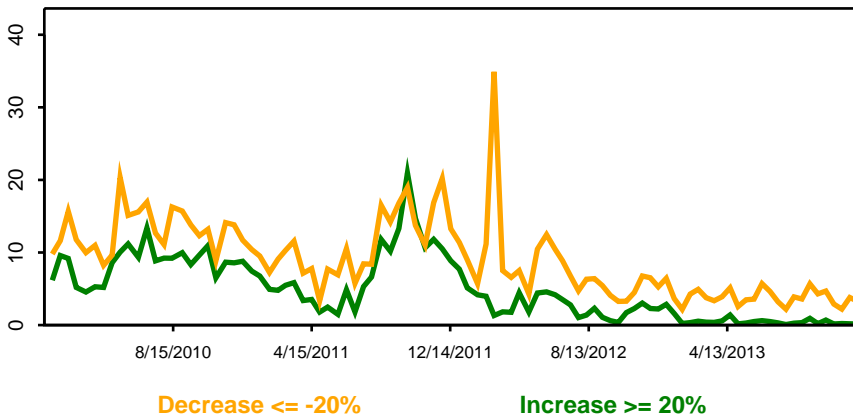
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

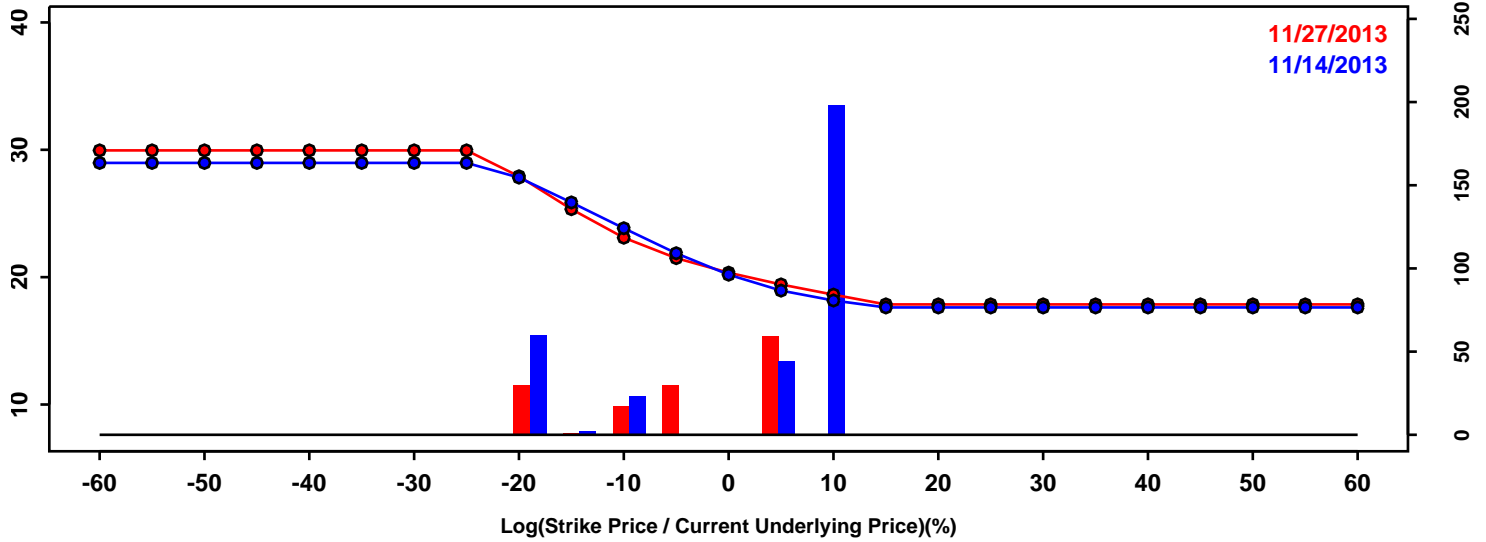


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-11.18%	-12.43%	-1.25%
50th Pct	0.71%	0.32%	-0.39%
90th Pct	9.36%	9.63%	0.27%
Mean	-0.46%	-0.61%	-0.16%
Std Dev	9.35%	8.89%	-0.46%
Skew	-1.54	-0.74	0.79
Kurtosis	5.09	0.89	-4.20

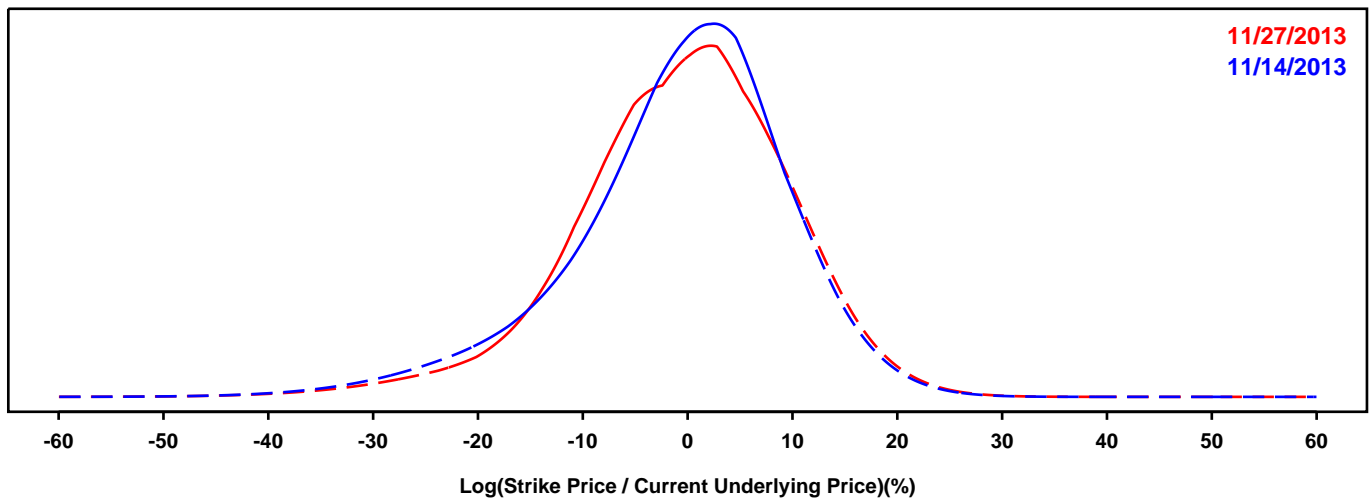
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BANK OF NEW YORK MELLON

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

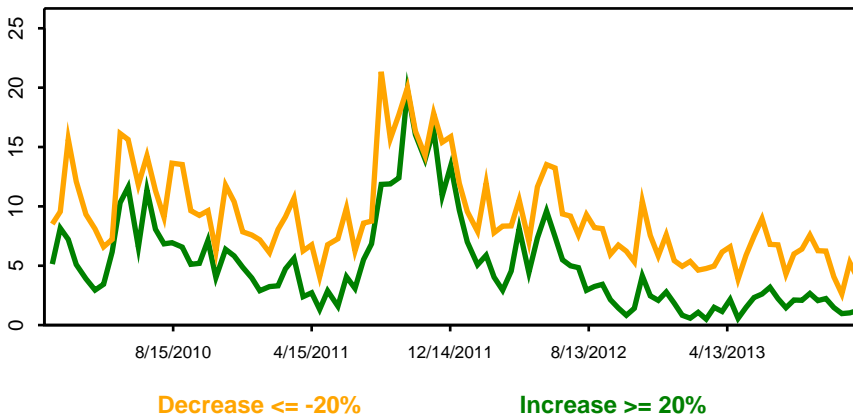
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

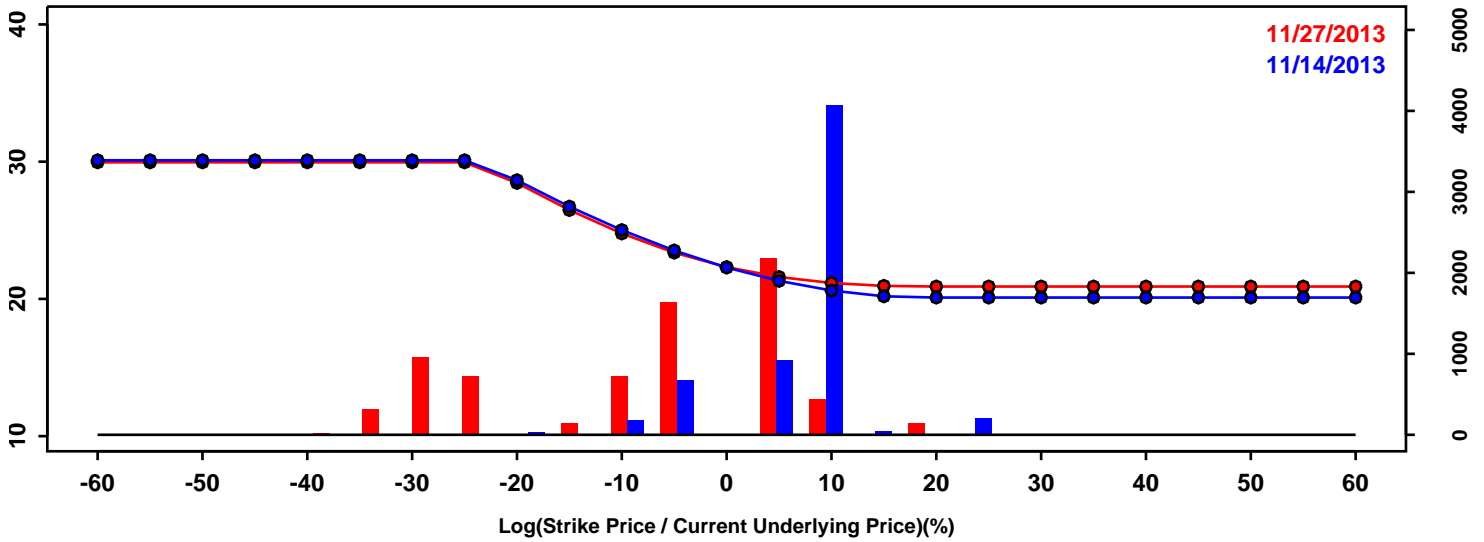


	11/14/2013	11/27/2013	Change
10th Pct	-14.46%	-13.21%	1.25%
50th Pct	0.38%	0.08%	-0.30%
90th Pct	11.22%	11.70%	0.48%
Mean	-0.77%	-0.57%	0.21%
Std Dev	10.48%	10.25%	-0.23%
Skew	-0.72	-0.55	0.17
Kurtosis	1.12	1.04	-0.08

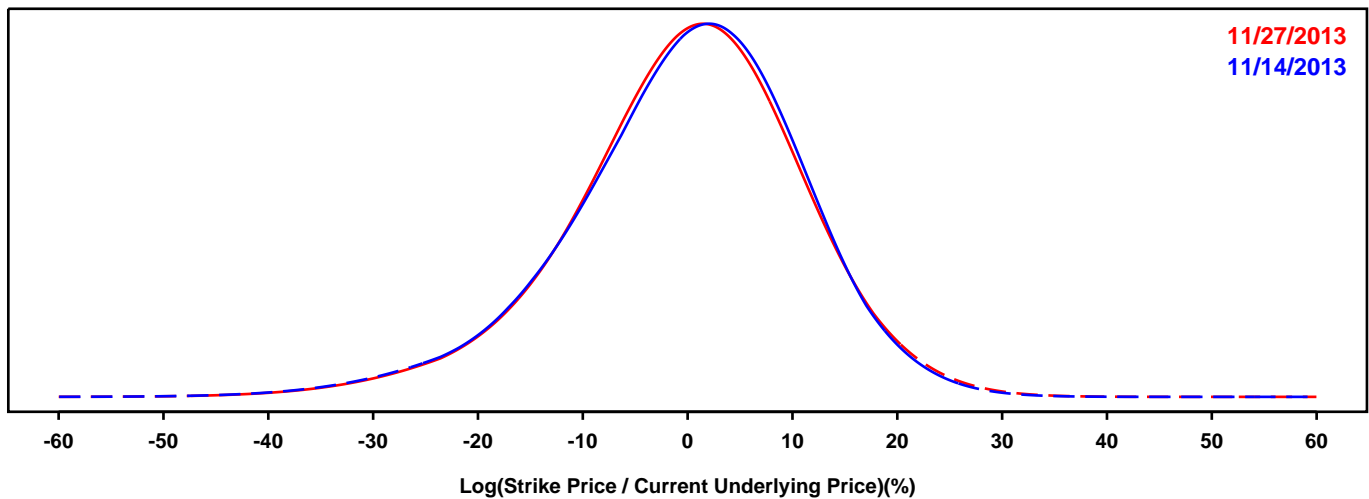
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CITIGROUP

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

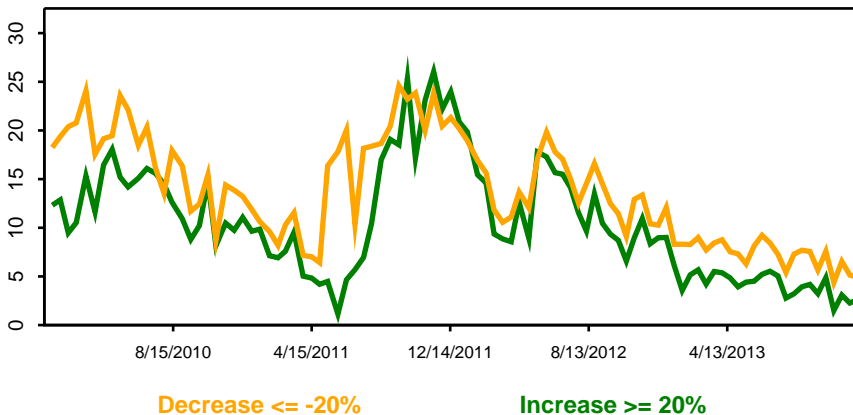
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

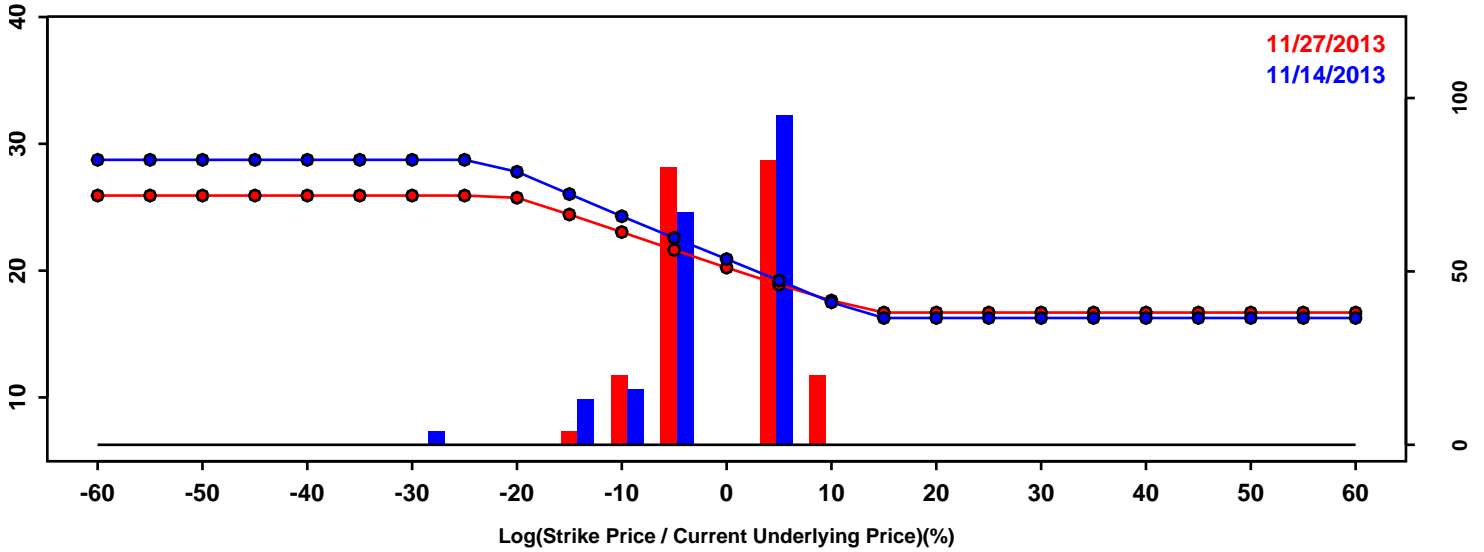


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-14.71%	-14.46%	0.25%
50th Pct	0.64%	0.51%	-0.14%
90th Pct	13.05%	13.24%	0.20%
Mean	-0.22%	-0.18%	0.05%
Std Dev	11.23%	11.22%	-0.01%
Skew	-0.52	-0.44	0.08
Kurtosis	0.77	0.75	-0.02

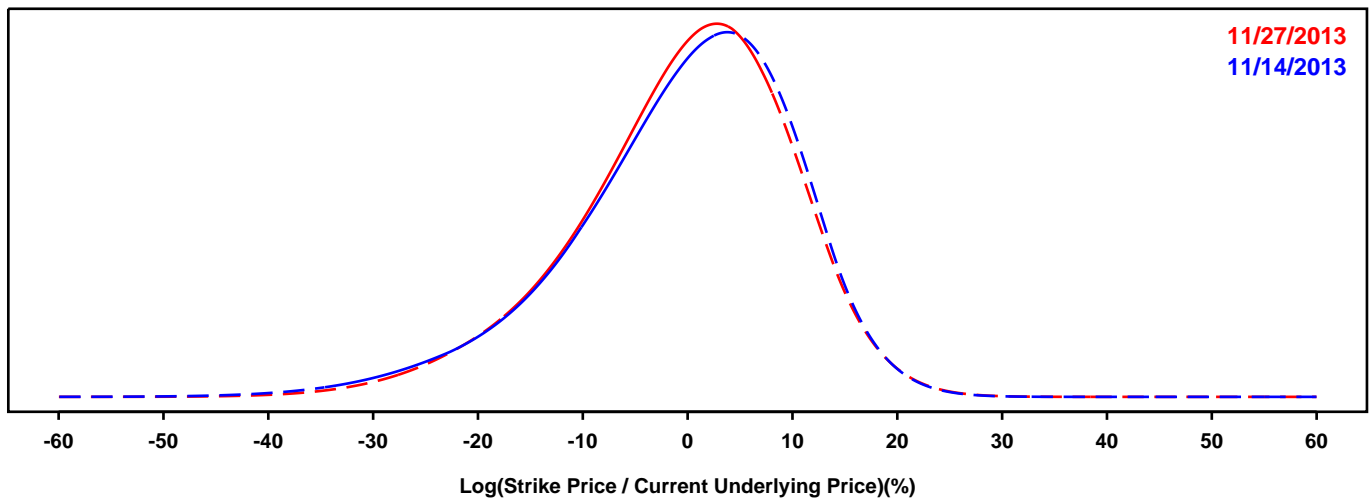
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CAPITAL ONE

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

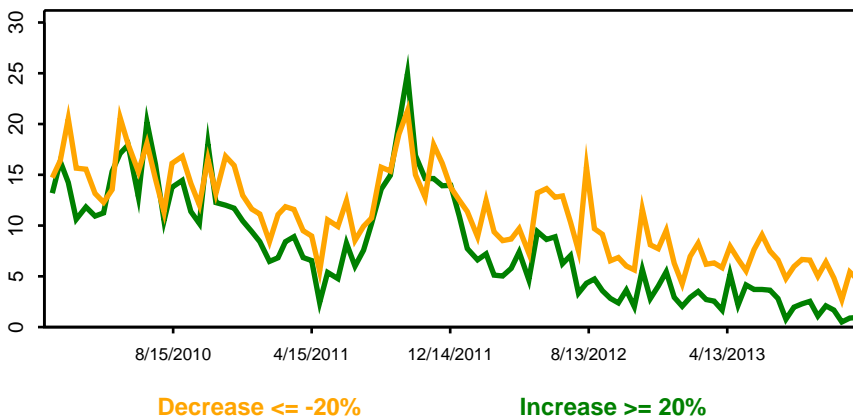
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

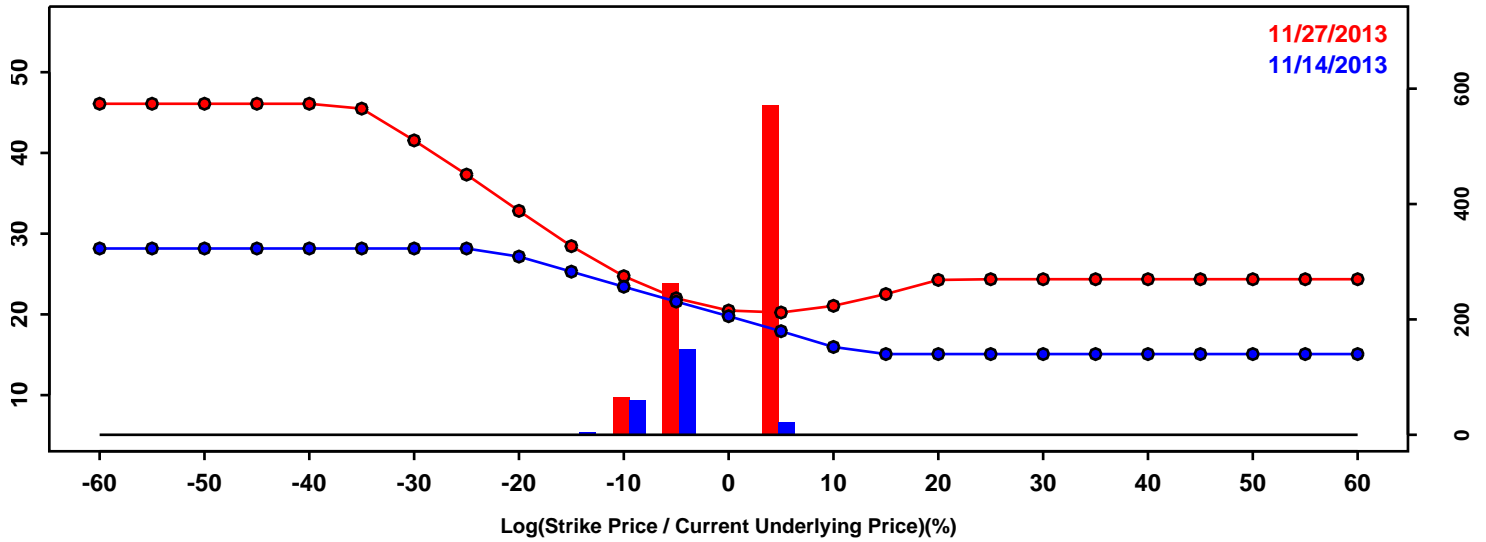


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-14.90%	-14.41%	0.49%
50th Pct	0.90%	0.63%	-0.26%
90th Pct	11.87%	11.63%	-0.24%
Mean	-0.48%	-0.50%	-0.02%
Std Dev	10.79%	10.37%	-0.43%
Skew	-0.73	-0.58	0.15
Kurtosis	0.79	0.52	-0.28

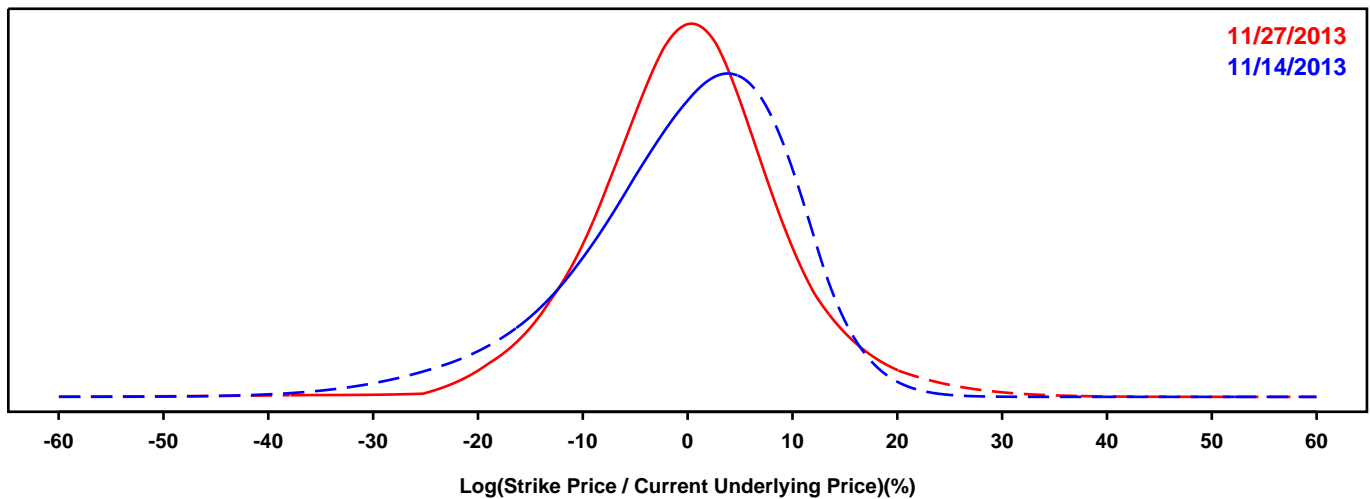
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- FIFTH THIRD

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

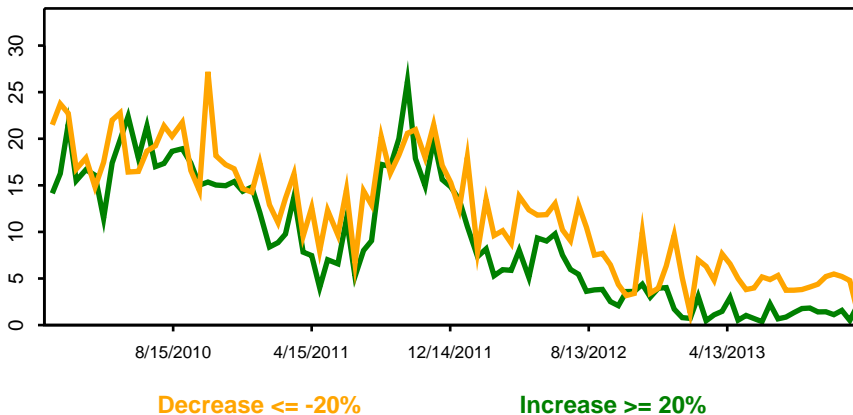
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

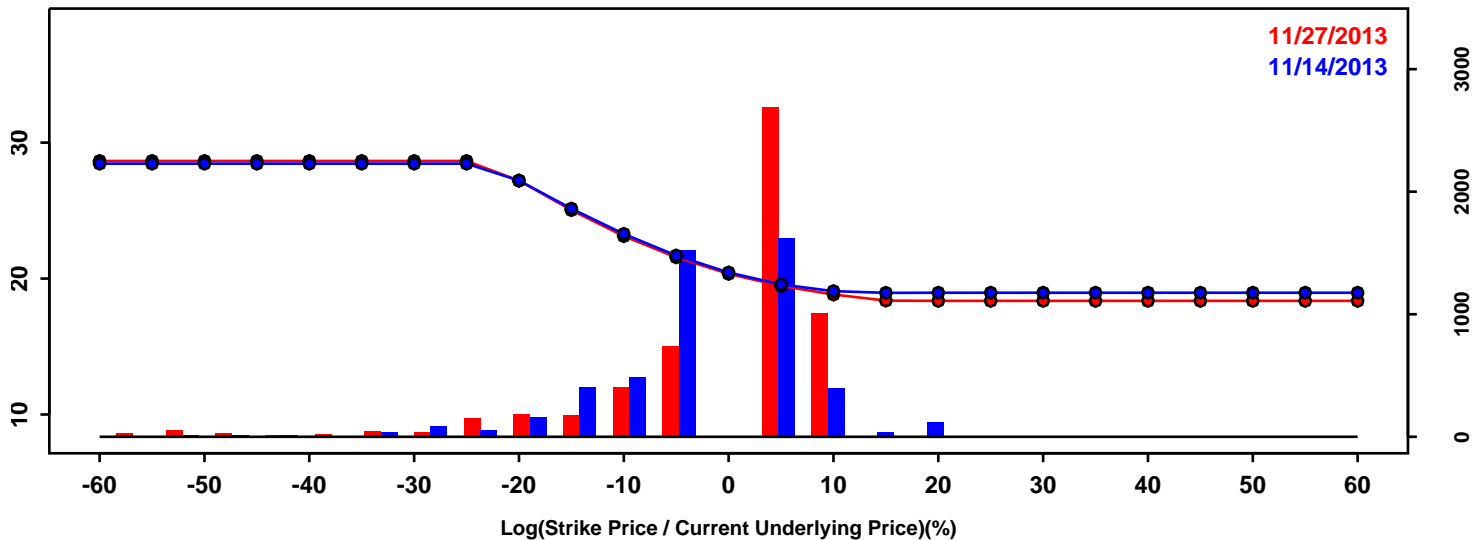


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-14.06%	-11.02%	3.04%
50th Pct	0.98%	0.09%	-0.89%
90th Pct	11.12%	10.95%	-0.17%
Mean	-0.44%	0.05%	0.48%
Std Dev	10.22%	9.26%	-0.95%
Skew	-0.80	-0.25	0.55
Kurtosis	0.96	2.73	1.77

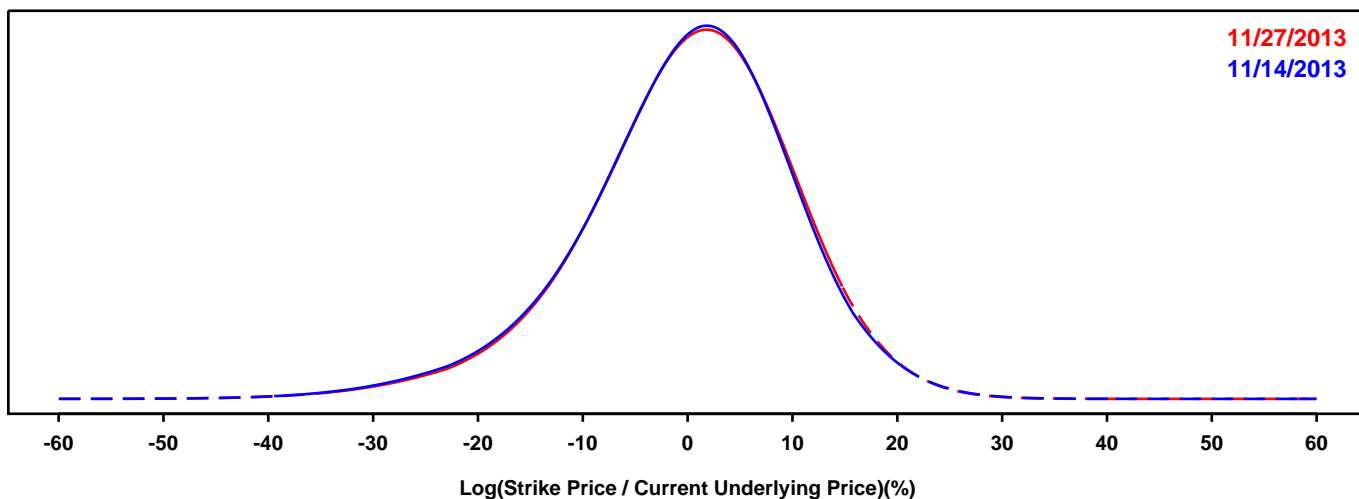
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- GOLDMAN SACHS

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

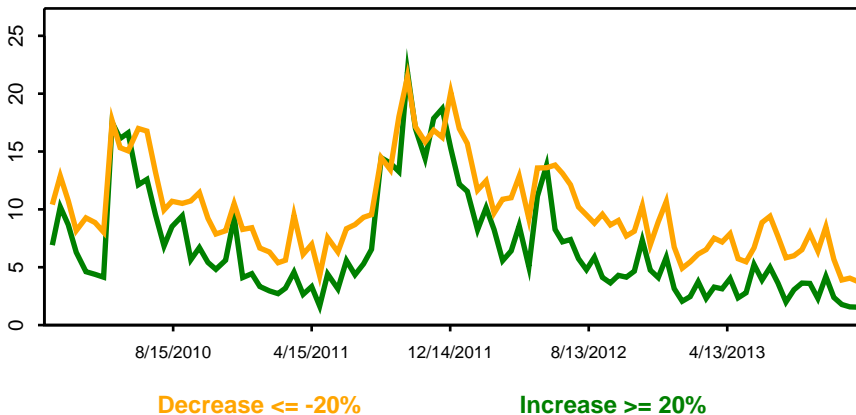
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



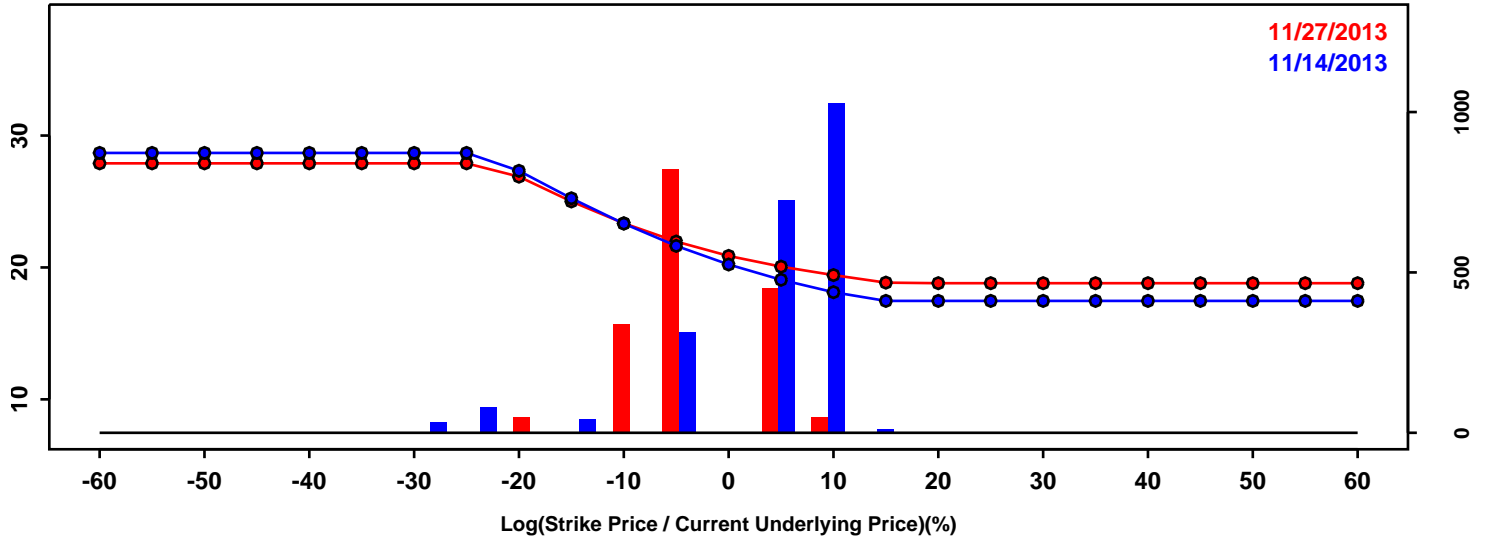
Statistics of the Log Return Distributions

	11/14/2013	11/27/2013	Change
10th Pct	-13.29%	-12.97%	0.32%
50th Pct	0.64%	0.77%	0.14%
90th Pct	11.95%	12.20%	0.25%
Mean	-0.15%	0.06%	0.20%
Std Dev	10.30%	10.22%	-0.08%
Skew	-0.52	-0.52	0.01
Kurtosis	0.90	0.87	-0.02

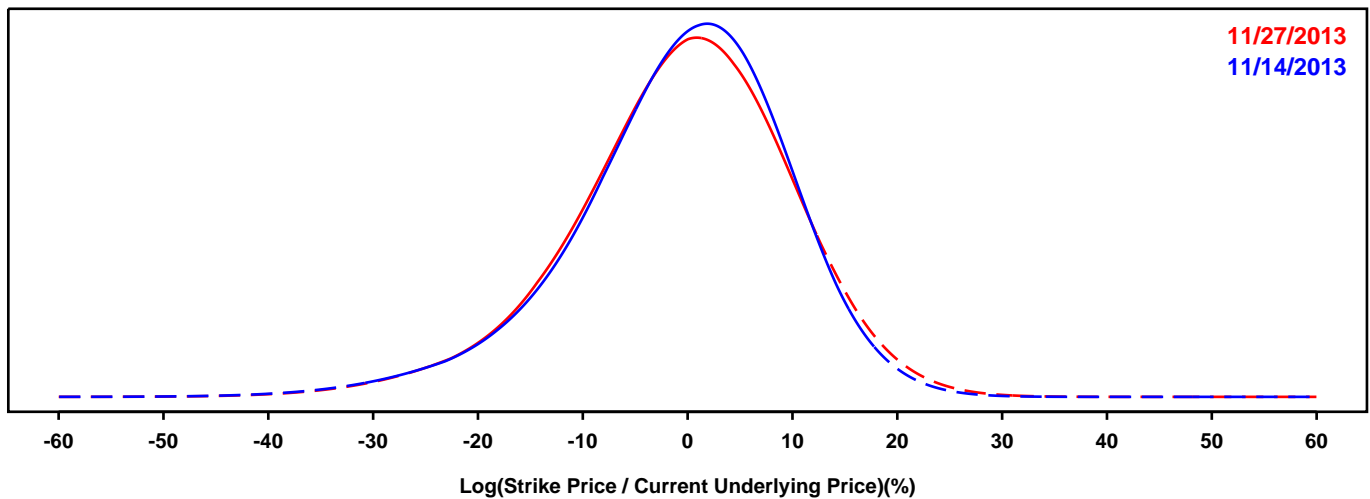
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- JP MORGAN

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

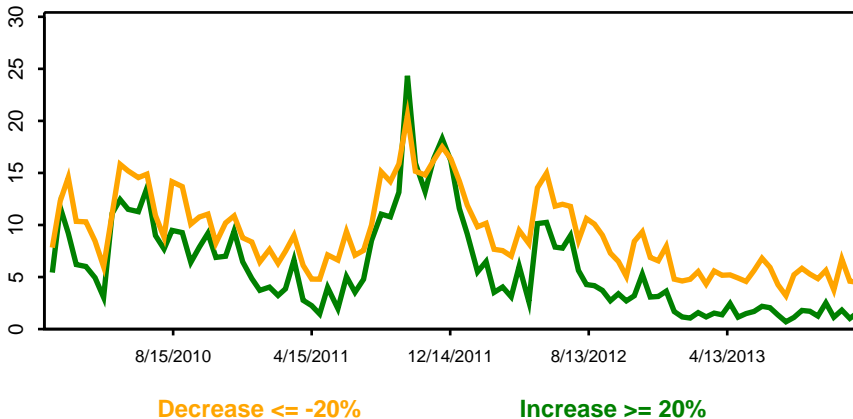
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

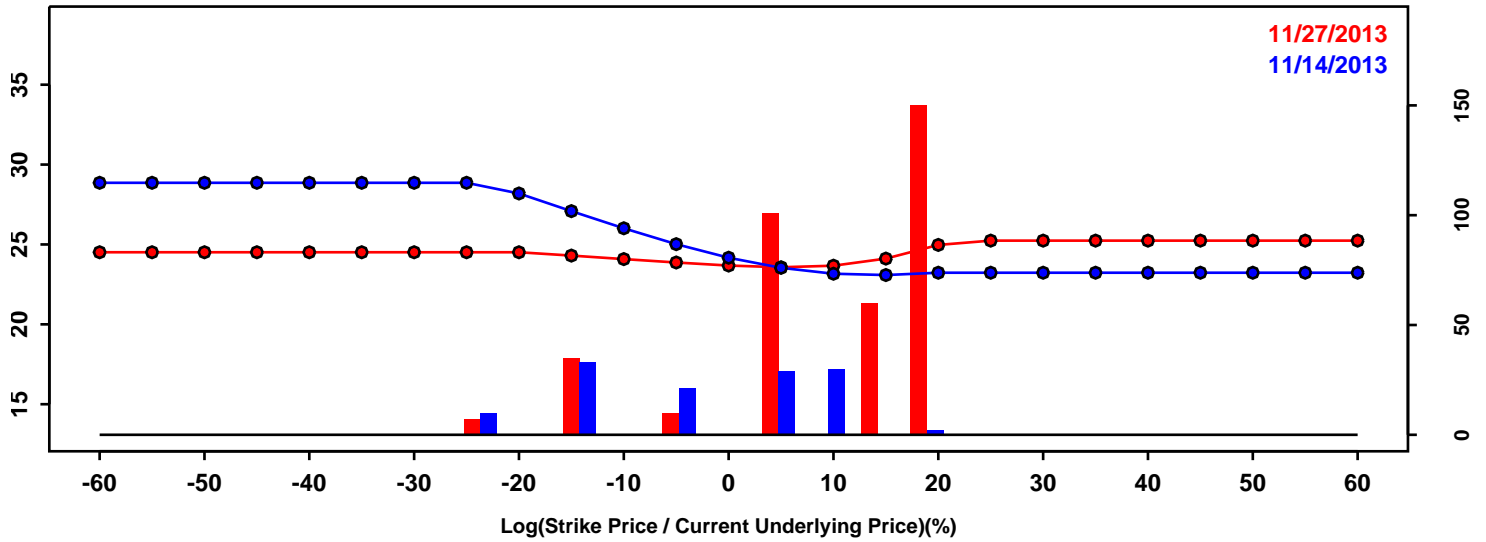


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-14.01%	-14.14%	-0.13%
50th Pct	0.26%	0.09%	-0.16%
90th Pct	11.35%	12.06%	0.71%
Mean	-0.69%	-0.61%	0.09%
Std Dev	10.33%	10.55%	0.23%
Skew	-0.62	-0.47	0.16
Kurtosis	0.93	0.68	-0.25

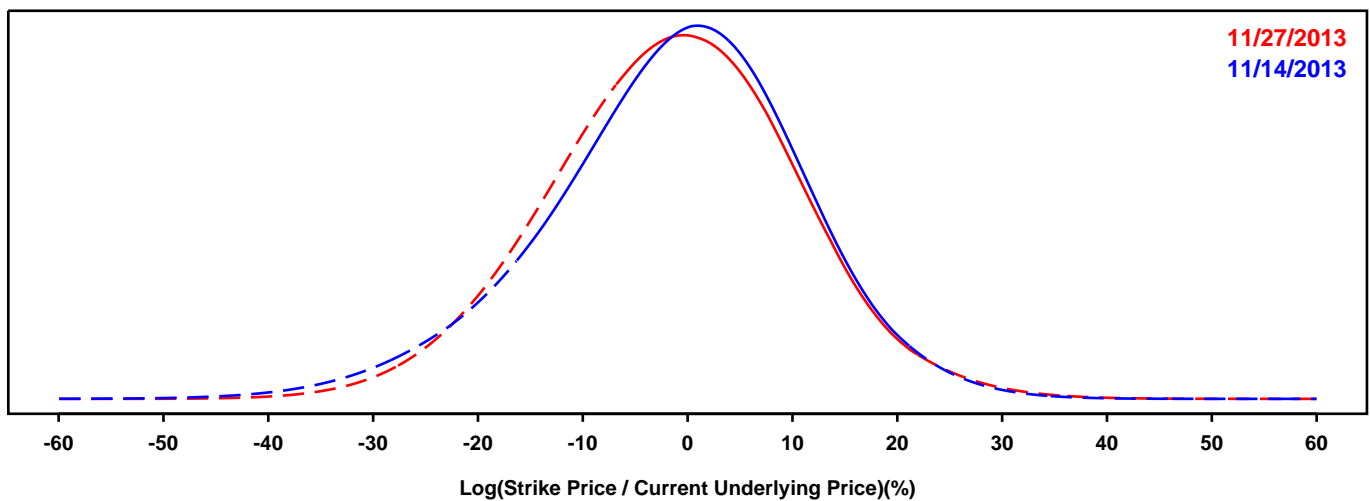
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- KEYCORP

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

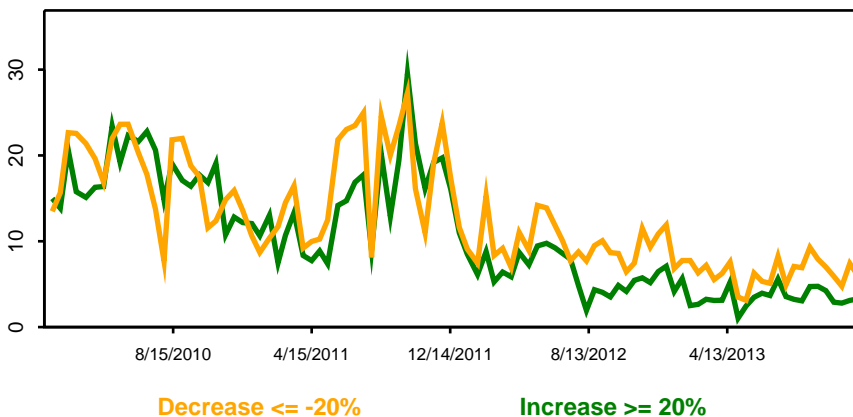
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

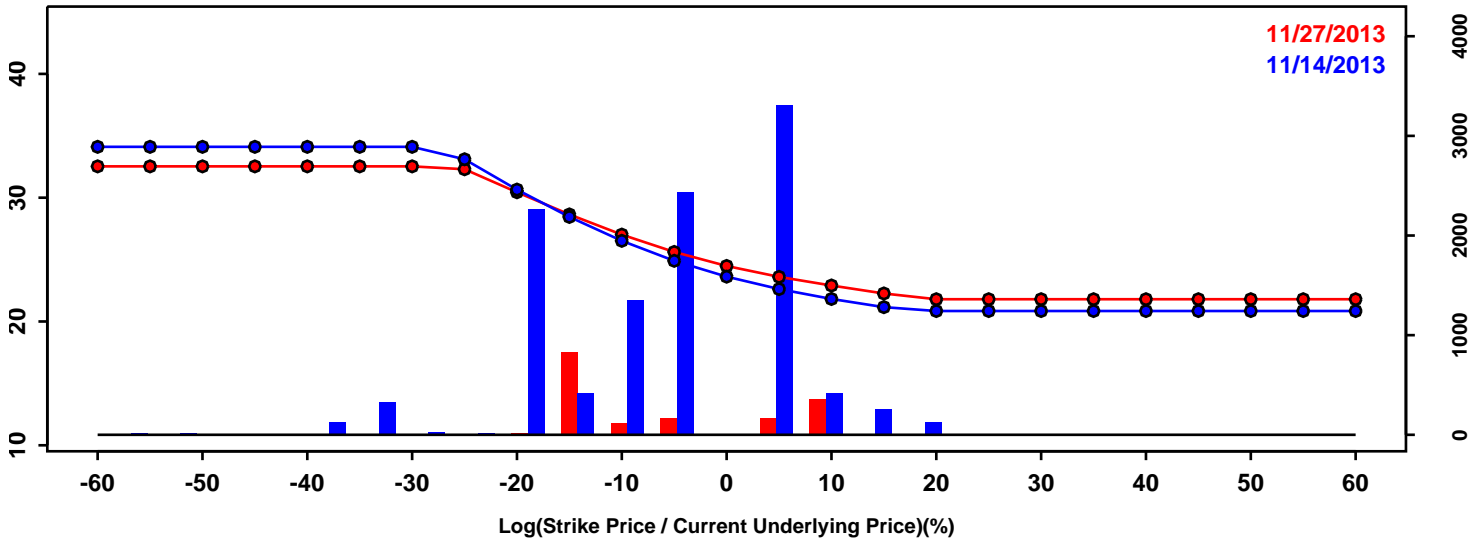


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-17.45%	-16.72%	0.73%
50th Pct	-0.53%	-1.19%	-0.67%
90th Pct	13.42%	13.28%	-0.14%
Mean	-1.34%	-1.41%	-0.08%
Std Dev	12.28%	11.82%	-0.45%
Skew	-0.34	-0.06	0.28
Kurtosis	0.38	0.14	-0.24

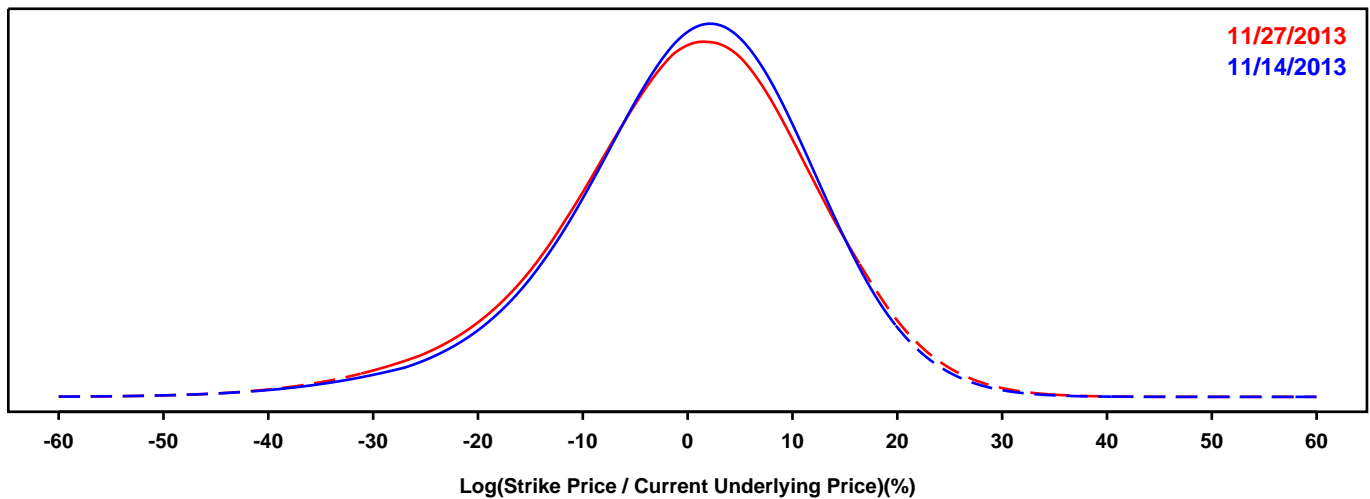
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- MORGAN STANLEY

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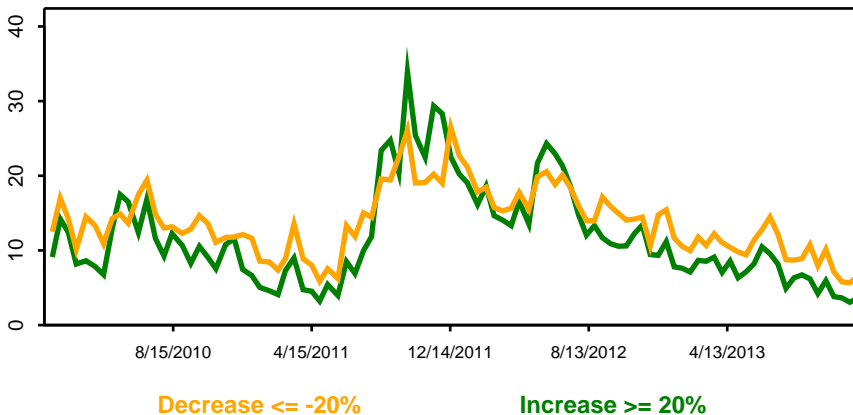
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

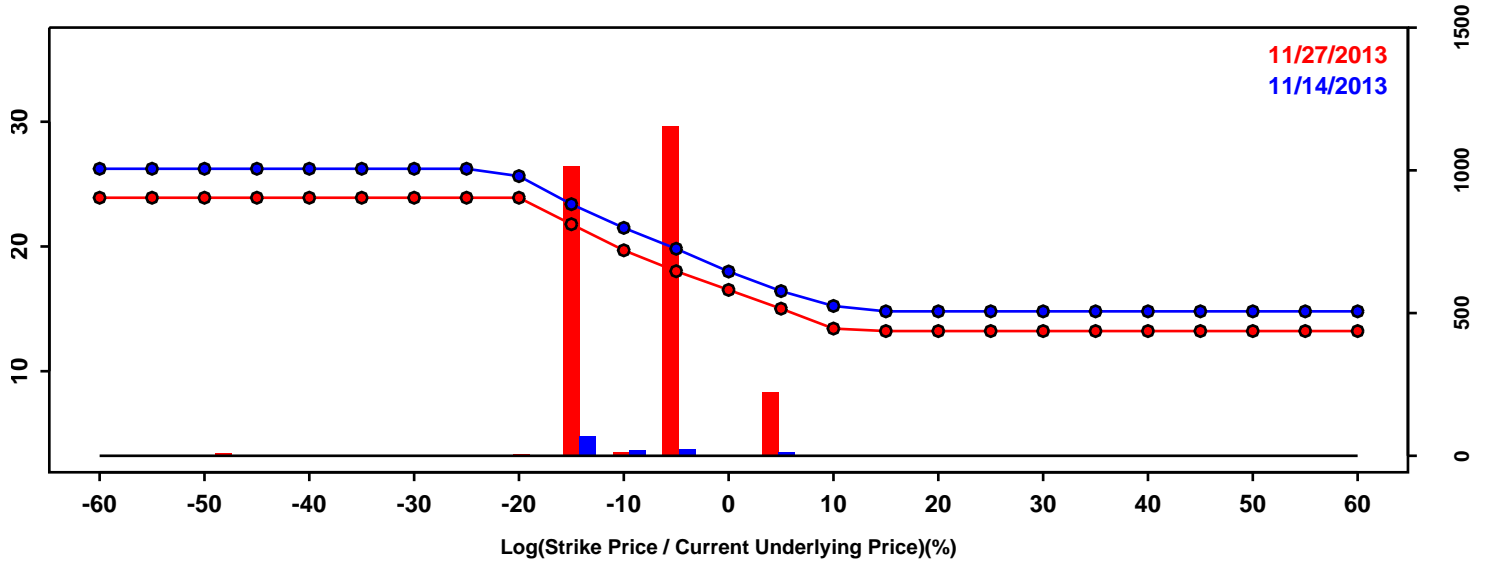


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-15.14%	-16.17%	-1.02%
50th Pct	0.90%	0.55%	-0.35%
90th Pct	14.09%	14.57%	0.48%
Mean	0.02%	-0.28%	-0.31%
Std Dev	11.91%	12.38%	0.47%
Skew	-0.57	-0.48	0.09
Kurtosis	0.97	0.70	-0.28

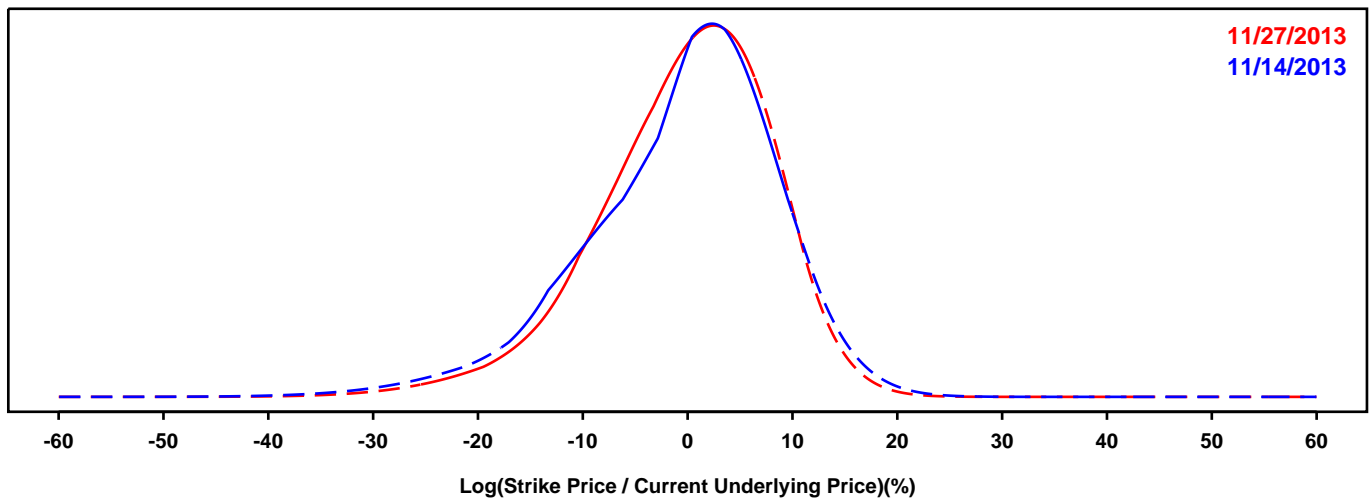
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PNC FINANCIAL

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

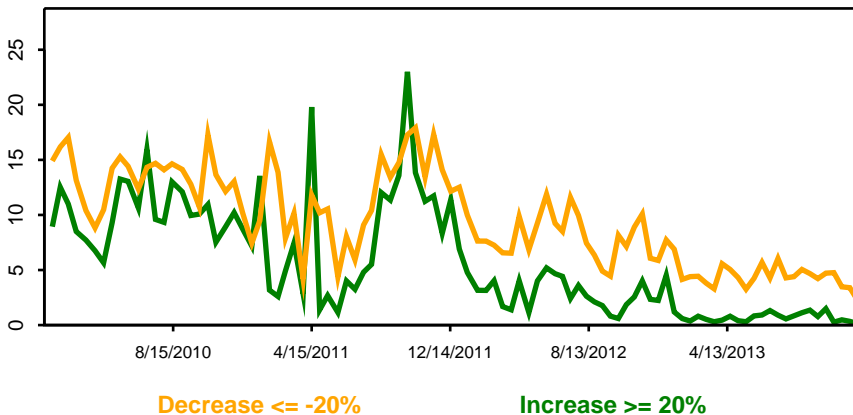
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

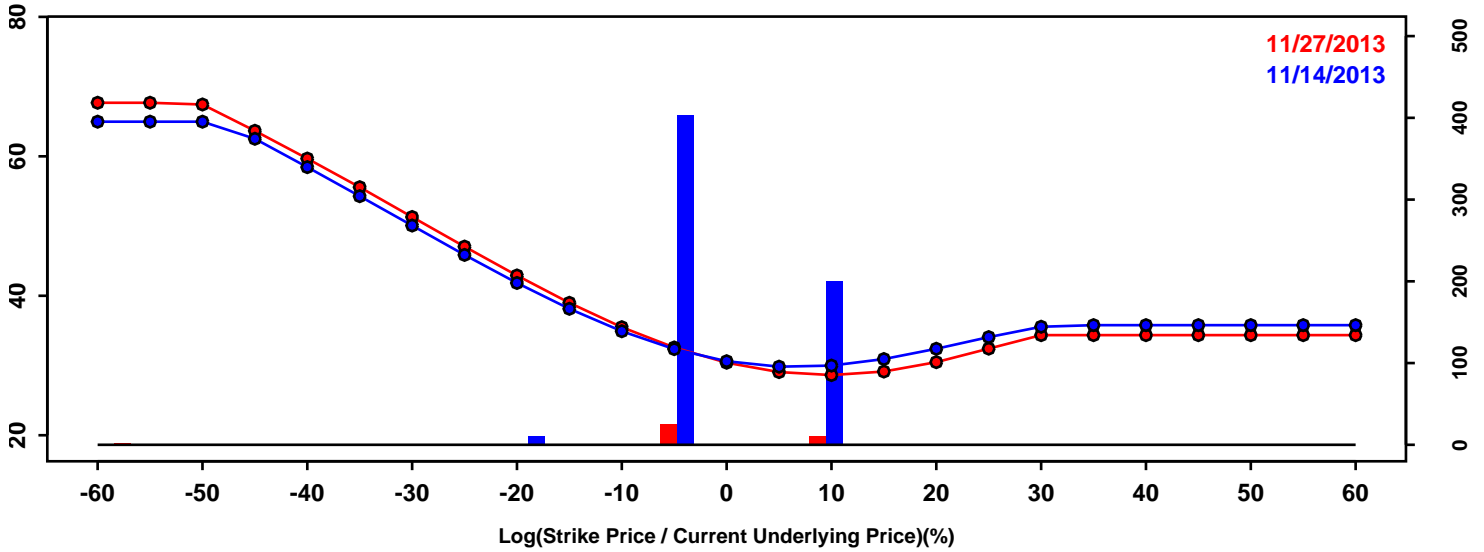


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-12.78%	-11.17%	1.60%
50th Pct	0.68%	0.60%	-0.09%
90th Pct	10.01%	9.45%	-0.56%
Mean	-0.54%	-0.30%	0.25%
Std Dev	9.24%	8.38%	-0.86%
Skew	-0.72	-0.67	0.05
Kurtosis	0.98	0.88	-0.10

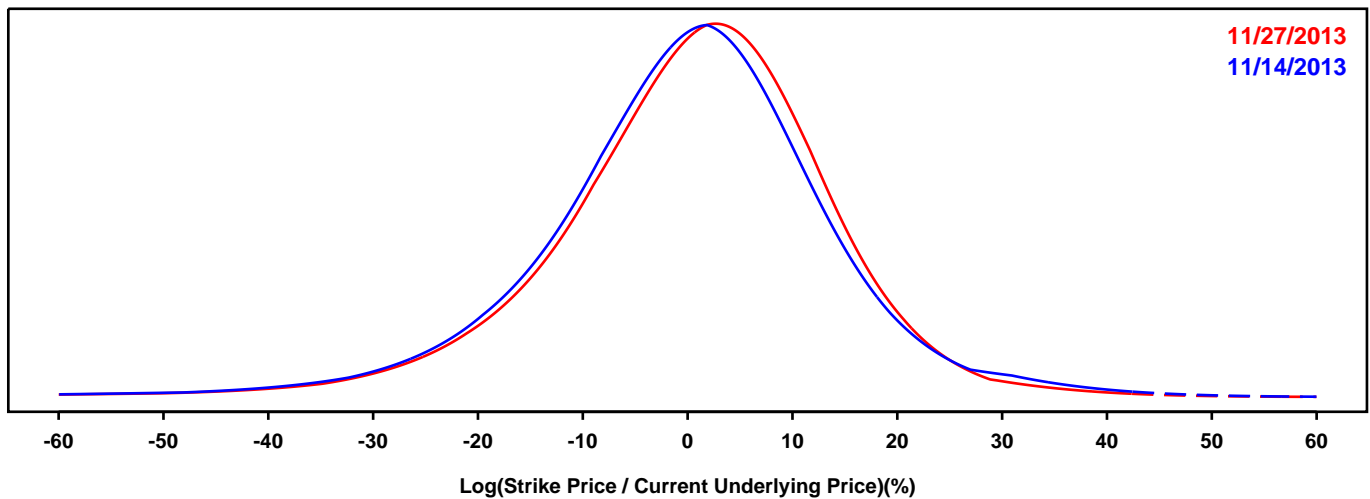
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- REGIONS FINANCIAL

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

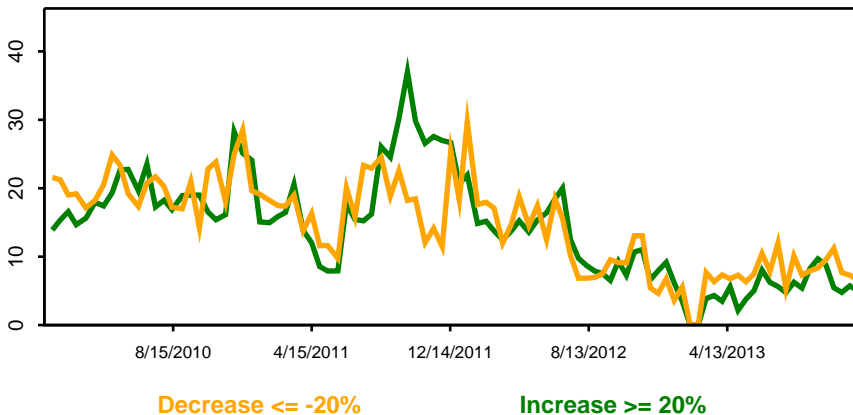
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

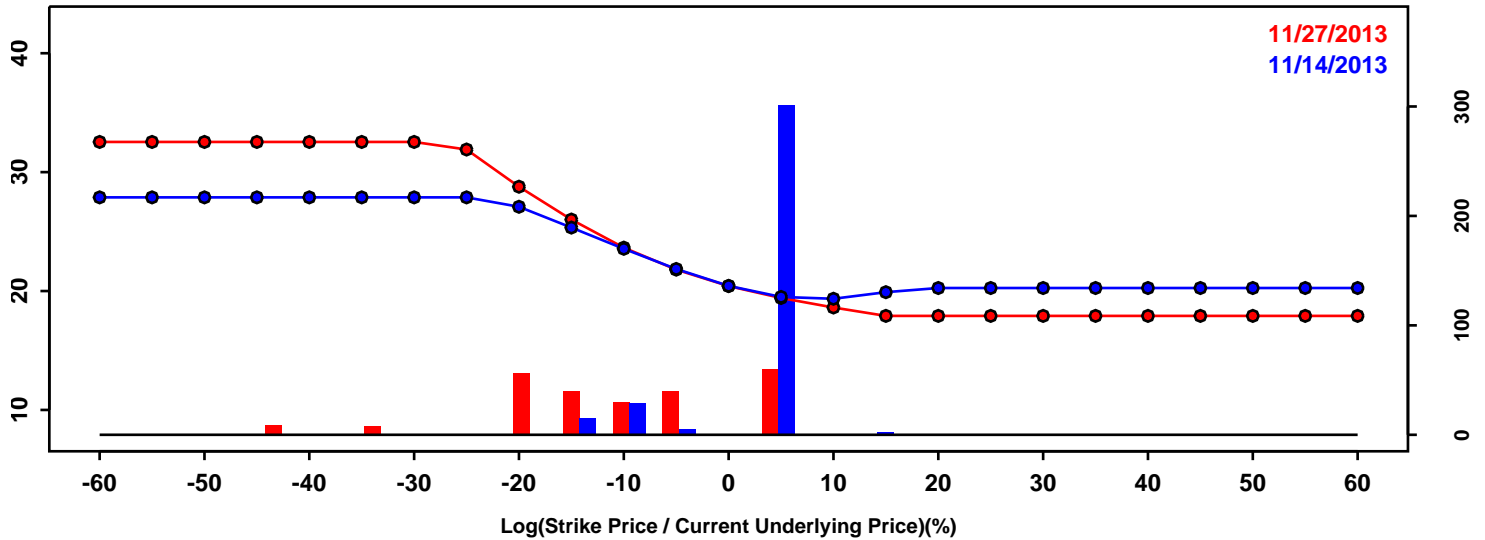


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-16.88%	-16.00%	0.87%
50th Pct	0.56%	1.42%	0.86%
90th Pct	15.70%	15.60%	-0.10%
Mean	-0.24%	0.31%	0.55%
Std Dev	14.48%	13.97%	-0.51%
Skew	-0.72	-0.97	-0.25
Kurtosis	3.70	4.29	0.59

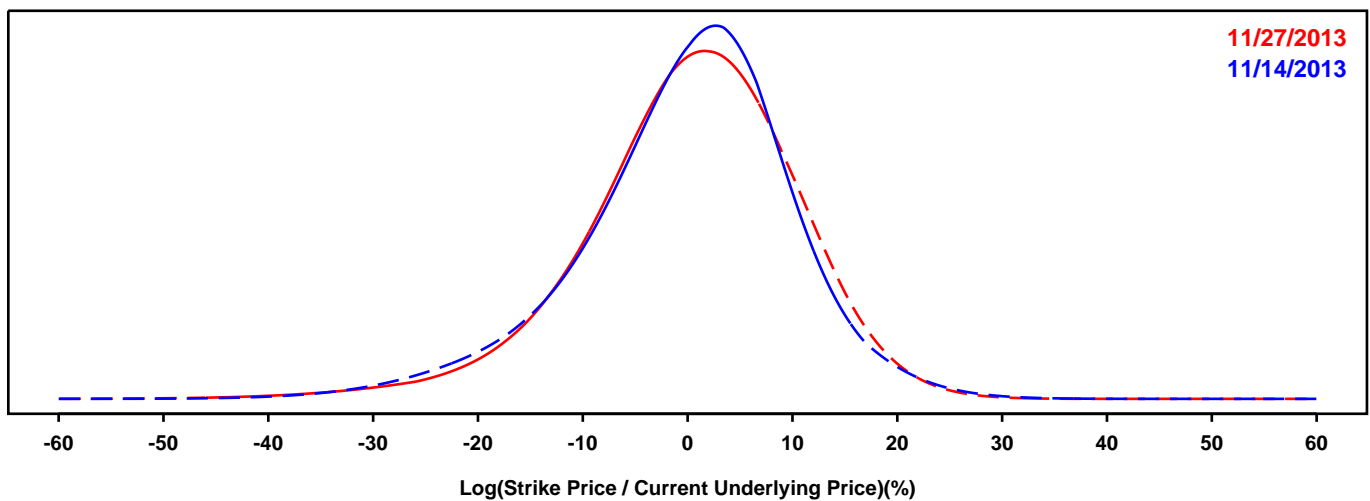
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SUNTRUST

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

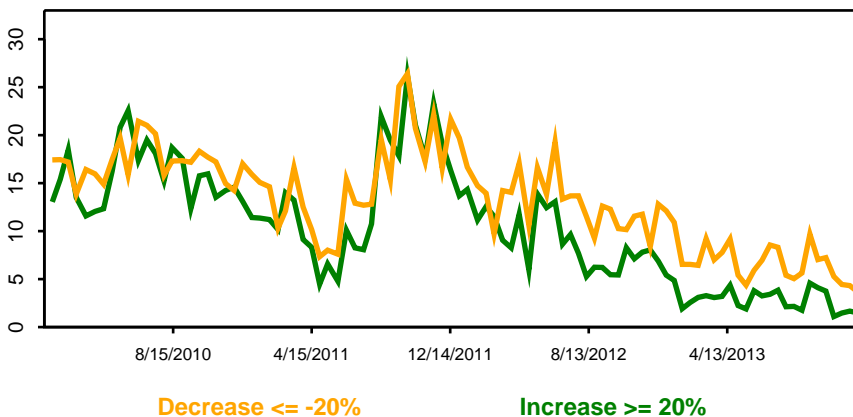
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

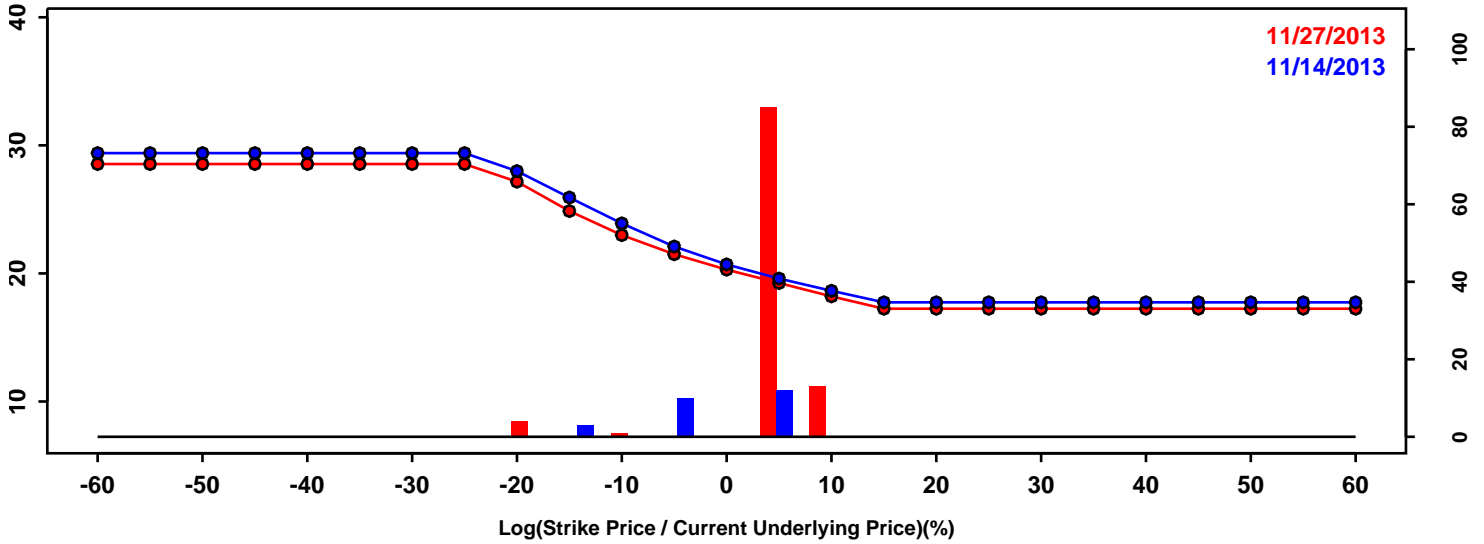


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-13.41%	-12.65%	0.76%
50th Pct	0.79%	0.89%	0.10%
90th Pct	11.57%	12.36%	0.80%
Mean	-0.15%	0.21%	0.36%
Std Dev	10.27%	10.28%	0.01%
Skew	-0.55	-0.63	-0.07
Kurtosis	1.02	1.29	0.27

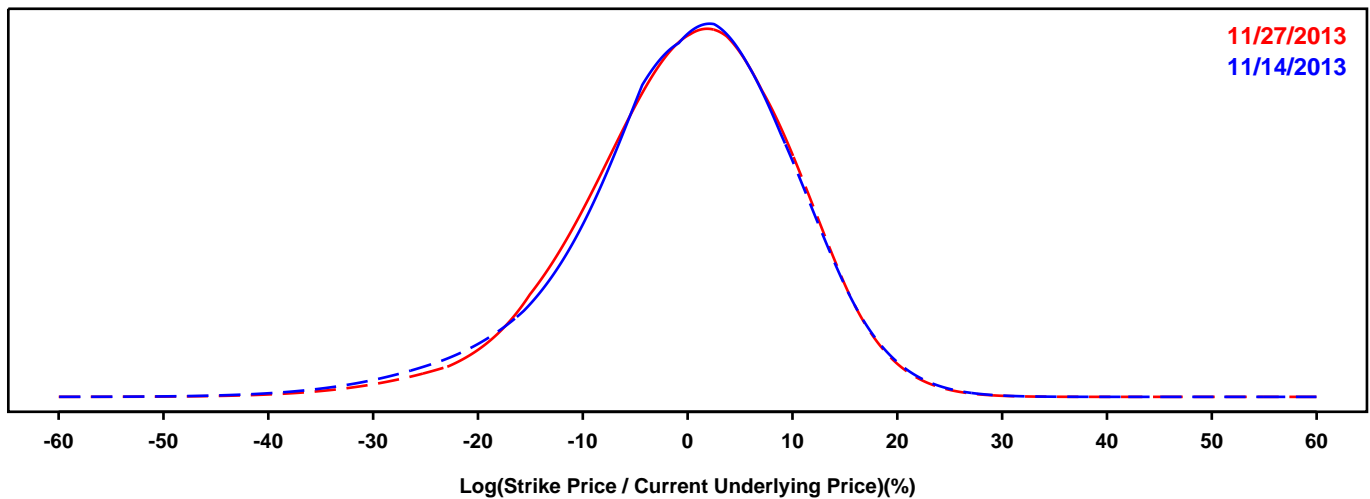
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- STATE STREET

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

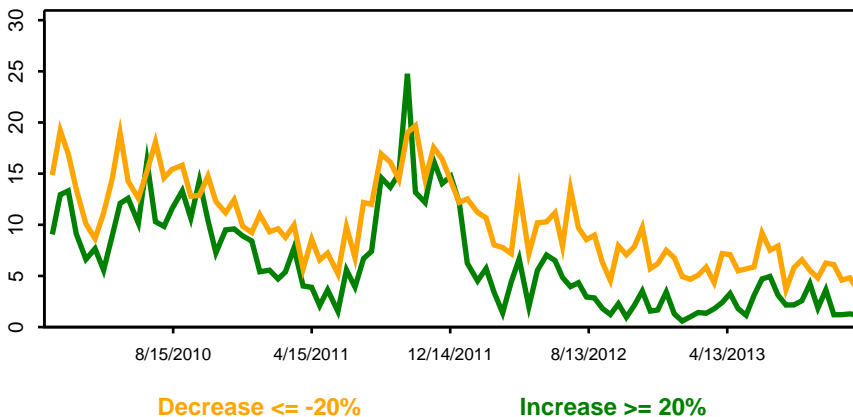
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

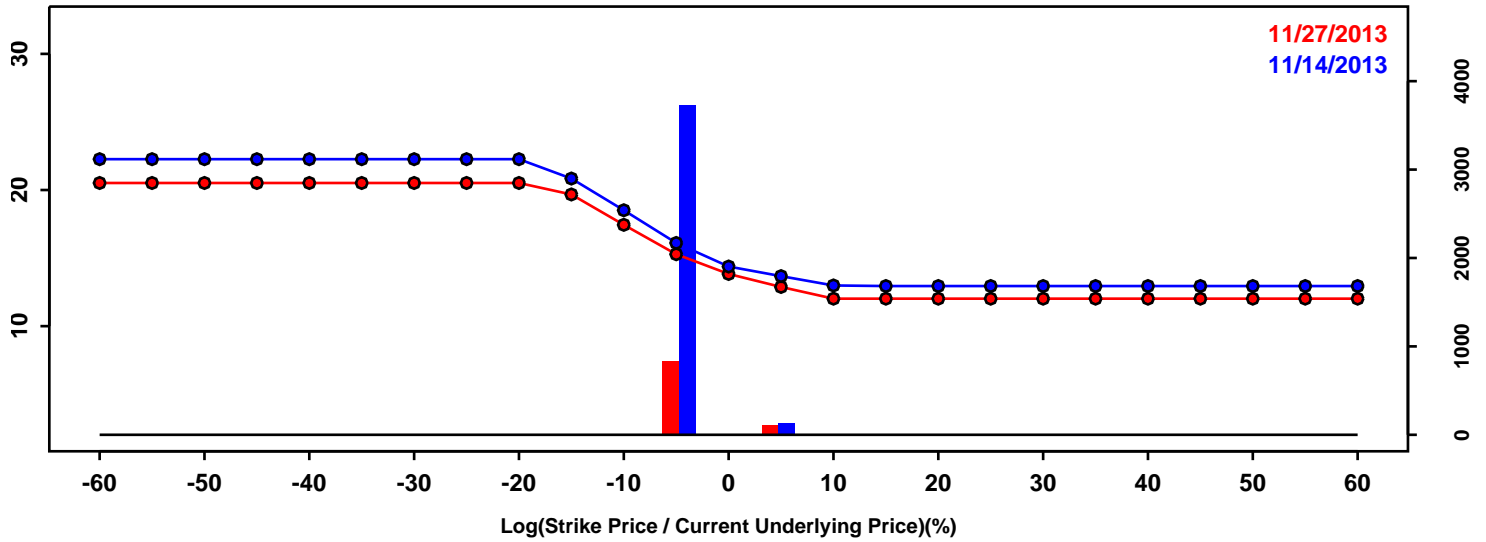


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-13.96%	-13.30%	0.66%
50th Pct	0.47%	0.51%	0.03%
90th Pct	12.03%	12.02%	-0.01%
Mean	-0.40%	-0.22%	0.18%
Std Dev	10.58%	10.19%	-0.39%
Skew	-0.64	-0.53	0.11
Kurtosis	0.99	0.76	-0.24

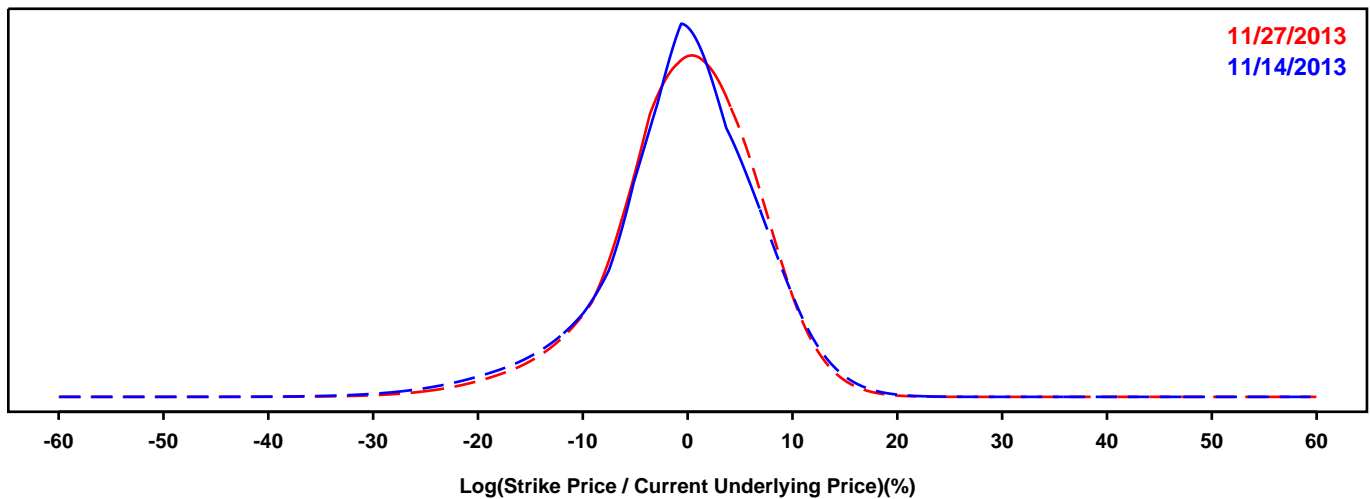
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- US BANCORP

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

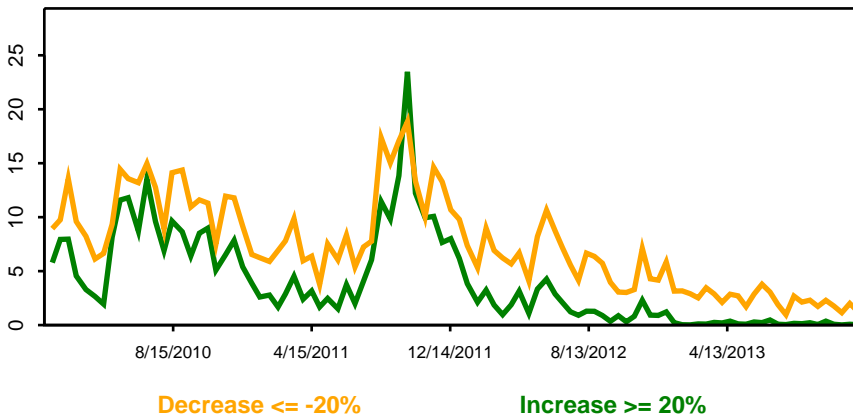
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

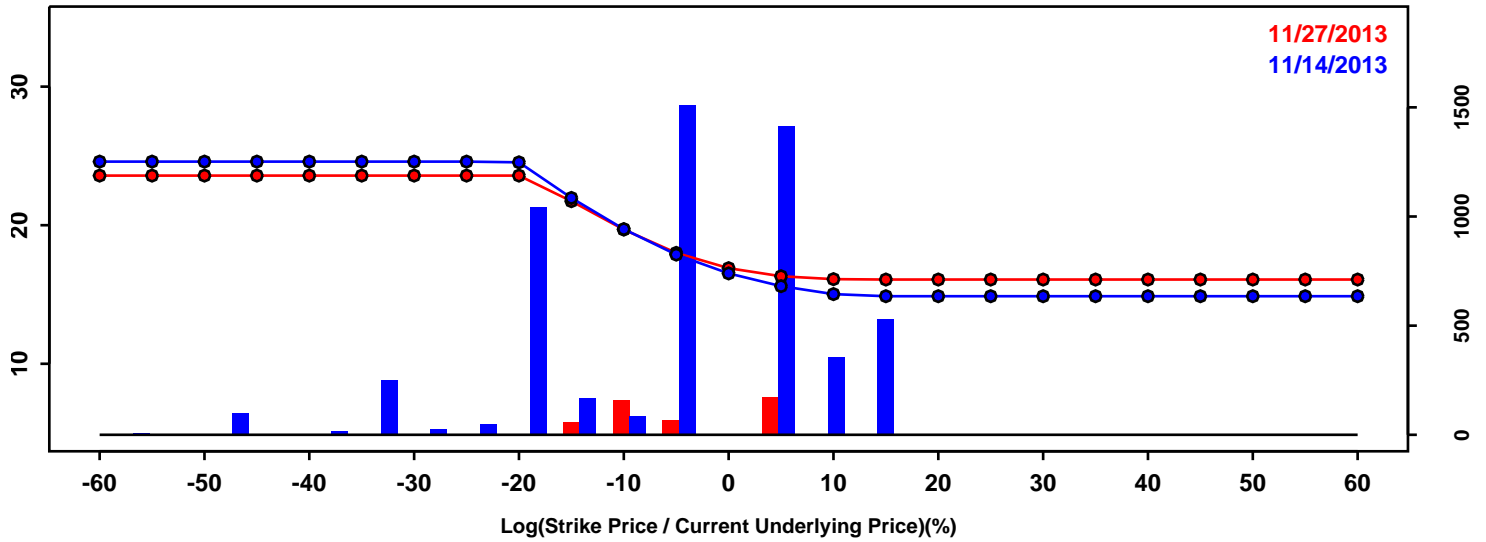


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-10.03%	-9.14%	0.89%
50th Pct	-0.07%	0.14%	0.21%
90th Pct	8.15%	8.01%	-0.13%
Mean	-0.63%	-0.33%	0.30%
Std Dev	7.52%	7.06%	-0.46%
Skew	-0.74	-0.65	0.09
Kurtosis	1.51	1.18	-0.33

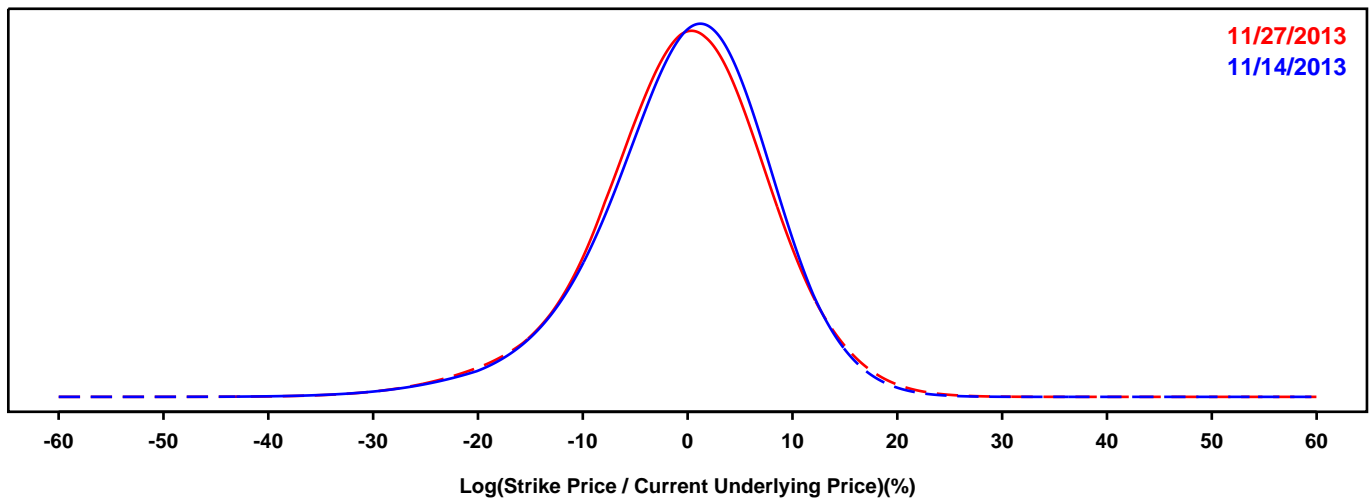
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- WELLS FARGO

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

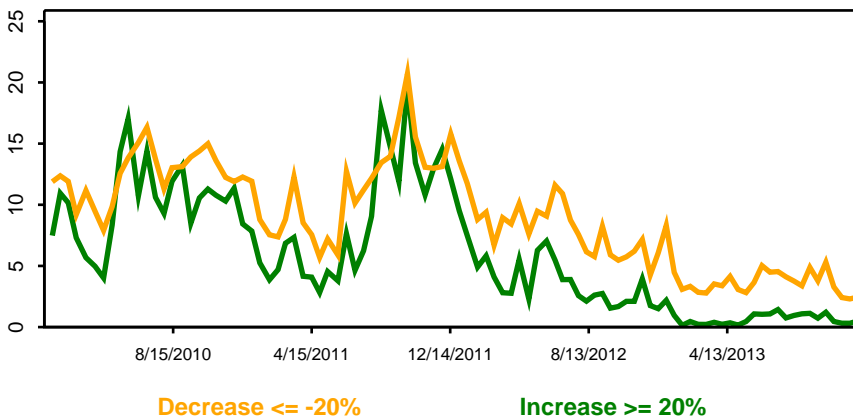
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

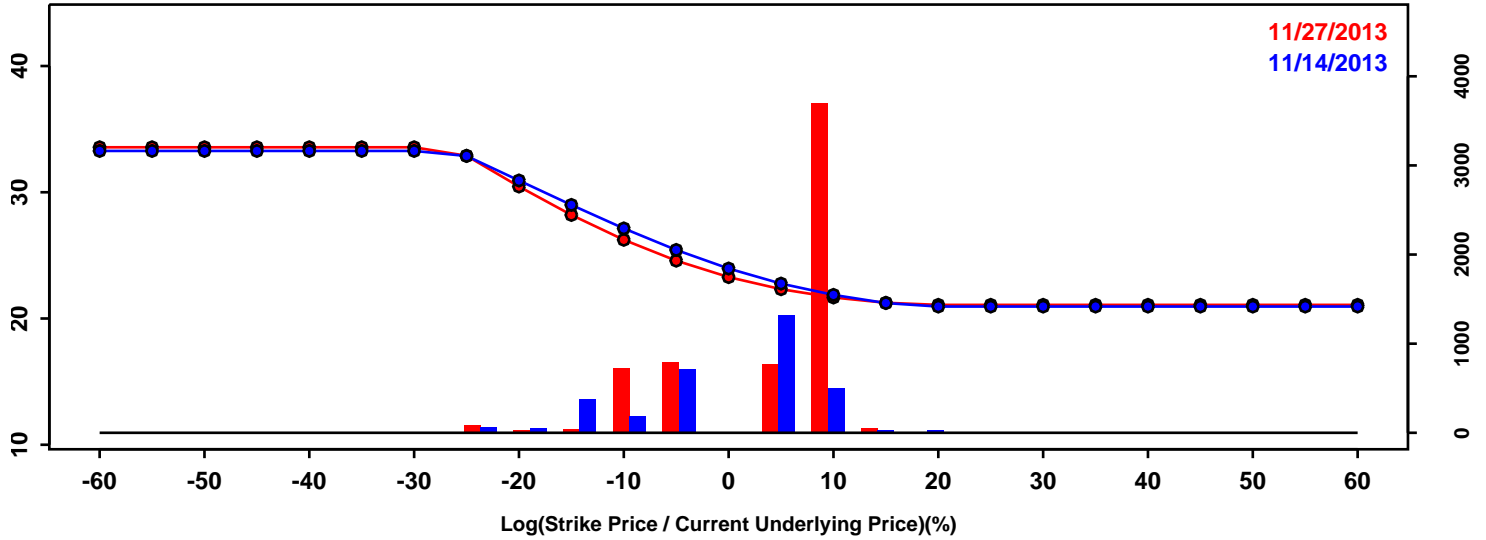


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-11.00%	-11.22%	-0.23%
50th Pct	0.32%	-0.09%	-0.41%
90th Pct	9.48%	9.62%	0.14%
Mean	-0.34%	-0.56%	-0.22%
Std Dev	8.39%	8.53%	0.15%
Skew	-0.59	-0.47	0.12
Kurtosis	1.09	0.94	-0.15

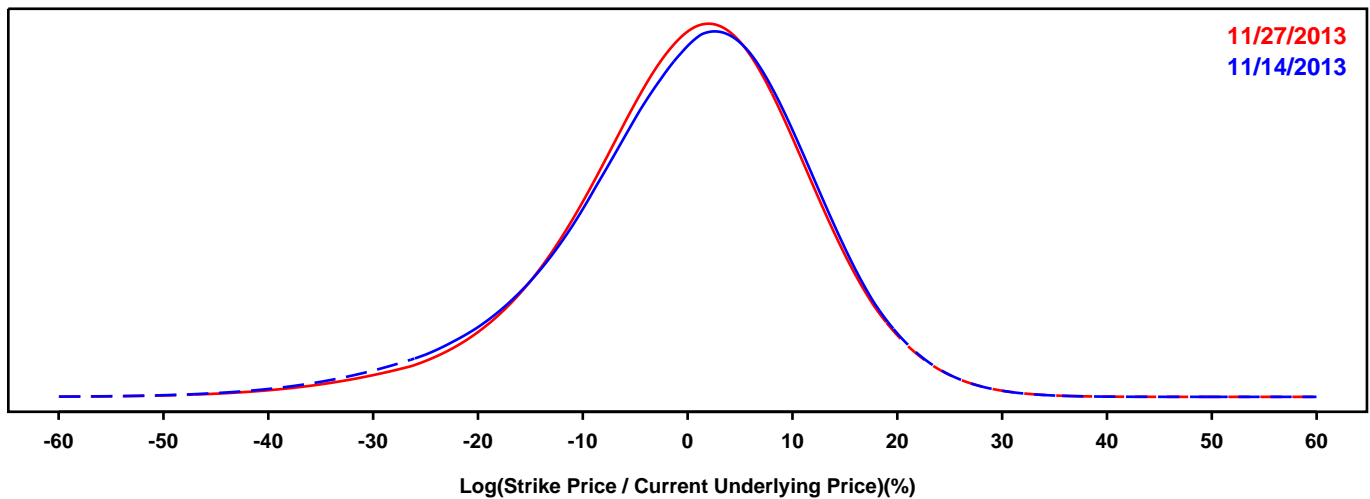
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AIG

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

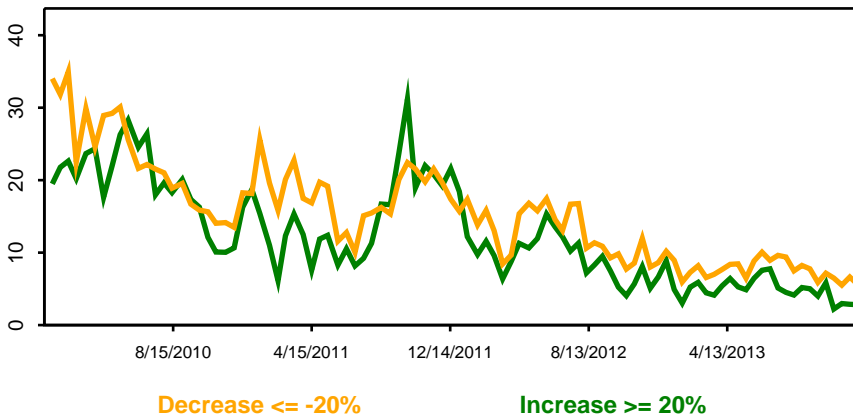
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

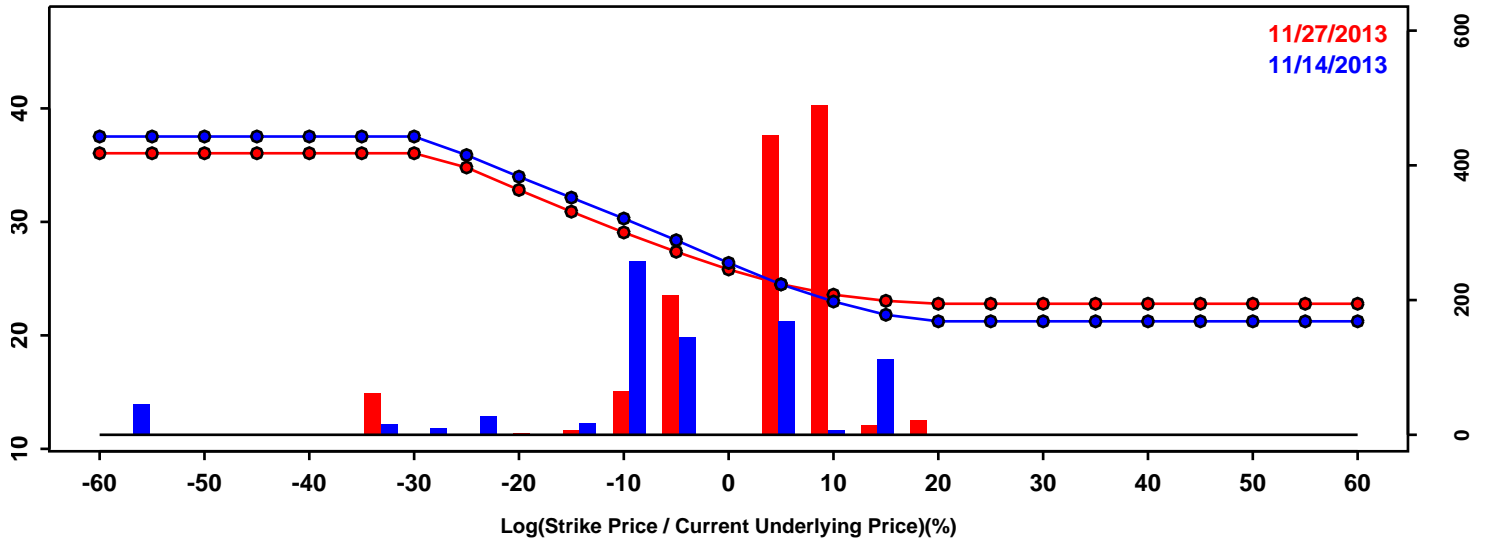


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-16.12%	-15.15%	0.97%
50th Pct	0.85%	0.69%	-0.17%
90th Pct	13.83%	13.65%	-0.18%
Mean	-0.32%	-0.21%	0.12%
Std Dev	12.18%	11.77%	-0.41%
Skew	-0.63	-0.57	0.06
Kurtosis	0.94	1.03	0.09

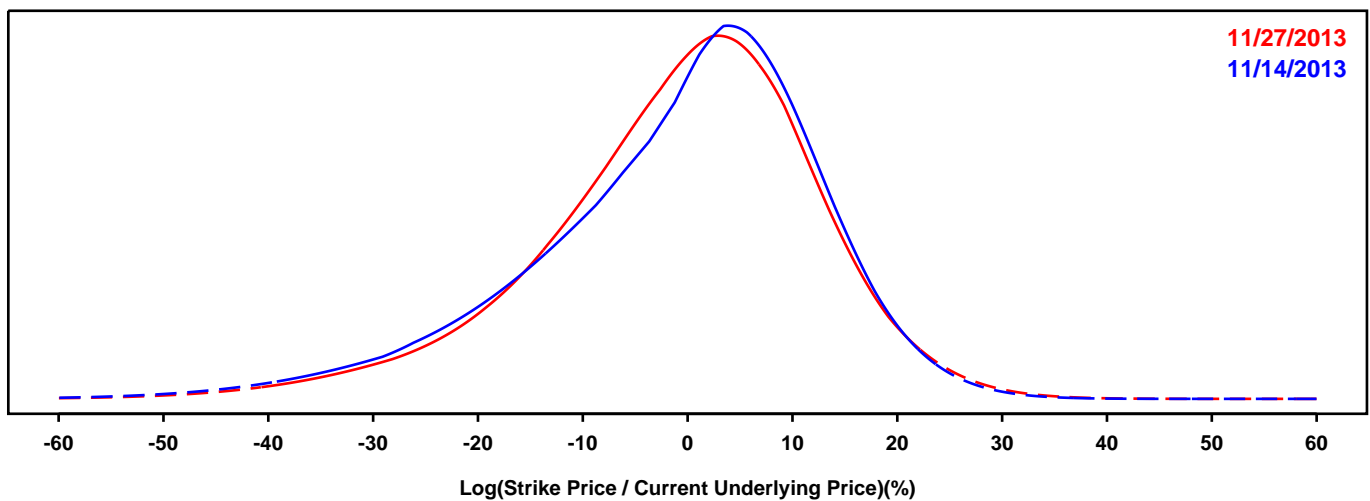
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- HARTFORD FINANCIAL

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

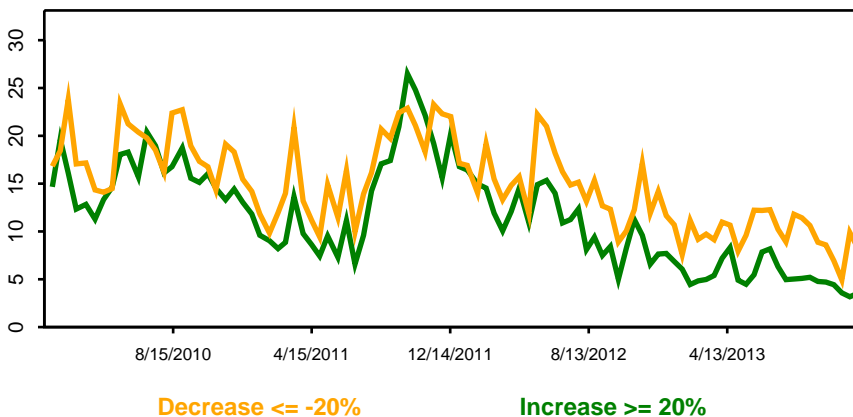
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

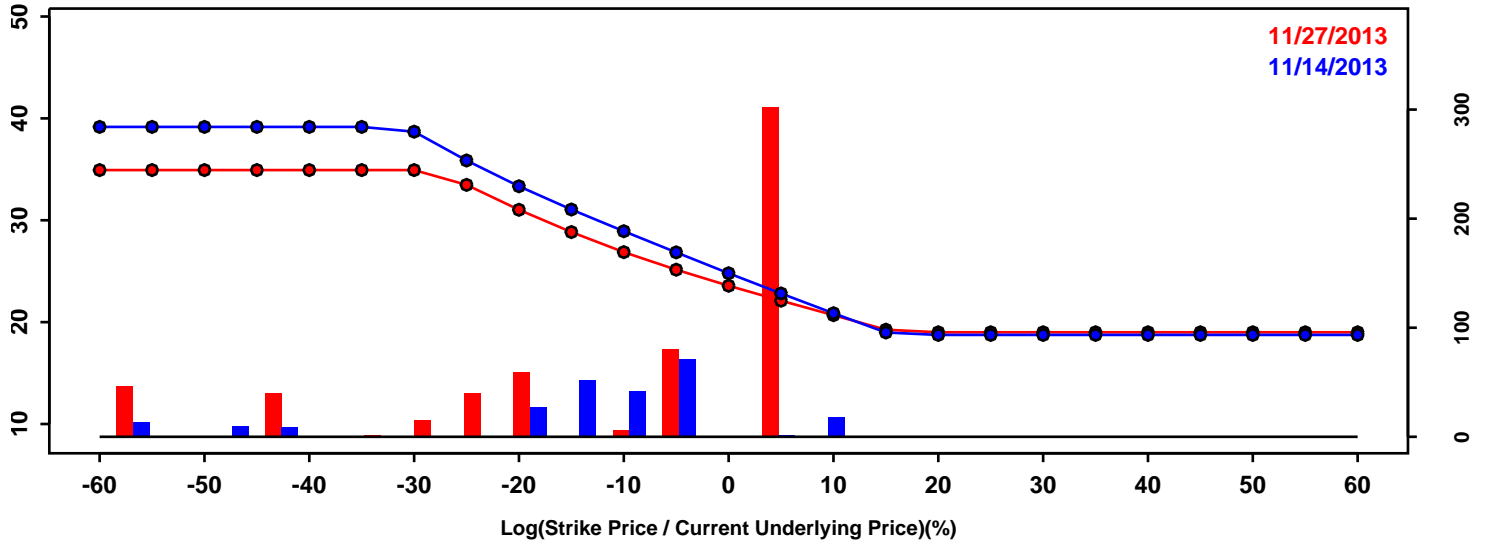


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-19.84%	-18.17%	1.67%
50th Pct	1.16%	0.59%	-0.56%
90th Pct	14.31%	14.26%	-0.05%
Mean	-1.09%	-0.90%	0.18%
Std Dev	13.82%	13.22%	-0.60%
Skew	-0.80	-0.66	0.14
Kurtosis	0.97	0.96	-0.01

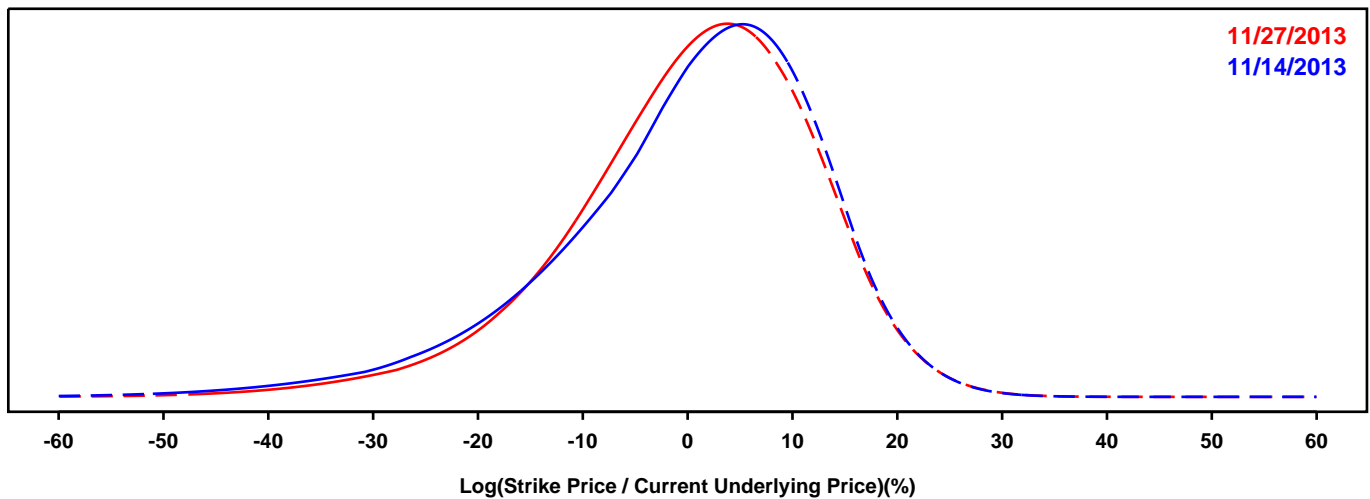
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- LINCOLN NATIONAL

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

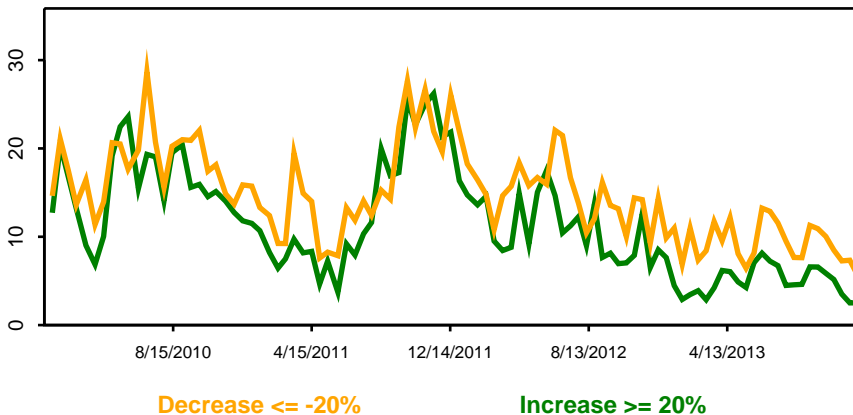
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

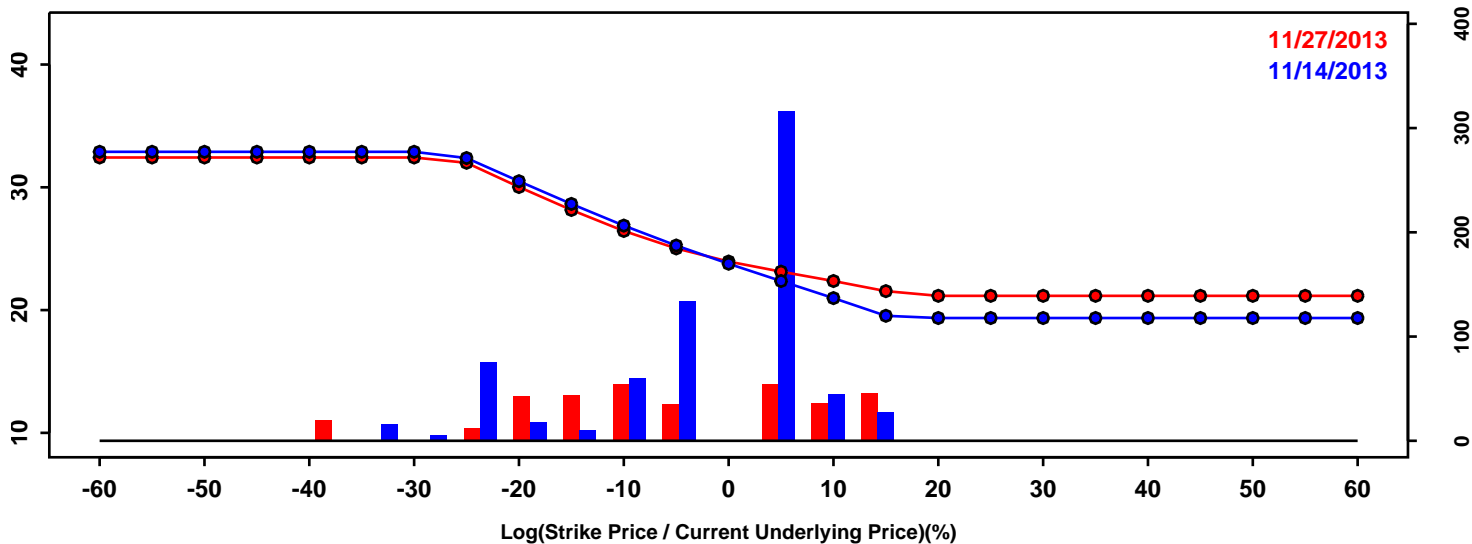


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-16.84%	-15.09%	1.76%
50th Pct	2.05%	1.60%	-0.46%
90th Pct	14.28%	14.09%	-0.19%
Mean	0.13%	0.33%	0.20%
Std Dev	12.81%	11.89%	-0.92%
Skew	-0.92	-0.71	0.21
Kurtosis	1.43	1.05	-0.38

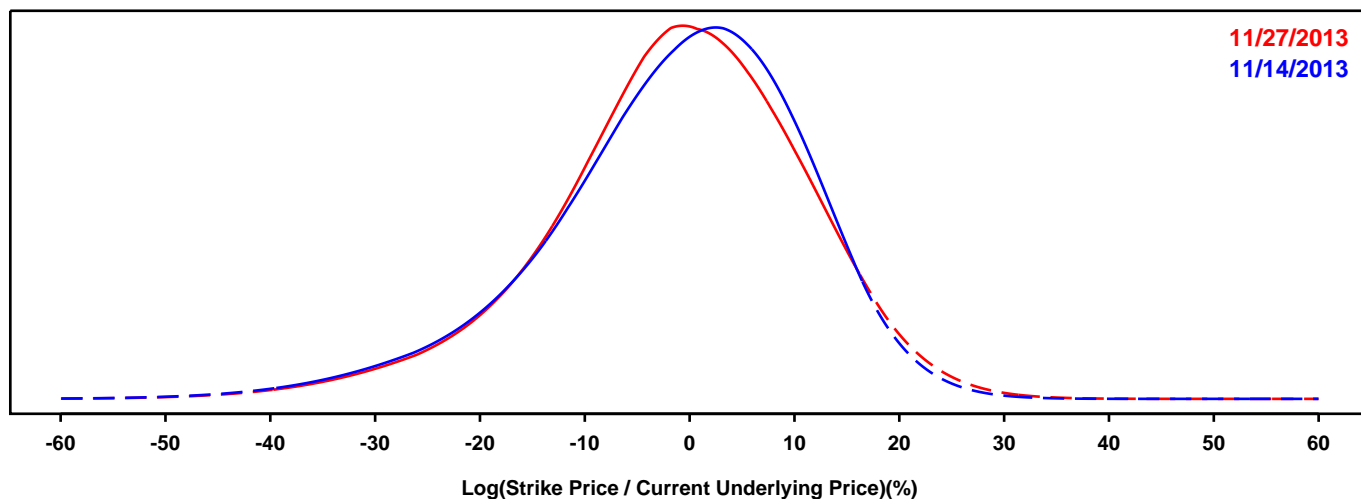
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PRUDENTIAL

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

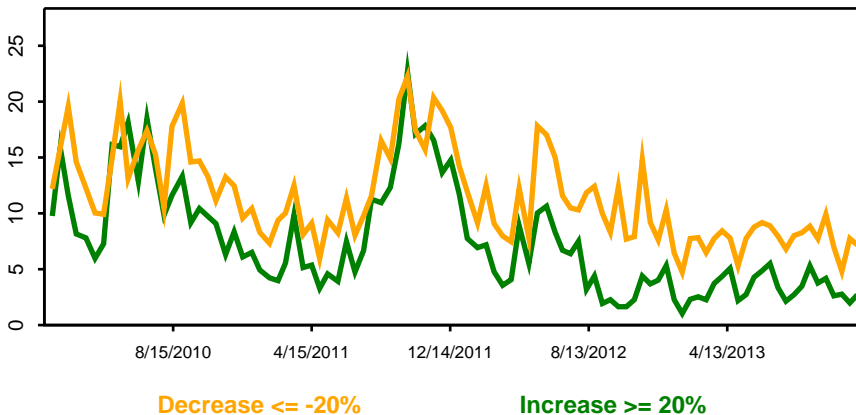
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



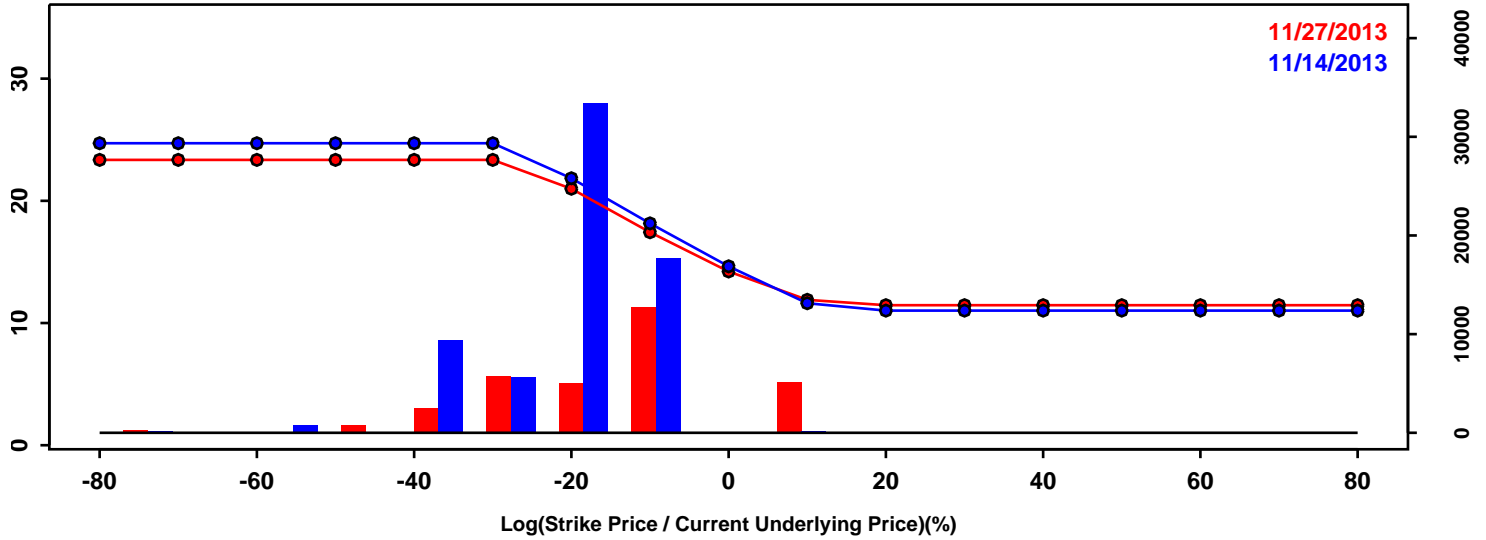
Statistics of the Log Return Distributions

	11/14/2013	11/27/2013	Change
10th Pct	-17.54%	-17.01%	0.53%
50th Pct	0.00%	-0.51%	-0.52%
90th Pct	13.04%	13.48%	0.45%
Mean	-1.32%	-1.28%	0.04%
Std Dev	12.34%	12.27%	-0.07%
Skew	-0.66	-0.51	0.16
Kurtosis	0.79	0.73	-0.06

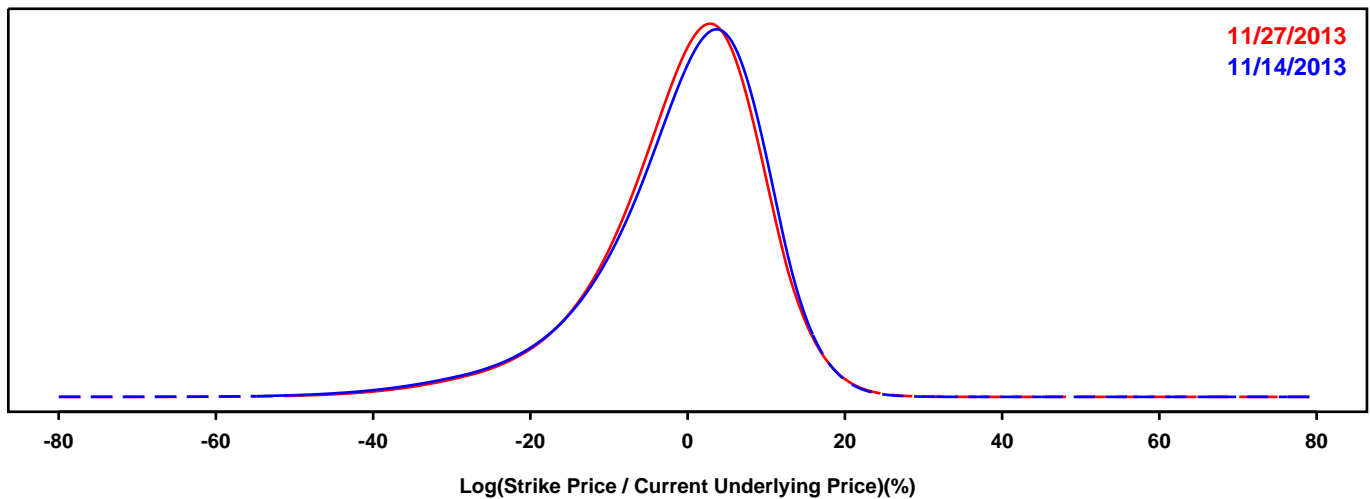
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- S&P 500

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 6 months.

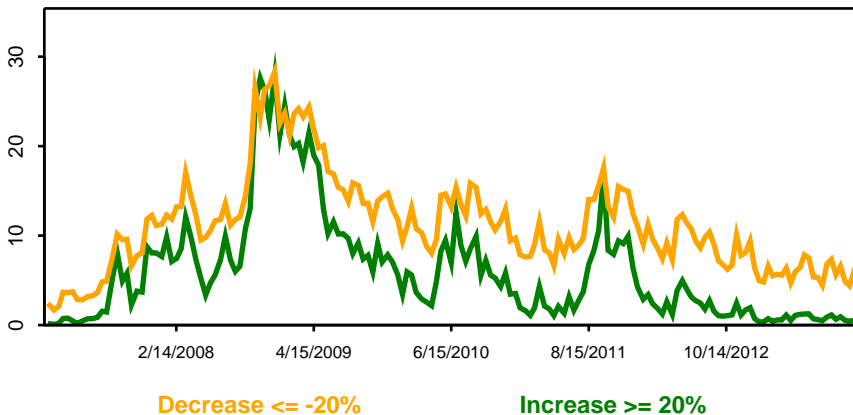
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

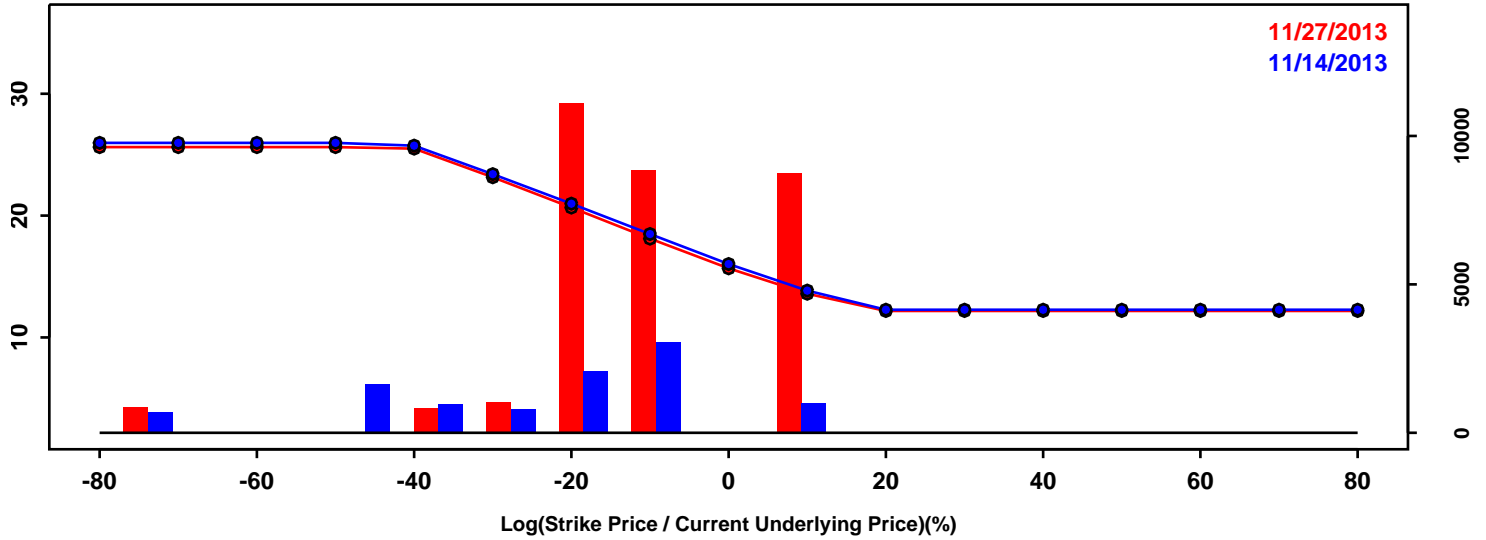


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-14.98%	-14.41%	0.56%
50th Pct	1.01%	0.67%	-0.34%
90th Pct	10.97%	10.68%	-0.29%
Mean	-0.77%	-0.85%	-0.08%
Std Dev	10.95%	10.54%	-0.42%
Skew	-1.11	-0.98	0.12
Kurtosis	2.07	1.83	-0.24

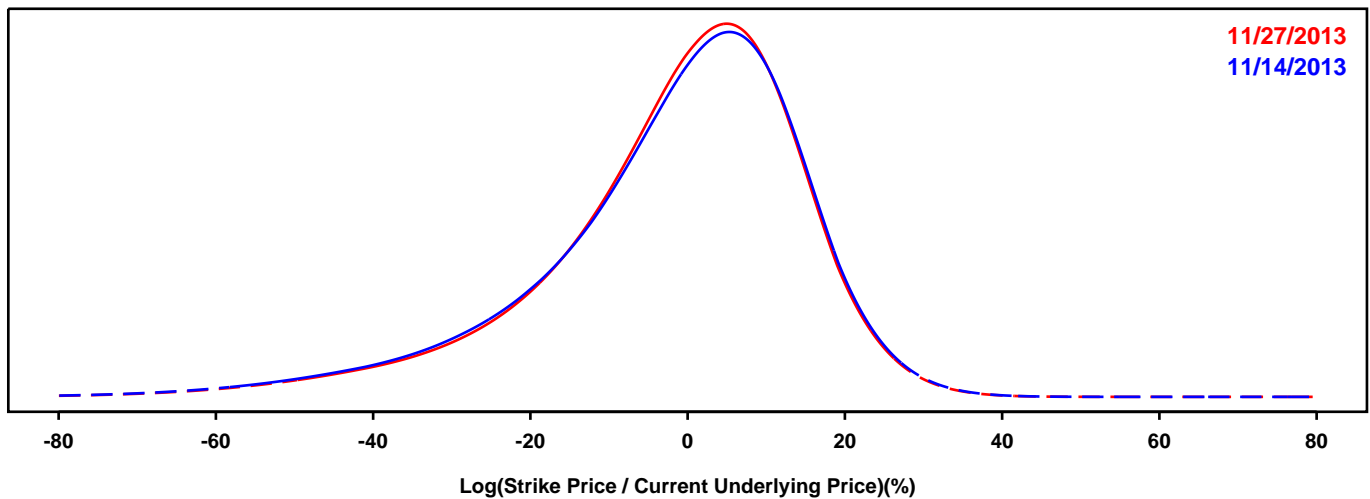
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- S&P 500

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 12 months.

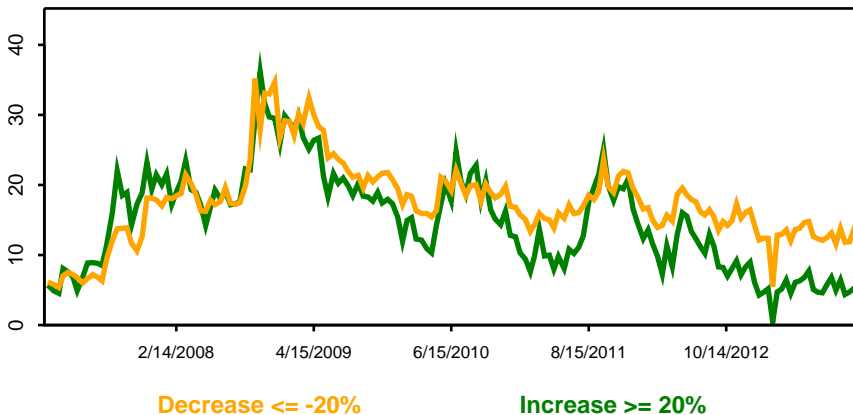
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

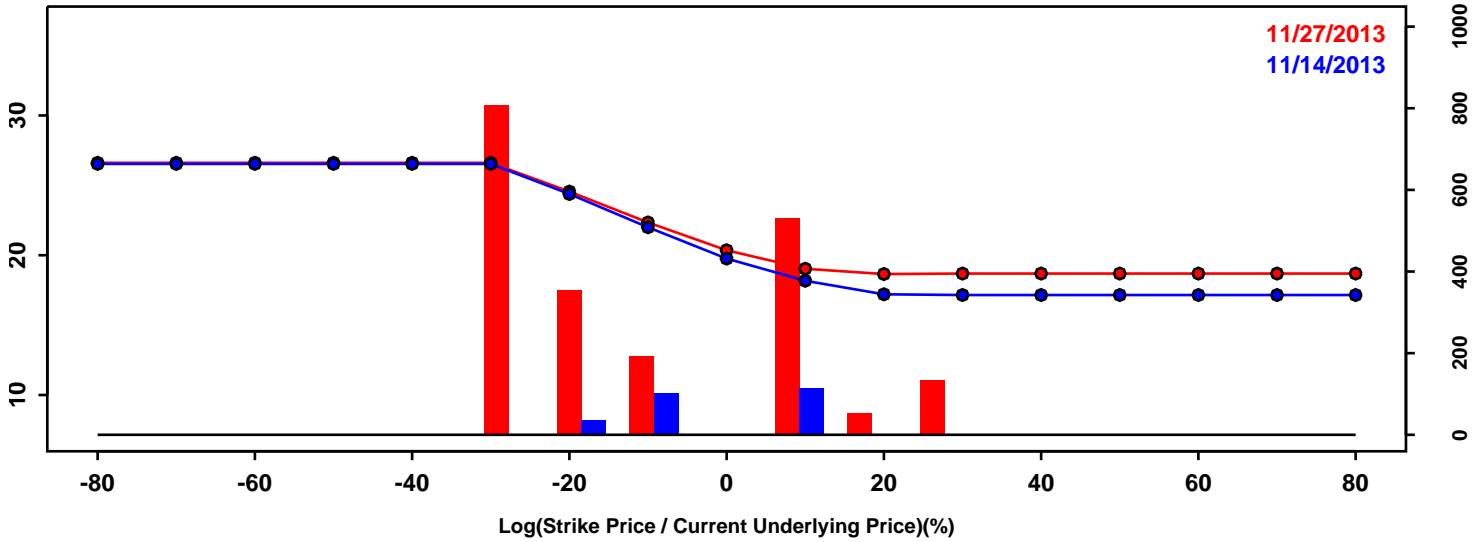


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-24.97%	-23.93%	1.03%
50th Pct	0.89%	0.86%	-0.03%
90th Pct	16.27%	16.00%	-0.28%
Mean	-2.10%	-1.93%	0.16%
Std Dev	17.22%	16.77%	-0.45%
Skew	-1.07	-1.07	-0.00
Kurtosis	1.79	1.88	0.10

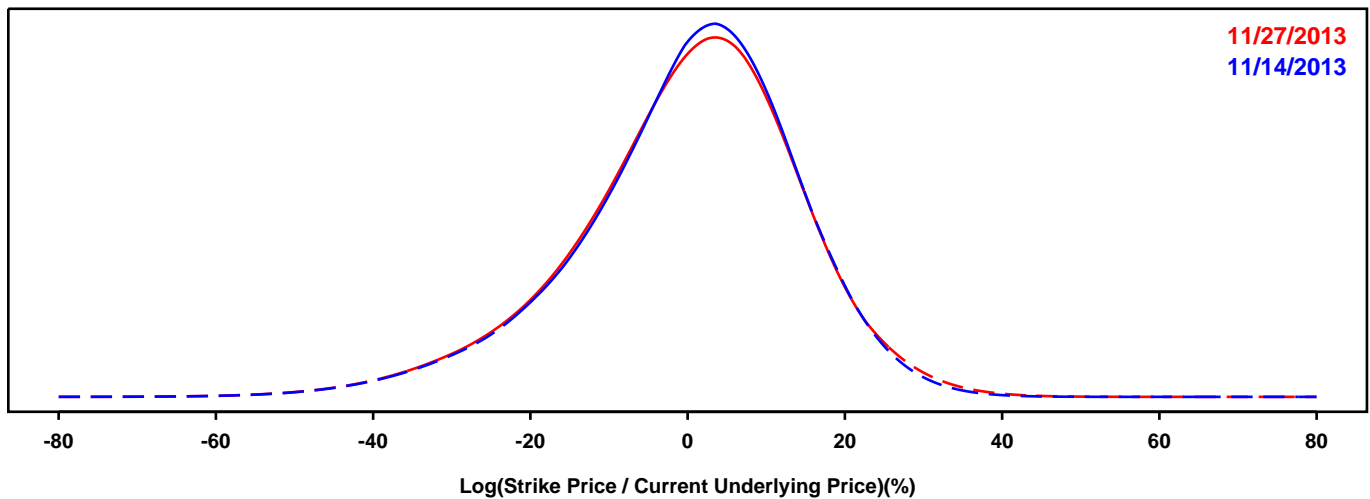
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CRUDE OIL FUTURES (WTI)

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 6 months.

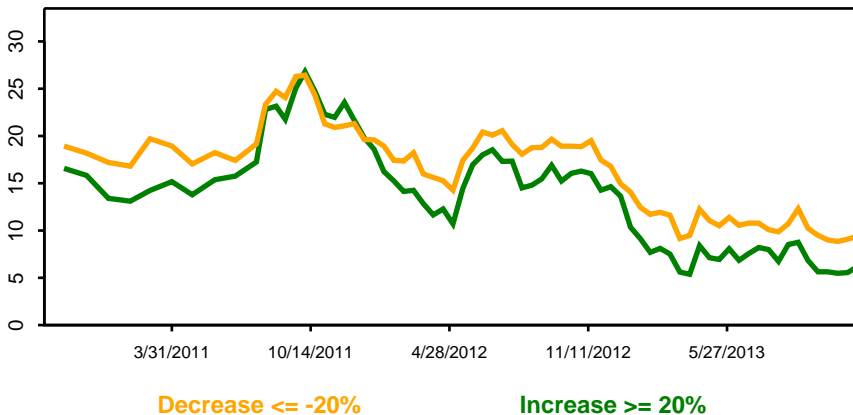
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

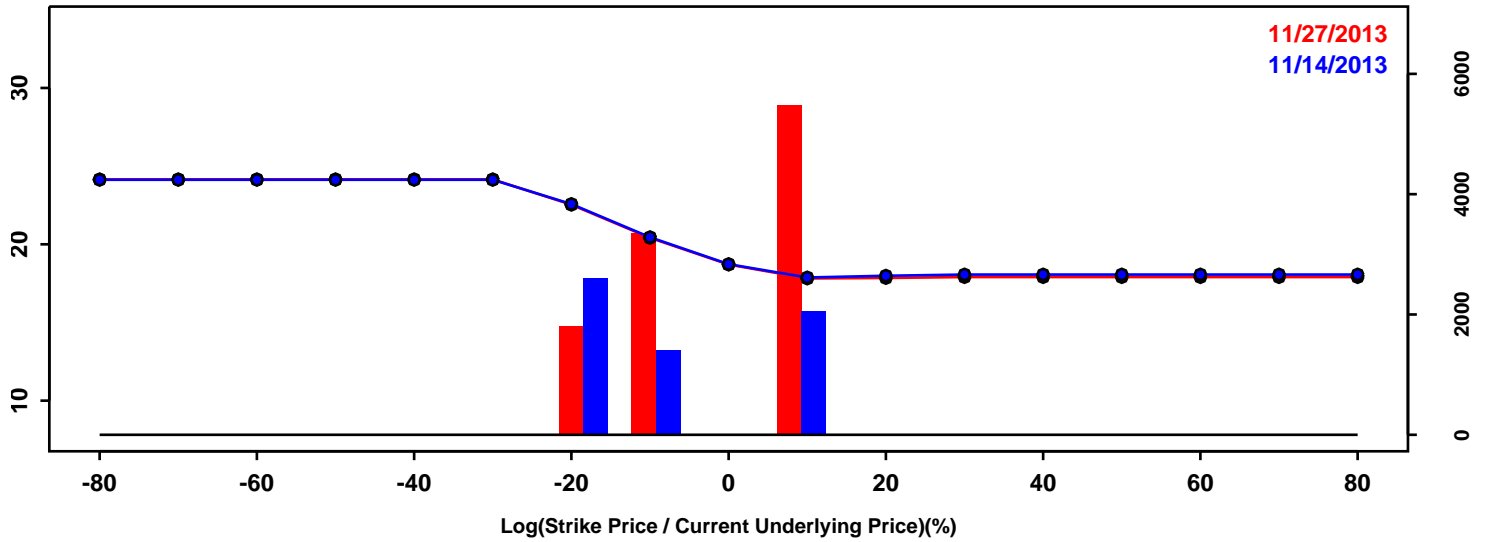


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-18.93%	-19.26%	-0.32%
50th Pct	1.36%	1.22%	-0.14%
90th Pct	16.38%	16.73%	0.35%
Mean	-0.12%	-0.16%	-0.04%
Std Dev	14.21%	14.53%	0.31%
Skew	-0.61	-0.54	0.08
Kurtosis	0.81	0.74	-0.07

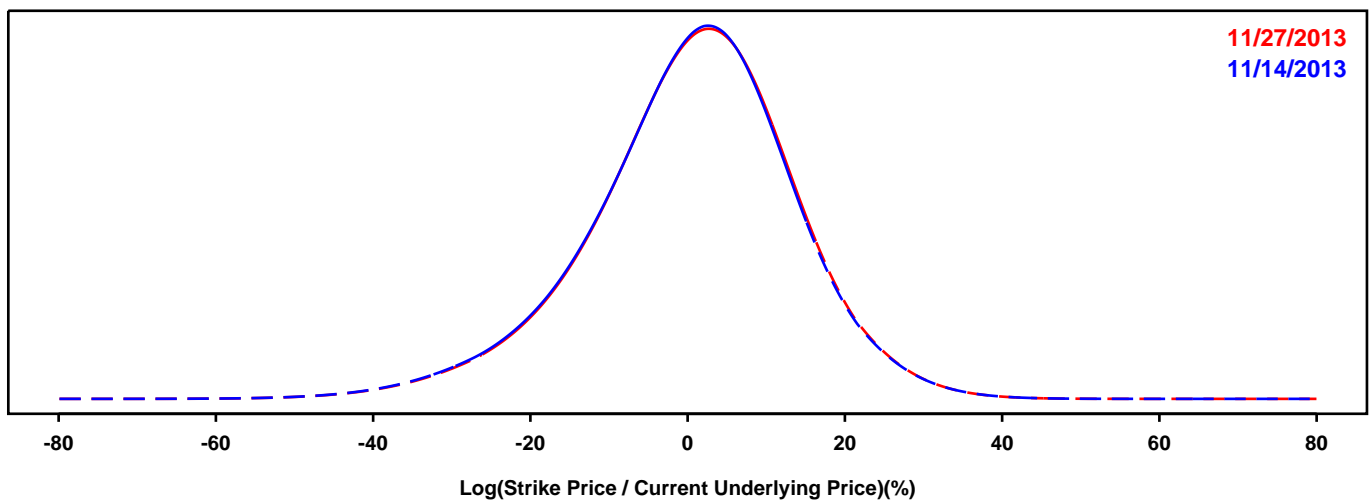
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CRUDE OIL FUTURES (Brent)

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 6 months.

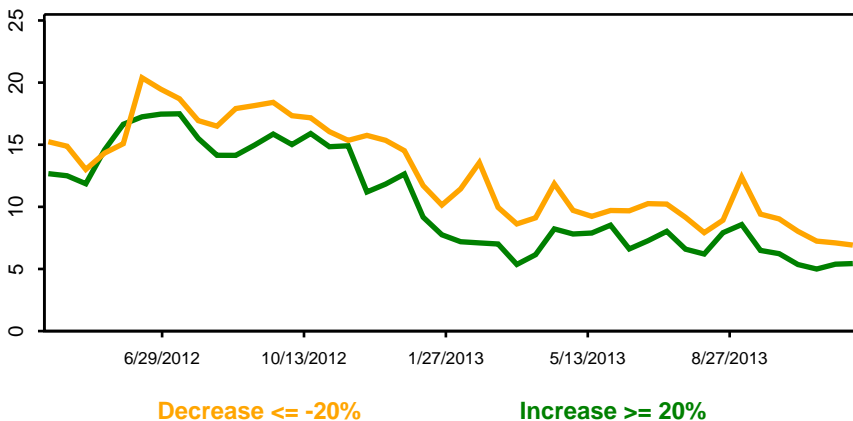
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

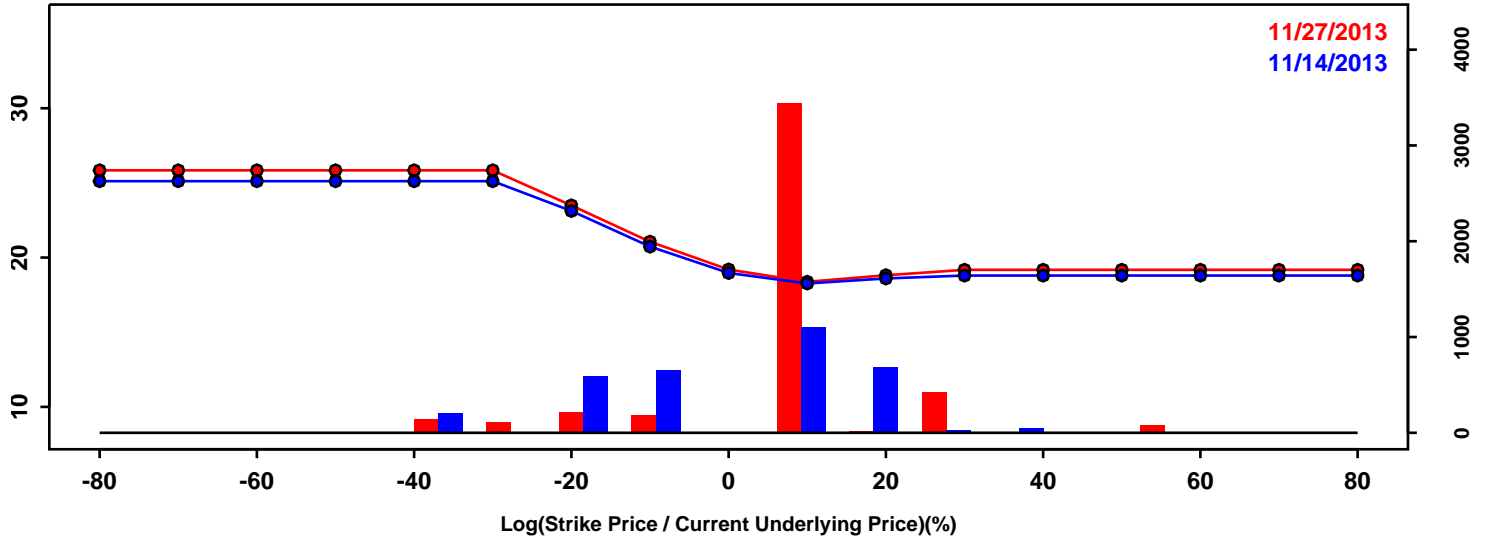


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-16.79%	-16.50%	0.29%
50th Pct	1.23%	1.33%	0.10%
90th Pct	15.98%	16.08%	0.10%
Mean	0.31%	0.47%	0.17%
Std Dev	13.22%	13.18%	-0.05%
Skew	-0.42	-0.42	0.00
Kurtosis	0.71	0.70	-0.01

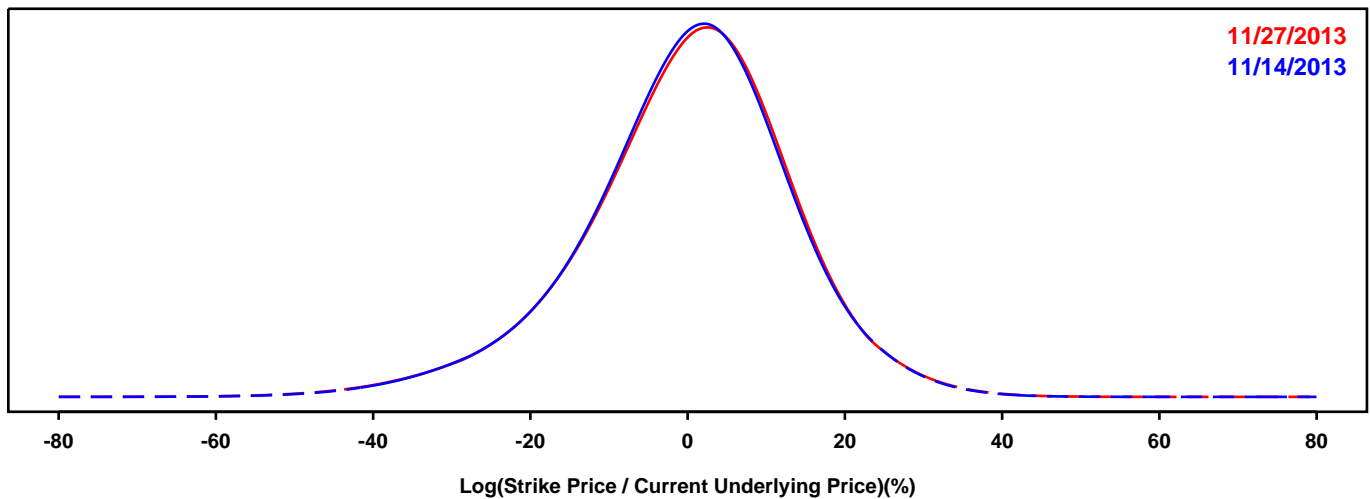
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- GOLD FUTURES

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 6 months.

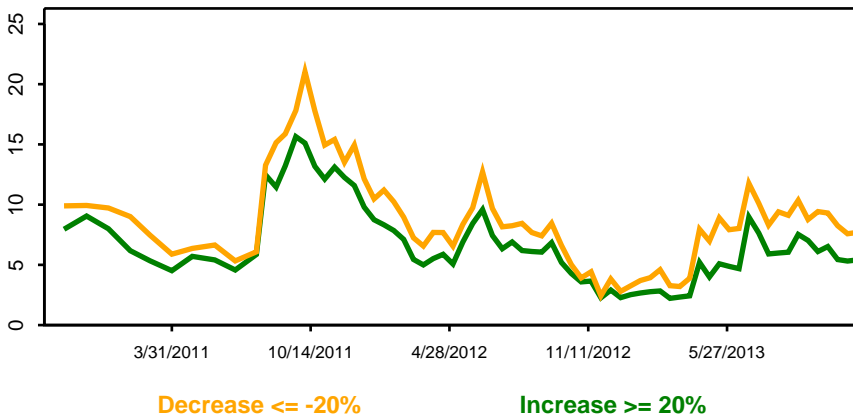
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

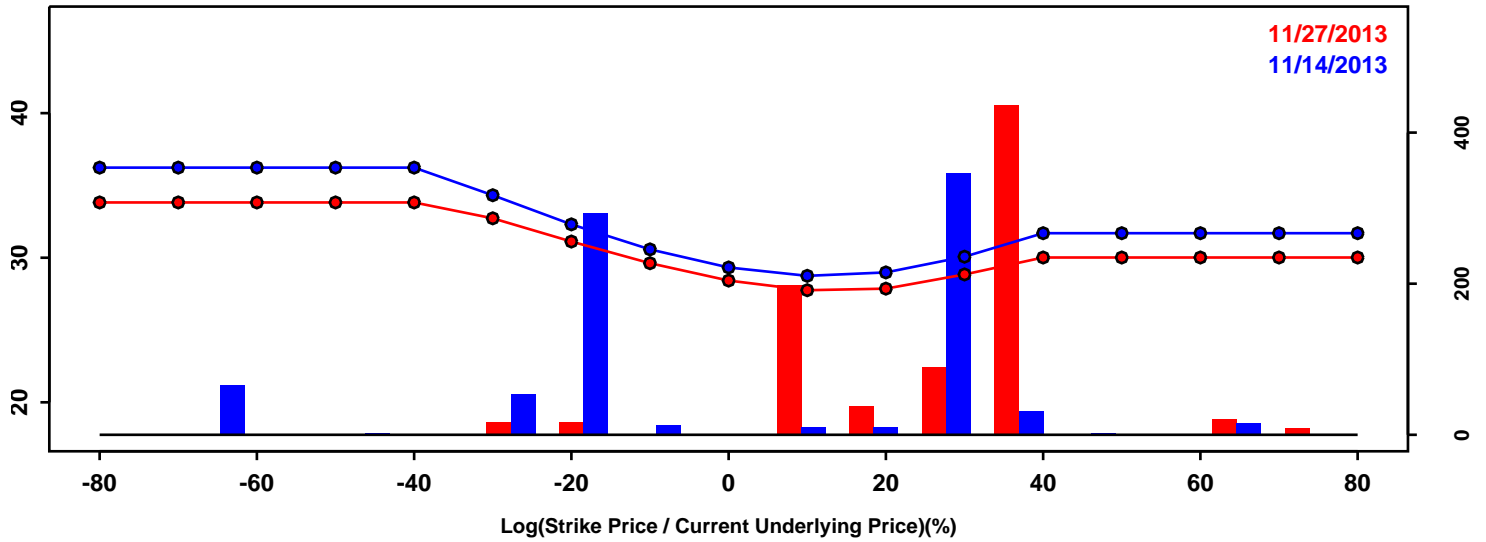


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-17.25%	-17.34%	-0.09%
50th Pct	0.78%	0.99%	0.21%
90th Pct	15.76%	15.93%	0.16%
Mean	-0.11%	0.02%	0.13%
Std Dev	13.46%	13.60%	0.14%
Skew	-0.43	-0.46	-0.03
Kurtosis	0.84	0.90	0.06

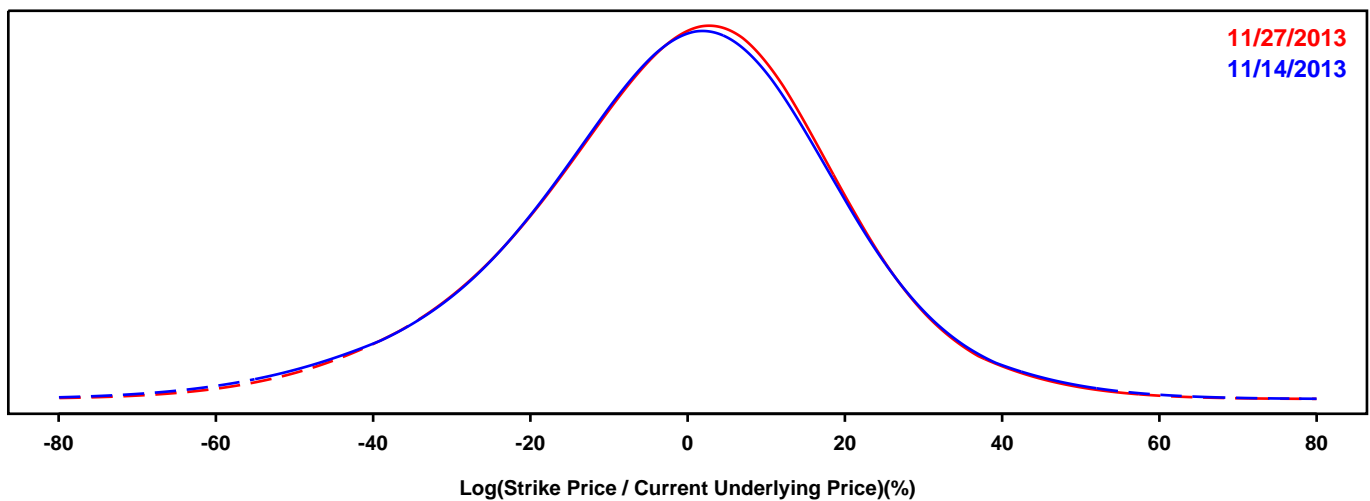
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SILVER FUTURES

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 6 months.

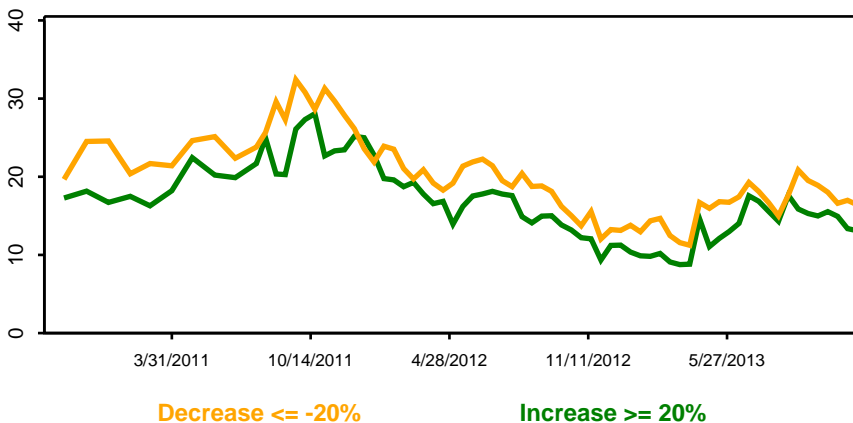
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

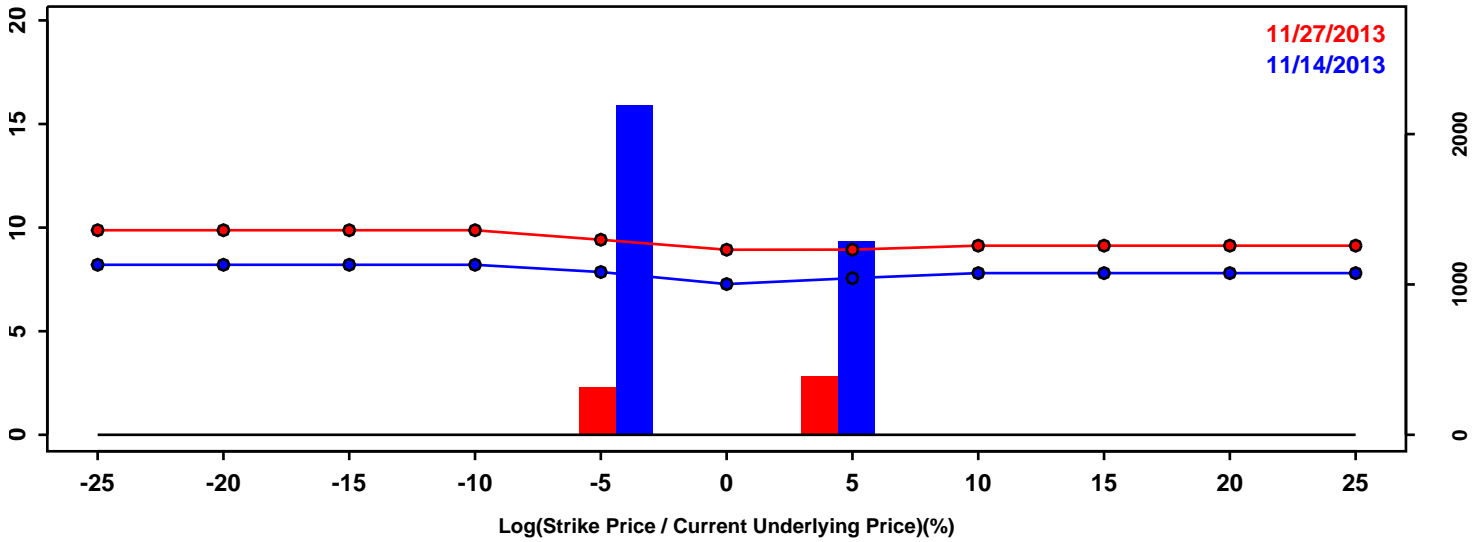


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-28.15%	-27.38%	0.77%
50th Pct	-0.14%	0.15%	0.29%
90th Pct	23.26%	22.94%	-0.31%
Mean	-1.38%	-1.08%	0.29%
Std Dev	20.81%	20.19%	-0.63%
Skew	-0.32	-0.29	0.03
Kurtosis	0.67	0.51	-0.16

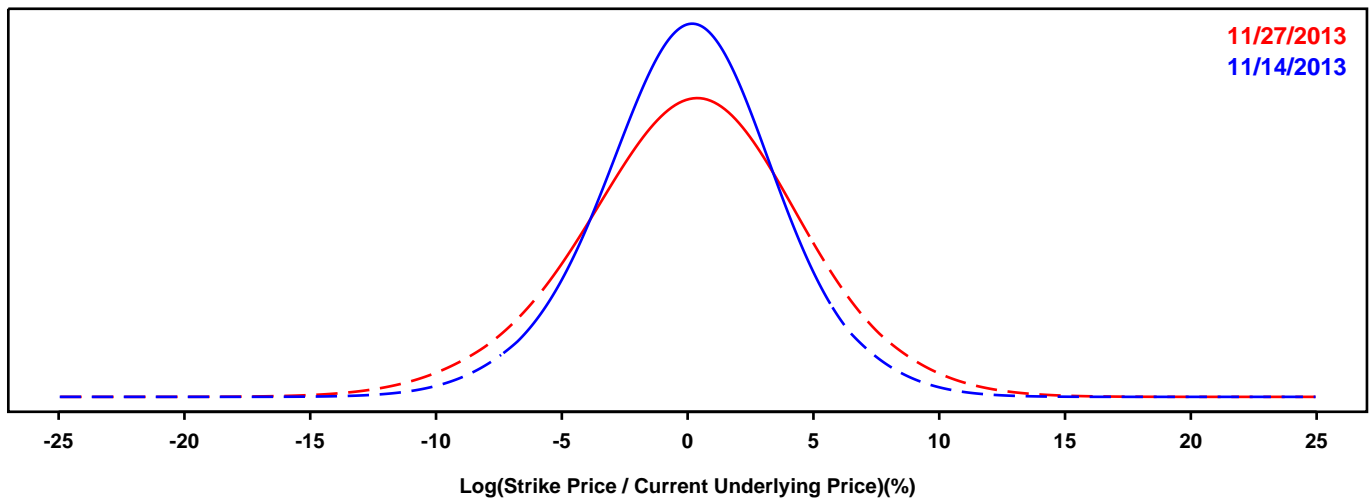
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-EURO EXCHANGE RATE FUTURES

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

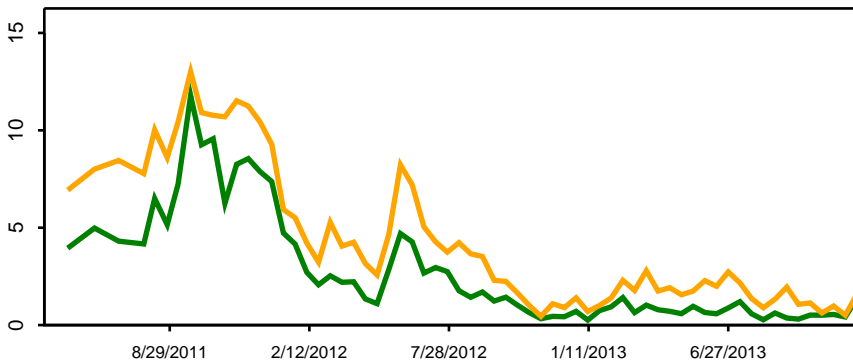
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



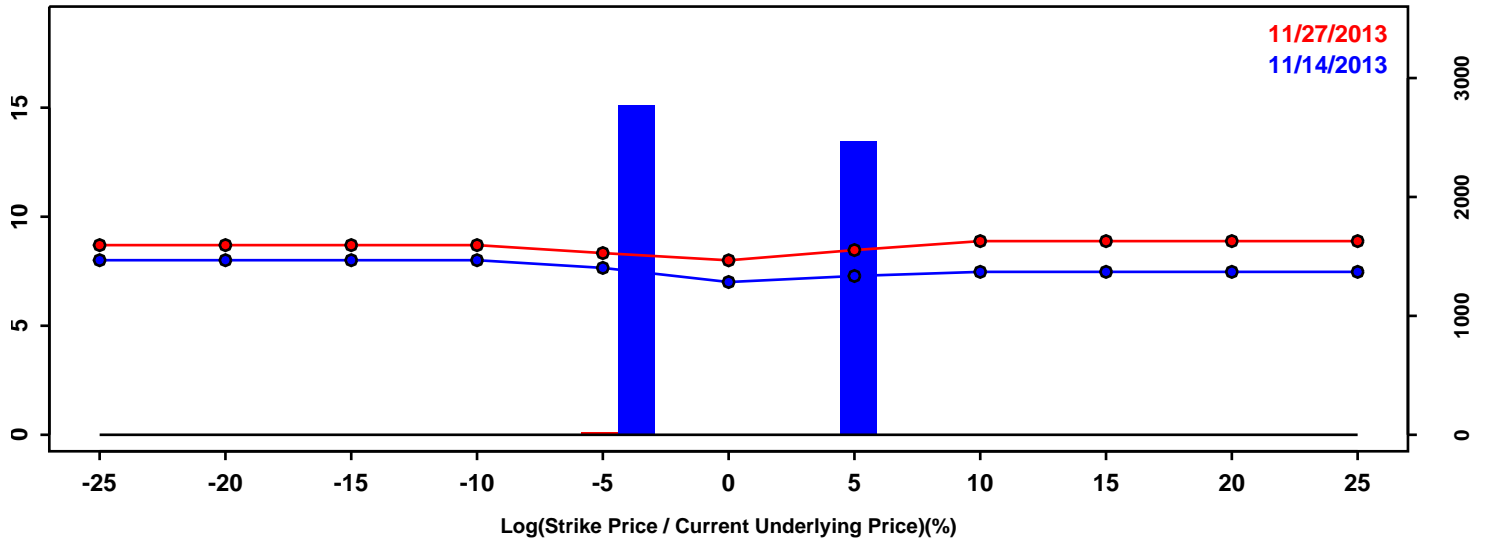
Decrease <= -10% [stronger \$] Increase >= 10% [weaker \$]

Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-4.48%	-5.56%	-1.08%
50th Pct	0.09%	0.29%	0.19%
90th Pct	4.57%	5.75%	1.19%
Mean	0.09%	0.21%	0.11%
Std Dev	3.63%	4.45%	0.83%
Skew	-0.07	-0.10	-0.03
Kurtosis	0.39	0.26	-0.12

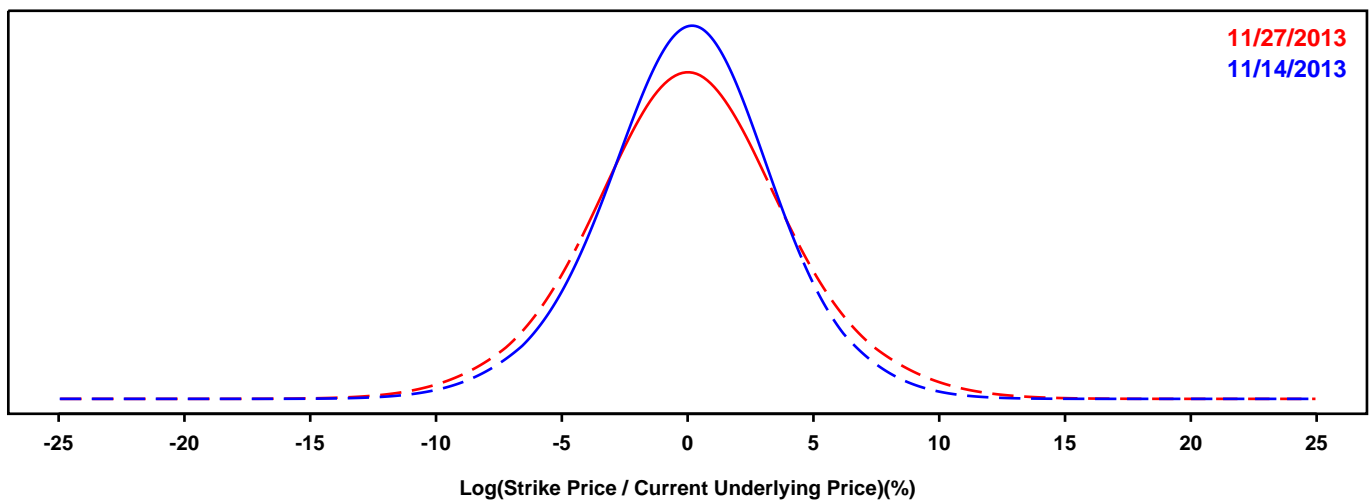
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-POUND EXCHANGE RATE FUTURES

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

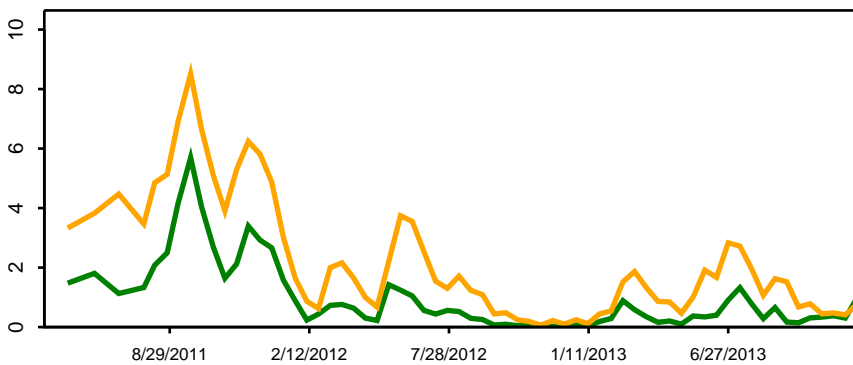
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



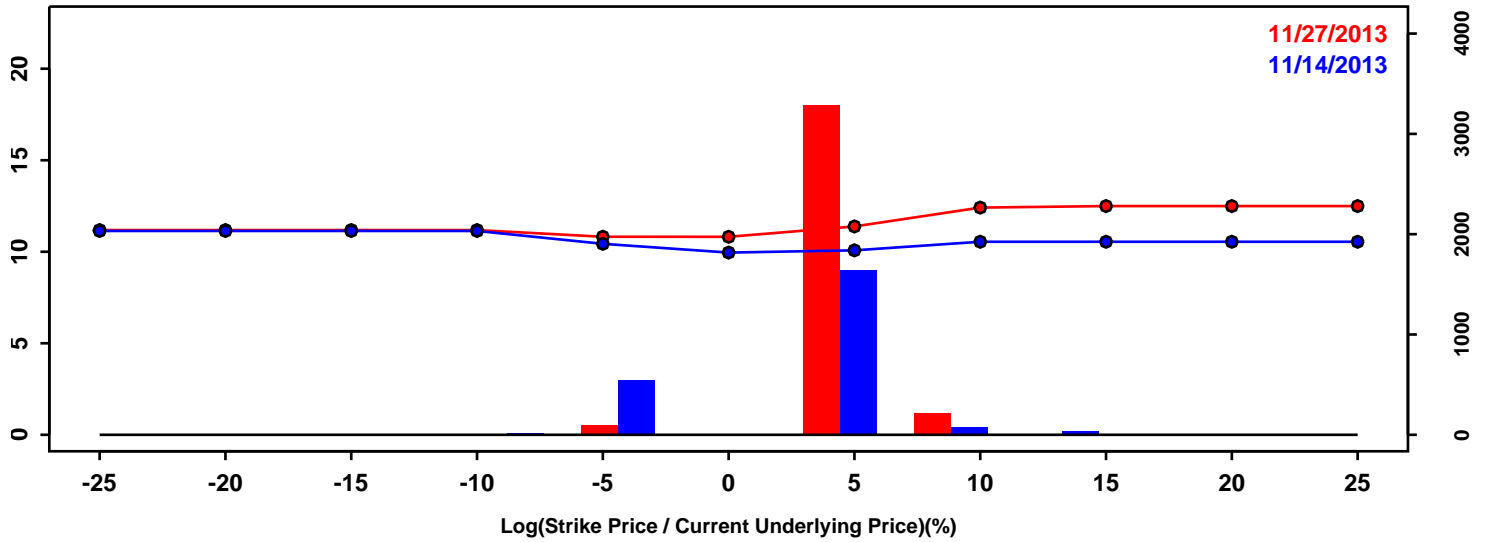
Decrease <= -10% [stronger \$] Increase >= 10% [weaker \$]

Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-4.39%	-4.84%	-0.45%
50th Pct	0.09%	0.00%	-0.09%
90th Pct	4.39%	5.06%	0.67%
Mean	0.09%	0.14%	0.05%
Std Dev	3.49%	3.99%	0.50%
Skew	-0.08	0.04	0.12
Kurtosis	0.41	0.38	-0.02

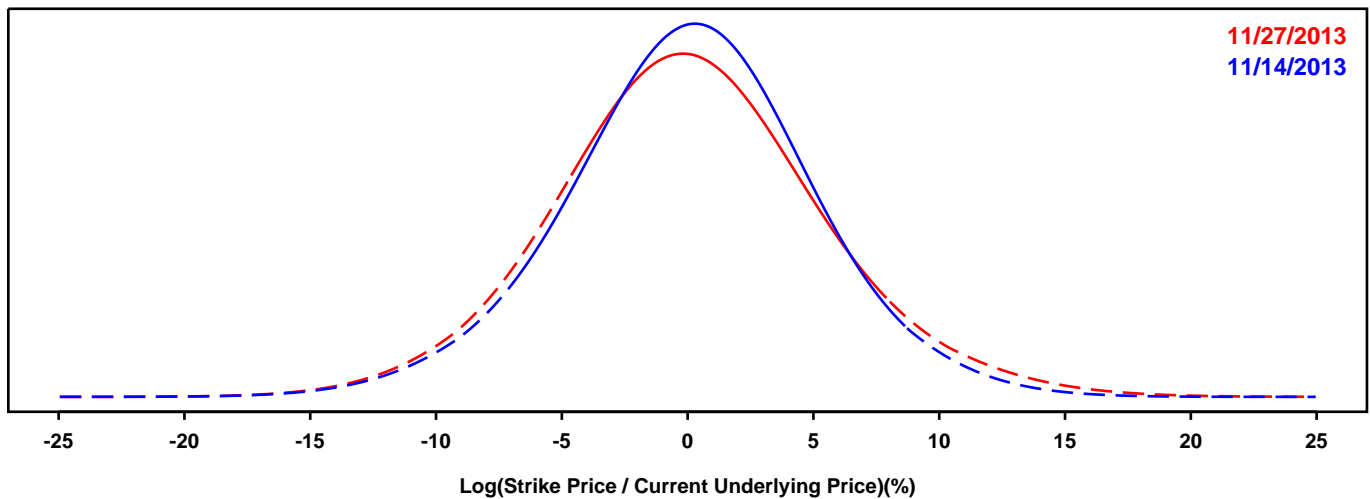
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-YEN EXCHANGE RATE FUTURES

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

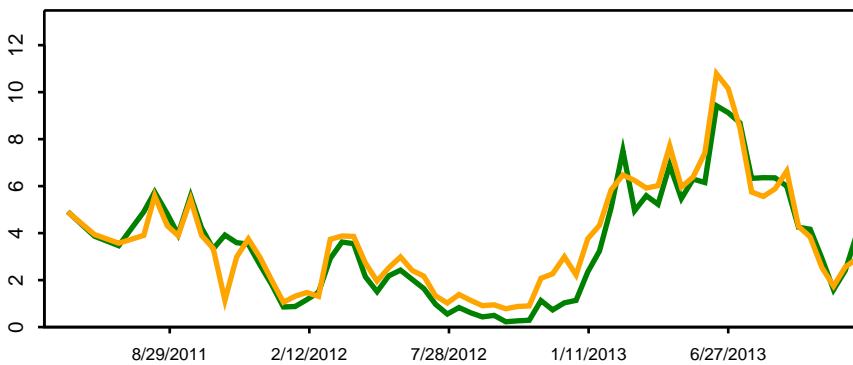
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



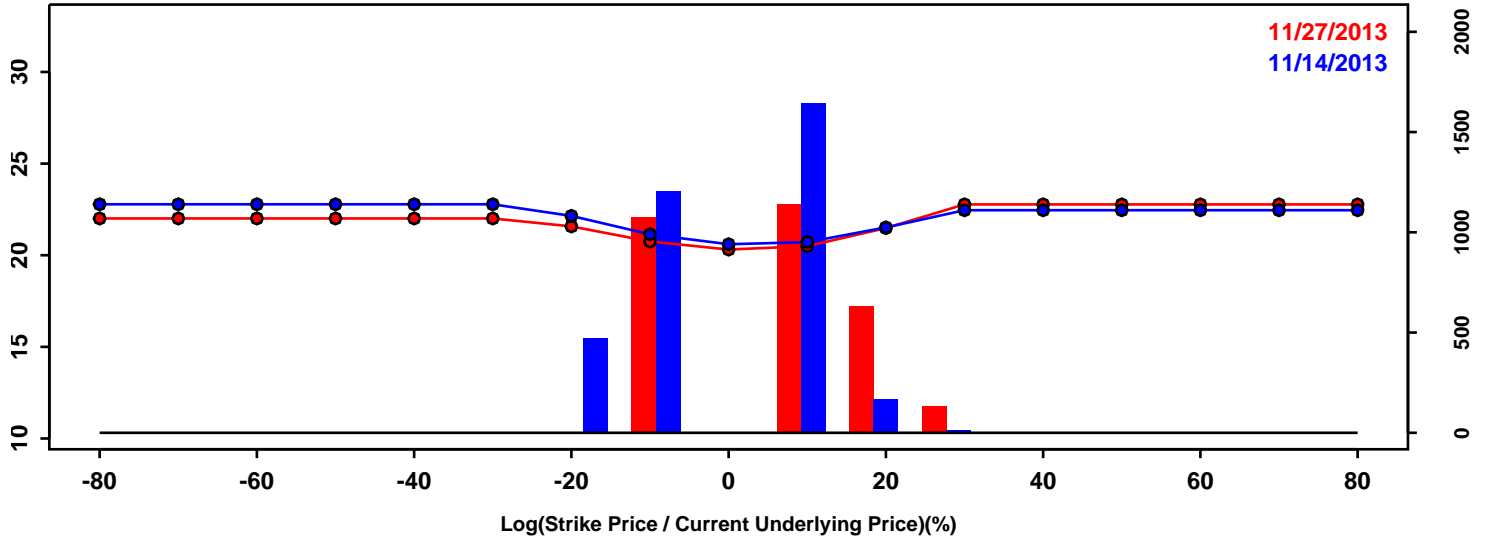
Decrease <= -10% [stronger \$] Increase >= 10% [weaker \$]

Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-6.15%	-6.57%	-0.42%
50th Pct	0.18%	0.00%	-0.18%
90th Pct	6.24%	7.00%	0.76%
Mean	0.14%	0.17%	0.03%
Std Dev	4.96%	5.40%	0.44%
Skew	-0.08	0.14	0.21
Kurtosis	0.35	0.38	0.03

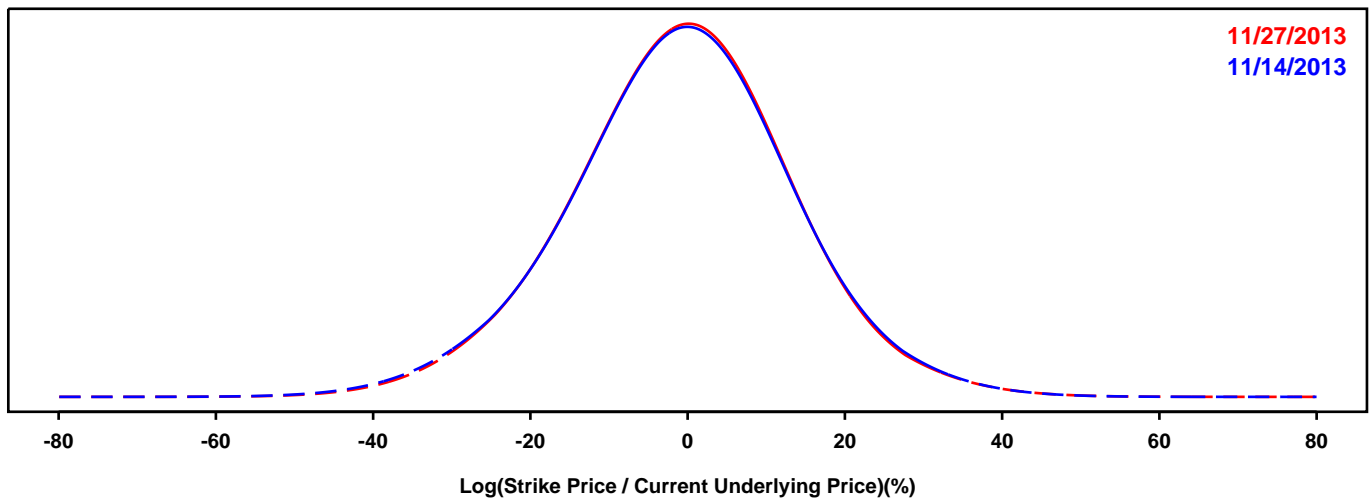
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CORN FUTURES

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 6 months.

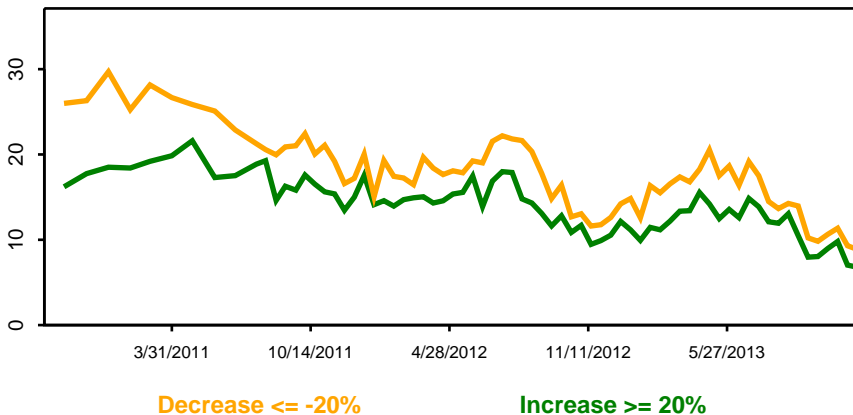
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

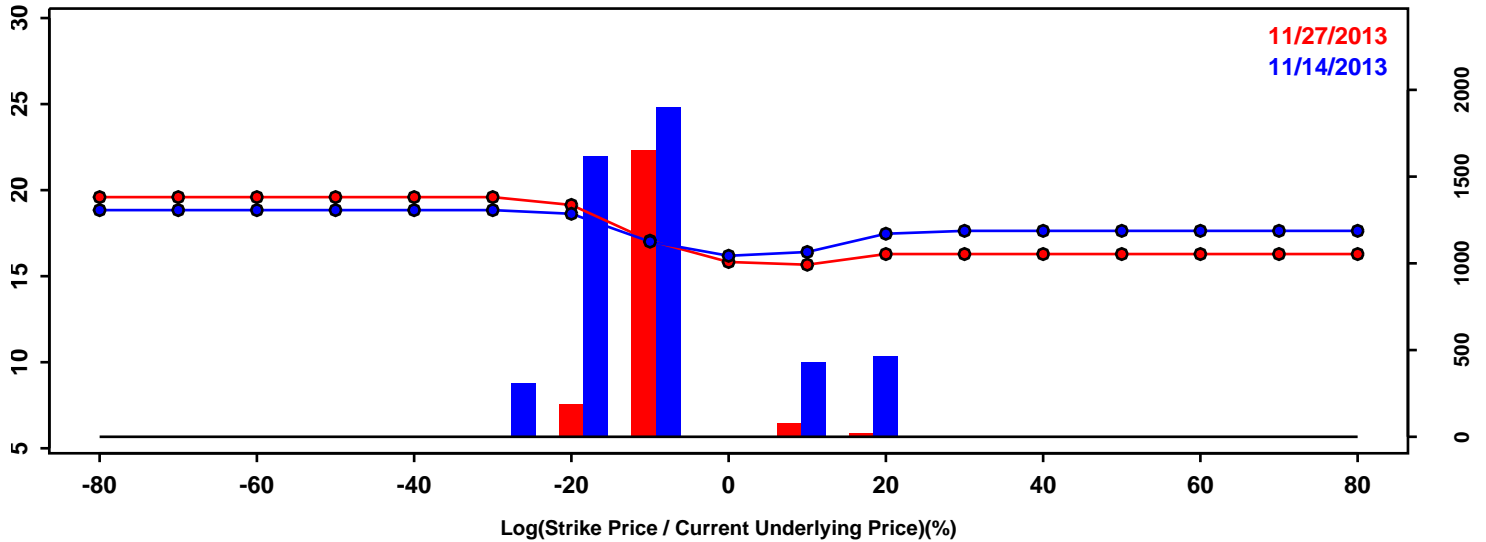


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-19.30%	-18.95%	0.35%
50th Pct	-0.57%	-0.49%	0.07%
90th Pct	17.09%	16.89%	-0.19%
Mean	-0.81%	-0.73%	0.09%
Std Dev	14.53%	14.31%	-0.22%
Skew	-0.08	-0.05	0.03
Kurtosis	0.38	0.37	-0.01

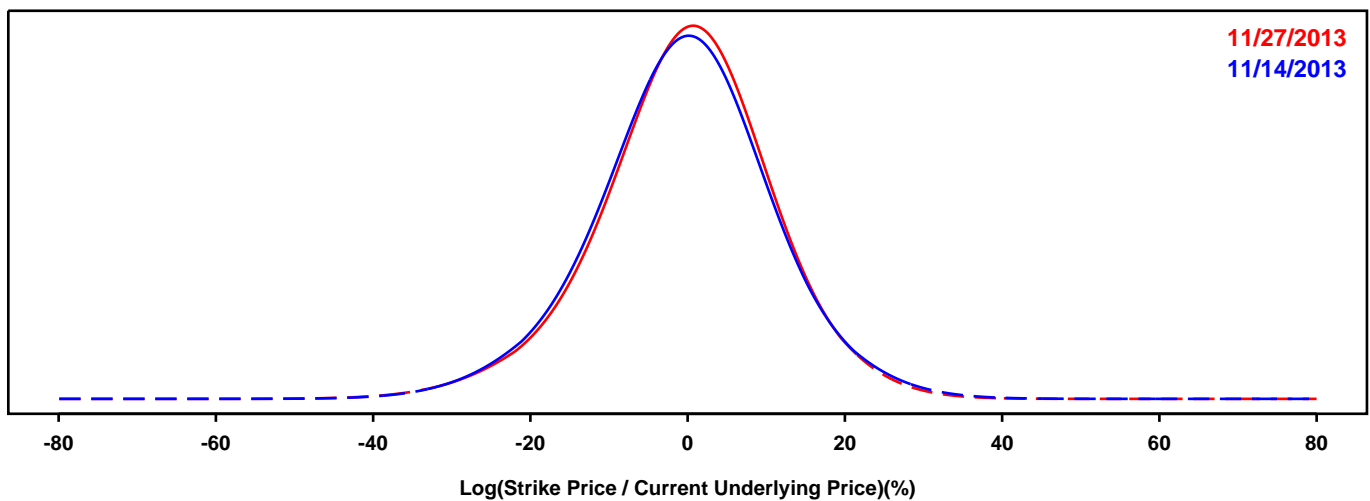
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SOYBEAN FUTURES

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 6 months.

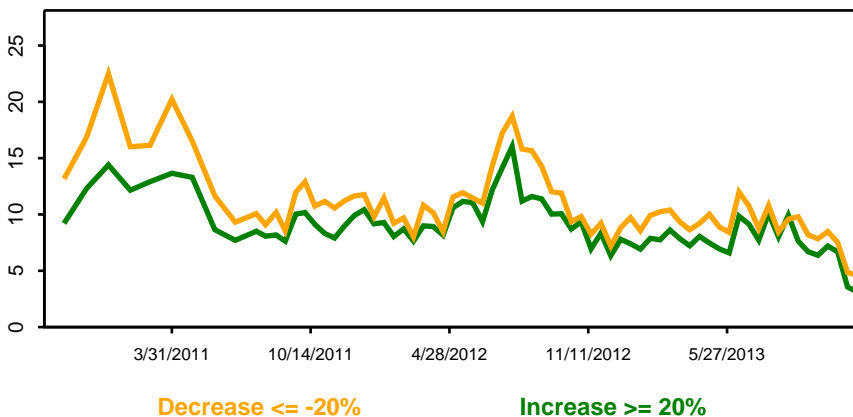
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

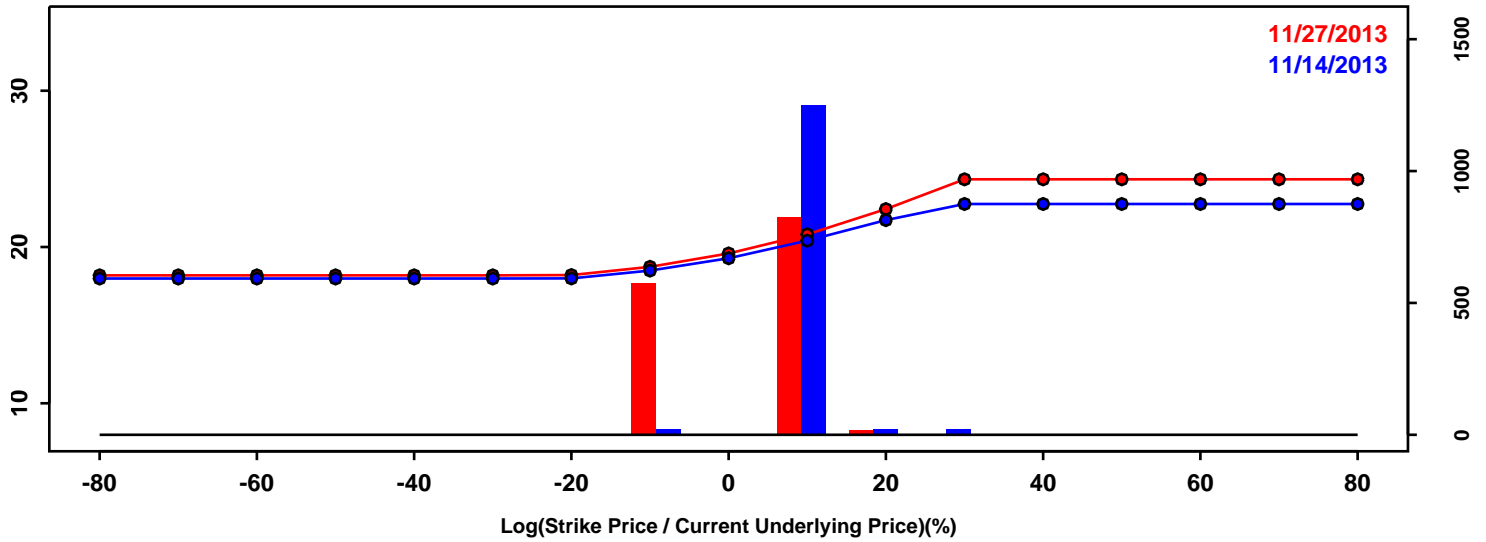


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-14.80%	-14.31%	0.49%
50th Pct	-0.24%	0.15%	0.38%
90th Pct	13.53%	13.37%	-0.16%
Mean	-0.44%	-0.22%	0.23%
Std Dev	11.41%	11.18%	-0.23%
Skew	-0.12	-0.25	-0.13
Kurtosis	0.51	0.60	0.08

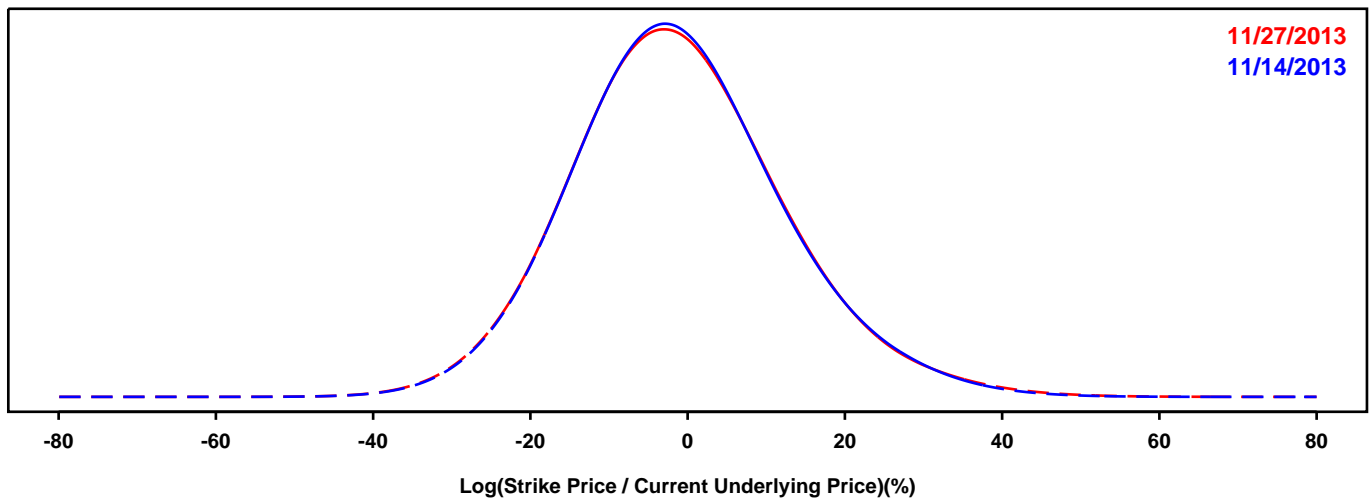
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- WHEAT FUTURES

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 6 months.

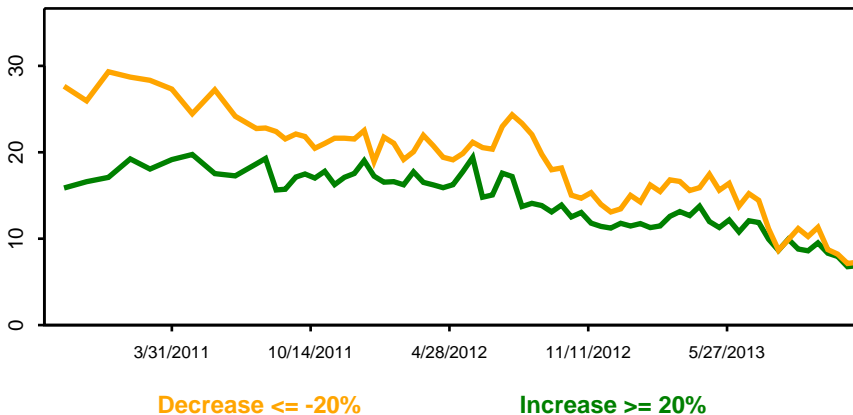
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

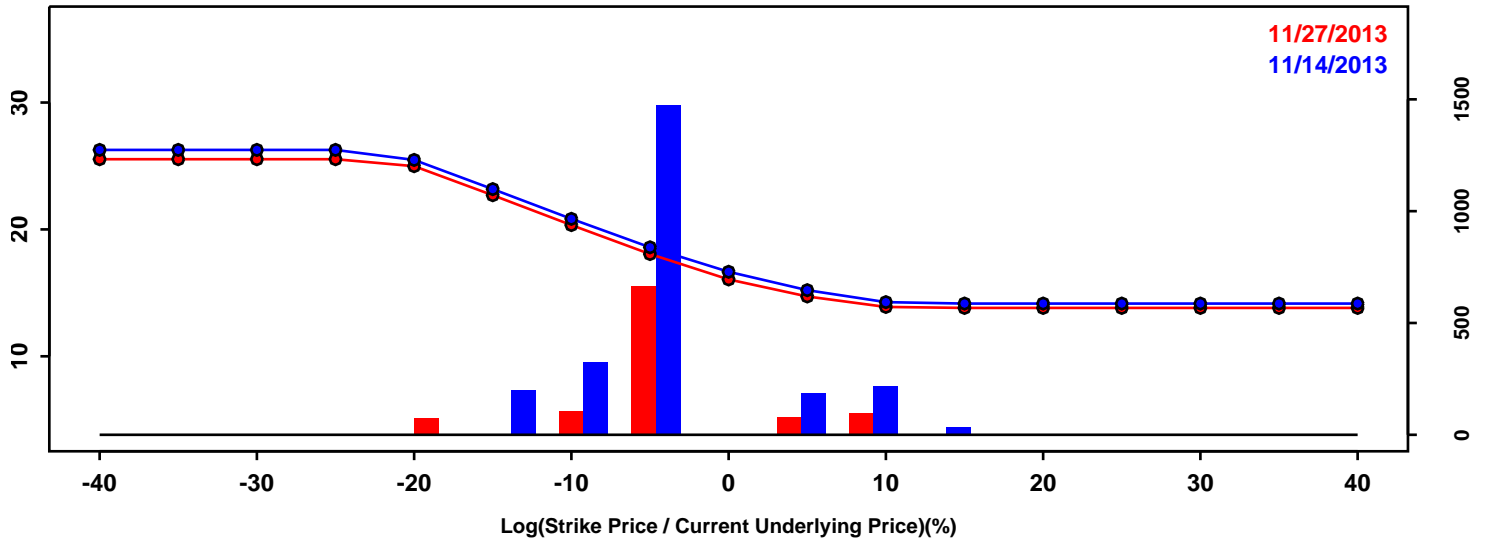


Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-17.72%	-17.85%	-0.12%
50th Pct	-1.76%	-1.74%	0.02%
90th Pct	16.52%	16.64%	0.12%
Mean	-1.05%	-1.01%	0.03%
Std Dev	13.56%	13.75%	0.19%
Skew	0.29	0.32	0.03
Kurtosis	0.32	0.43	0.10

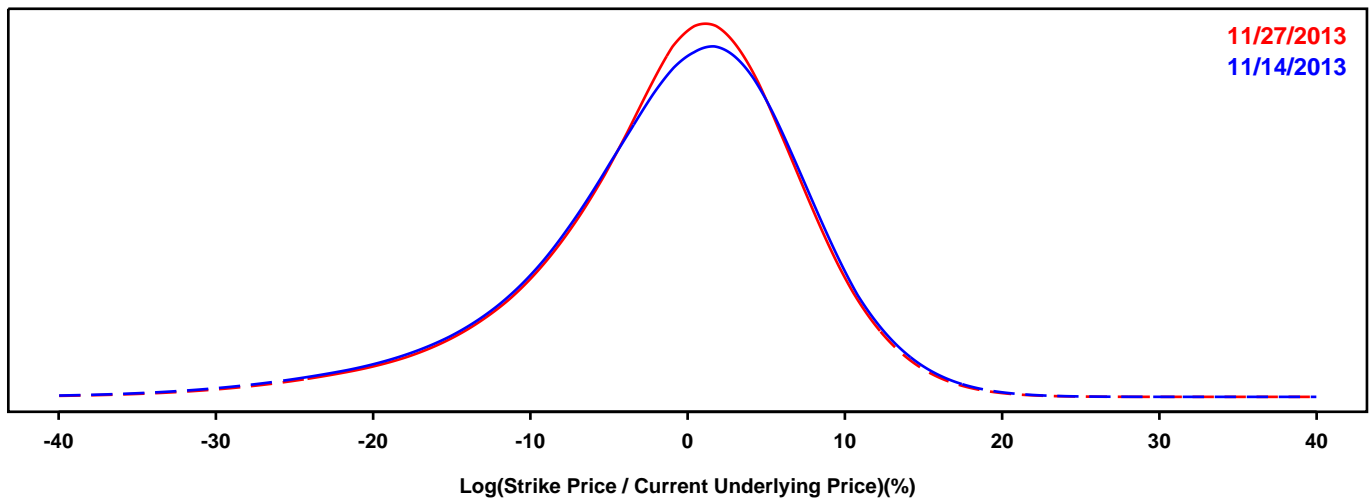
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- iSHARES DOW JONES US REAL ESTATE

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.

Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



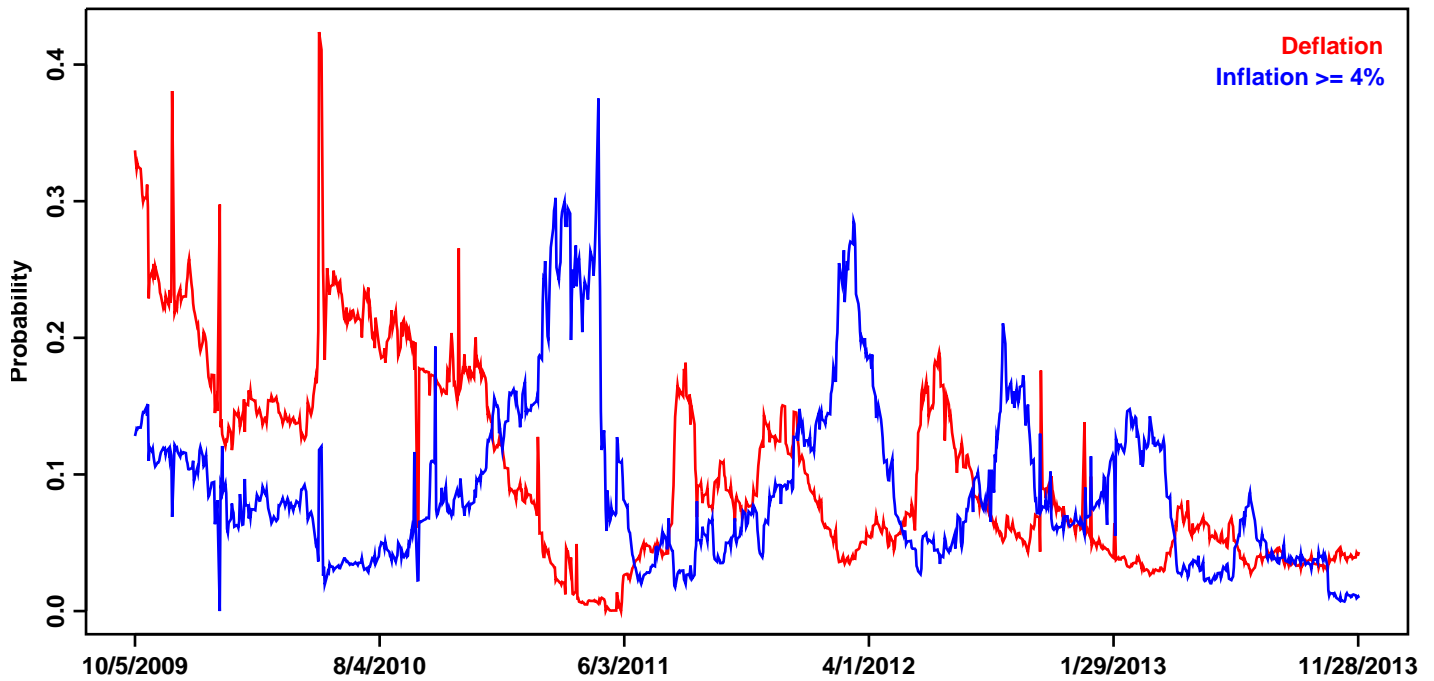
Probability of a Large Change



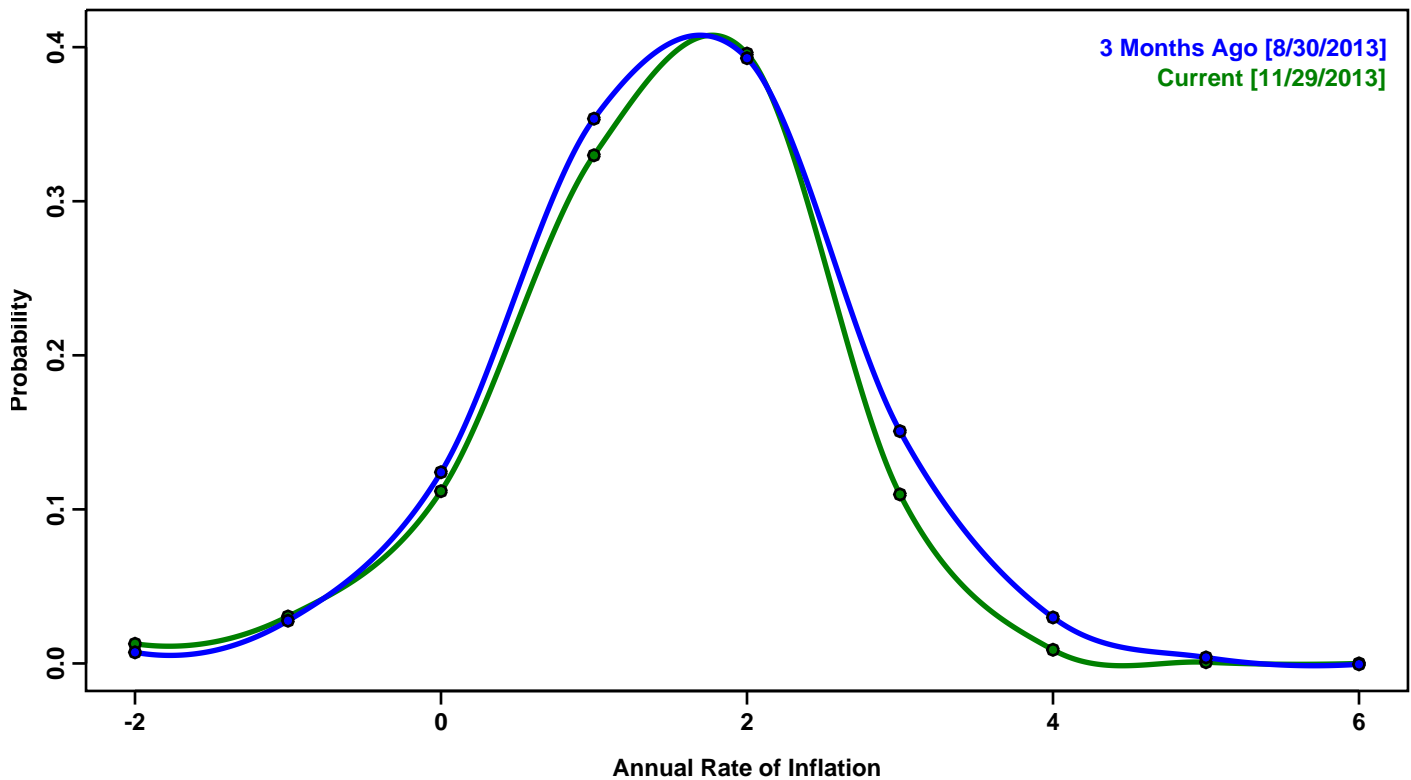
Statistics of the Log Return Distributions			
	11/14/2013	11/27/2013	Change
10th Pct	-12.52%	-12.02%	0.50%
50th Pct	-0.07%	-0.04%	0.04%
90th Pct	8.59%	8.34%	-0.25%
Mean	-1.20%	-1.10%	0.10%
Std Dev	8.78%	8.45%	-0.32%
Skew	-0.87	-0.88	-0.00
Kurtosis	1.54	1.60	0.06

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- Inflation Caps & Floors

Probability of Deflation and High Inflation over the next 12 Months



Risk Neutral Density Function for Inflation over the next 12 Months



RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- Inflation Caps & Floors

Probability of Deflation and High Inflation over the next 5 Years

