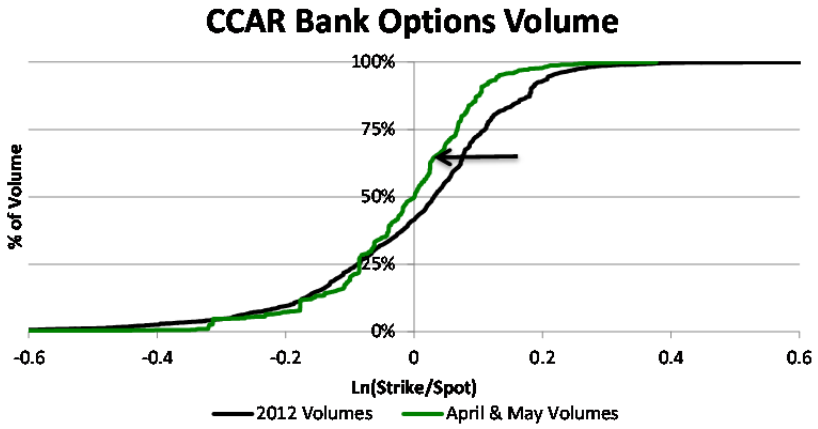
Minneapolis Options Report – May 3rd

Banks
Trading in options on bank stocks was light for US firms. Downside volume percentages jumped as underlying prices rose. Options on PNC and RF stock also had relatively strong activity. RNPD standard deviations fell for every bank we follow relative to our last report. The median RNPD standard deviation for the CCAR firms fell 230 basis points. The CCAR median had been increasing since January but has now retraced.

Two week returns for these firms were quite strong: Median CCAR bank stock rose 5.3%. Shares of C, AXP, COF, FITB, PNC, and RF have drifted higher since their earnings results were made public. As underlying prices have drifted higher, options volumes have shifted to lower strikes.

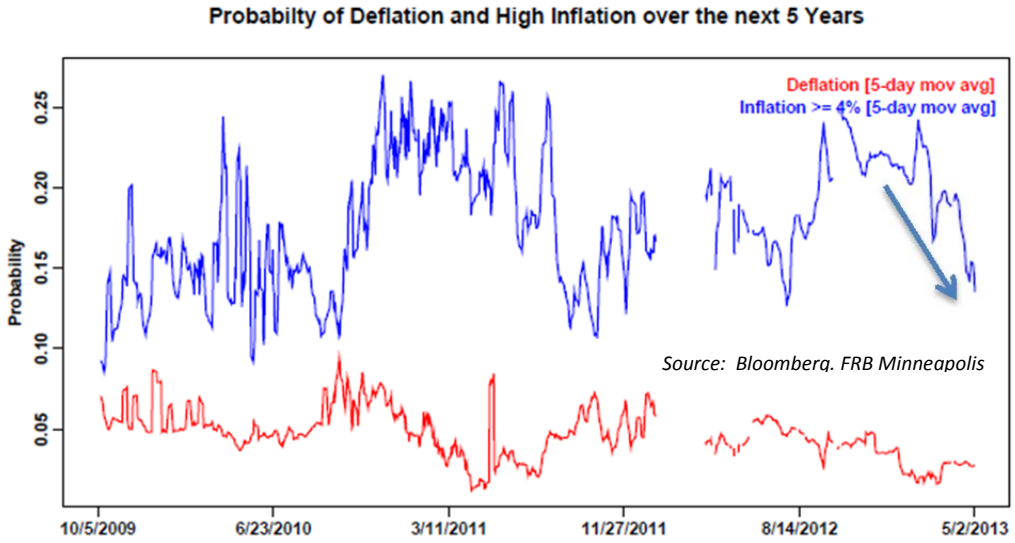


Additional notes:

- Above average trading activity in options on BK stock featured deeply out of the money strikes. The RNPD derived from options on BK stock skewed more negatively. (*See BK report*)
- MS stock was up nearly 10% since our last report and trading was about average. The RNPD skew became more negative in response to the underlying price move. (*See MS report*)
- The volatility smiles for PNC and RF shifted lower on relatively strong trading. (*See PNC and RF reports*)

Other Commodity Markets
Trading was strong again last week in options on the other commodities we follow. Volumes continue to be strong in options on precious metals and exchange rate futures. Options trading jumped in grain markets last week. Trading was below average in options on the S&P 500 index. Tail risks were generally lower relative to two weeks ago as measured by changes in the

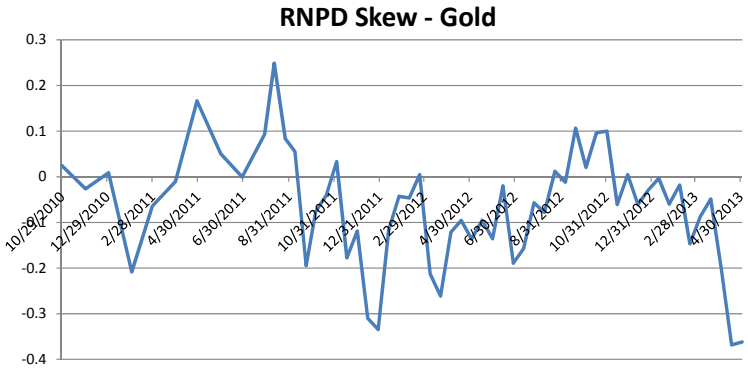
standard deviations of derived RNPDs and risk neutral inflation probabilities continue their decline.



- Risk-neutral probabilities of large upside moves continued to rise in the grain markets. Interestingly, RN probabilities of large downside moves ticked lower. Volumes were notably higher relative to two weeks ago. (*See grain market reports*)

- Bucking the lower tail risk trend, the standard deviation of the RNPD derived from options on corn futures continues to rise. (*See corn report*)

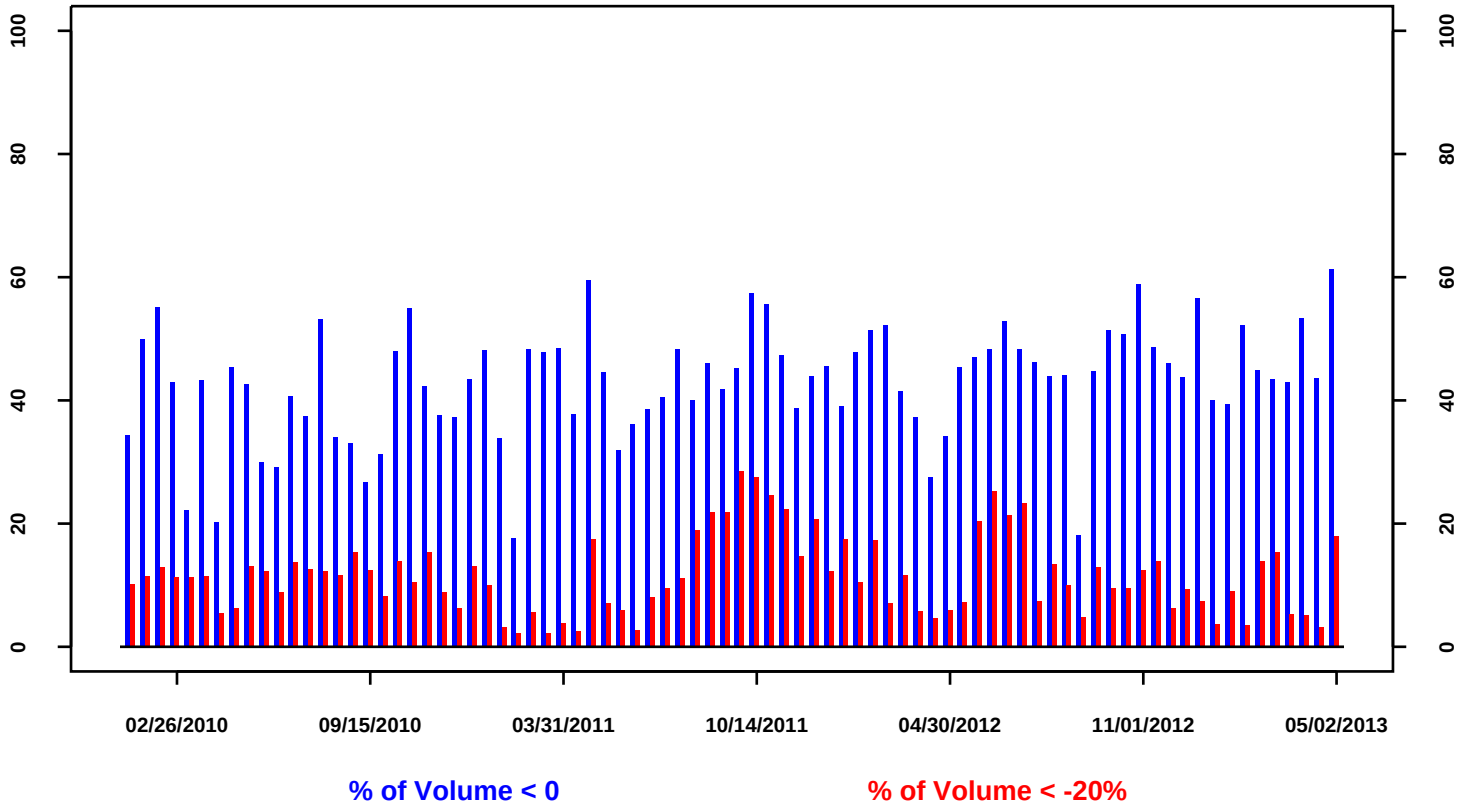
- Gold and Silver spot prices are up relative to two weeks ago, 5.5% and 2.6% respectively. We point out the downward shift in the volatility smile for both commodities. The current downside skew in the Gold RNPD is the most negative we have measured in the past 36 months. (*See Gold and Silver reports*)



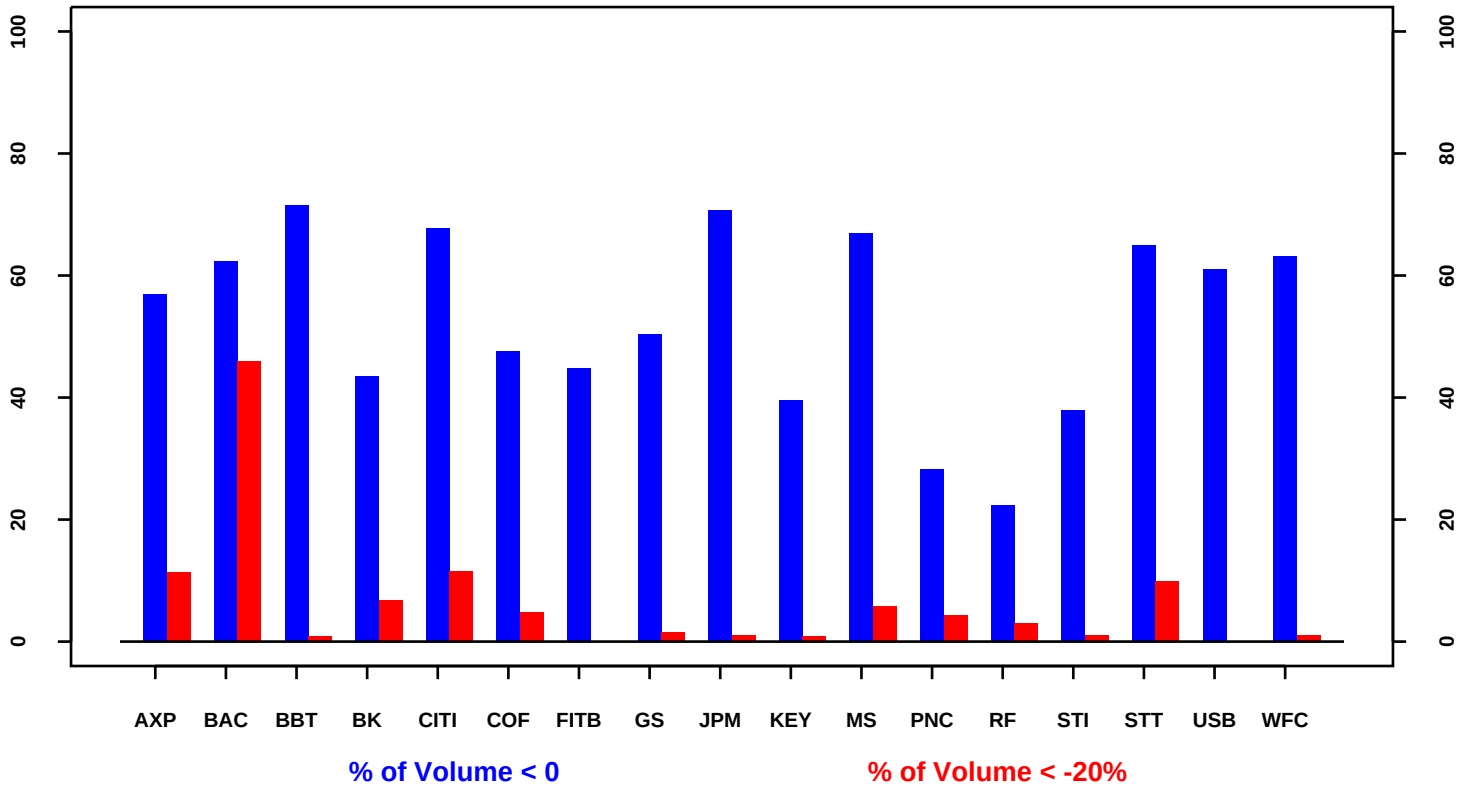
- Statistics from RNPDs derived from options on exchange rate futures remained largely unchanged despite strong trading. (*See exchange rate reports*)

- The DJ Real Estate Index rose another 3% over the past two weeks. Options volumes were very strong. (*See real estate report*)

Aggregate Volumes for Options on CCAR Banks

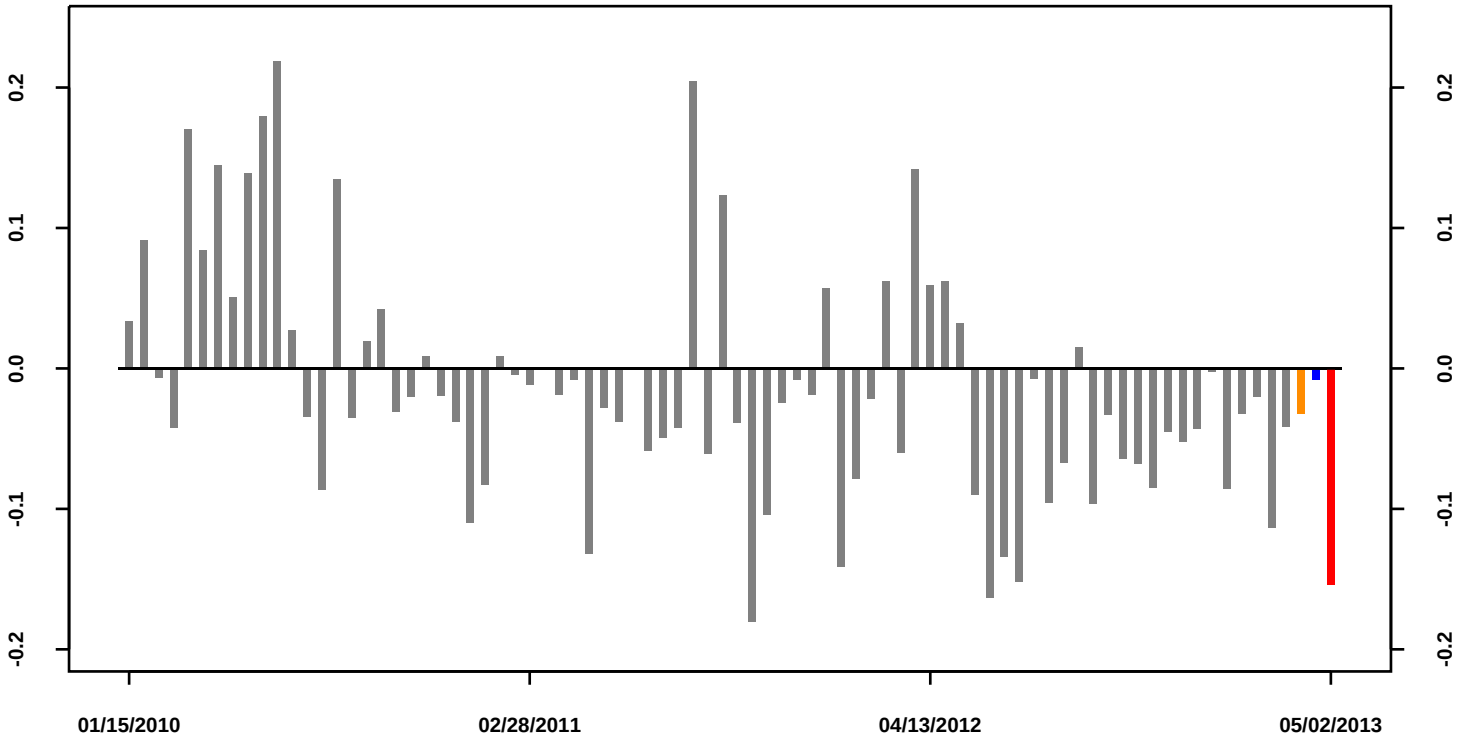


Volumes for Options on CCAR Banks

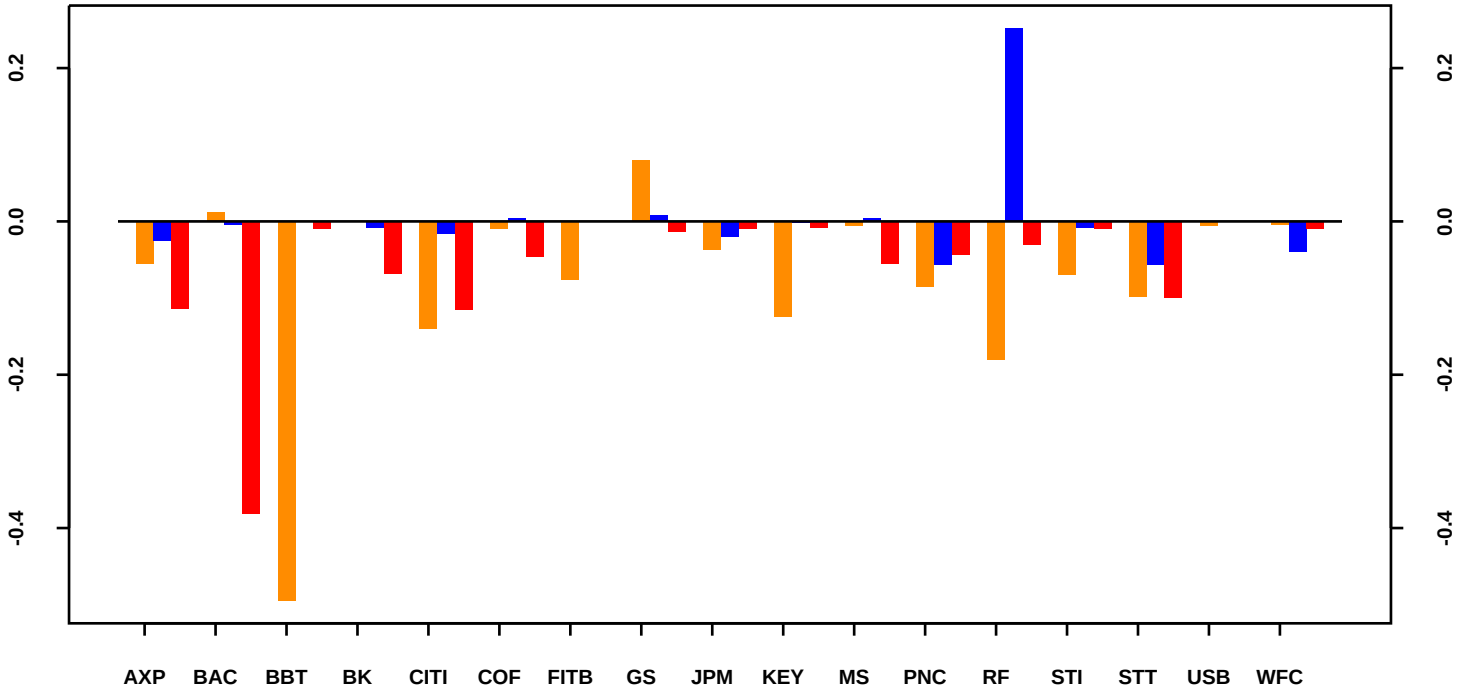


Aggregate Volume Skew--CCAR Banks

(% 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

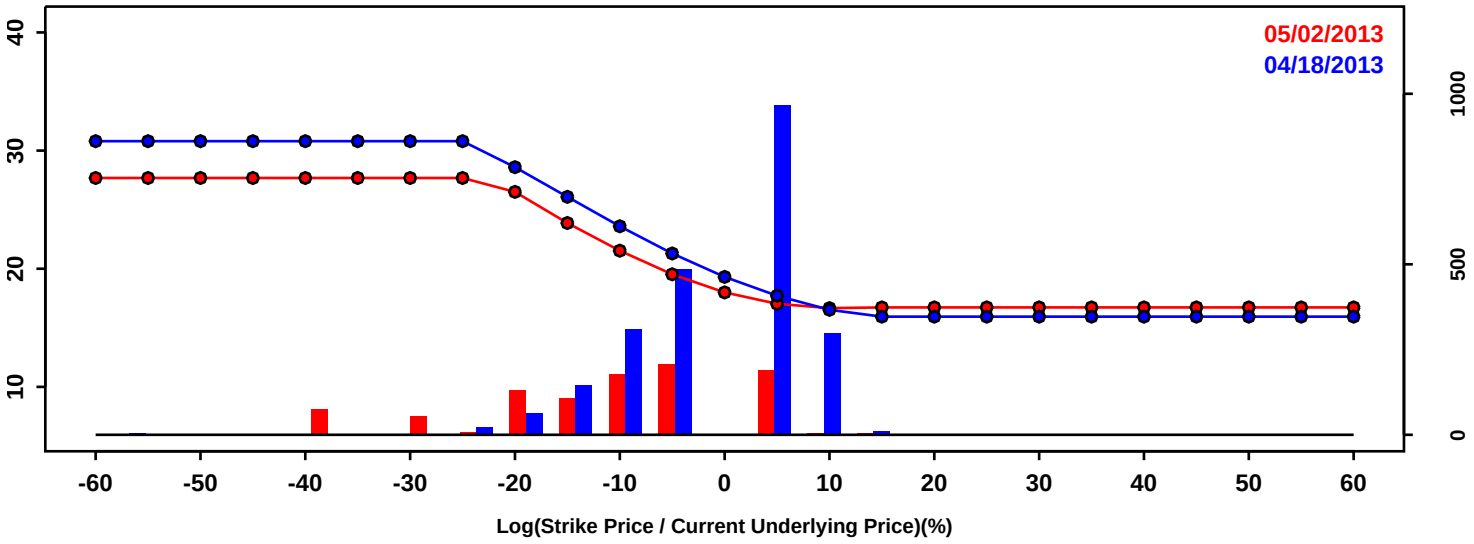


04/04/2013 04/18/2013 05/02/2013

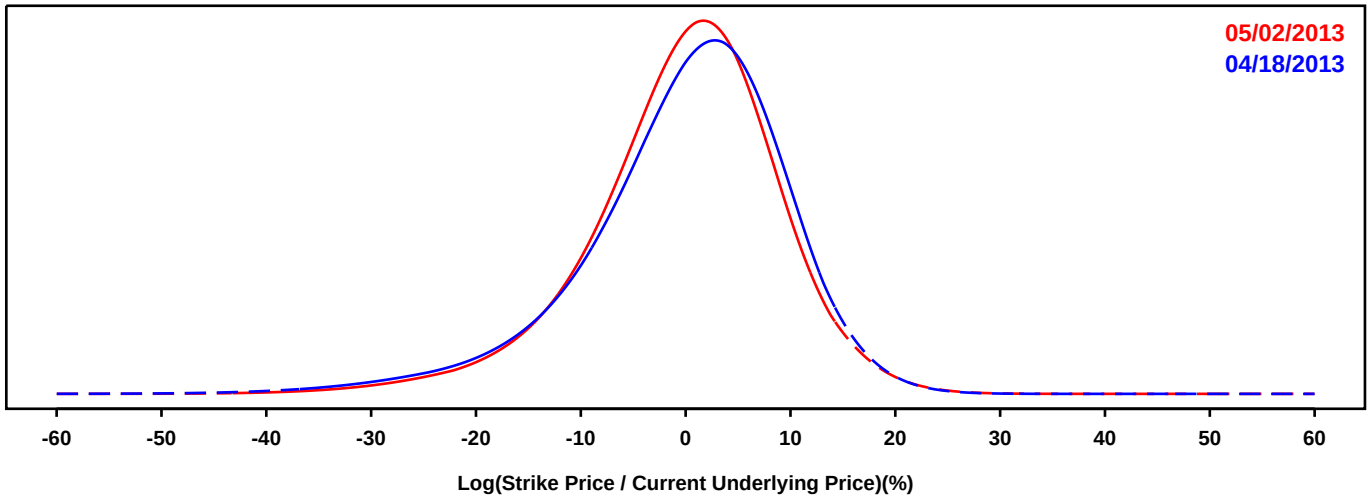
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AMERICAN EXPRESS

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

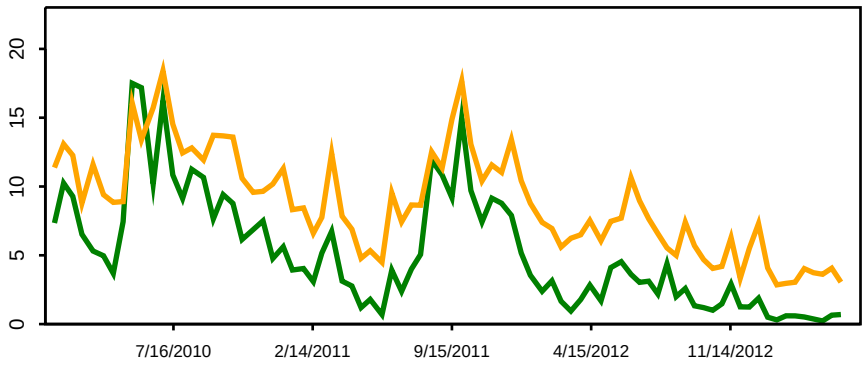
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

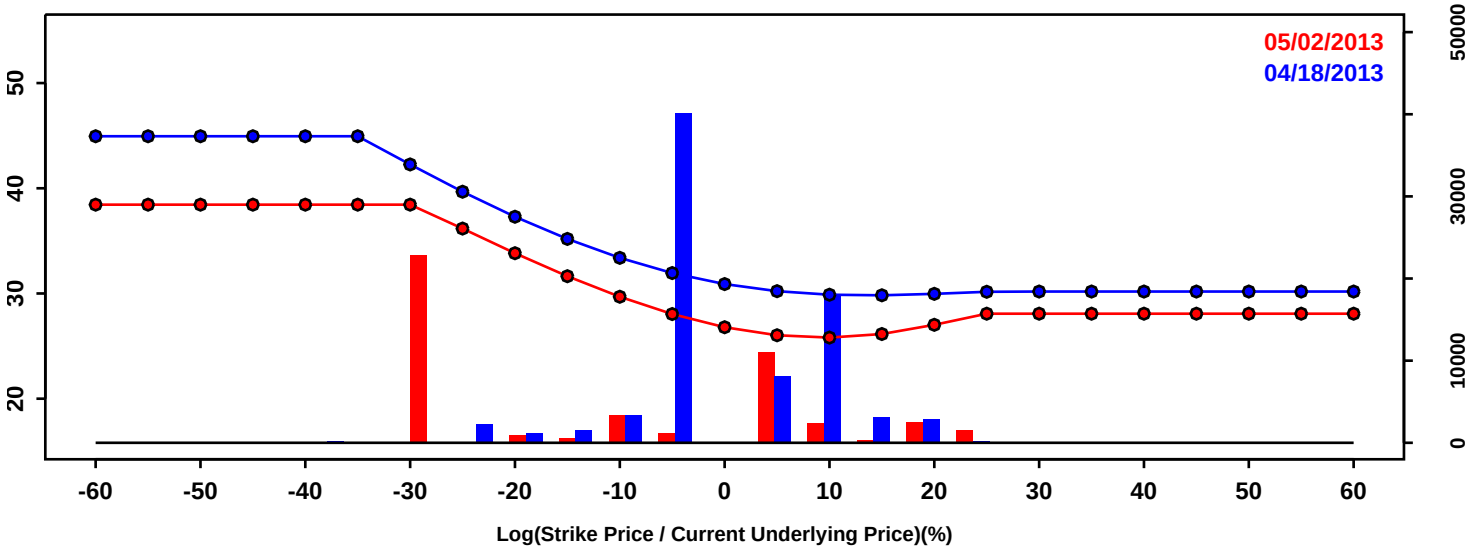
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-12.63%	-11.72%	0.91%
50th Pct	1.06%	0.58%	-0.48%
90th Pct	10.88%	10.26%	-0.62%
Mean	-0.11%	-0.22%	-0.11%
Std Dev	9.84%	9.13%	-0.71%
Skew	-0.88	-0.66	0.22
Kurtosis	1.69	1.36	-0.33

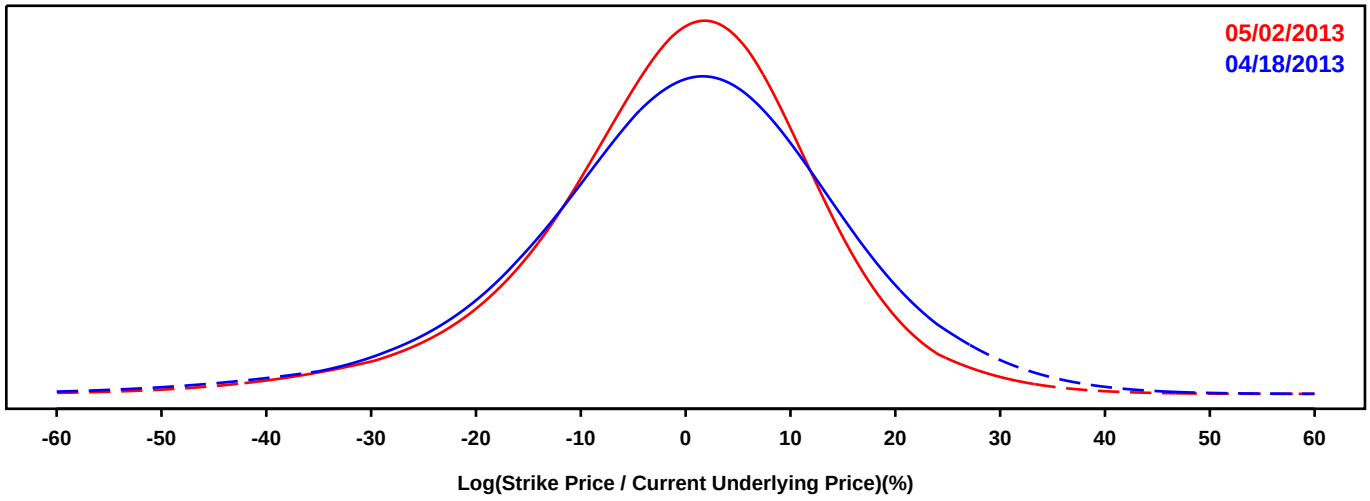
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BANK OF AMERICA

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

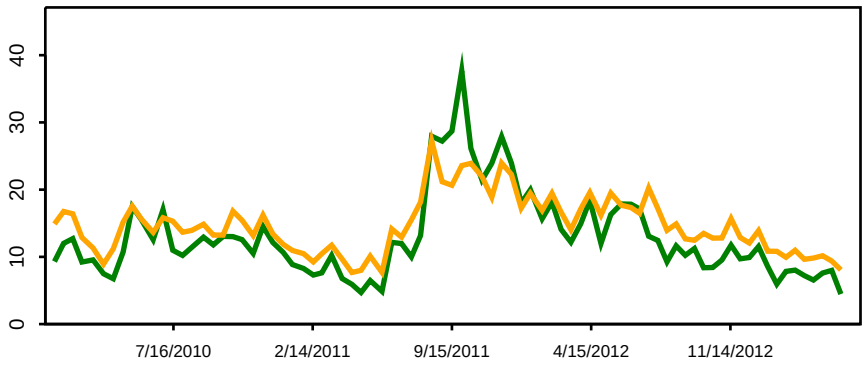
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

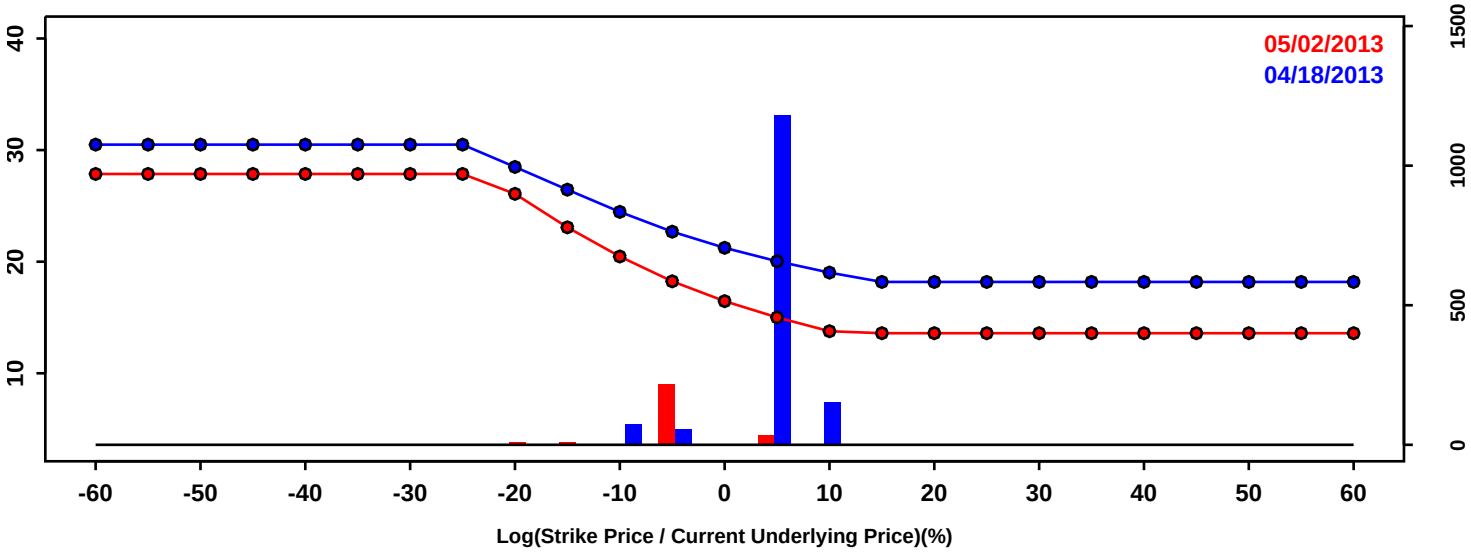
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-19.32%	-17.80%	1.51%
50th Pct	0.64%	0.29%	-0.35%
90th Pct	18.21%	14.82%	-3.39%
Mean	-0.15%	-0.76%	-0.61%
Std Dev	15.45%	13.54%	-1.91%
Skew	-0.46	-0.54	-0.08
Kurtosis	1.10	1.22	0.12

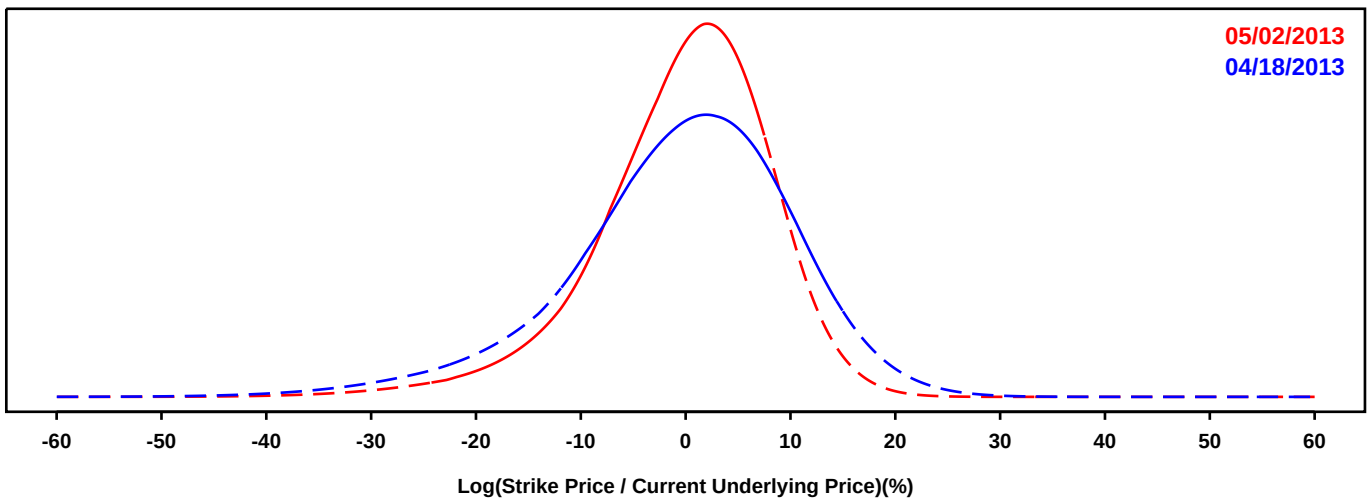
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BB&T

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

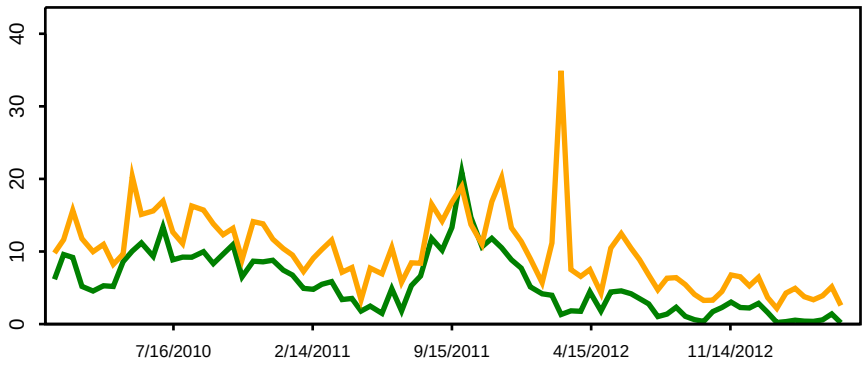
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



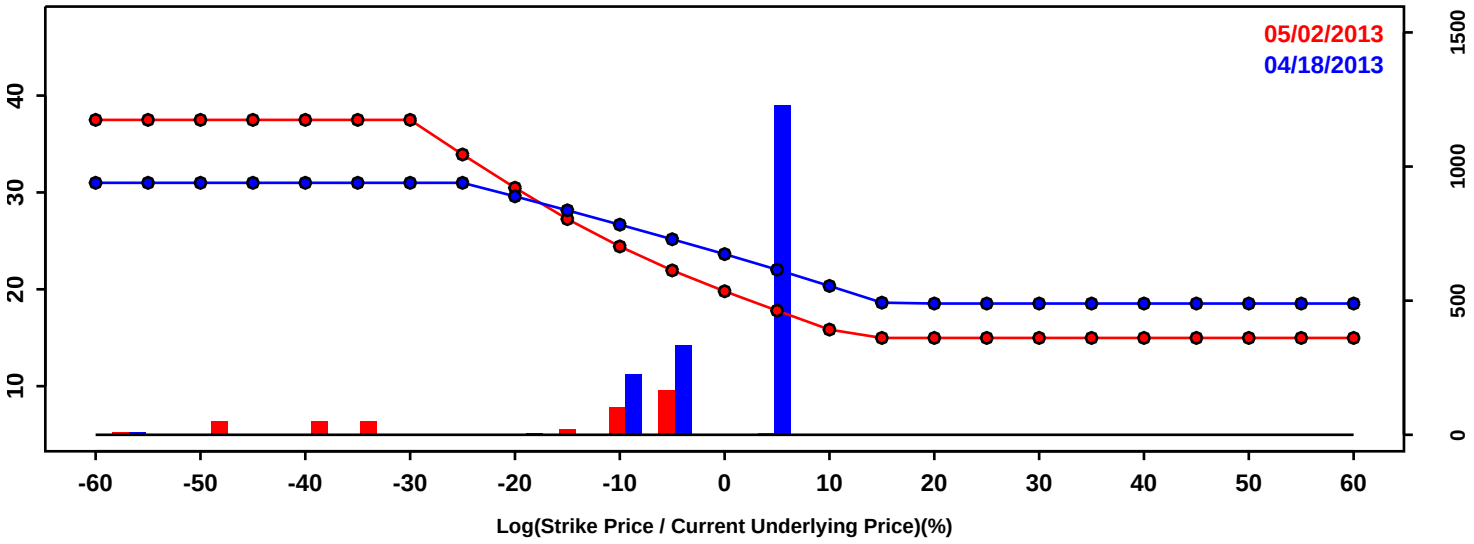
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-14.36%	-10.87%	3.49%
50th Pct	0.53%	0.66%	0.13%
90th Pct	12.10%	9.33%	-2.76%
Mean	-0.48%	-0.23%	0.25%
Std Dev	10.81%	8.45%	-2.36%
Skew	-0.66	-0.84	-0.19
Kurtosis	1.03	1.69	0.66

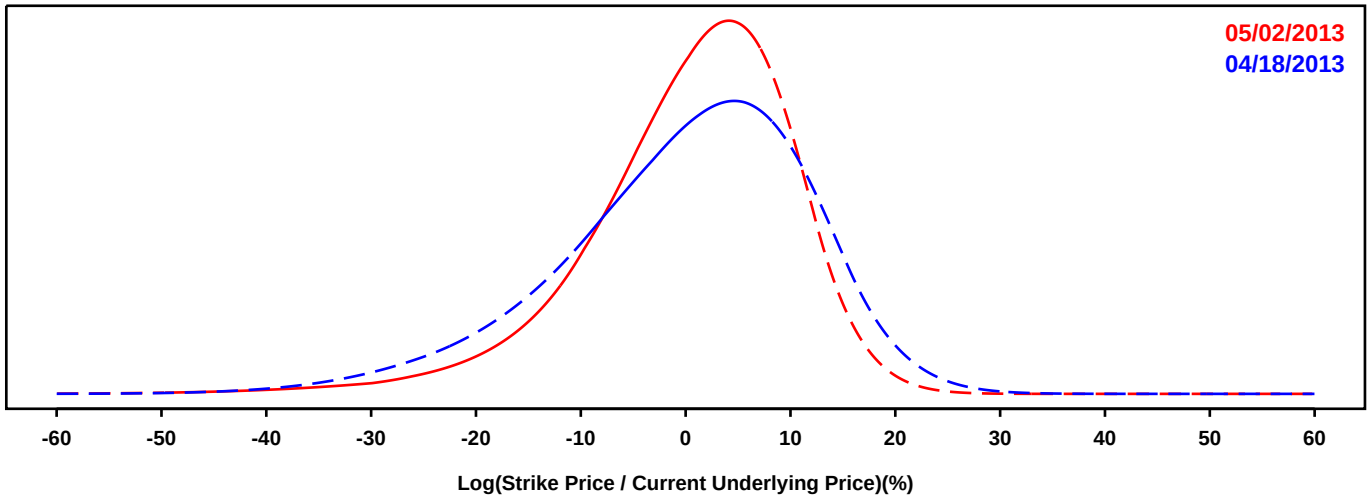
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BANK OF NEW YORK MELLON

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

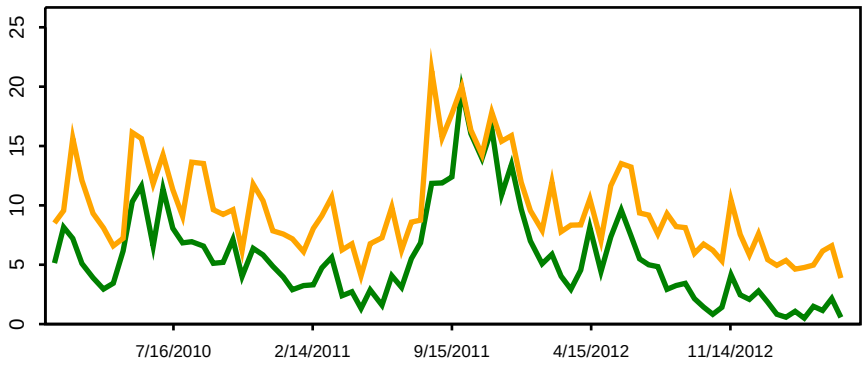
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



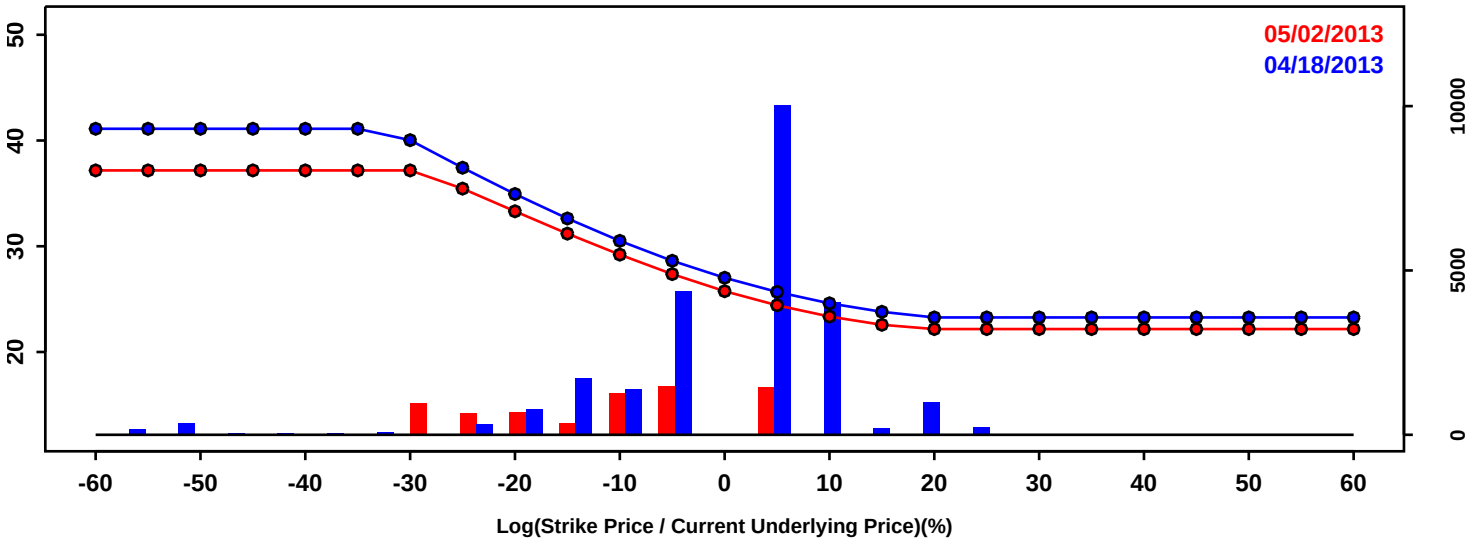
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-16.29%	-12.38%	3.92%
50th Pct	1.37%	1.67%	0.30%
90th Pct	13.76%	11.39%	-2.37%
Mean	-0.09%	0.31%	0.40%
Std Dev	12.00%	10.07%	-1.93%
Skew	-0.66	-1.05	-0.40
Kurtosis	0.61	2.39	1.78

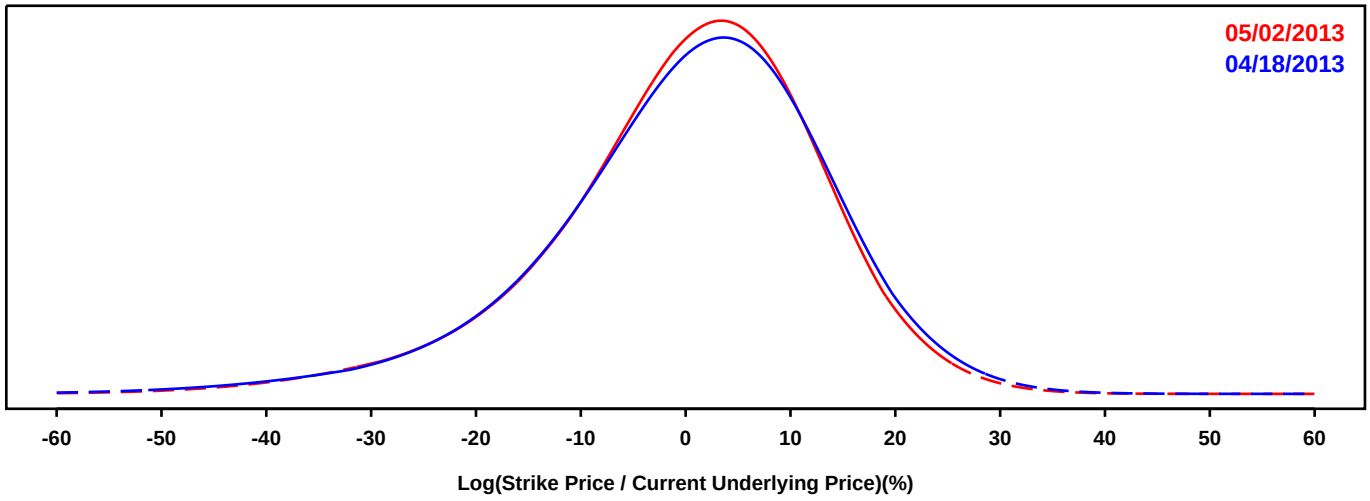
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CITIGROUP

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

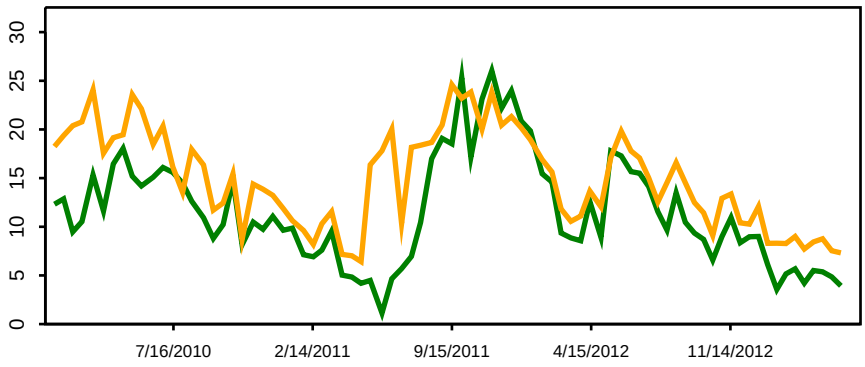
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



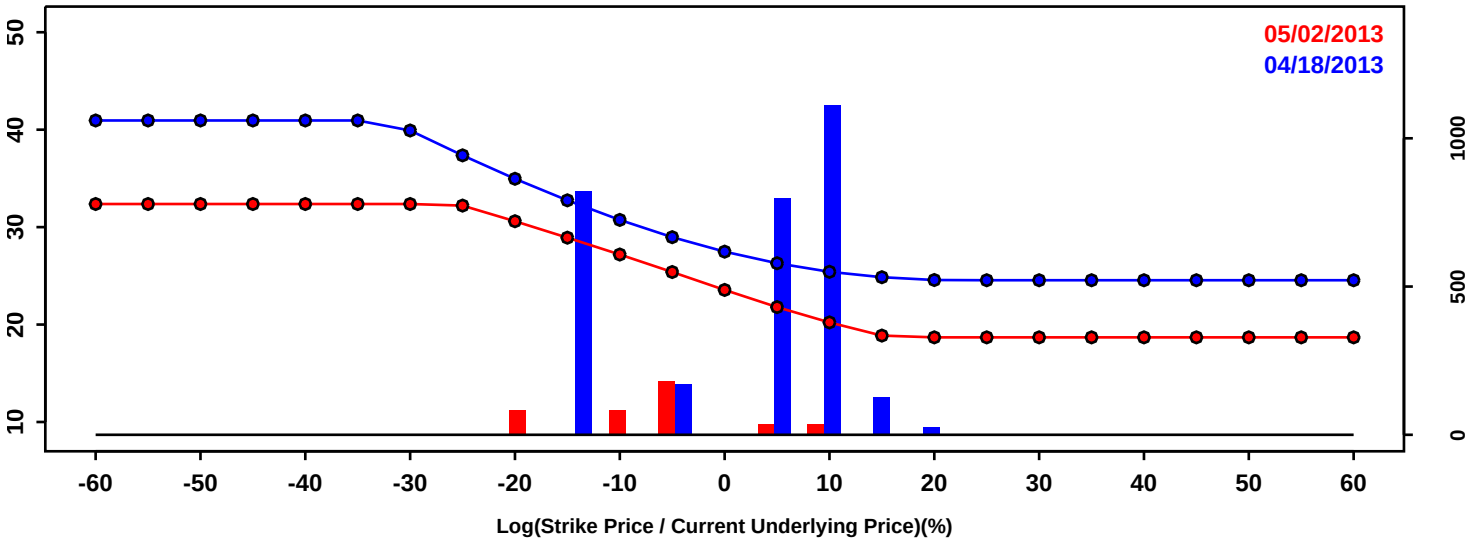
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-17.09%	-16.82%	0.27%
50th Pct	1.58%	1.39%	-0.20%
90th Pct	15.87%	15.00%	-0.87%
Mean	0.24%	0.02%	-0.22%
Std Dev	13.61%	13.04%	-0.57%
Skew	-0.72	-0.70	0.02
Kurtosis	1.31	1.12	-0.19

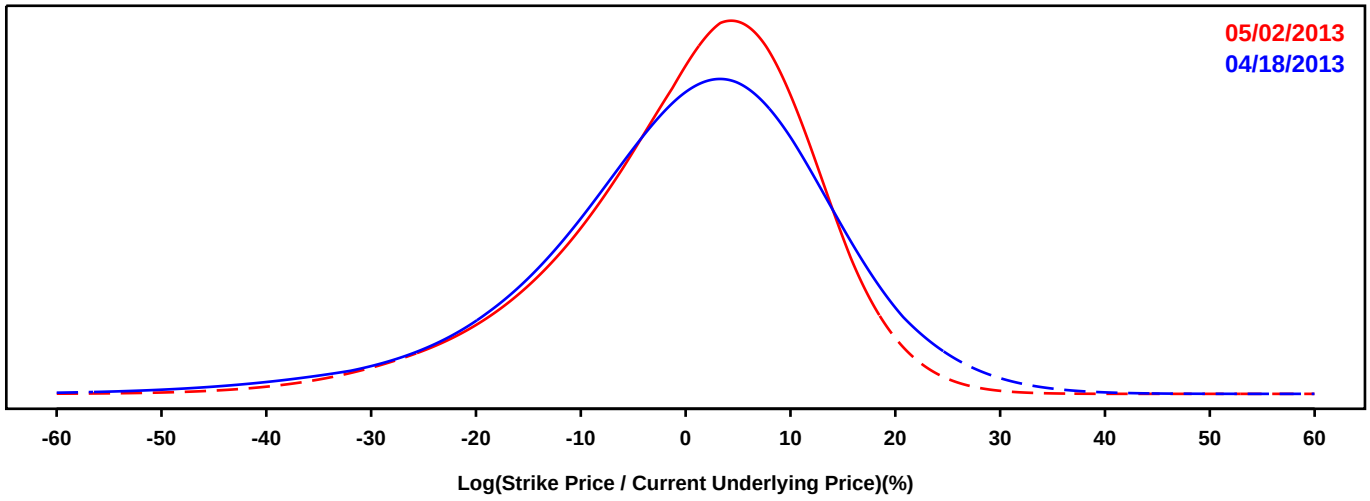
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CAPITAL ONE

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

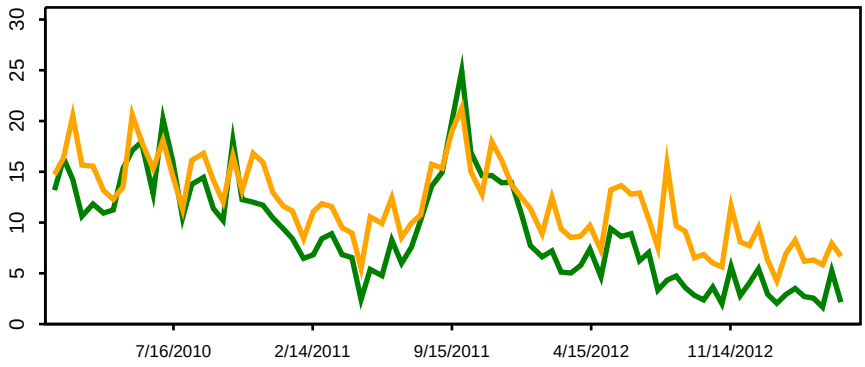
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

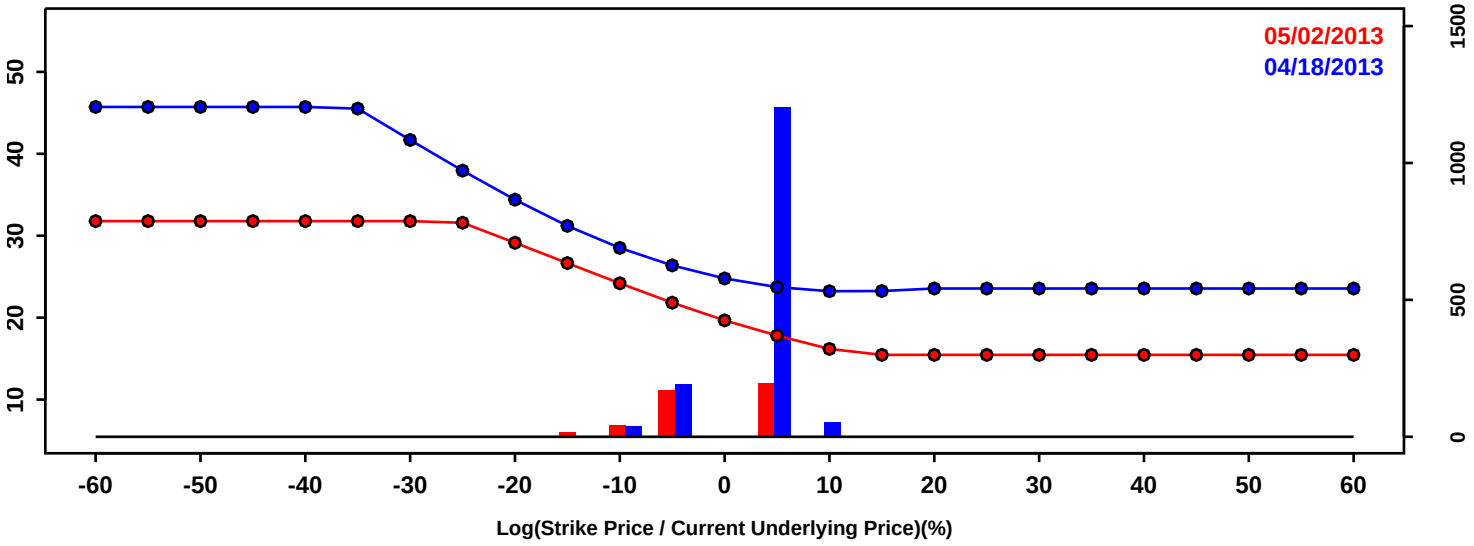
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-17.58%	-16.15%	1.43%
50th Pct	1.32%	1.72%	0.40%
90th Pct	16.05%	13.57%	-2.48%
Mean	0.05%	0.04%	-0.01%
Std Dev	13.87%	12.01%	-1.86%
Skew	-0.66	-0.76	-0.10
Kurtosis	1.21	0.91	-0.31

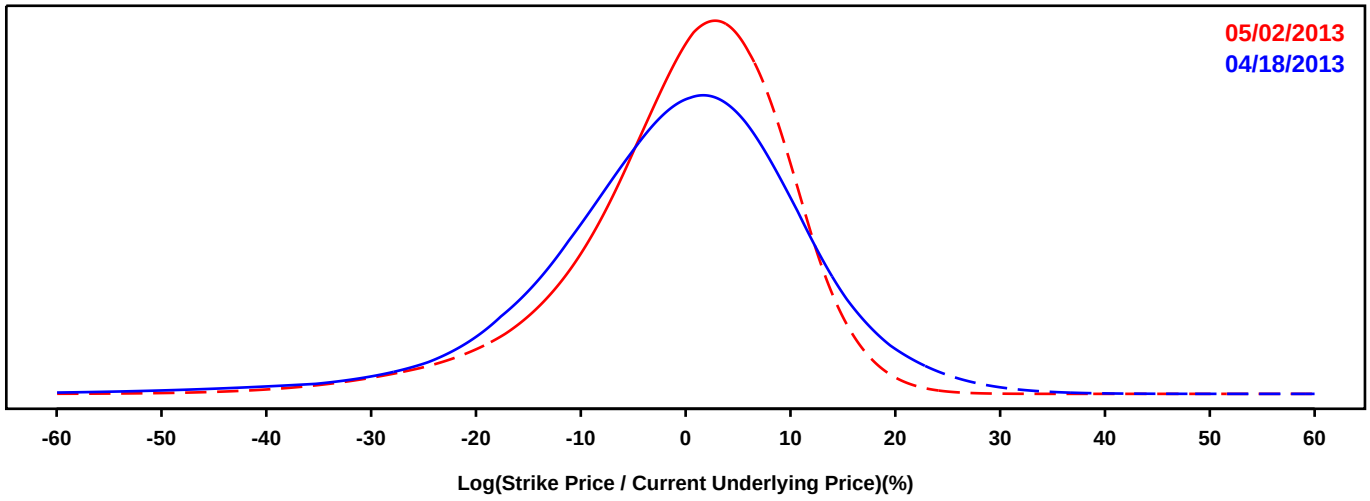
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- FIFTH THIRD

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

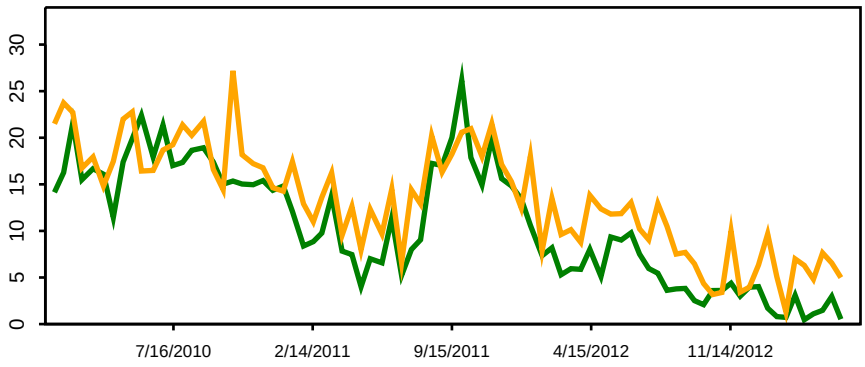
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

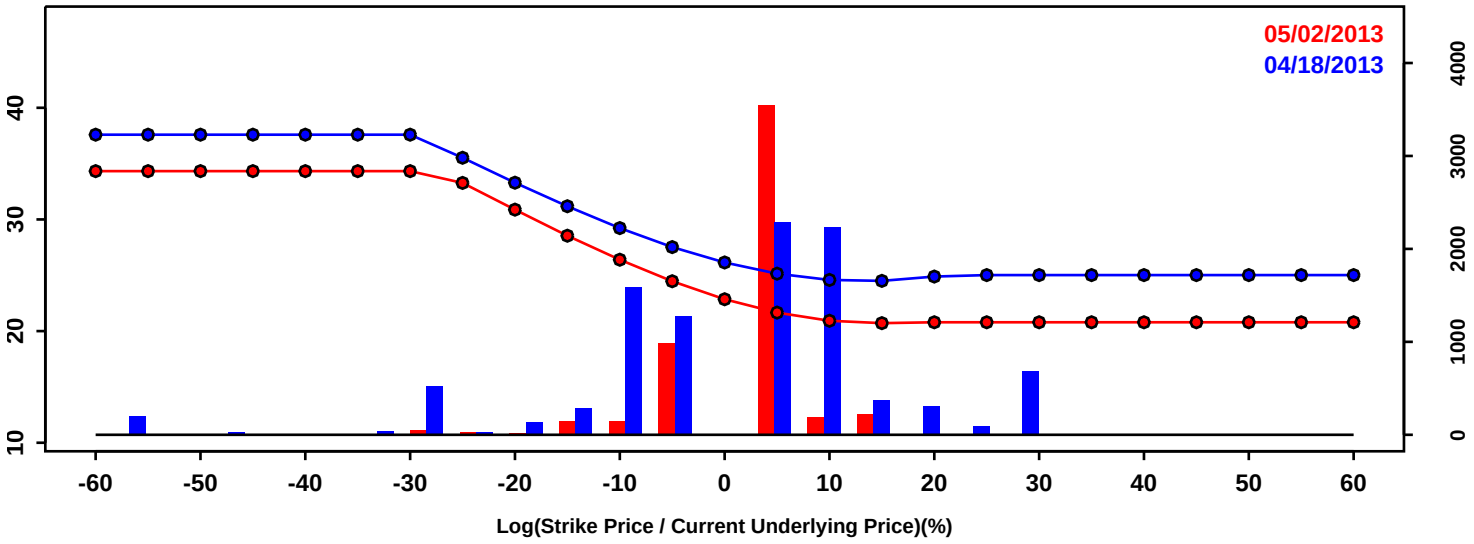
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-16.20%	-13.72%	2.48%
50th Pct	0.00%	0.95%	0.95%
90th Pct	13.16%	10.82%	-2.34%
Mean	-1.06%	-0.49%	0.57%
Std Dev	12.58%	10.28%	-2.30%
Skew	-0.82	-0.98	-0.16
Kurtosis	2.36	1.76	-0.60

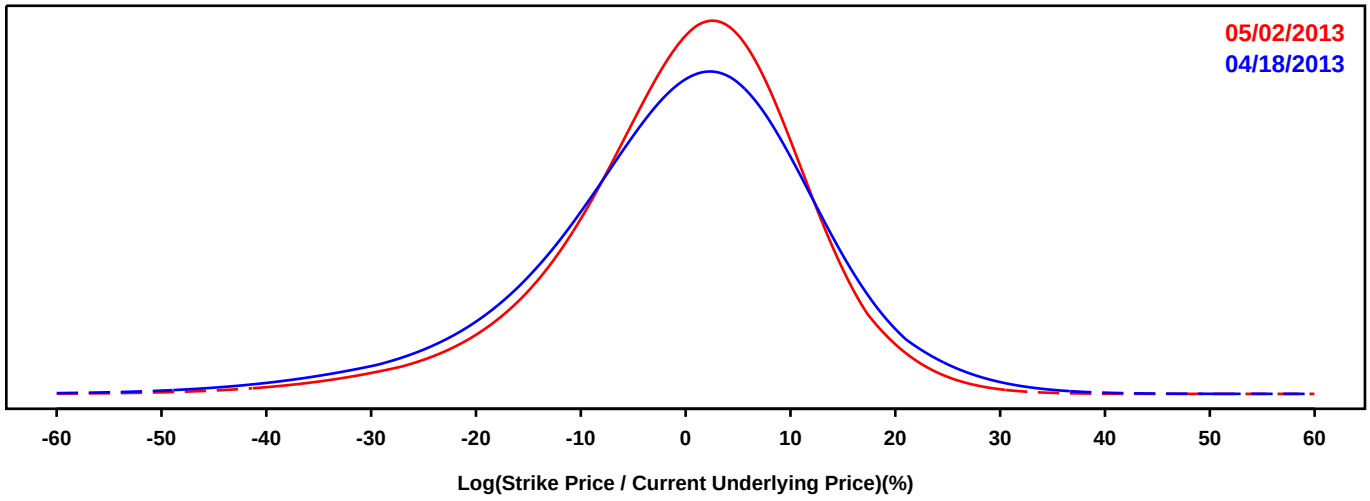
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- GOLDMAN SACHS

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

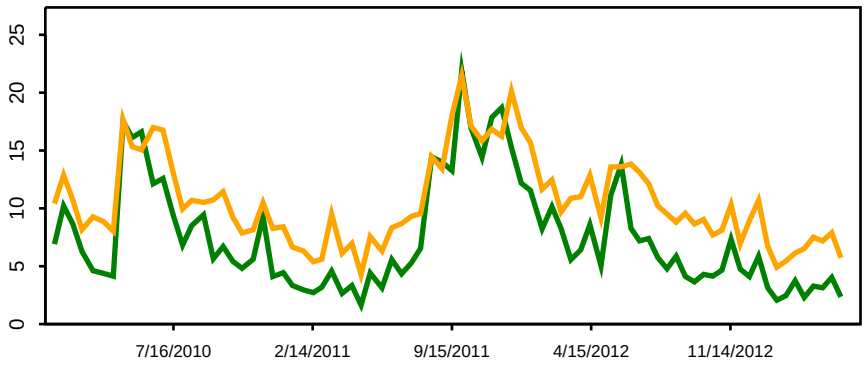
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

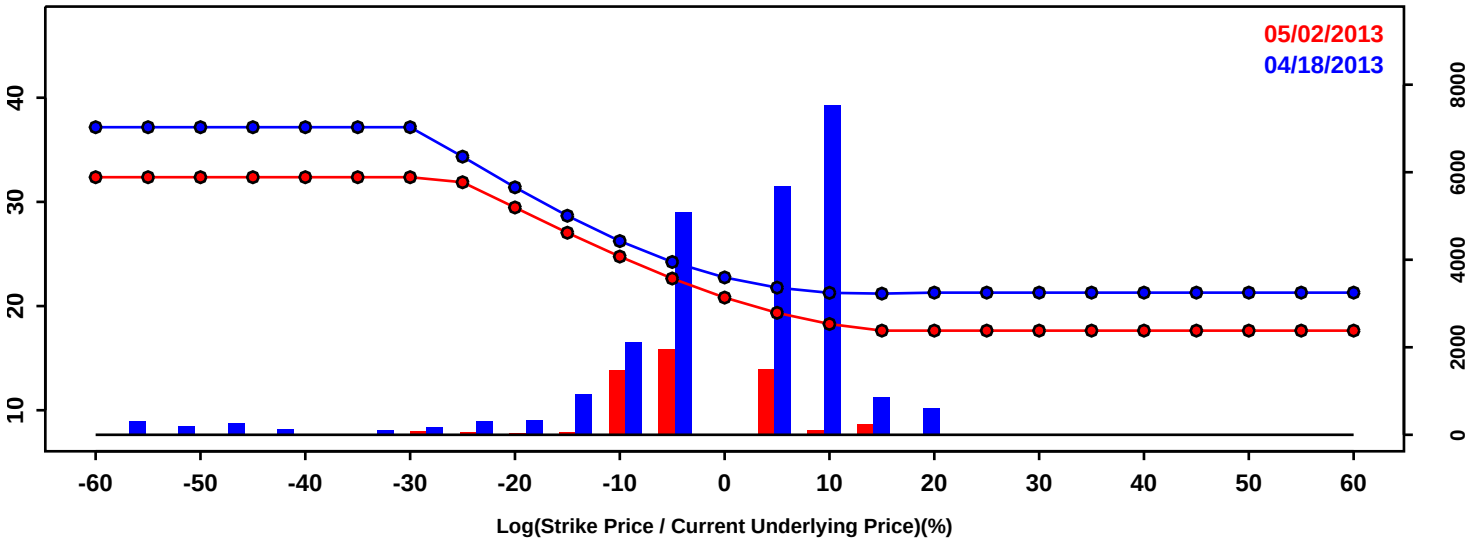
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-17.58%	-14.98%	2.60%
50th Pct	0.49%	0.86%	0.38%
90th Pct	14.58%	12.93%	-1.65%
Mean	-0.69%	-0.26%	0.44%
Std Dev	13.27%	11.58%	-1.69%
Skew	-0.61	-0.70	-0.09
Kurtosis	1.14	1.32	0.18

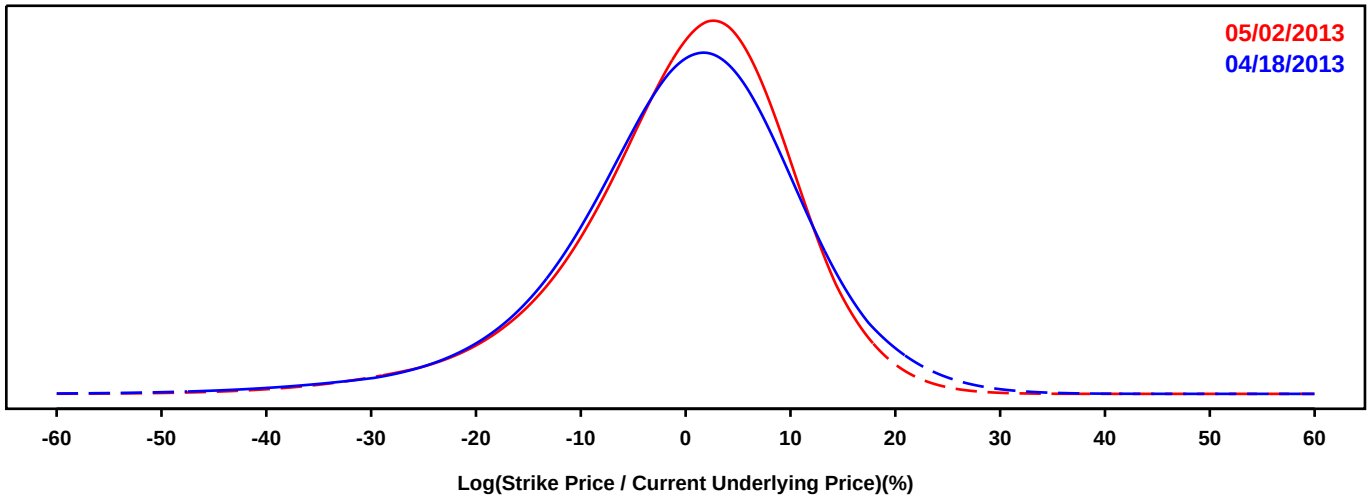
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- JP MORGAN

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

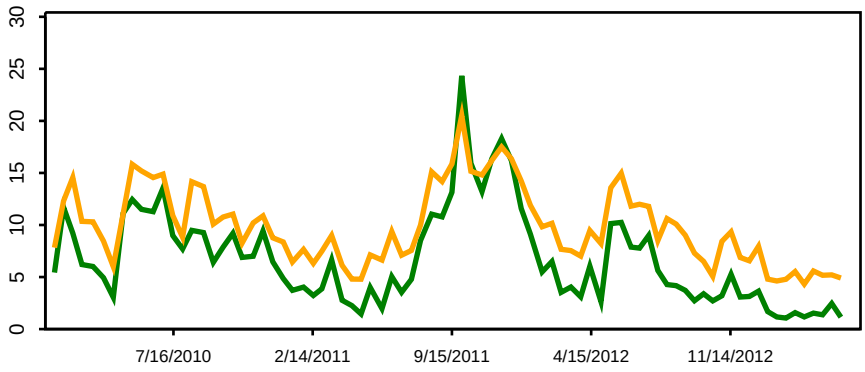
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

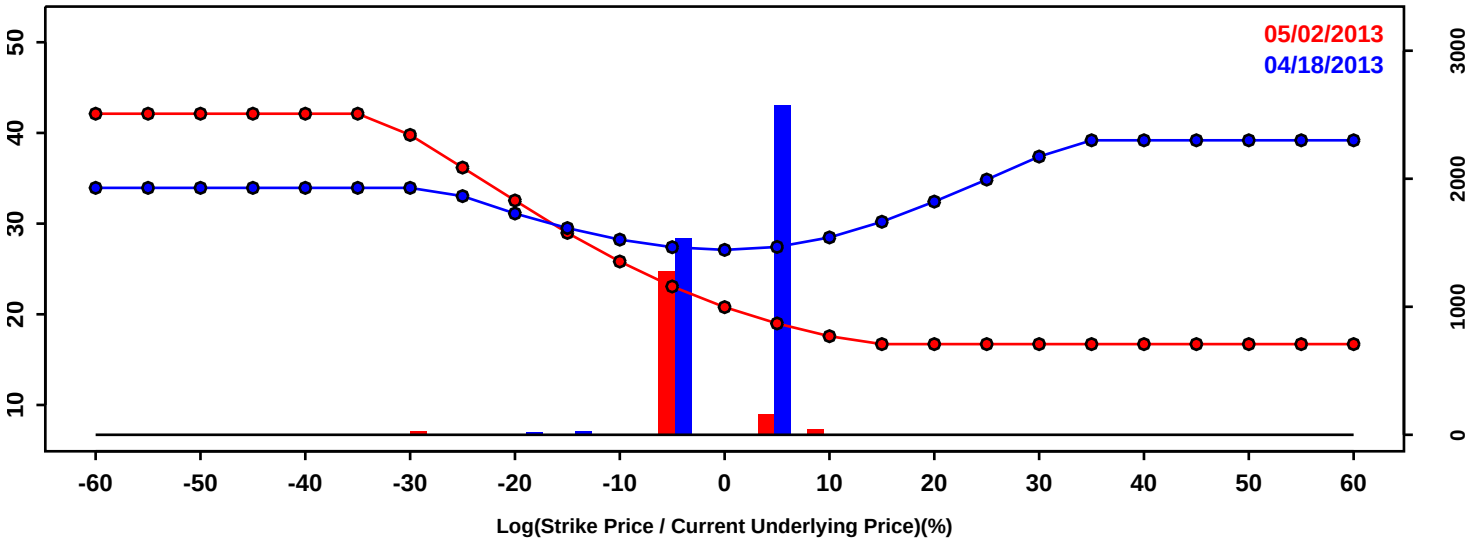
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-14.42%	-13.94%	0.49%
50th Pct	0.58%	0.86%	0.28%
90th Pct	12.91%	11.65%	-1.26%
Mean	-0.30%	-0.36%	-0.06%
Std Dev	11.45%	10.62%	-0.83%
Skew	-0.68	-0.81	-0.13
Kurtosis	1.62	1.48	-0.14

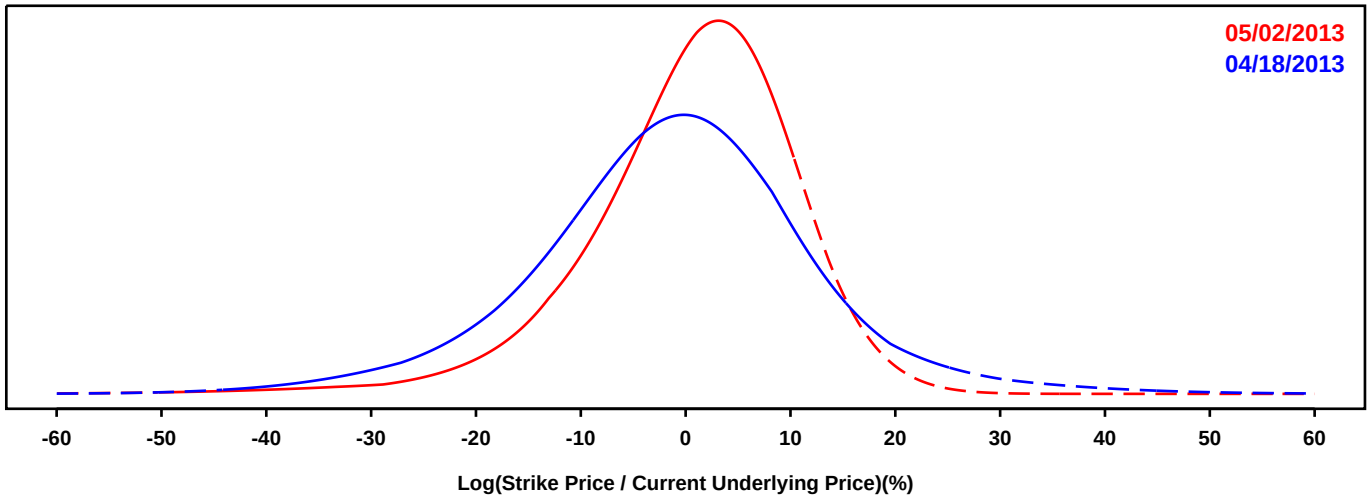
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- KEYCORP

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

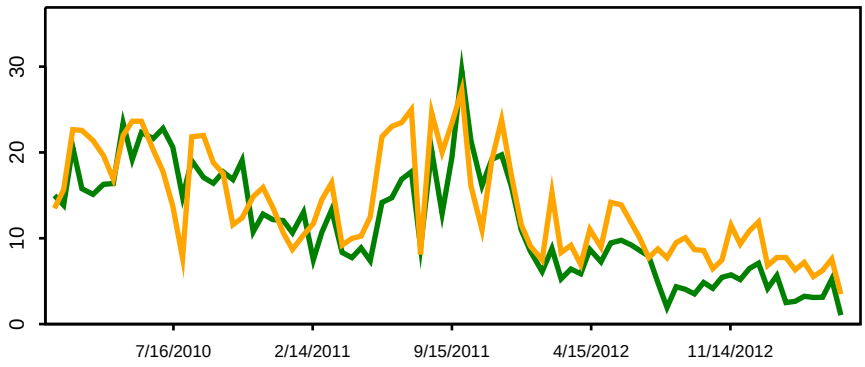
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

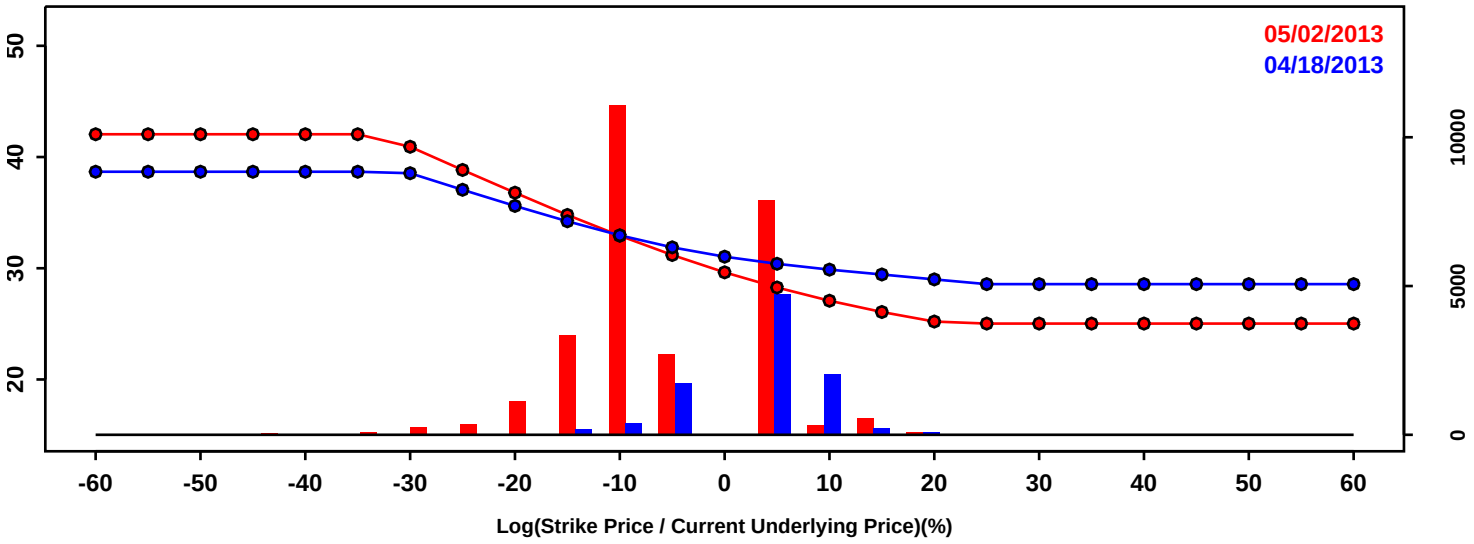
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-17.52%	-11.98%	5.54%
50th Pct	-0.80%	1.61%	2.41%
90th Pct	14.56%	11.94%	-2.62%
Mean	-1.04%	0.52%	1.57%
Std Dev	13.55%	10.21%	-3.34%
Skew	0.01	-1.04	-1.05
Kurtosis	1.32	2.99	1.67

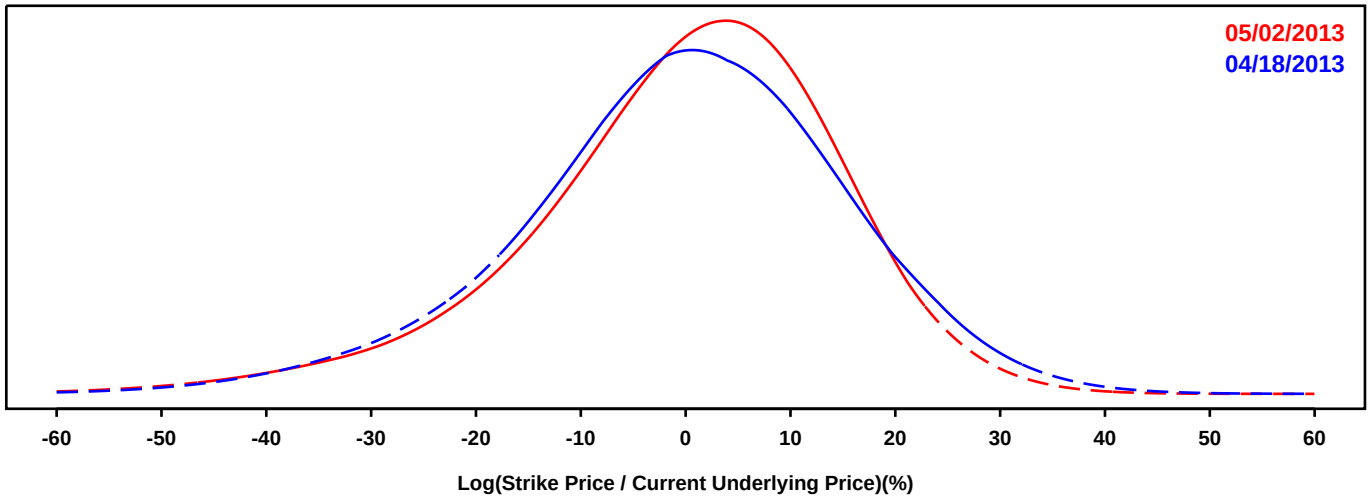
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- MORGAN STANLEY

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

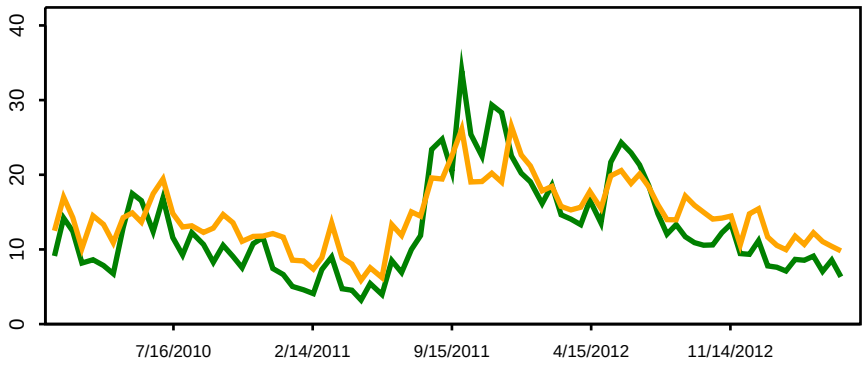
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

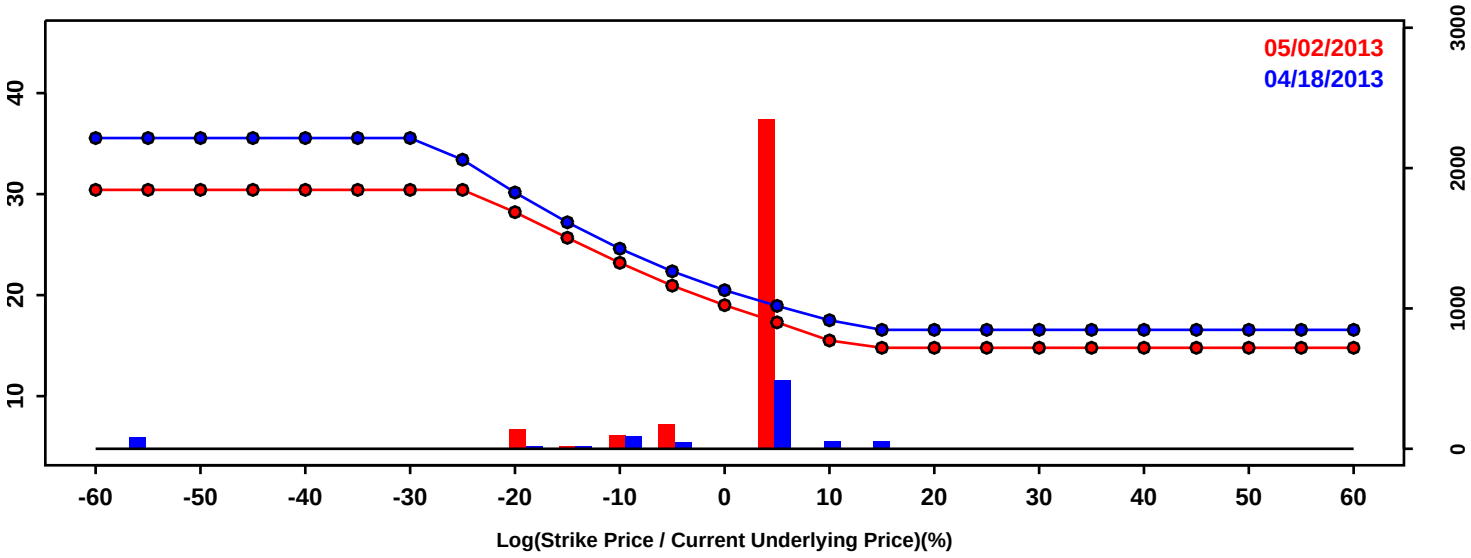
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-20.44%	-19.78%	0.66%
50th Pct	0.48%	1.29%	0.81%
90th Pct	18.80%	17.11%	-1.69%
Mean	-0.30%	-0.26%	0.05%
Std Dev	15.65%	15.05%	-0.60%
Skew	-0.36	-0.68	-0.32
Kurtosis	0.49	1.02	0.53

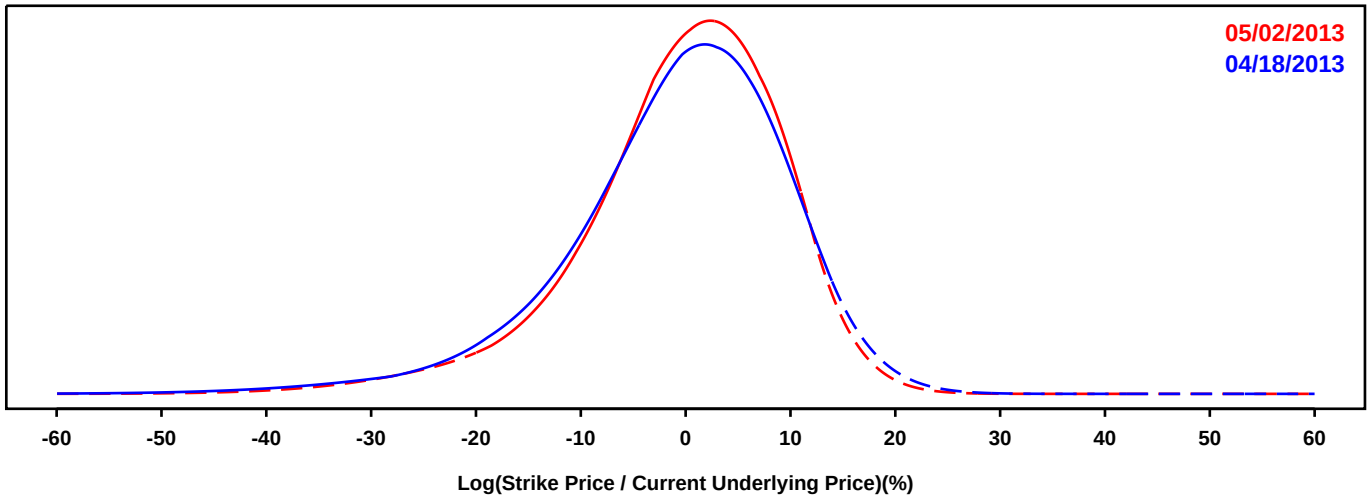
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PNC FINANCIAL

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

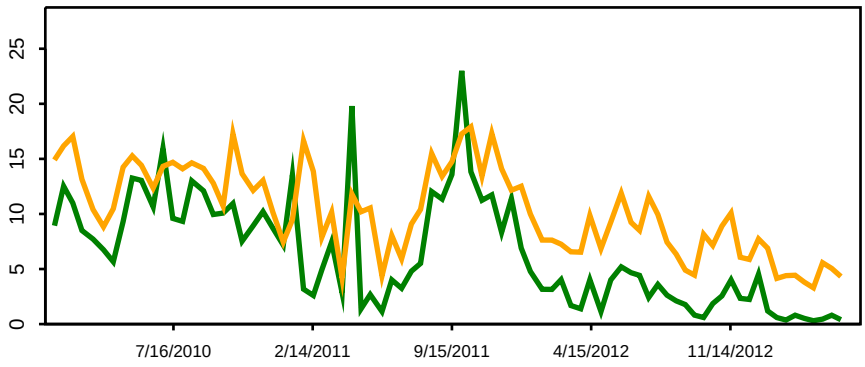
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

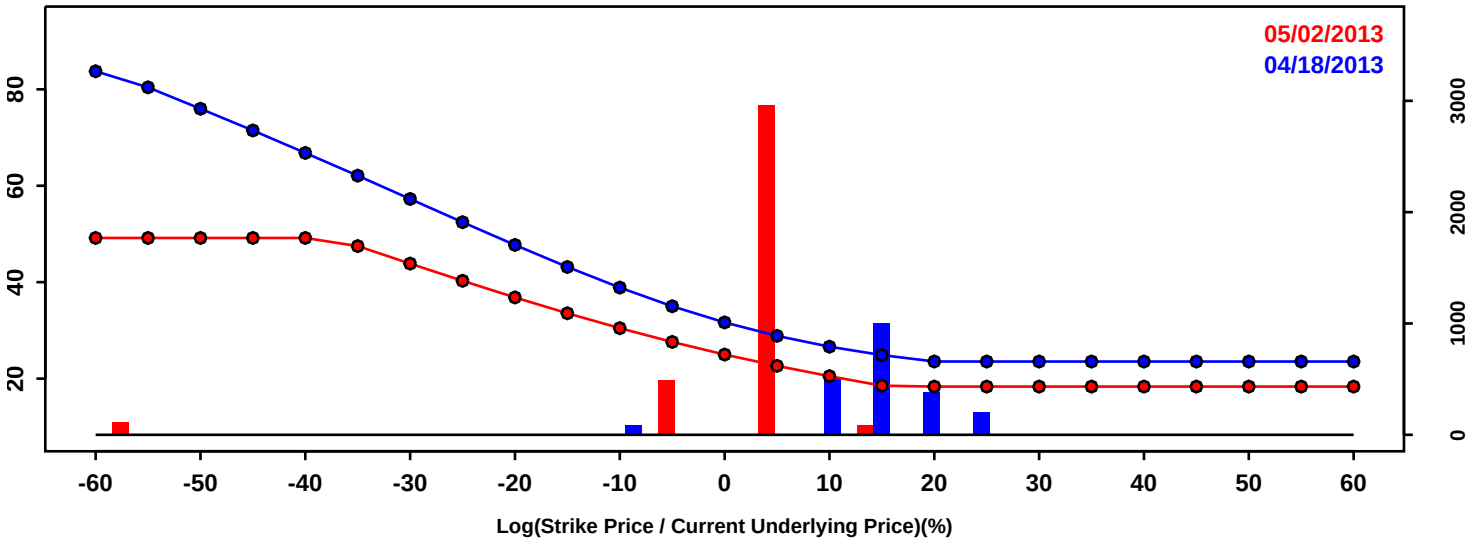
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-14.30%	-12.96%	1.34%
50th Pct	0.43%	0.74%	0.32%
90th Pct	11.30%	10.67%	-0.63%
Mean	-0.78%	-0.44%	0.34%
Std Dev	10.70%	9.86%	-0.84%
Skew	-0.91	-0.91	0.00
Kurtosis	1.87	1.62	-0.25

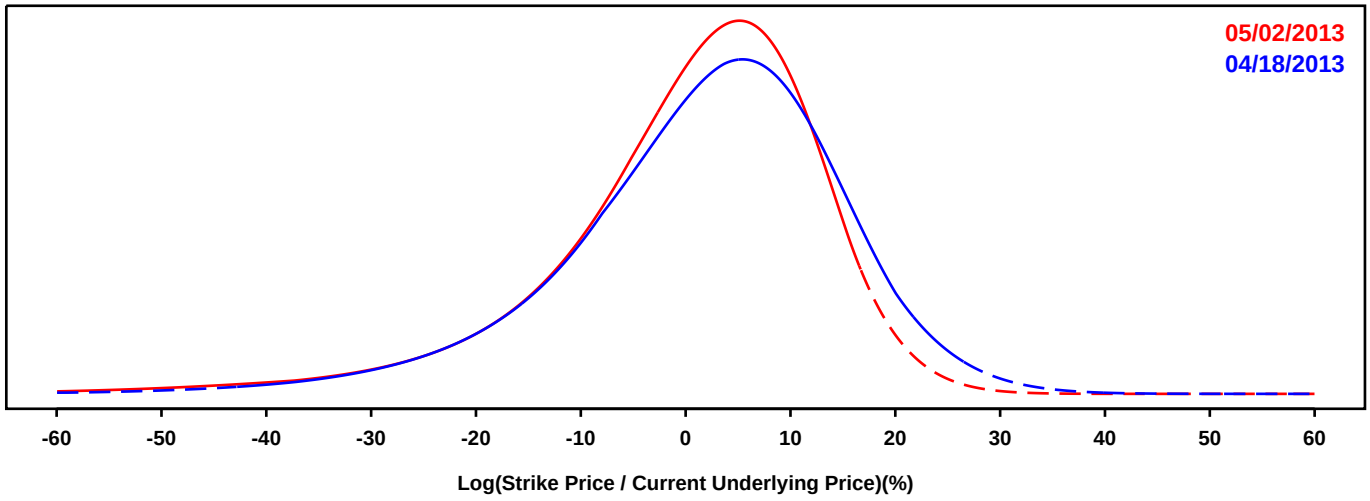
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- REGIONS FINANCIAL

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

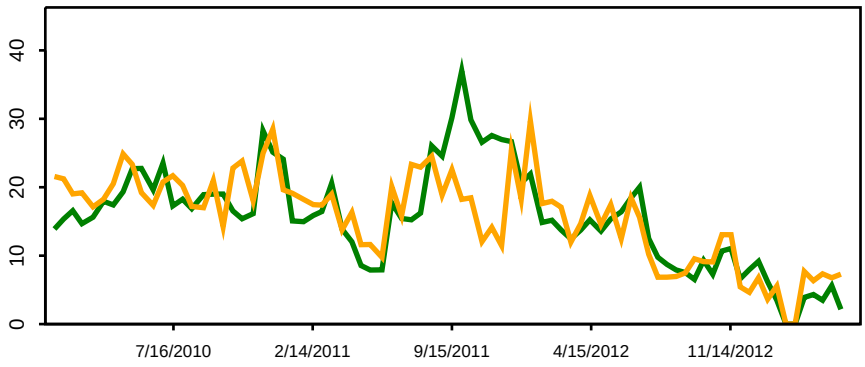
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

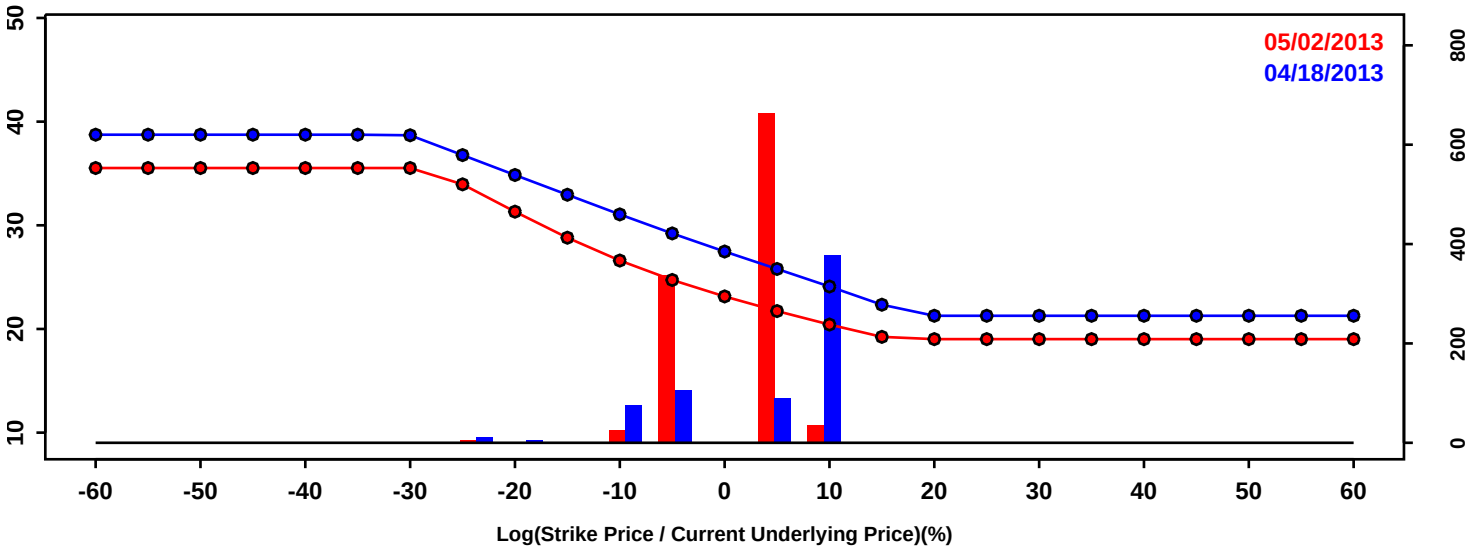
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-15.74%	-16.36%	-0.62%
50th Pct	3.10%	2.13%	-0.97%
90th Pct	16.79%	13.86%	-2.93%
Mean	1.42%	-0.01%	-1.42%
Std Dev	14.06%	13.18%	-0.88%
Skew	-1.24	-1.31	-0.07
Kurtosis	4.67	3.25	-1.42

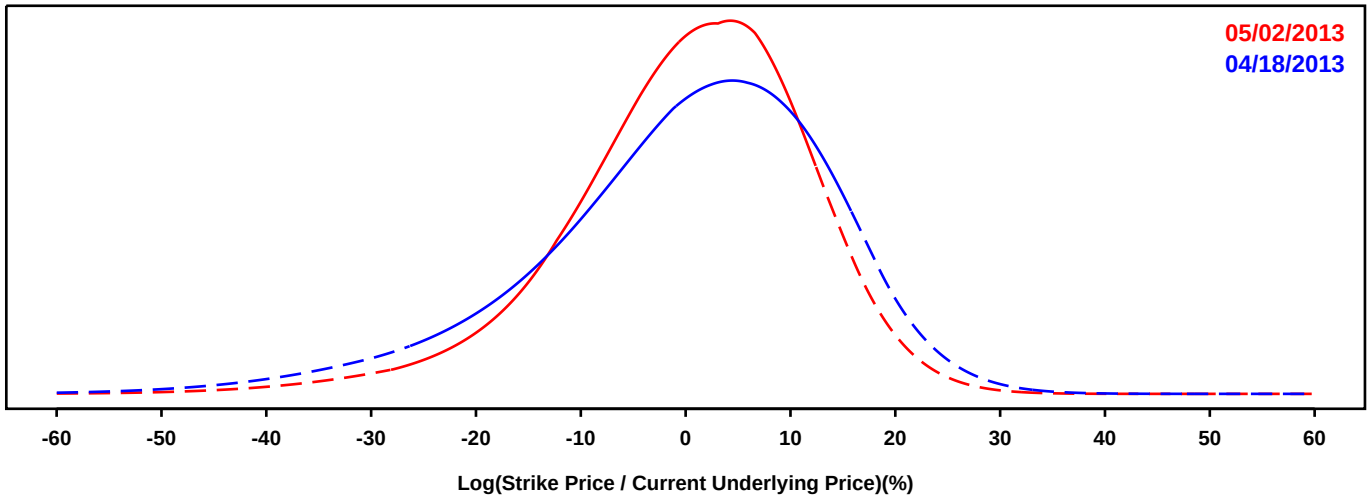
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SUNTRUST

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

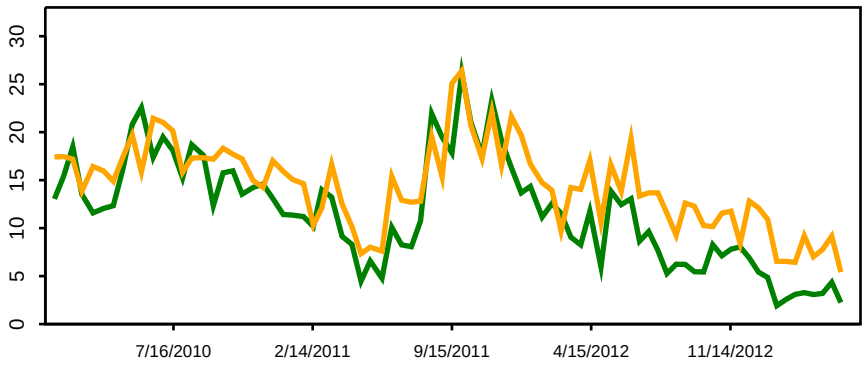
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

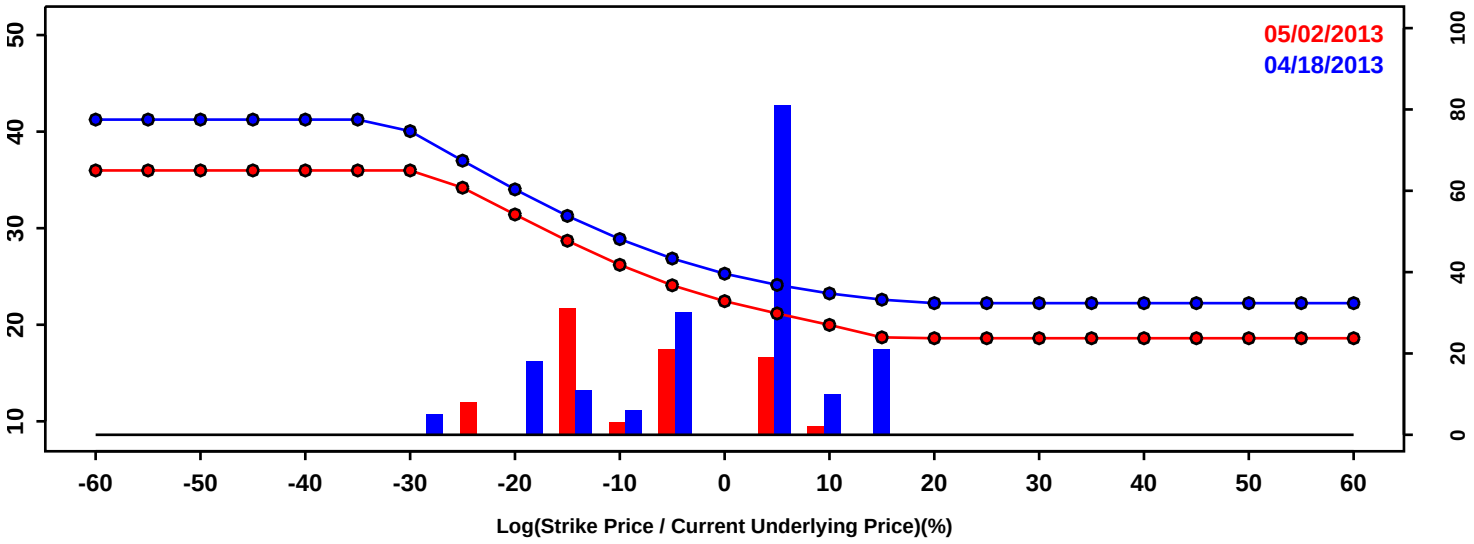
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-19.02%	-14.71%	4.31%
50th Pct	1.54%	1.20%	-0.34%
90th Pct	15.91%	13.53%	-2.38%
Mean	-0.24%	0.08%	0.32%
Std Dev	14.13%	11.64%	-2.48%
Skew	-0.77	-0.73	0.04
Kurtosis	0.96	1.28	0.32

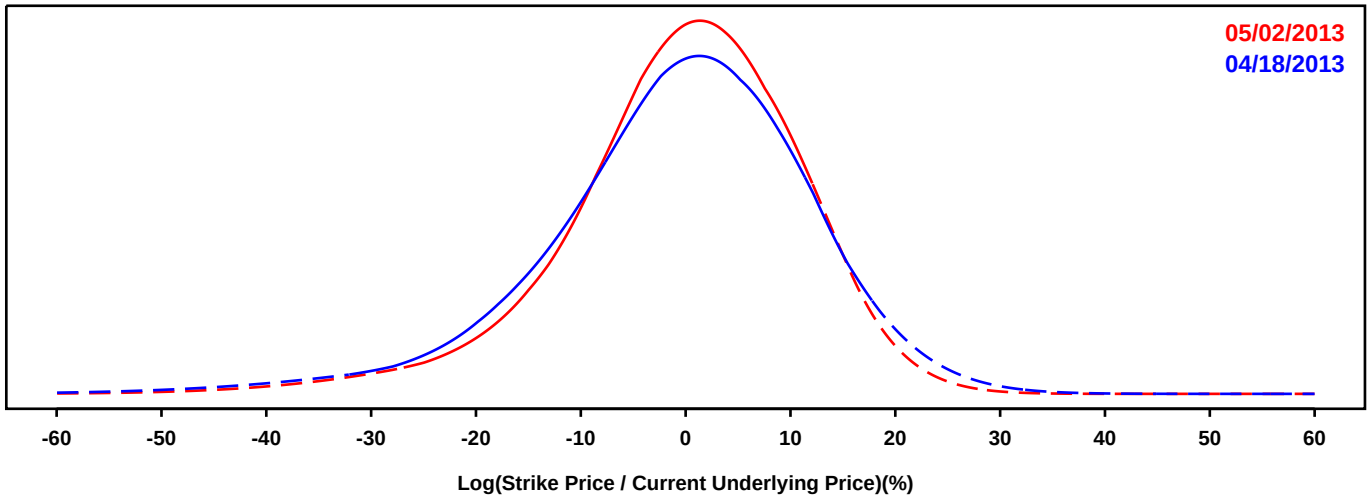
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- STATE STREET

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

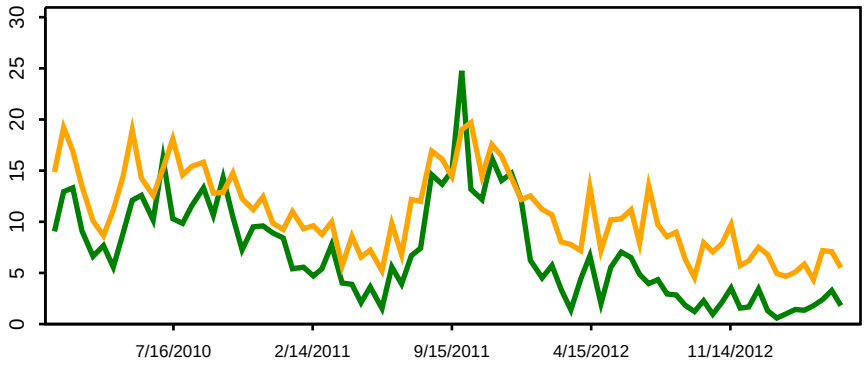
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

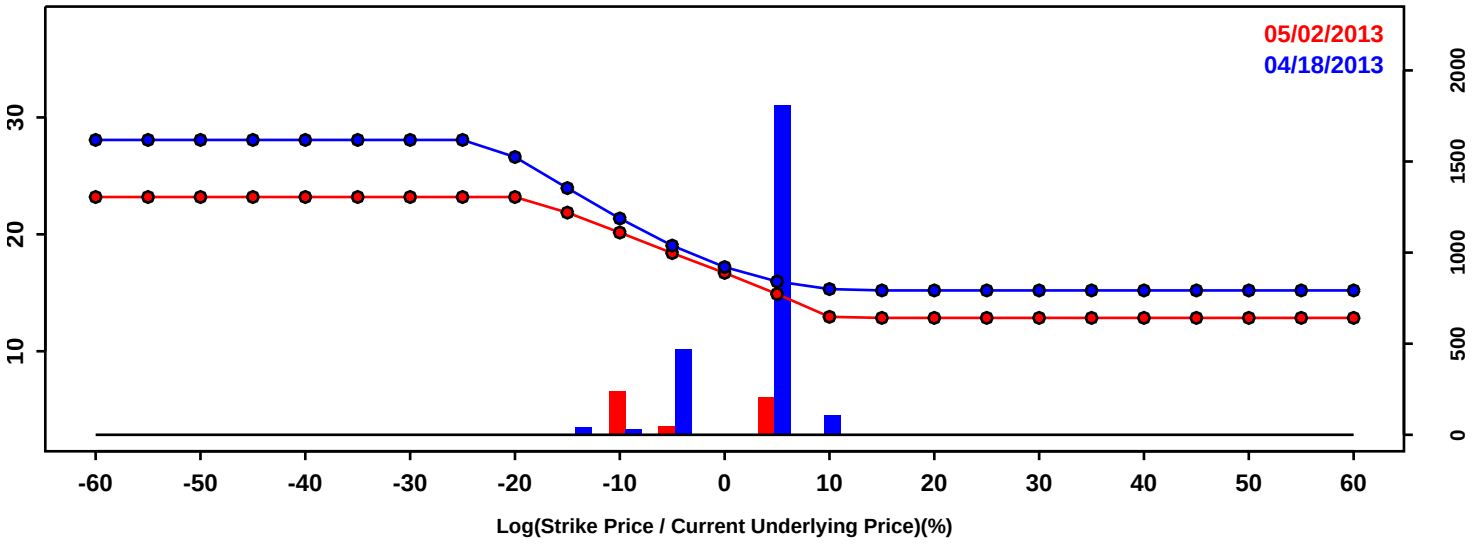
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-16.72%	-14.59%	2.13%
50th Pct	0.31%	0.62%	0.31%
90th Pct	14.02%	12.93%	-1.09%
Mean	-0.80%	-0.38%	0.42%
Std Dev	12.89%	11.47%	-1.42%
Skew	-0.76	-0.79	-0.03
Kurtosis	1.69	1.59	-0.09

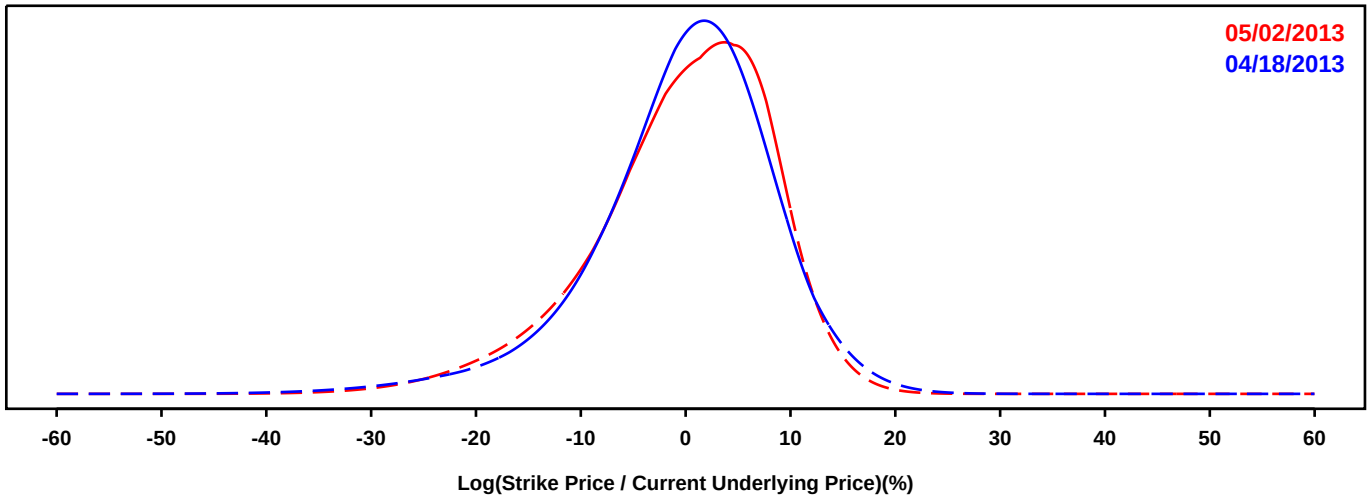
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- US BANCORP

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

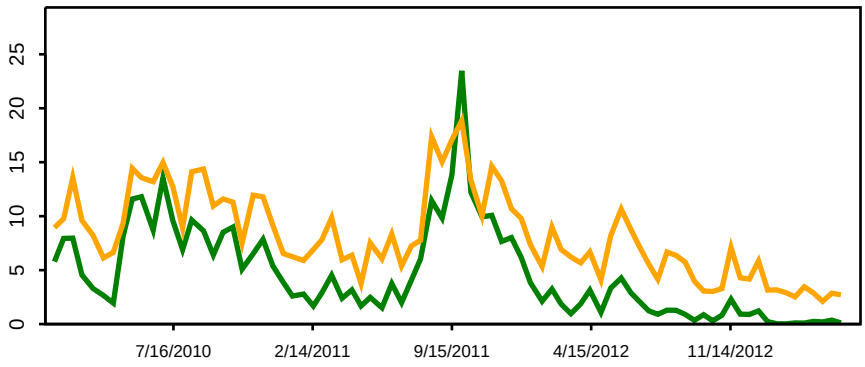
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

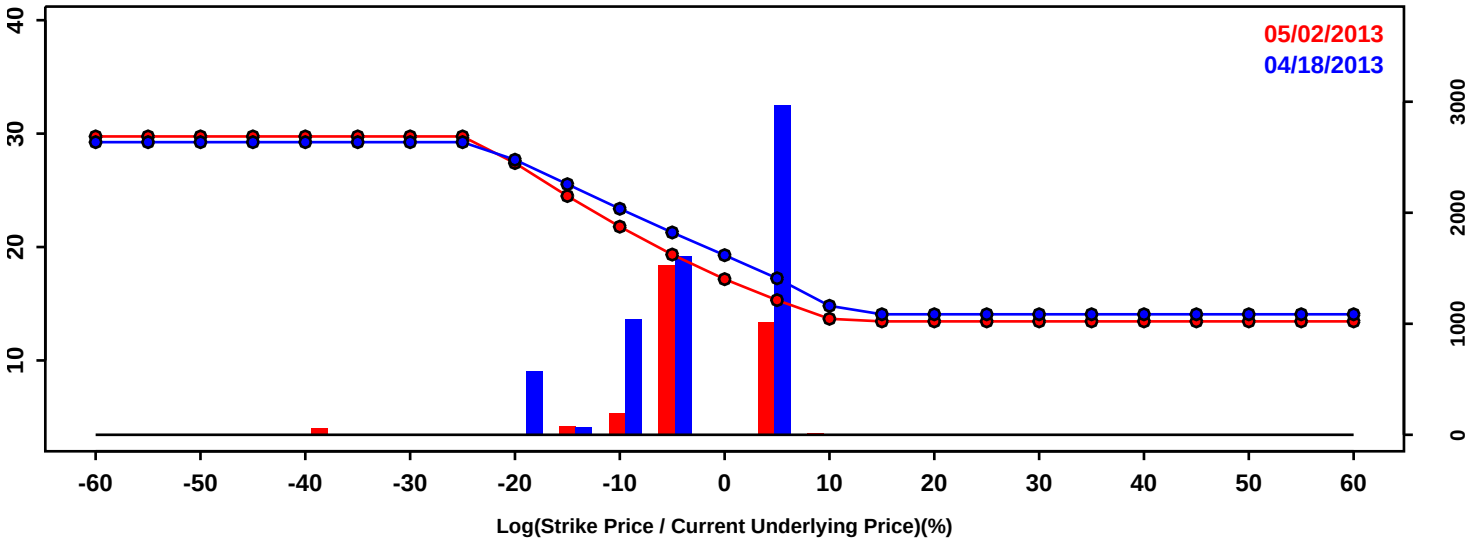
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-11.06%	-11.72%	-0.66%
50th Pct	0.69%	0.82%	0.13%
90th Pct	9.68%	9.38%	-0.29%
Mean	-0.18%	-0.27%	-0.08%
Std Dev	8.72%	8.55%	-0.17%
Skew	-0.81	-0.76	0.05
Kurtosis	1.75	0.86	-0.89

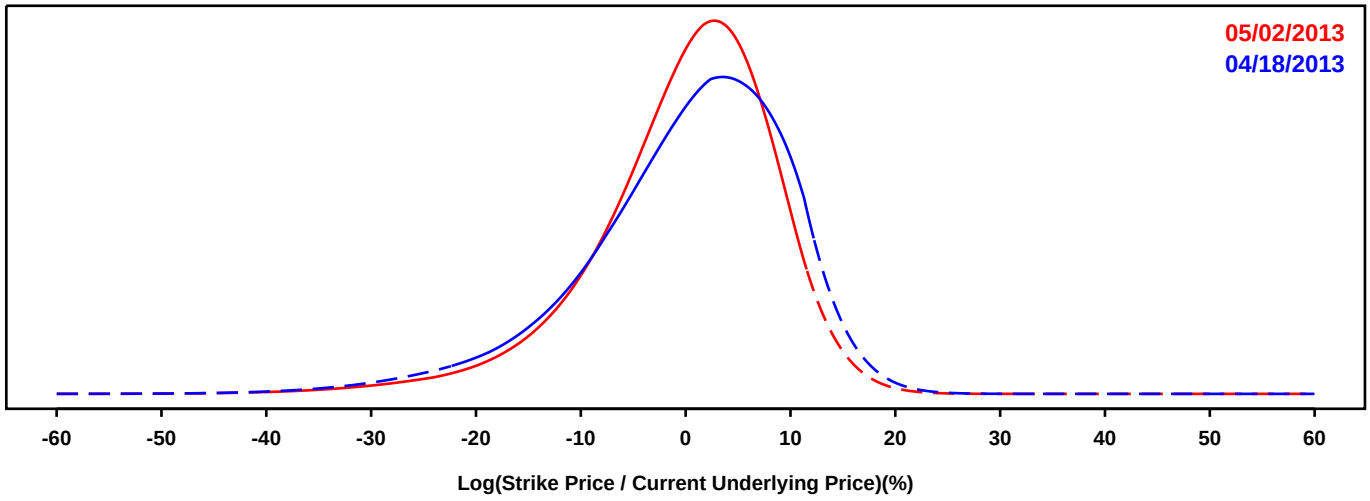
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- WELLS FARGO

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

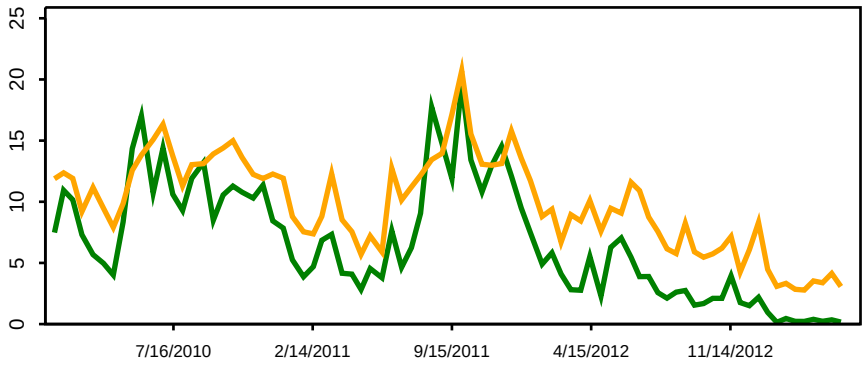
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

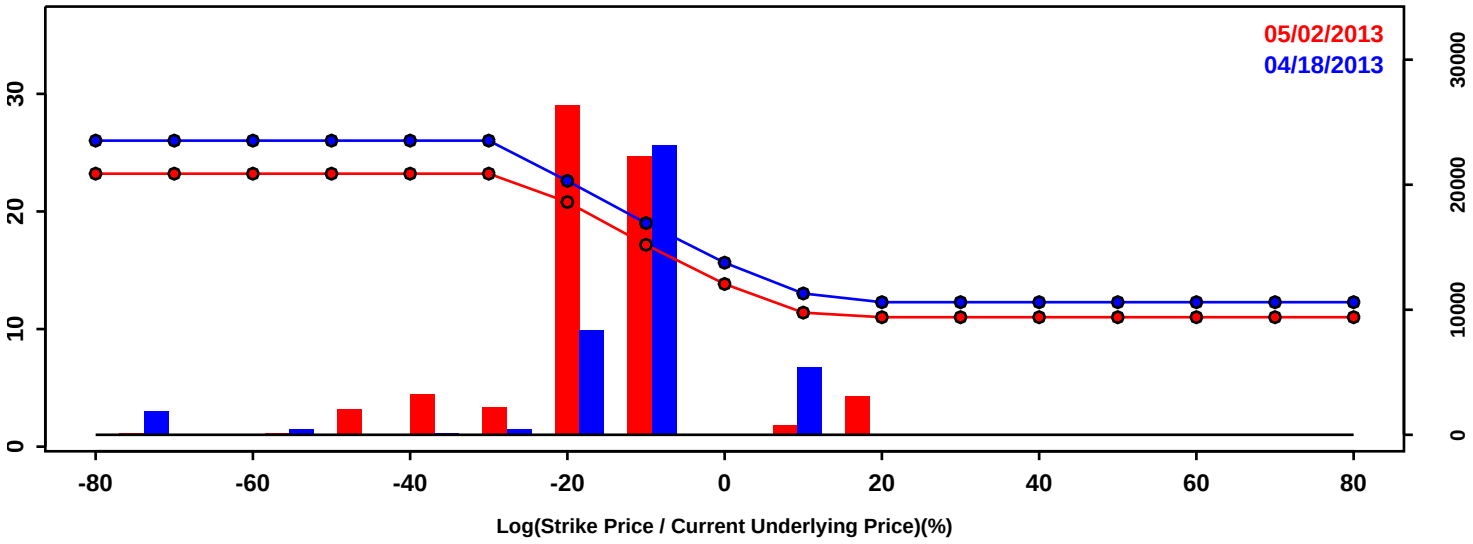
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-12.93%	-11.40%	1.54%
50th Pct	1.48%	1.01%	-0.47%
90th Pct	11.09%	9.56%	-1.53%
Mean	0.08%	-0.17%	-0.25%
Std Dev	9.87%	8.82%	-1.05%
Skew	-0.90	-0.99	-0.09
Kurtosis	1.32	2.04	0.72

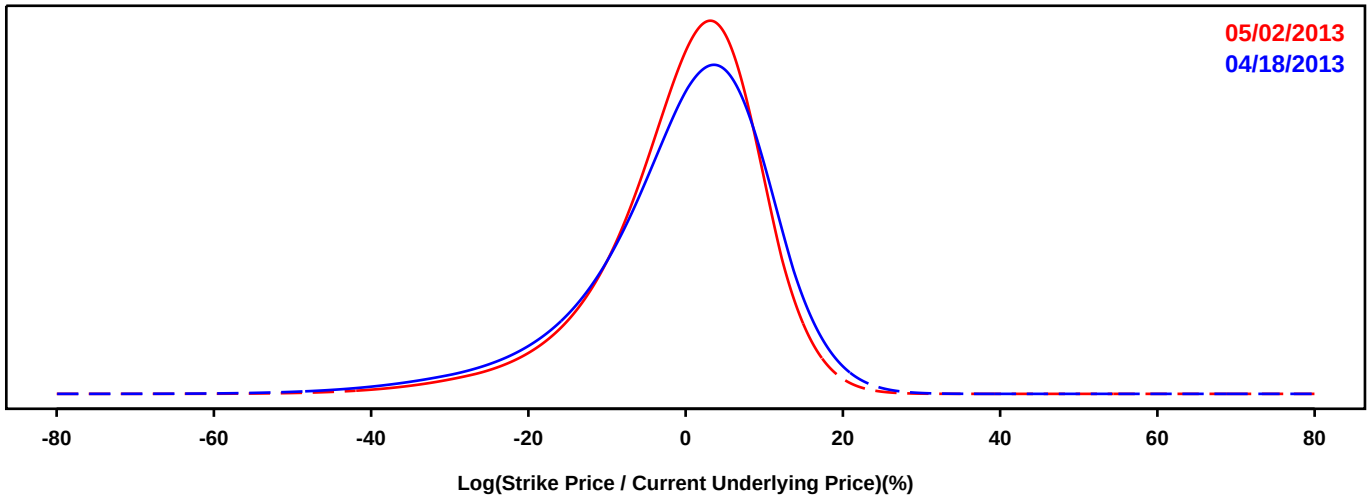
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- S&P 500

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

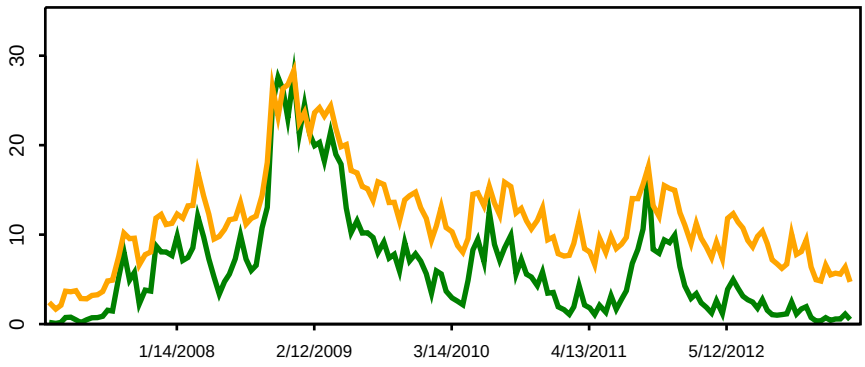
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

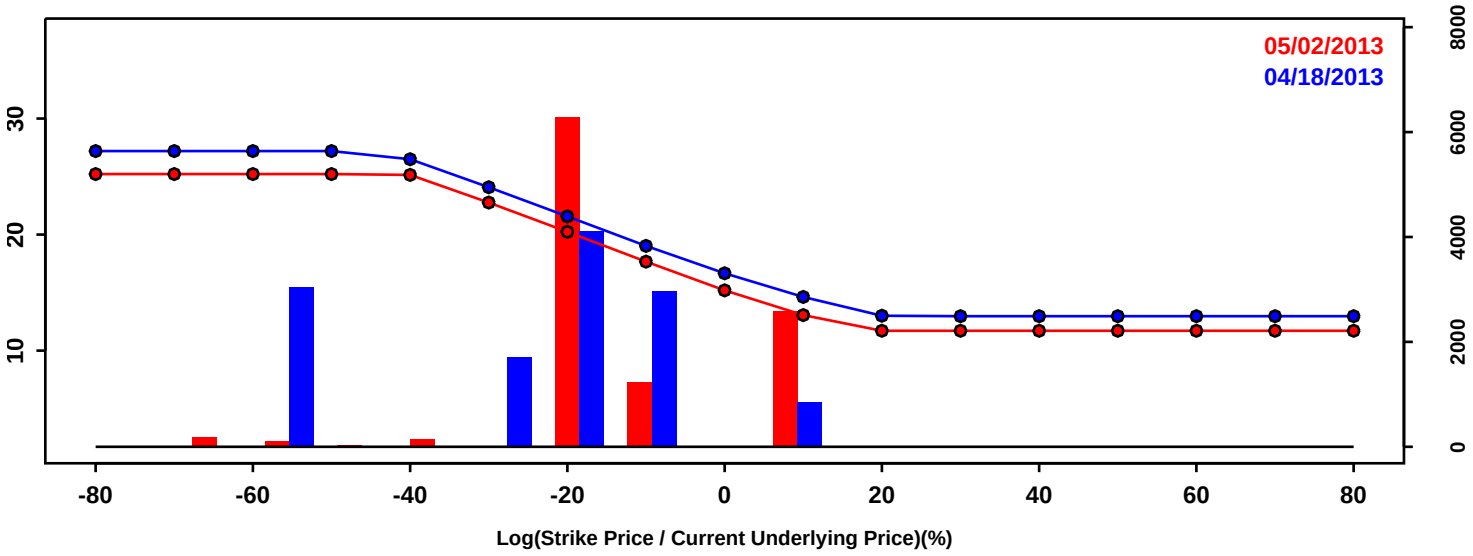
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-15.41%	-13.38%	2.03%
50th Pct	1.16%	1.02%	-0.14%
90th Pct	11.94%	10.59%	-1.35%
Mean	-0.55%	-0.43%	0.12%
Std Dev	11.52%	10.12%	-1.41%
Skew	-1.04	-1.02	0.02
Kurtosis	1.98	2.00	0.03

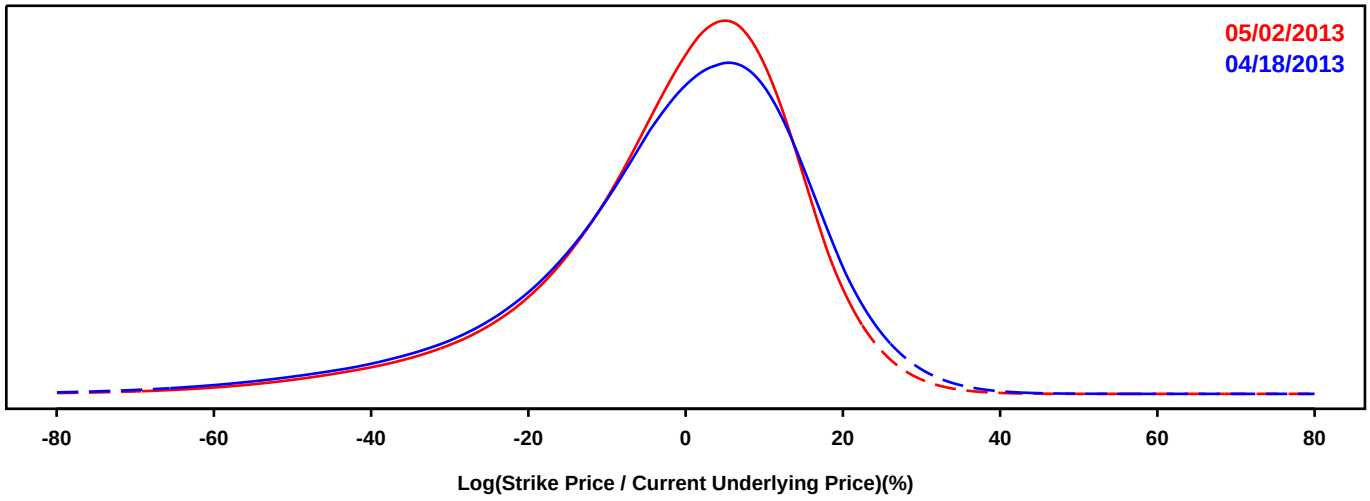
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- S&P 500

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

Decrease <= -20% Increase >= 20%

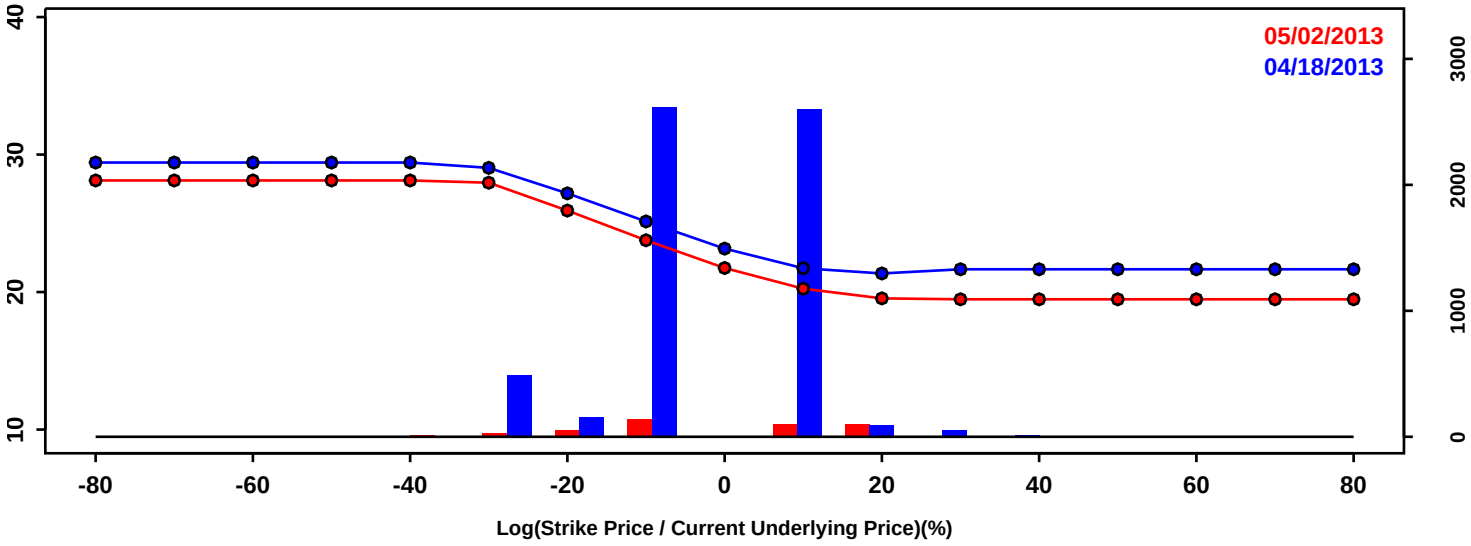
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-24.92%	-22.72%	2.20%
50th Pct	1.02%	1.13%	0.12%
90th Pct	17.25%	15.68%	-1.57%
Mean	-1.81%	-1.58%	0.23%
Std Dev	17.70%	16.17%	-1.53%
Skew	-1.05	-1.10	-0.04
Kurtosis	1.87	1.99	0.12

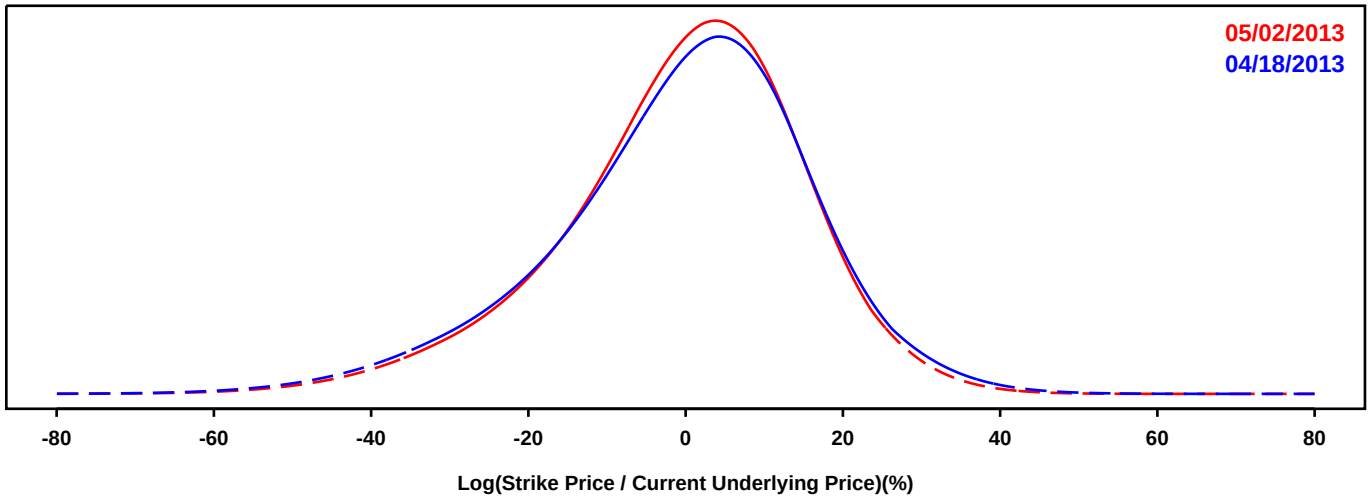
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CRUDE OIL FUTURES (WTI)

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

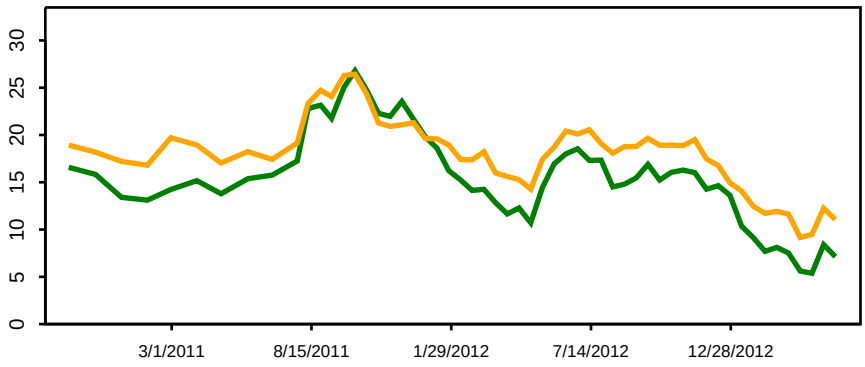
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

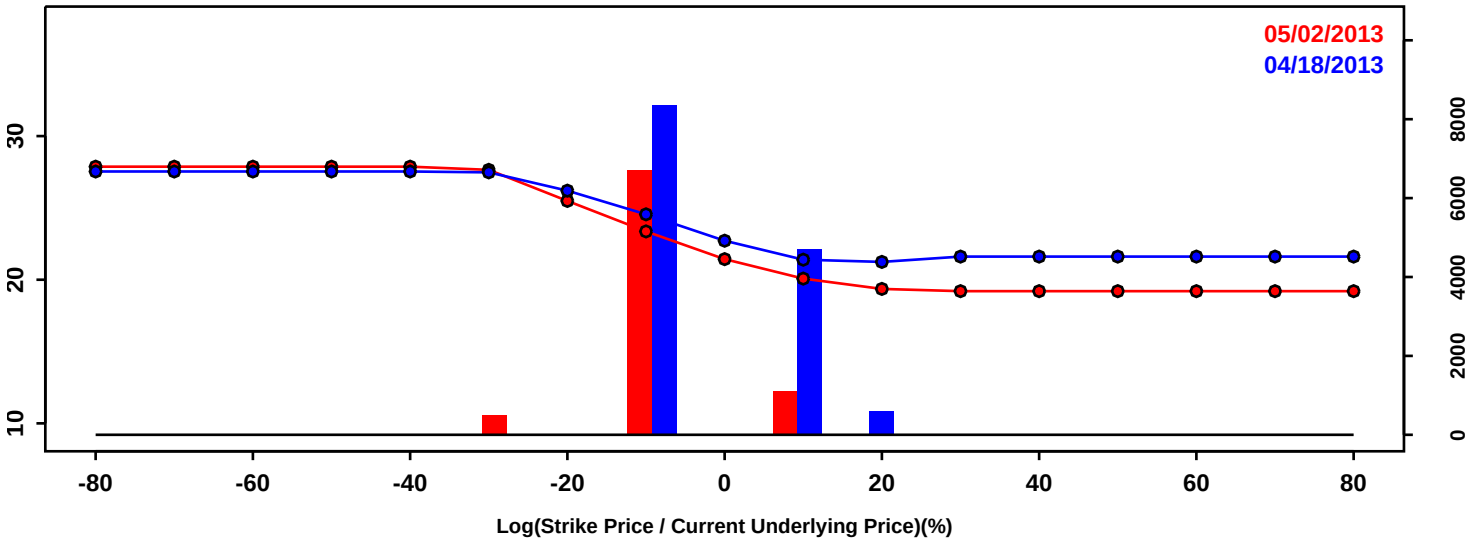
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-22.69%	-21.28%	1.42%
50th Pct	1.22%	1.12%	-0.11%
90th Pct	18.64%	17.67%	-0.97%
Mean	-0.48%	-0.47%	0.01%
Std Dev	16.59%	15.62%	-0.97%
Skew	-0.53	-0.56	-0.03
Kurtosis	0.65	0.67	0.02

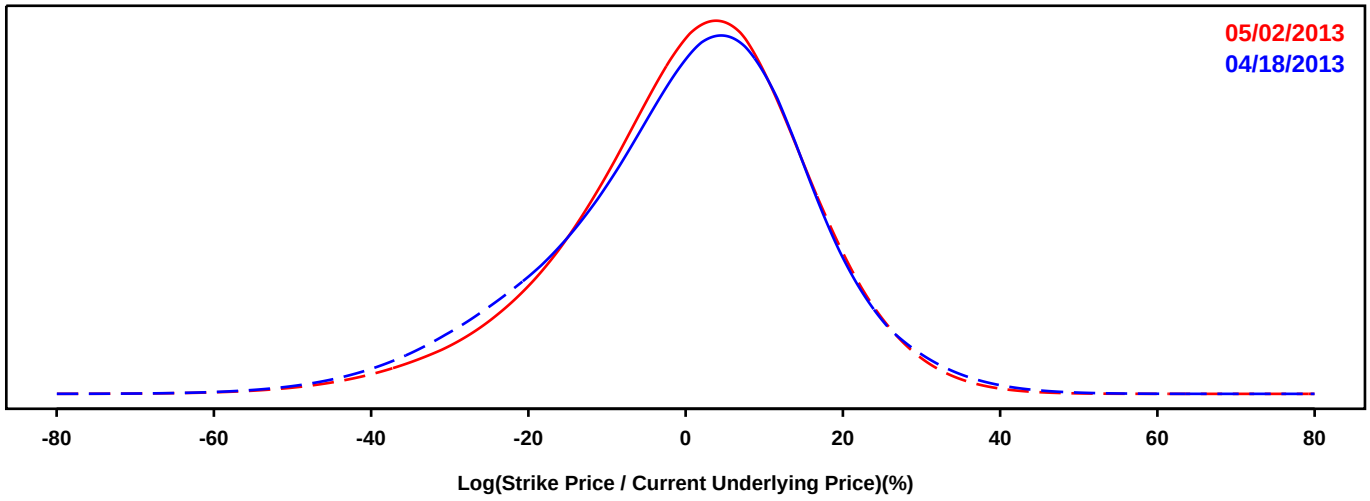
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CRUDE OIL FUTURES (Brent)

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

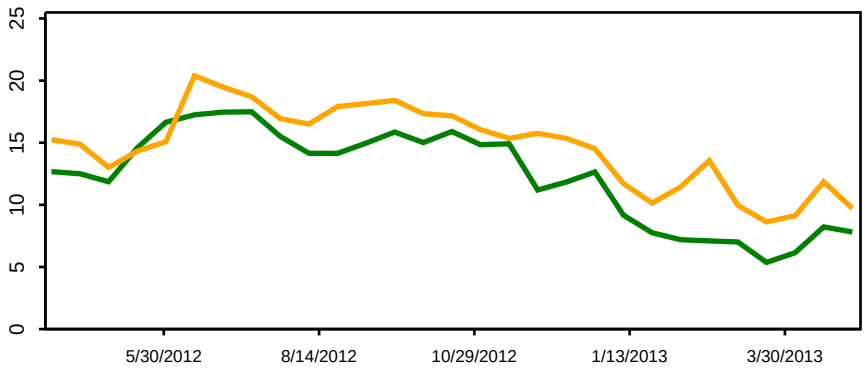
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

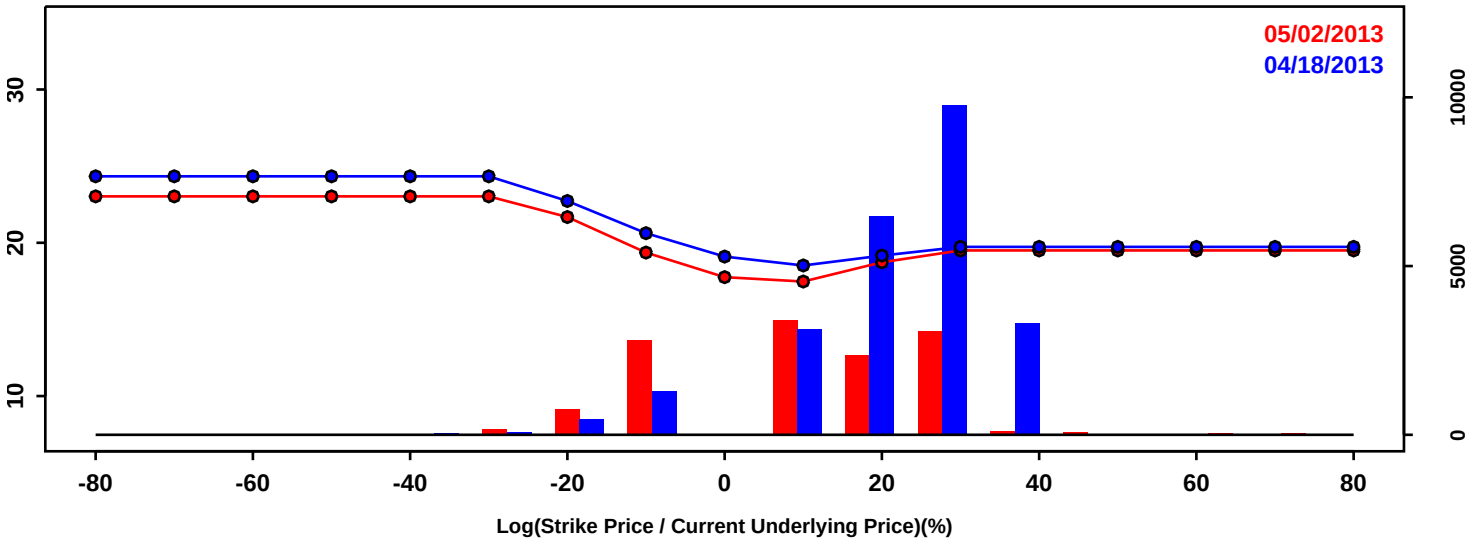
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-22.13%	-19.68%	2.45%
50th Pct	1.45%	1.61%	0.16%
90th Pct	18.52%	18.21%	-0.31%
Mean	-0.20%	0.29%	0.49%
Std Dev	16.18%	15.22%	-0.95%
Skew	-0.47	-0.51	-0.05
Kurtosis	0.51	0.68	0.17

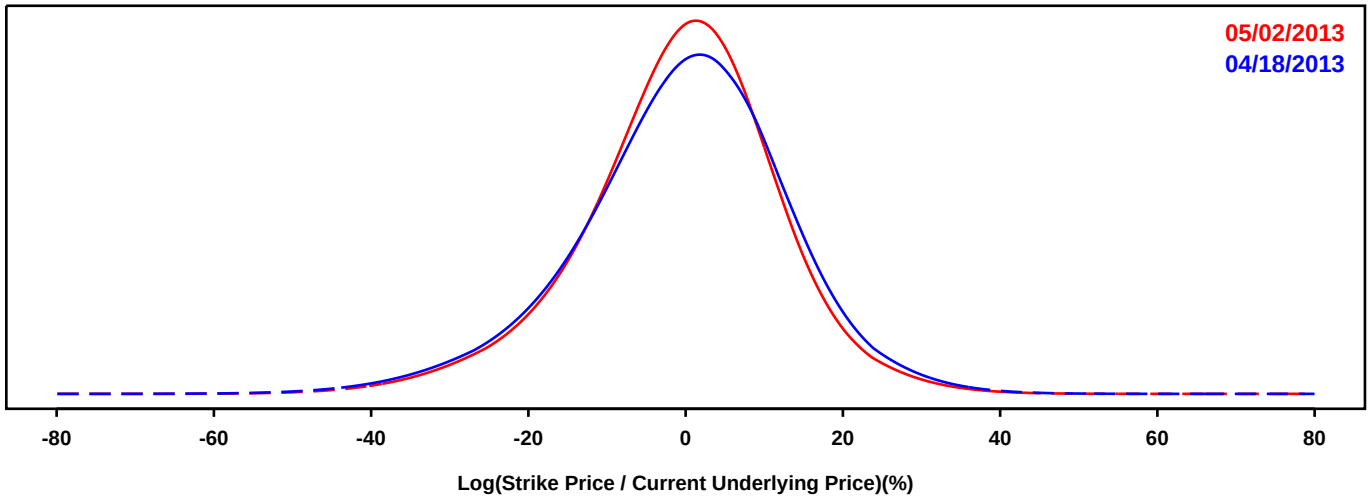
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- GOLD FUTURES

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

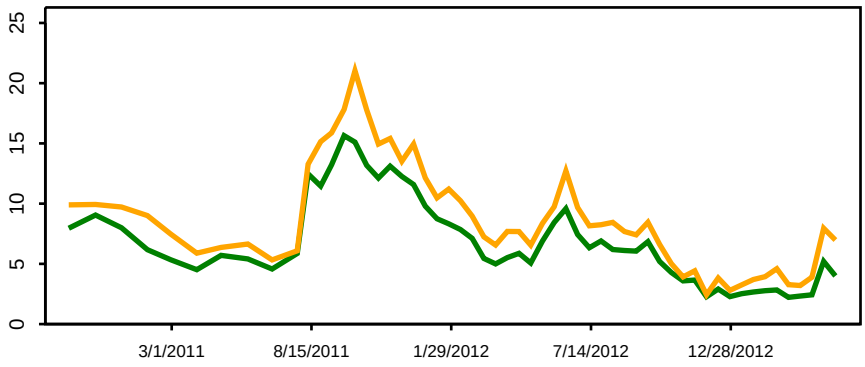
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

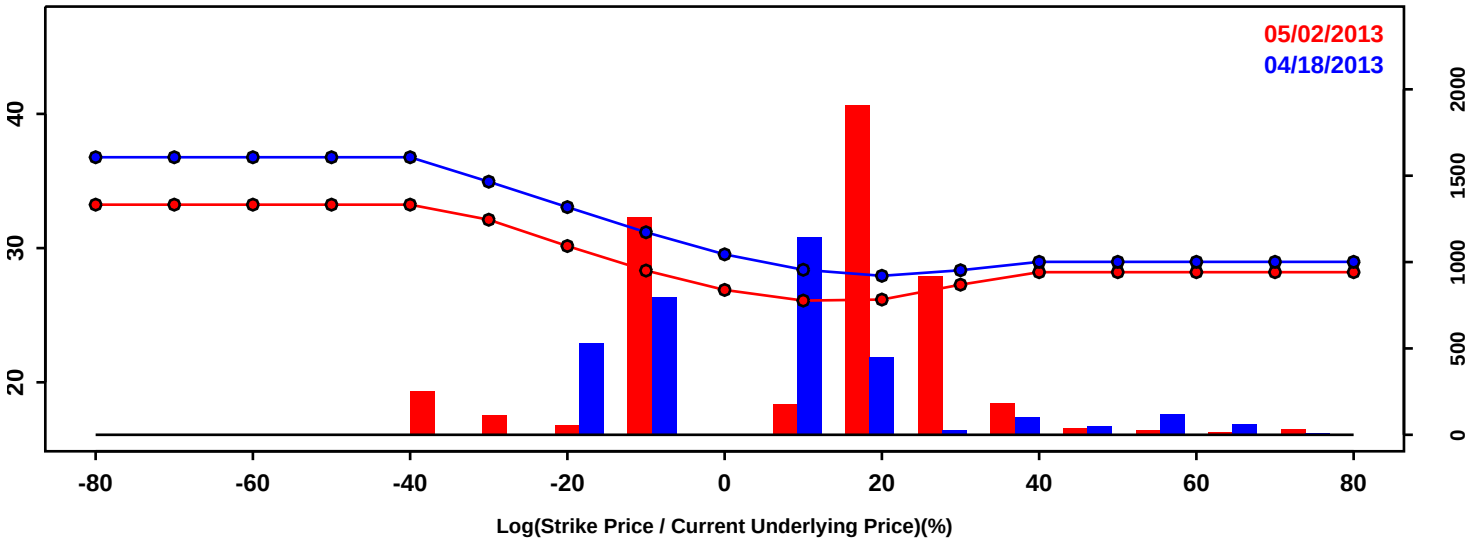
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-17.78%	-16.74%	1.04%
50th Pct	0.43%	0.09%	-0.35%
90th Pct	15.58%	14.10%	-1.48%
Mean	-0.41%	-0.66%	-0.25%
Std Dev	13.55%	12.63%	-0.92%
Skew	-0.37	-0.36	0.01
Kurtosis	0.72	0.87	0.15

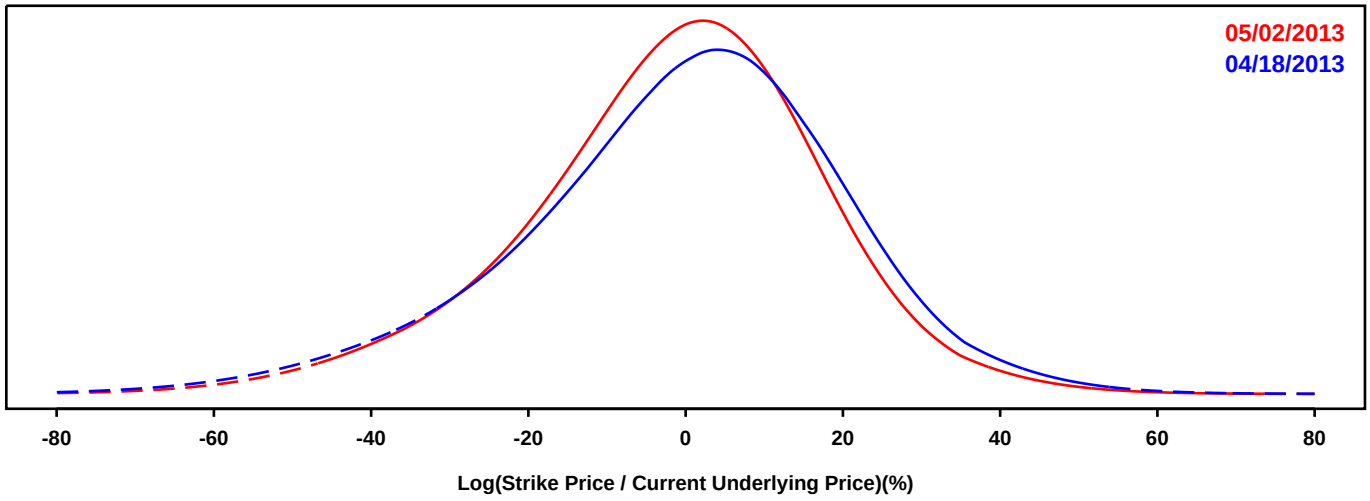
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SILVER FUTURES

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

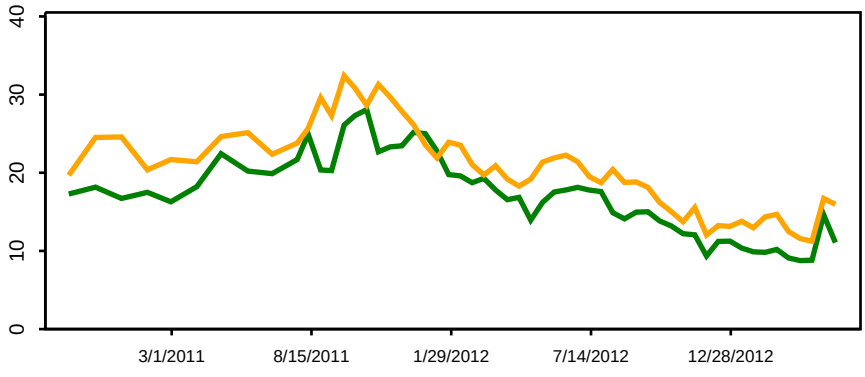
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

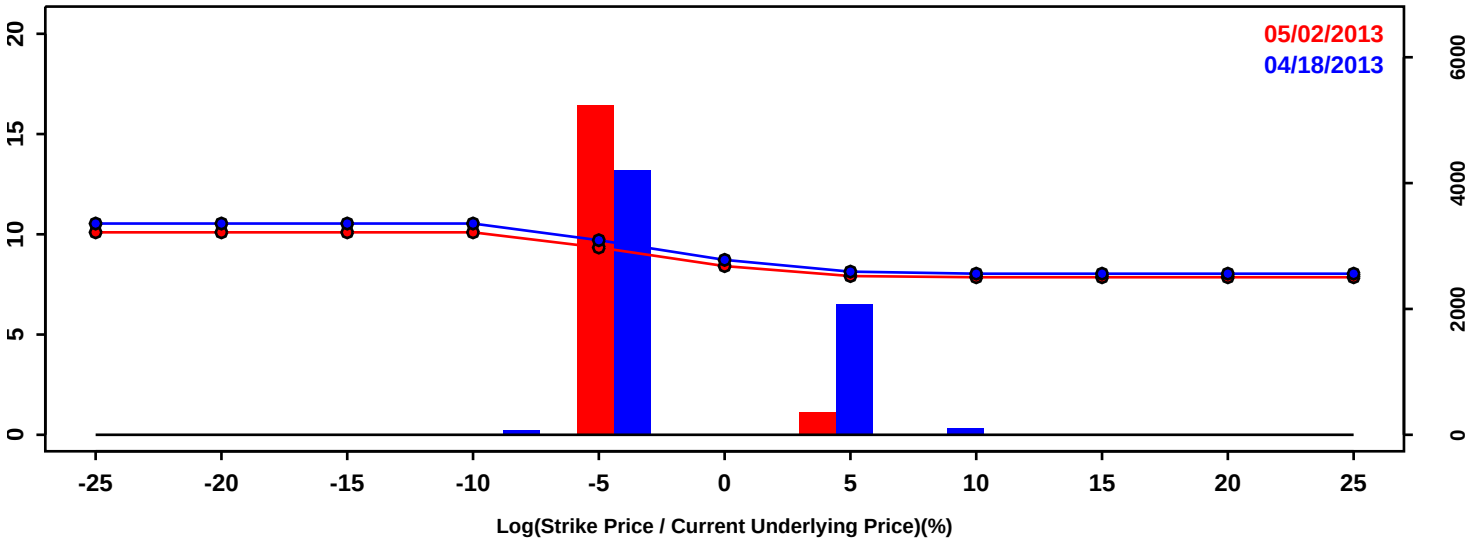
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-28.35%	-26.82%	1.53%
50th Pct	1.11%	-0.29%	-1.40%
90th Pct	24.02%	20.99%	-3.03%
Mean	-0.63%	-1.69%	-1.06%
Std Dev	21.03%	19.26%	-1.77%
Skew	-0.44	-0.38	0.06
Kurtosis	0.60	0.61	0.01

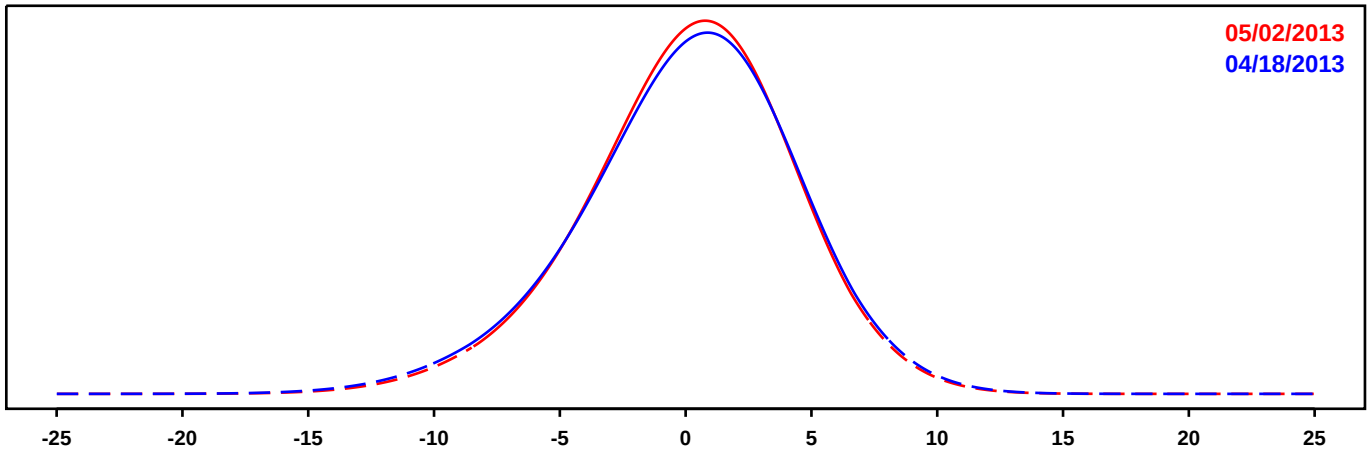
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-EURO EXCHANGE RATE FUTURES

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

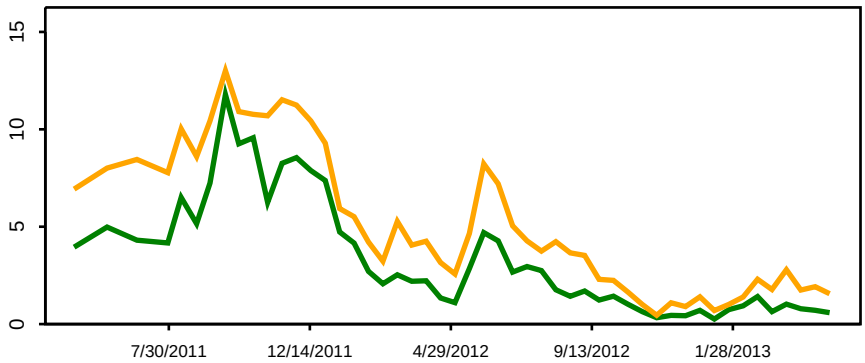
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



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

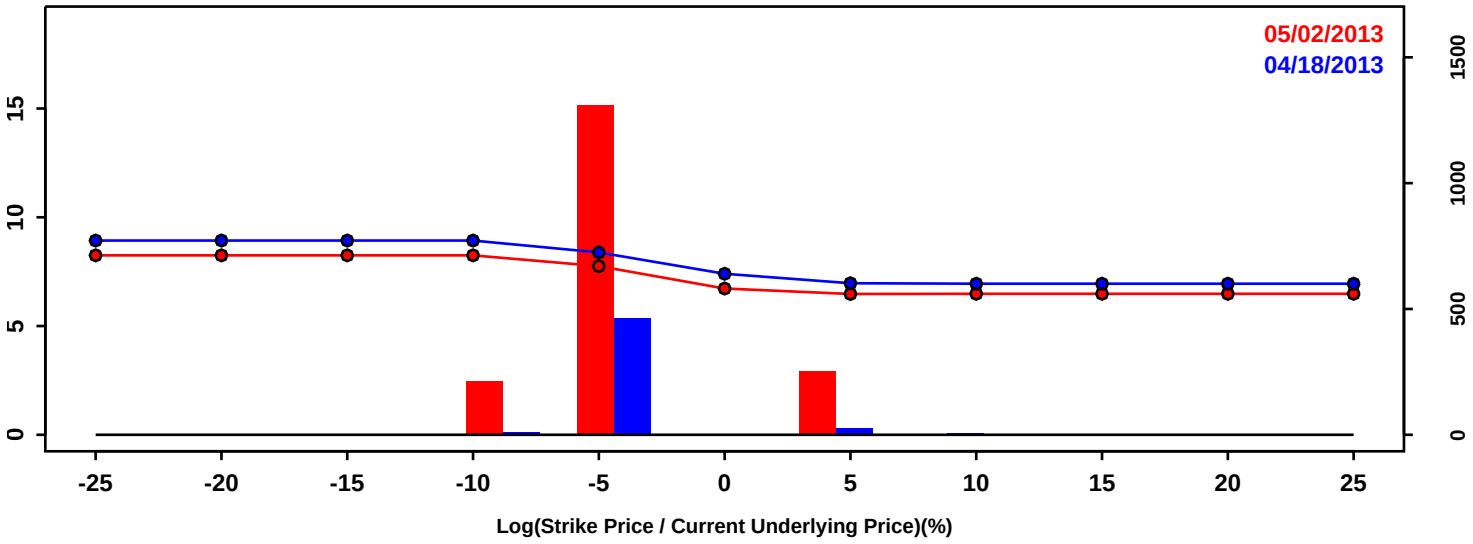
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-5.57%	-5.32%	0.25%
50th Pct	0.37%	0.36%	-0.00%
90th Pct	5.41%	5.22%	-0.19%
Mean	0.12%	0.14%	0.02%
Std Dev	4.36%	4.20%	-0.16%
Skew	-0.35	-0.32	0.03
Kurtosis	0.38	0.37	-0.02

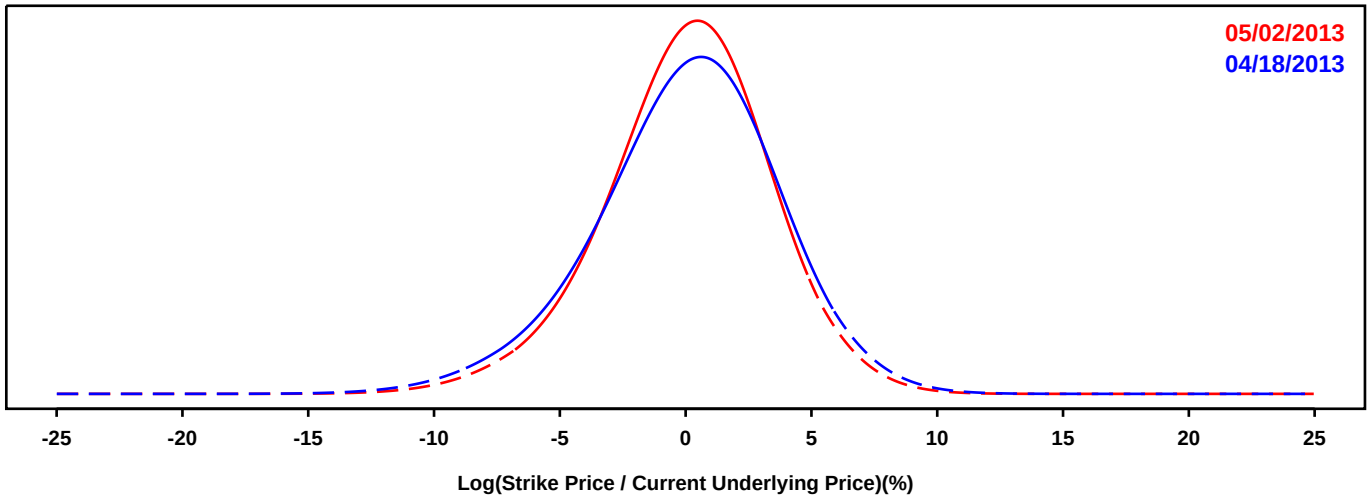
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-POUND EXCHANGE RATE FUTURES

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

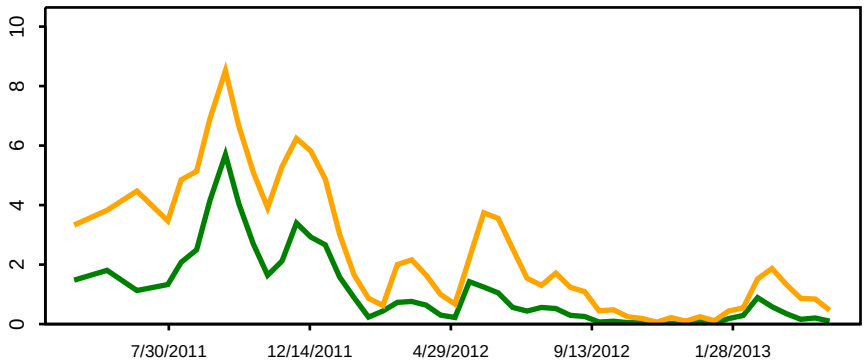
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



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

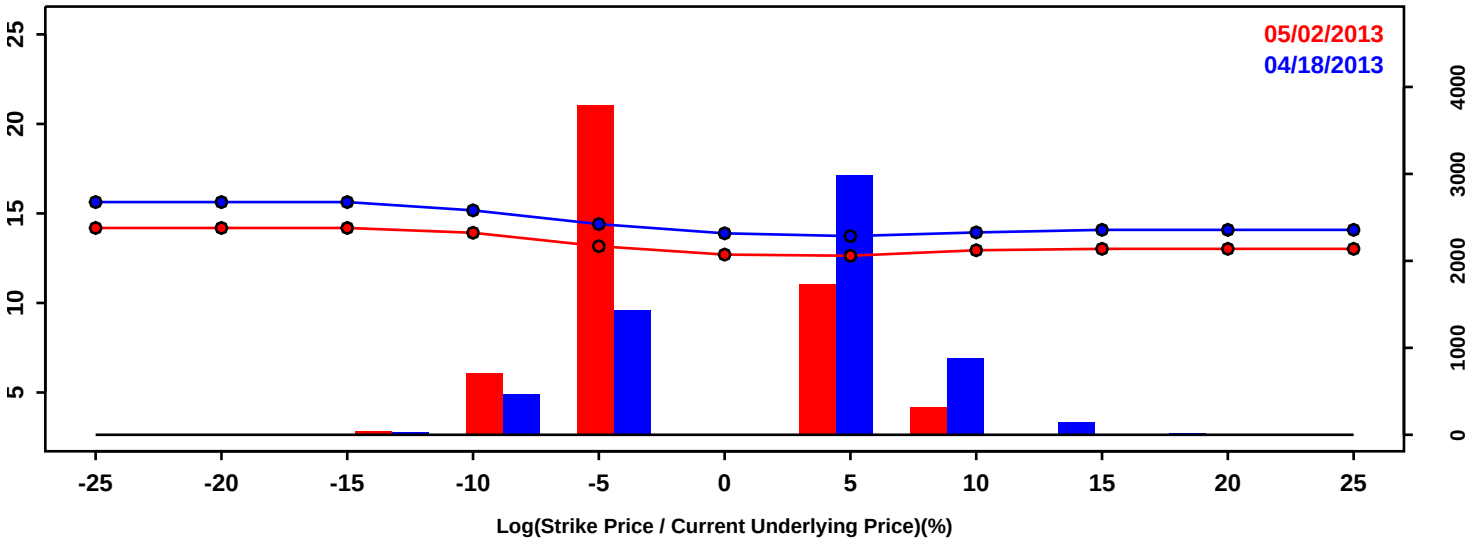
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-4.75%	-4.21%	0.54%
50th Pct	0.24%	0.22%	-0.03%
90th Pct	4.53%	4.18%	-0.35%
Mean	0.08%	0.10%	0.02%
Std Dev	3.70%	3.35%	-0.35%
Skew	-0.32	-0.29	0.03
Kurtosis	0.40	0.46	0.06

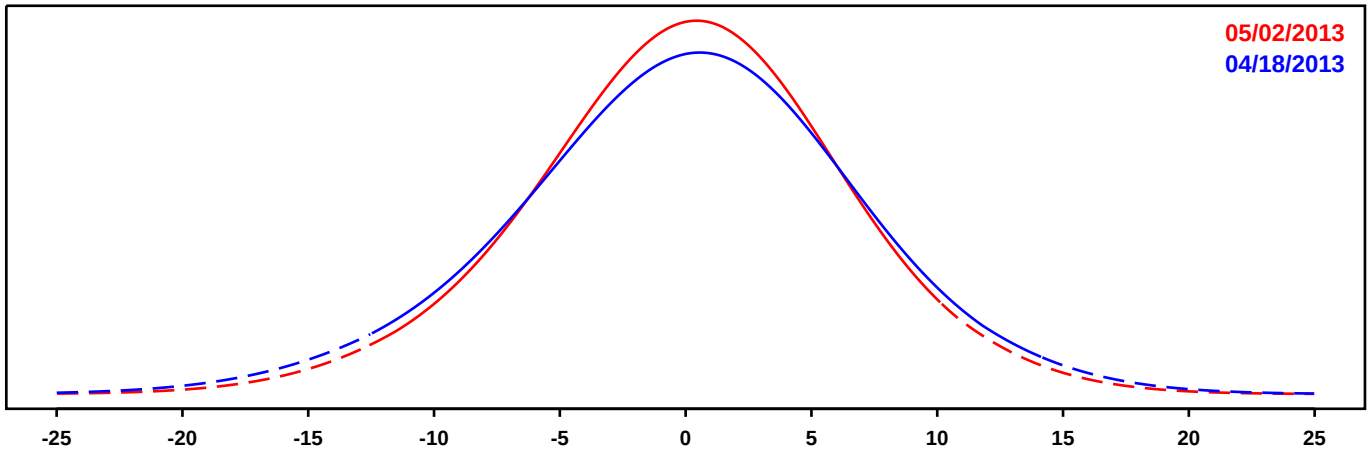
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-YEN EXCHANGE RATE FUTURES

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

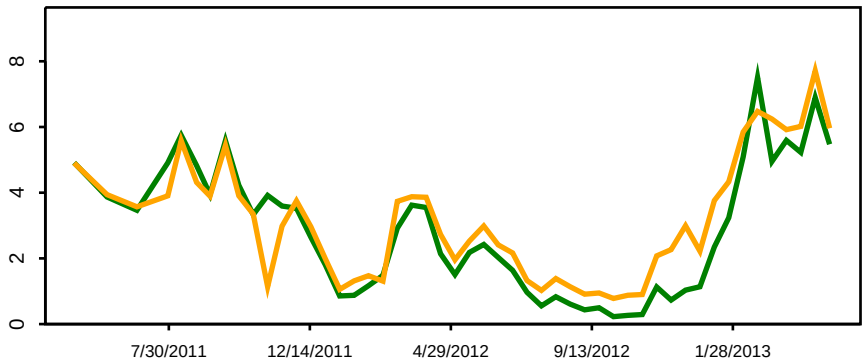
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



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

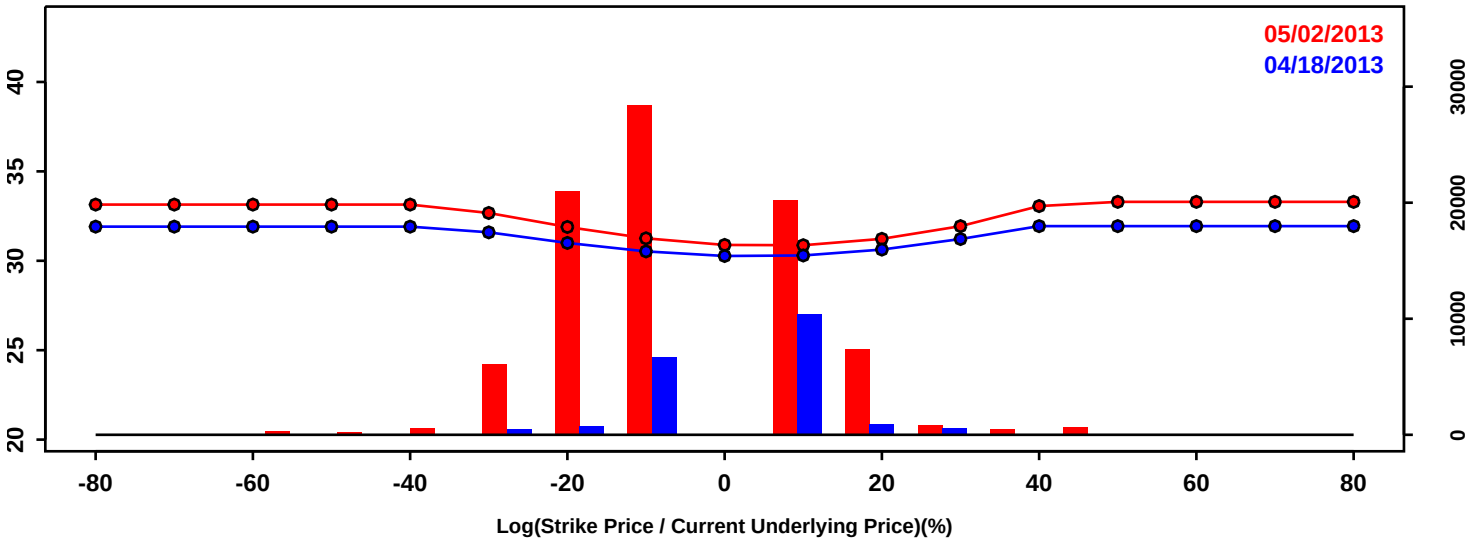
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-8.89%	-8.01%	0.88%
50th Pct	0.18%	0.22%	0.03%
90th Pct	8.58%	7.98%	-0.60%
Mean	0.04%	0.11%	0.07%
Std Dev	6.93%	6.33%	-0.60%
Skew	-0.15	-0.12	0.03
Kurtosis	0.30	0.30	-0.00

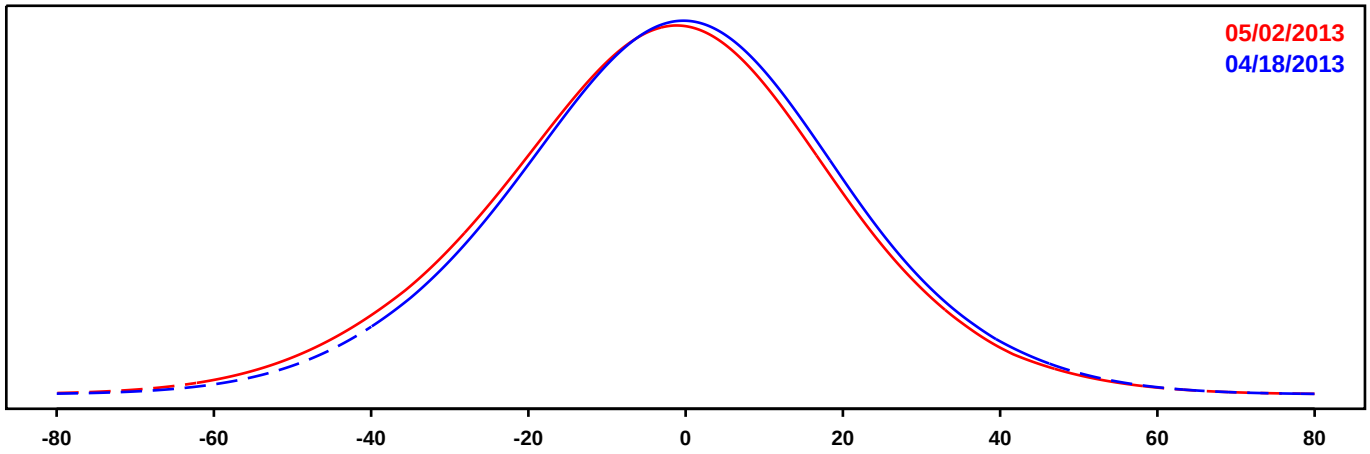
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CORN FUTURES

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

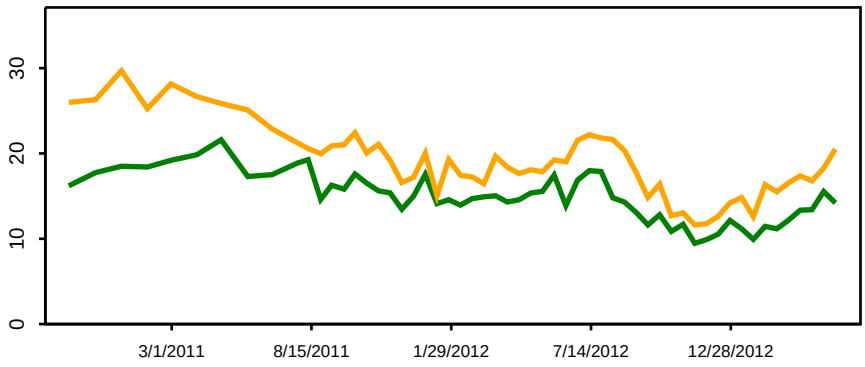
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

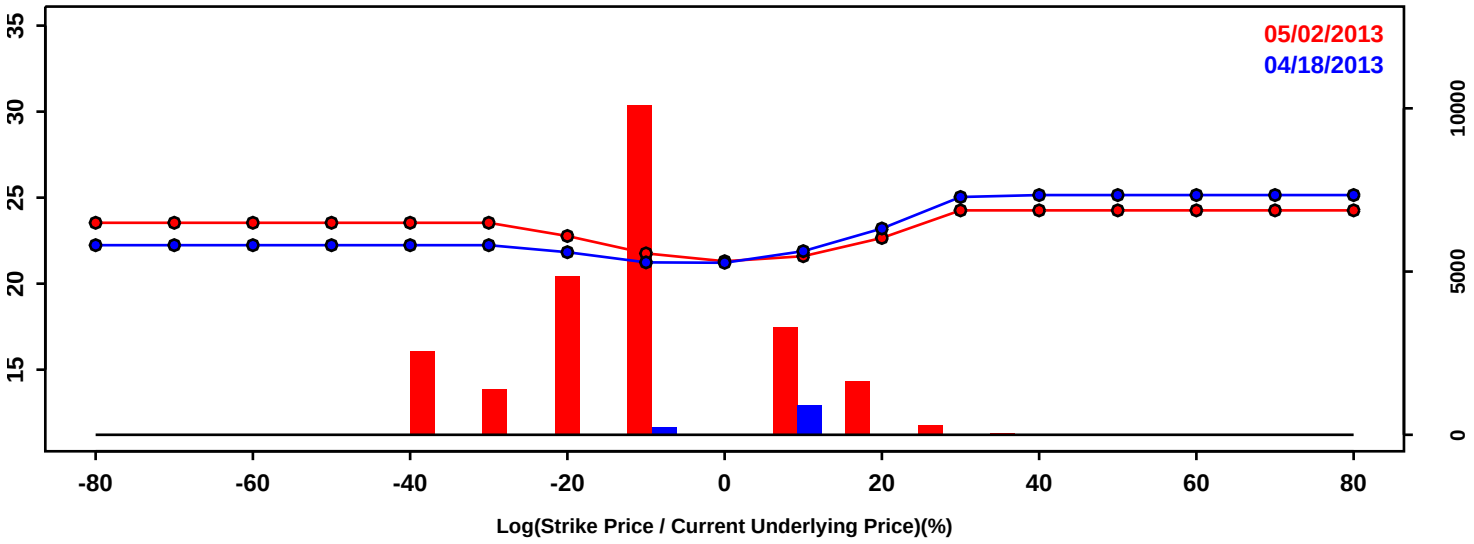
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-28.46%	-30.76%	-2.30%
50th Pct	-0.86%	-2.23%	-1.37%
90th Pct	25.75%	24.58%	-1.17%
Mean	-1.07%	-2.64%	-1.56%
Std Dev	21.39%	21.88%	0.49%
Skew	-0.03	-0.08	-0.04
Kurtosis	0.21	0.25	0.03

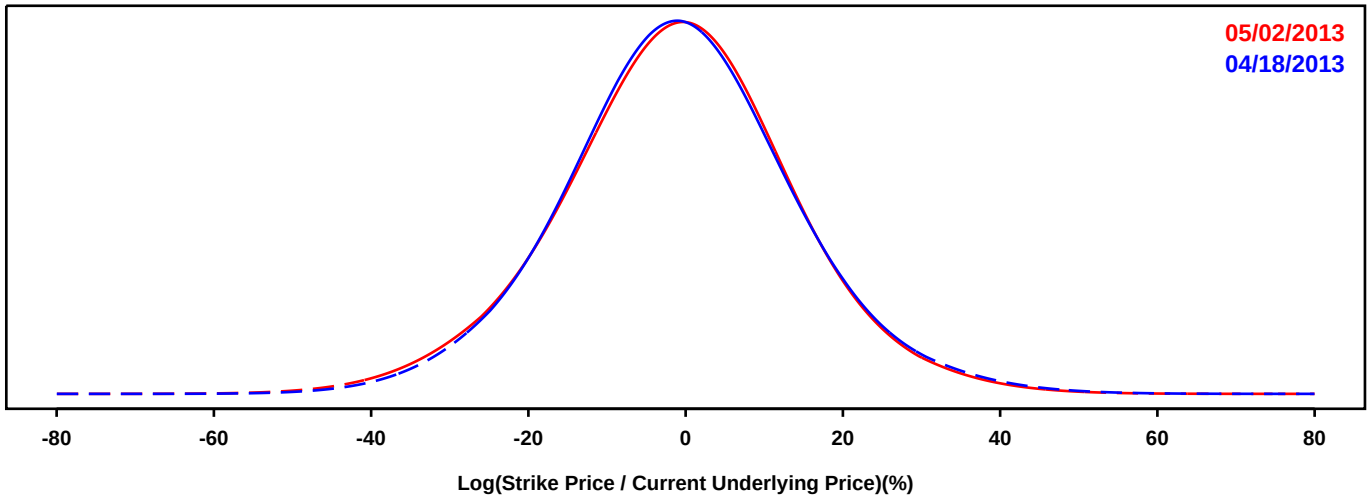
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SOYBEAN FUTURES

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

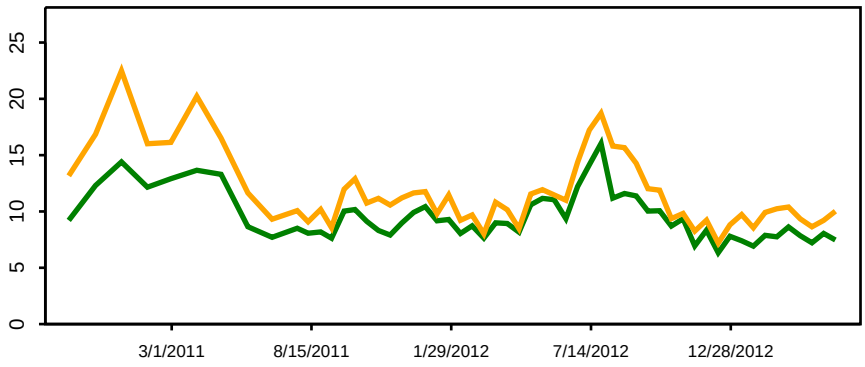
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

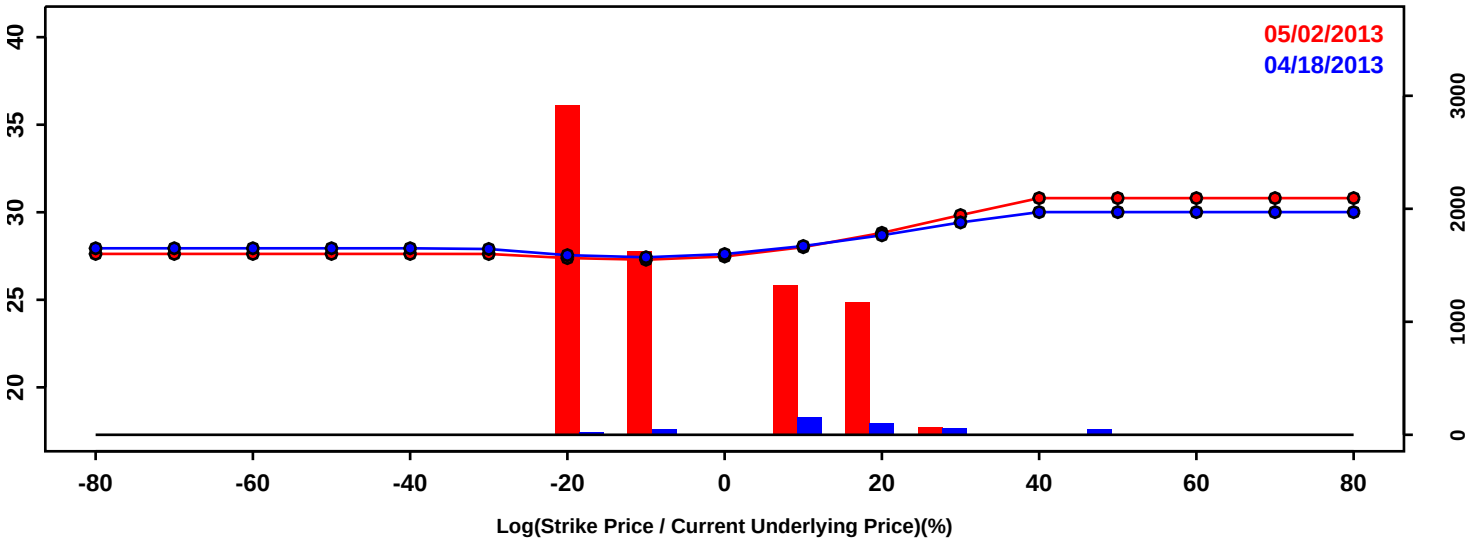
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-19.29%	-20.00%	-0.71%
50th Pct	-0.86%	-0.82%	0.04%
90th Pct	18.01%	17.45%	-0.56%
Mean	-0.65%	-1.03%	-0.37%
Std Dev	14.93%	15.03%	0.10%
Skew	0.10	-0.04	-0.14
Kurtosis	0.46	0.46	-0.00

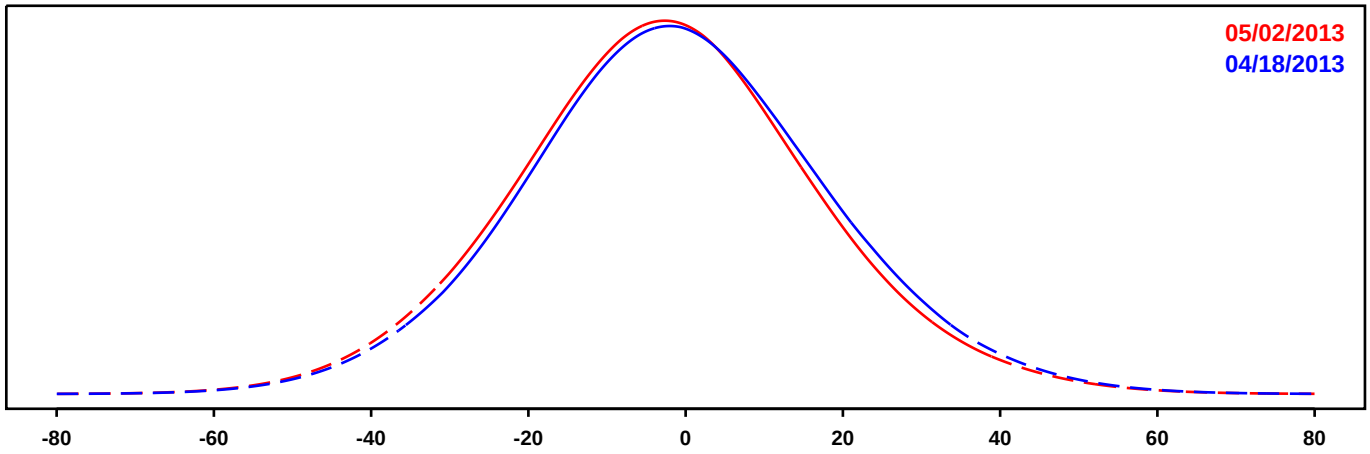
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- WHEAT FUTURES

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

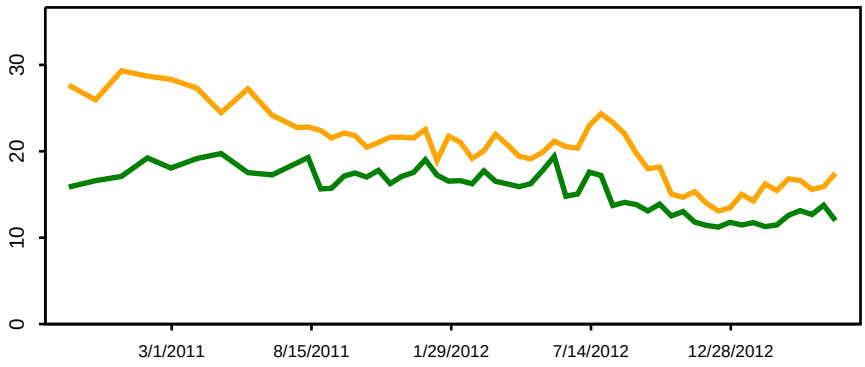
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

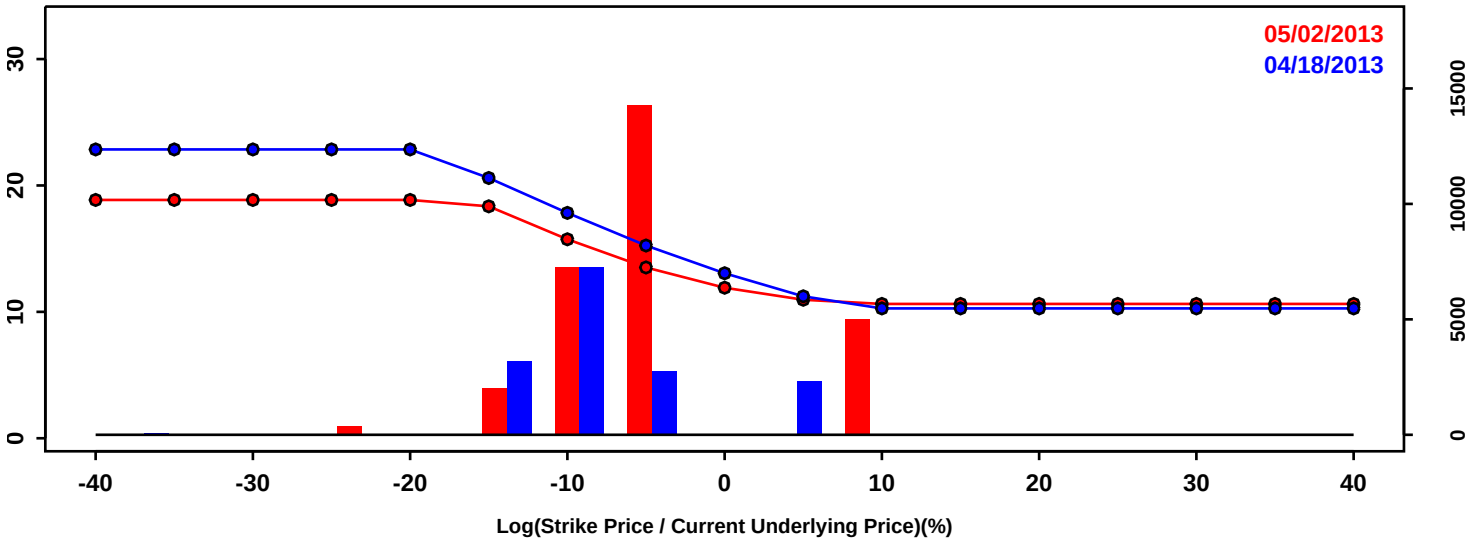
Statistics of the Log Return Distributions

	04/18/2013	05/02/2013	Change
10th Pct	-25.44%	-26.68%	-1.24%
50th Pct	-1.35%	-2.58%	-1.23%
90th Pct	23.96%	22.19%	-1.77%
Mean	-1.00%	-2.32%	-1.32%
Std Dev	19.48%	19.33%	-0.15%
Skew	0.09	0.09	0.01
Kurtosis	0.20	0.25	0.05

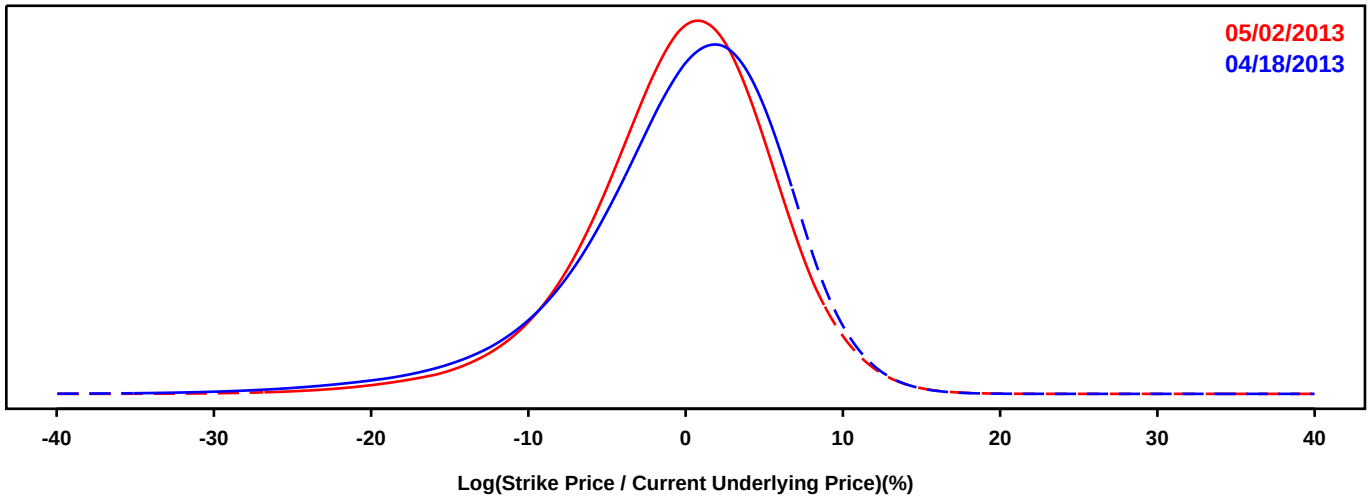
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- iSHARES DOW JONES US REAL ESTATE

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

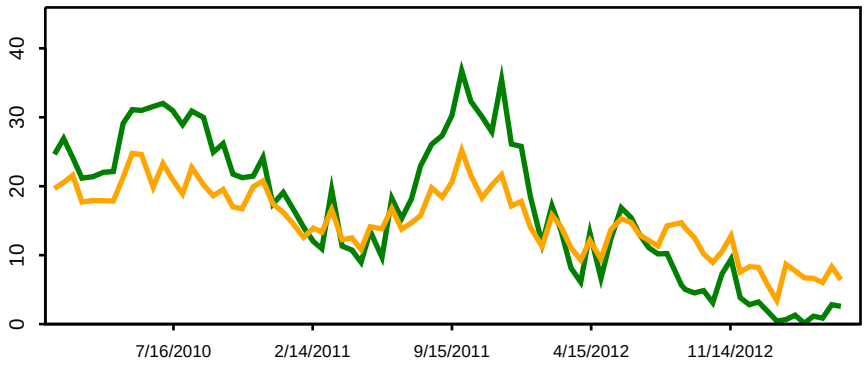
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



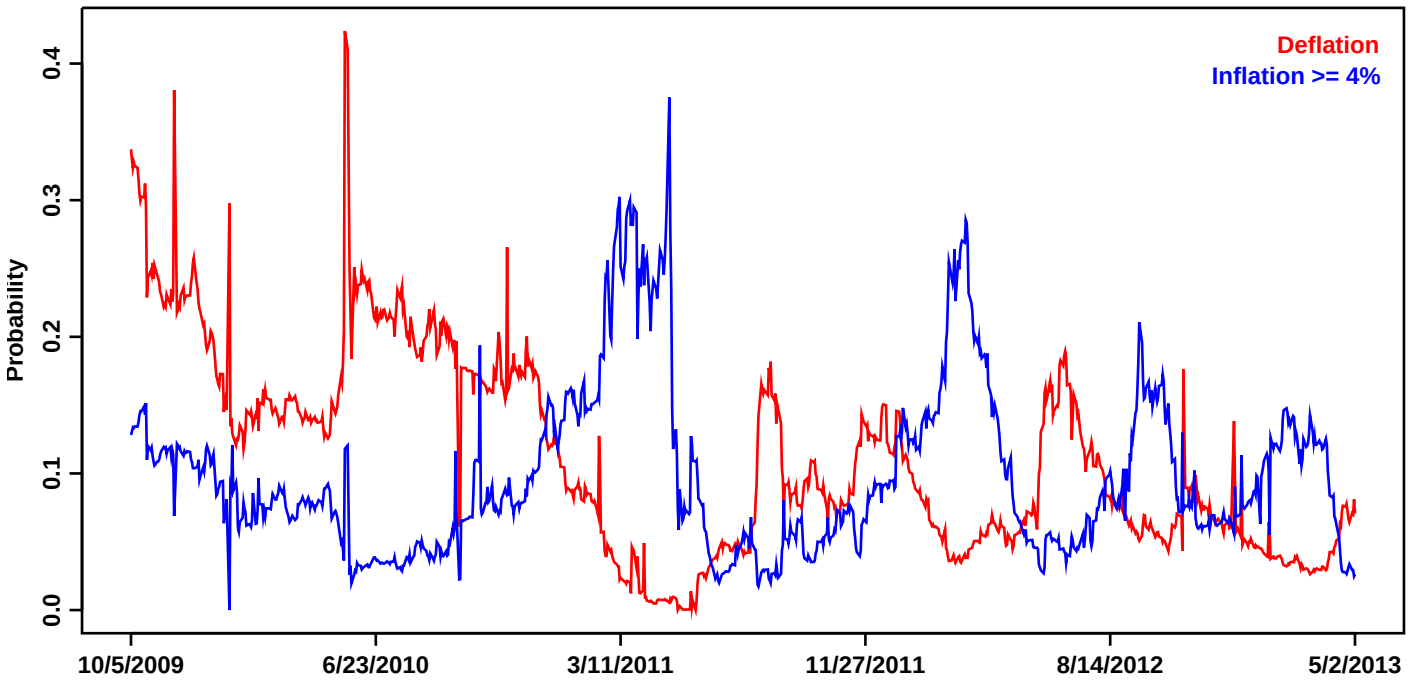
Decrease <= -10% Increase >= 10%

Statistics of the Log Return Distributions

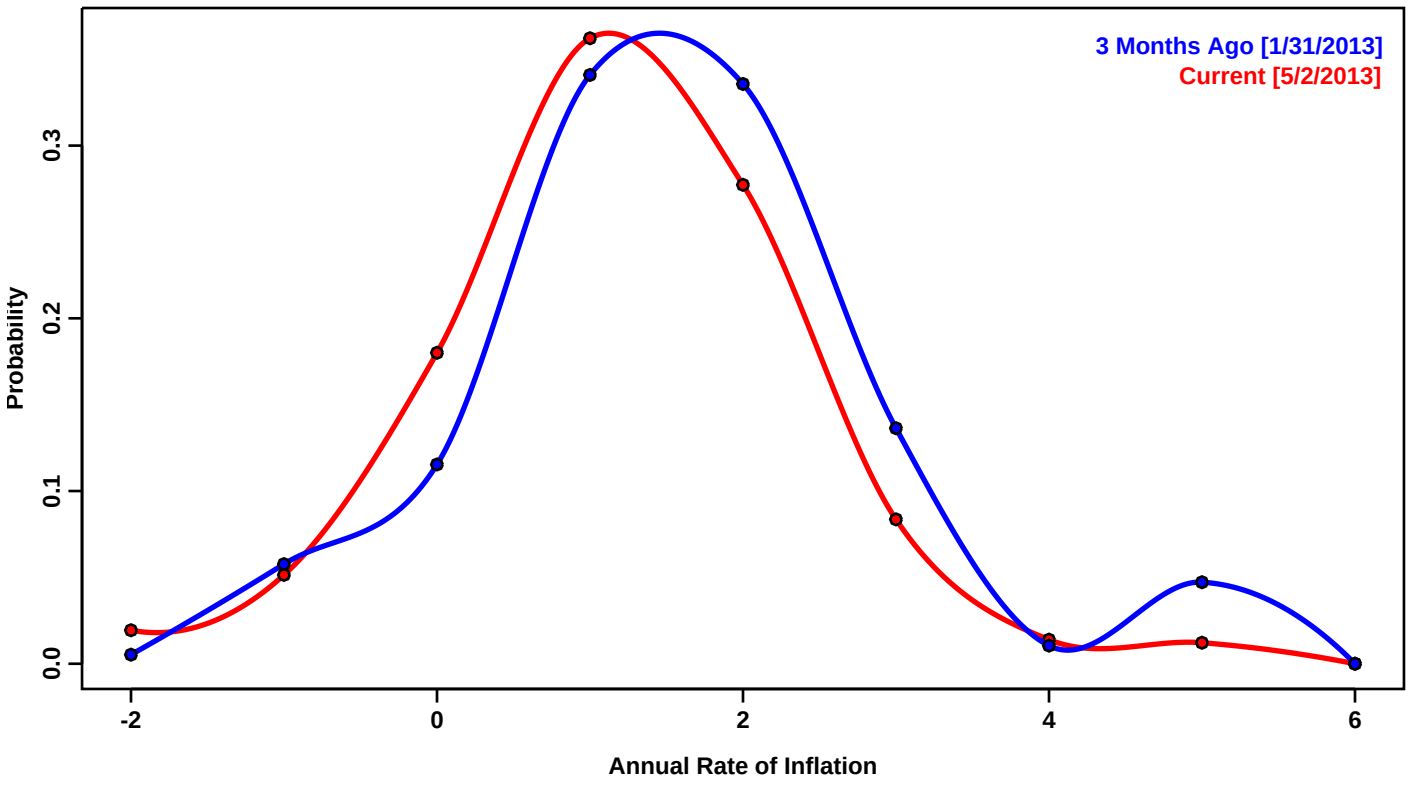
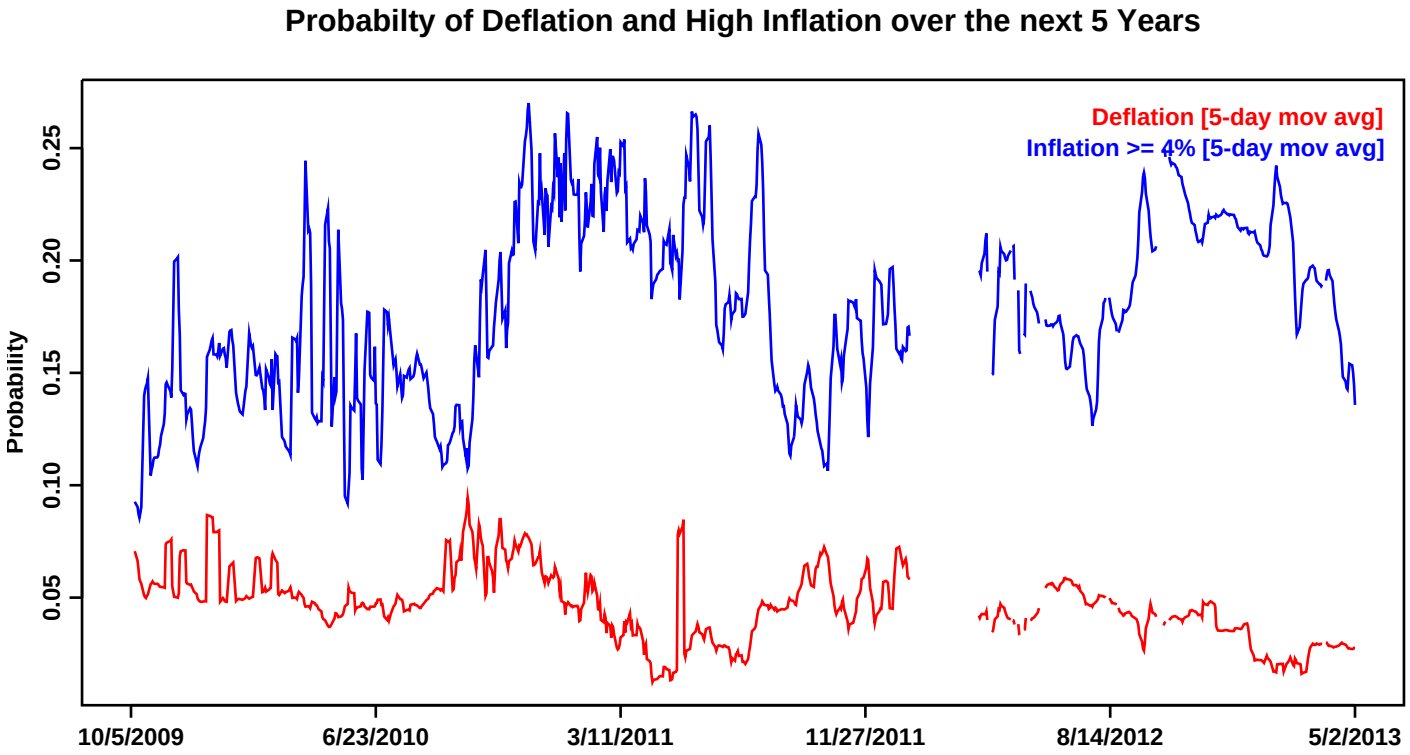
	04/18/2013	05/02/2013	Change
10th Pct	-8.98%	-8.04%	0.94%
50th Pct	0.53%	0.12%	-0.41%
90th Pct	7.06%	6.62%	-0.44%
Mean	-0.38%	-0.40%	-0.02%
Std Dev	6.78%	6.05%	-0.73%
Skew	-1.02	-0.67	0.34
Kurtosis	2.08	1.34	-0.74

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- Inflation Caps & Floors

Probabilty 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