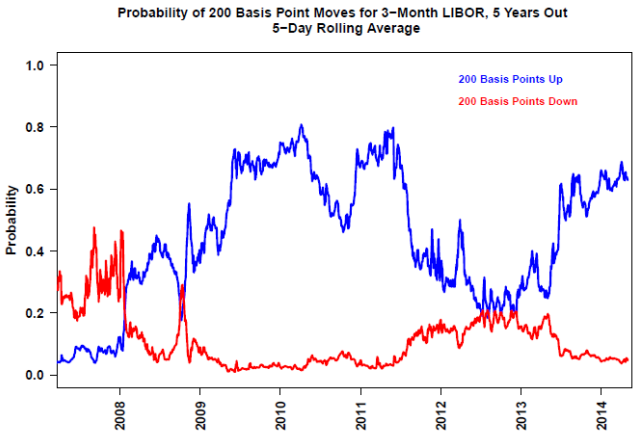
Minneapolis Options Report – May 1st

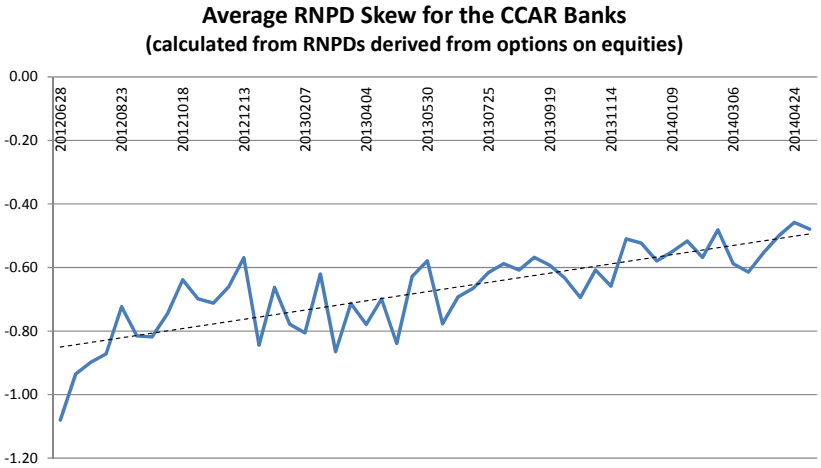
Inflation and Interest Rates

Risk neutral probabilities for inflation 1 and 5 years out have changed little over the past two weeks. There remains a downward skew to the RNPD for inflation 1 year from now indicating more probability in the distribution at lower inflation rates for the near term. Expectations for LIBOR rates 5 years out also show little change from last week. We saw little movement in any these distributions in the wake of the most recent FOMC meeting.



Banks & Insurance Companies

Trading in options on bank and insurance company stocks picked up relative to two weeks ago and ranked as one of the most active weeks of trading of the past twenty periods for a number of companies. In addition, RNPD skews are at the highest levels (least negative values) we have measured over the past twenty periods indicating less risk neutral probability at lower prices.



Price performance was different between the two industries over the past two weeks. The average insurance company price was up 180 basis points while the average CCAR bank price fell -120 basis points.

Additional Notes:

- BAC reported an important calculation error that caused the Fed to ask for a resubmission and reject their capital plan. The stock price fell -8.8% over the past two weeks and the RNPD standard deviation increased 60 basis points. (*See BAC report*)

- Option trading jumped for CB, HIG, and PFG last week. RNPD standard deviations declined for these firms. Most insurance company RNPD standard deviations are near their 20 period lows.

Other Commodity Markets

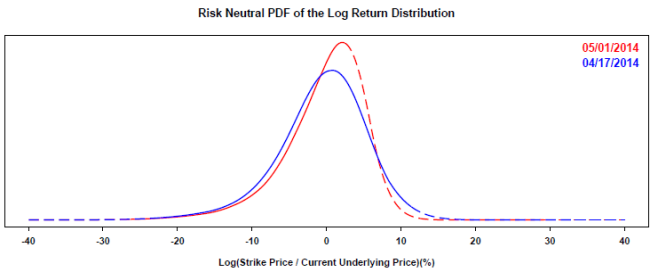
Trading in options on the S&P 500 was light. The standard deviation of the RNPD derived from options on the S&P 500 fell about -25 basis points. Trading for options on other commodities was generally light. The direction of tail risk, as measured by RNPD standard deviation, was down.

- RNPD standard deviations fell for the RNPDs derived from options on grain prices relative to two weeks ago. Tail risks in the wheat market dropped the most: -110 basis points. (*See corn, soybeans, and wheat reports*)

- RNPD standard deviations *increased* in the oil markets while spot prices dropped more than -250 basis points. Risk neutral probabilities remain skewed to the downside indicating a continued bias toward lower future prices by market participants. (*See oil reports*)

- We continue to observe very little change in the profile of options on exchange rate futures. RNPD standard deviations are at low levels indicating low expectations for large exchange rate fluctuations over the next few months. (*See exchange rate reports*)

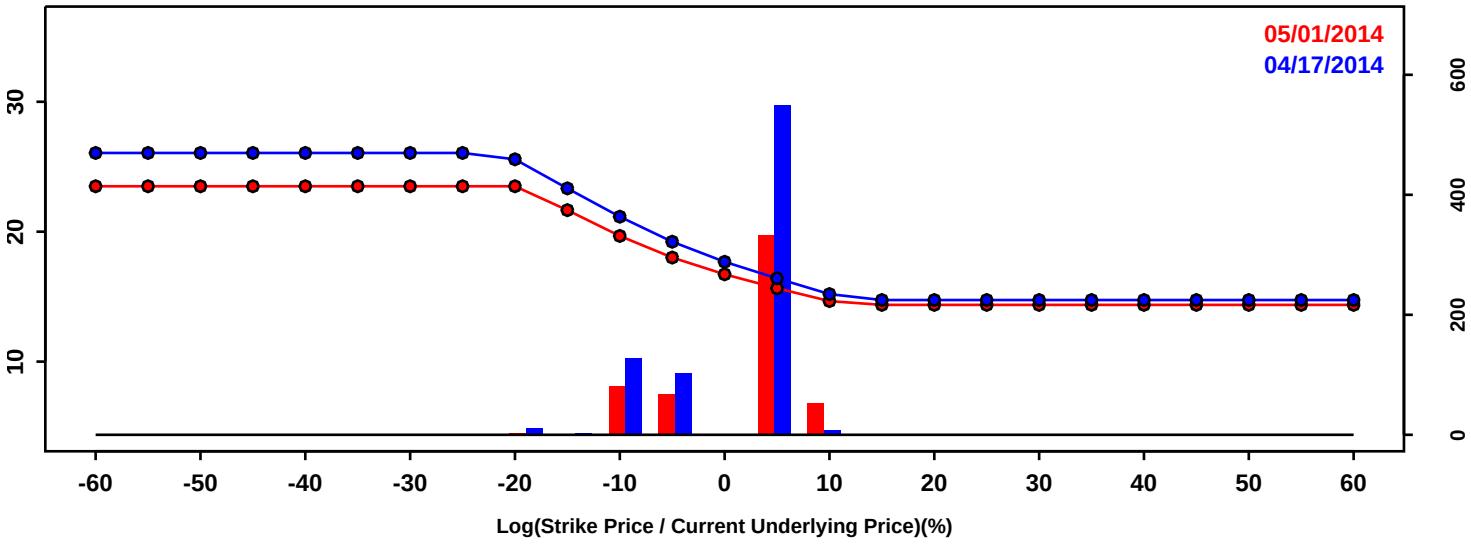
- There was a spike in options trading on the Dow Jones Real Estate ETF. This was the second highest level of options volume we have registered. Along with the increase in trading volume, the ETF price increased 150 basis points and the RNPD standard deviation fell -30 basis points. The RNPD distribution skewed more negatively over the past 4 weeks (chart below). (*See real estate report*)



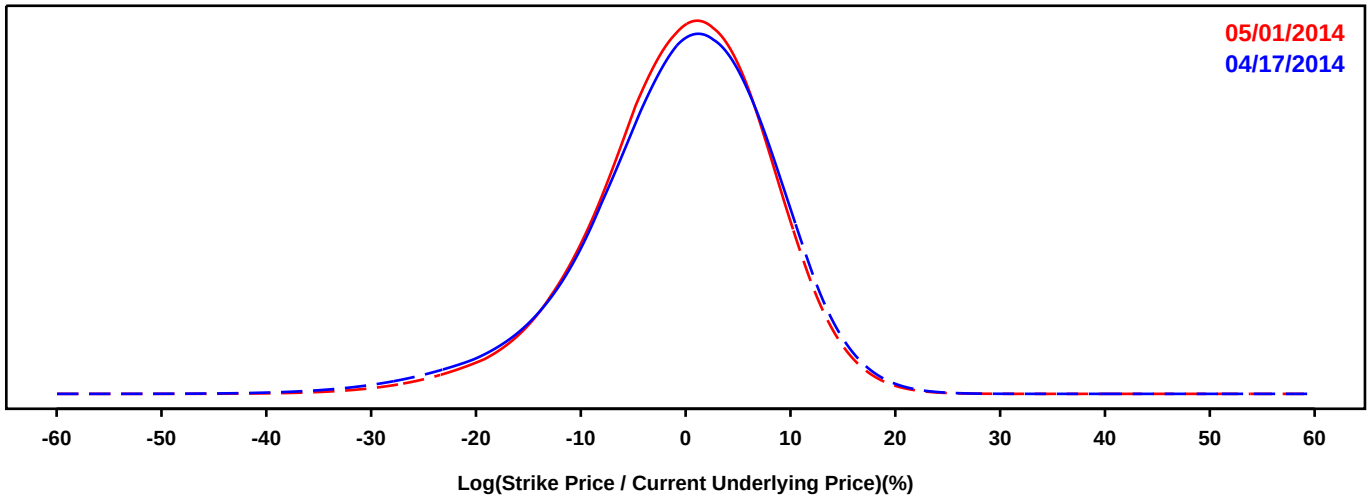
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AFLAC

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

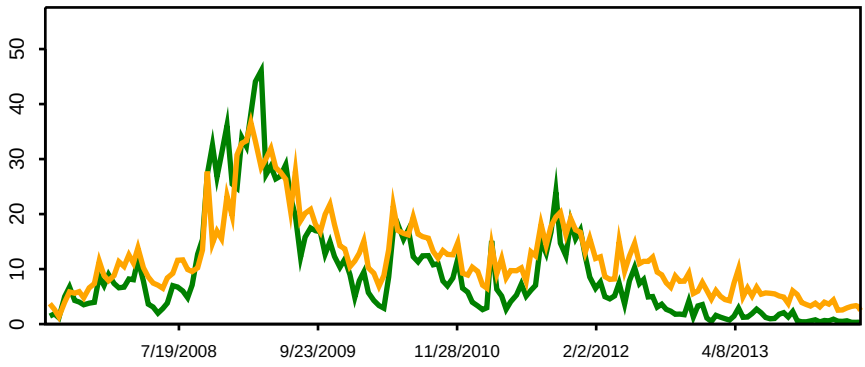
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

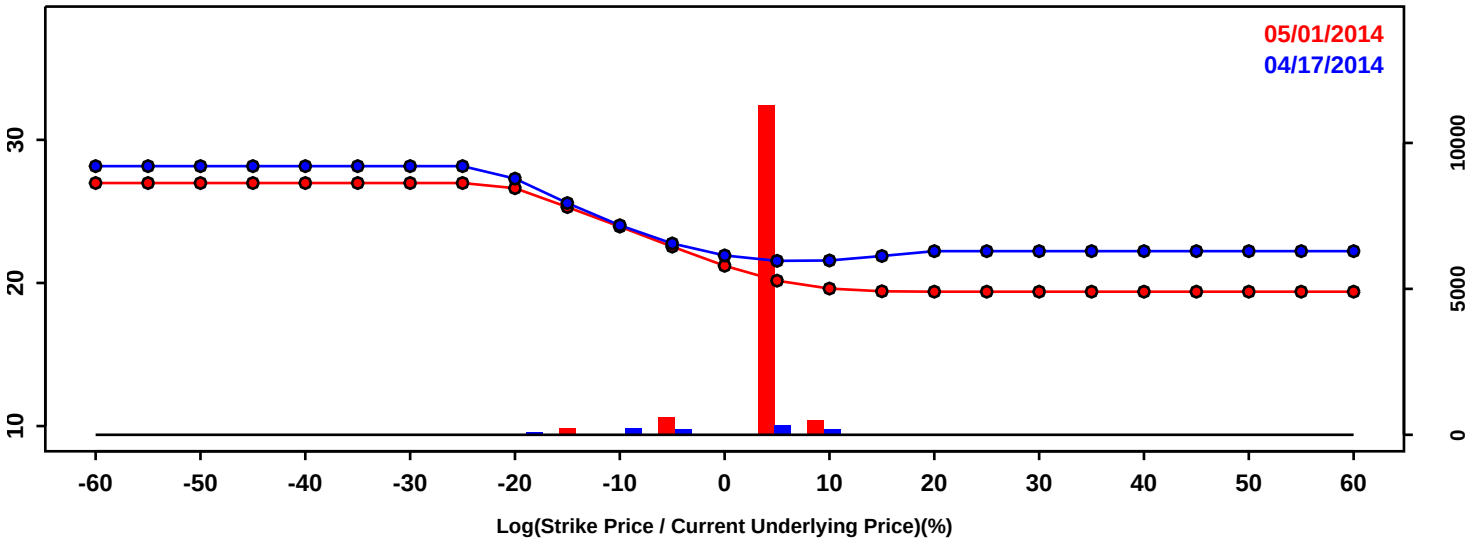
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-12.26%	-11.49%	0.77%
50th Pct	0.20%	0.08%	-0.11%
90th Pct	9.92%	9.48%	-0.44%
Mean	-0.64%	-0.60%	0.04%
Std Dev	9.08%	8.50%	-0.58%
Skew	-0.70	-0.57	0.13
Kurtosis	1.12	0.83	-0.29

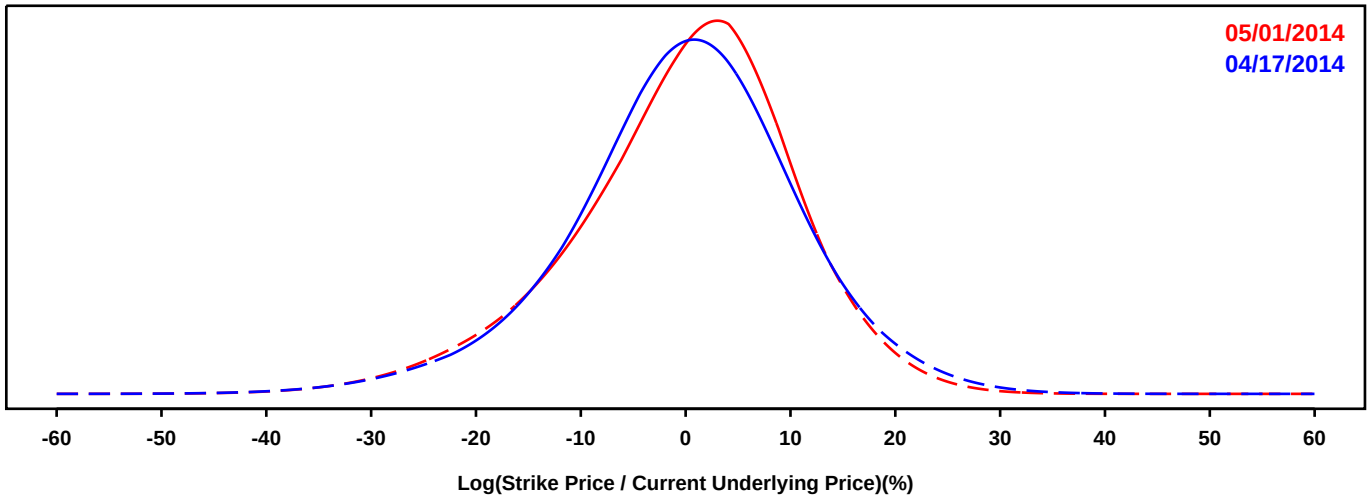
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AIG

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

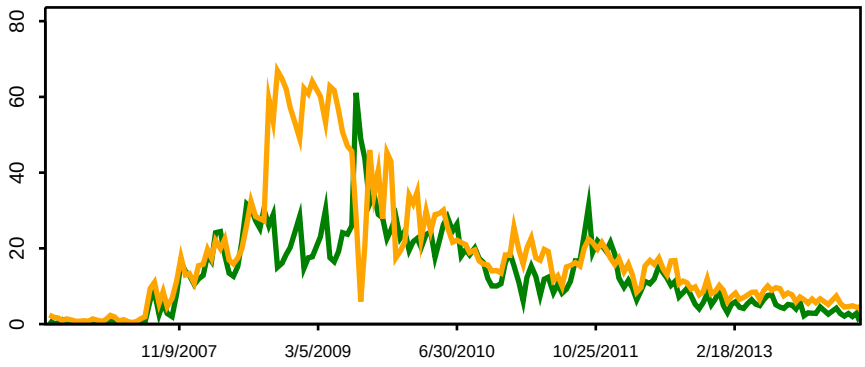
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

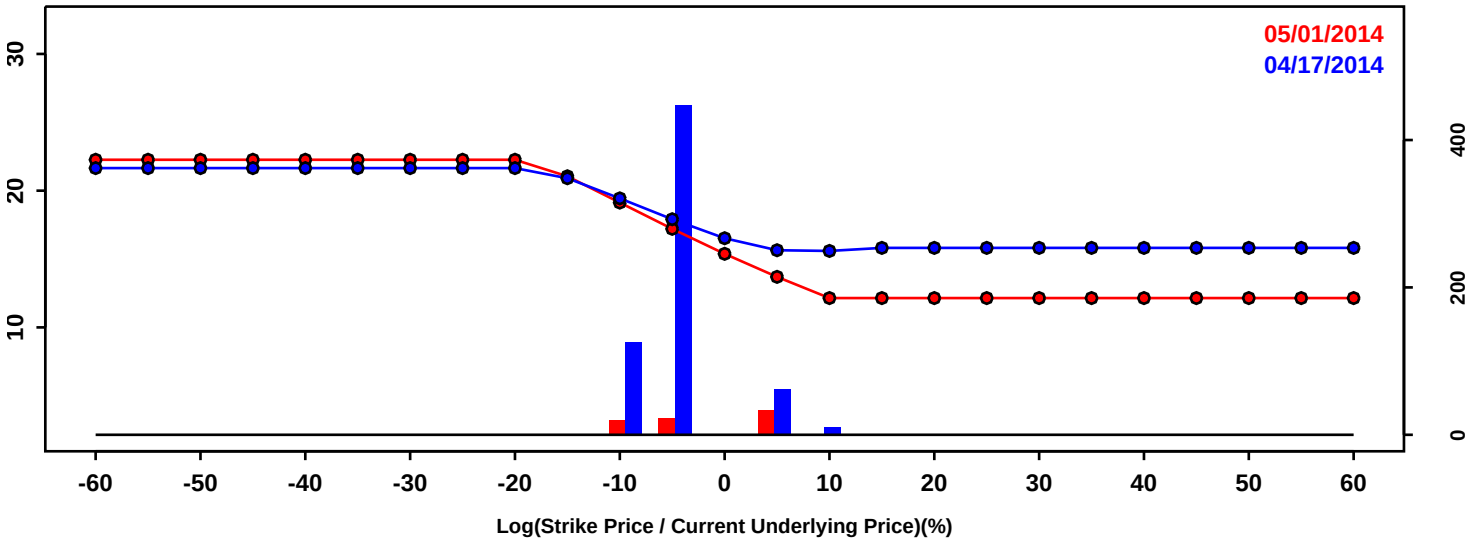
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-14.00%	-14.43%	-0.43%
50th Pct	0.32%	0.86%	0.54%
90th Pct	13.10%	12.34%	-0.76%
Mean	-0.12%	-0.20%	-0.07%
Std Dev	10.97%	10.73%	-0.24%
Skew	-0.31	-0.51	-0.20
Kurtosis	0.71	0.63	-0.08

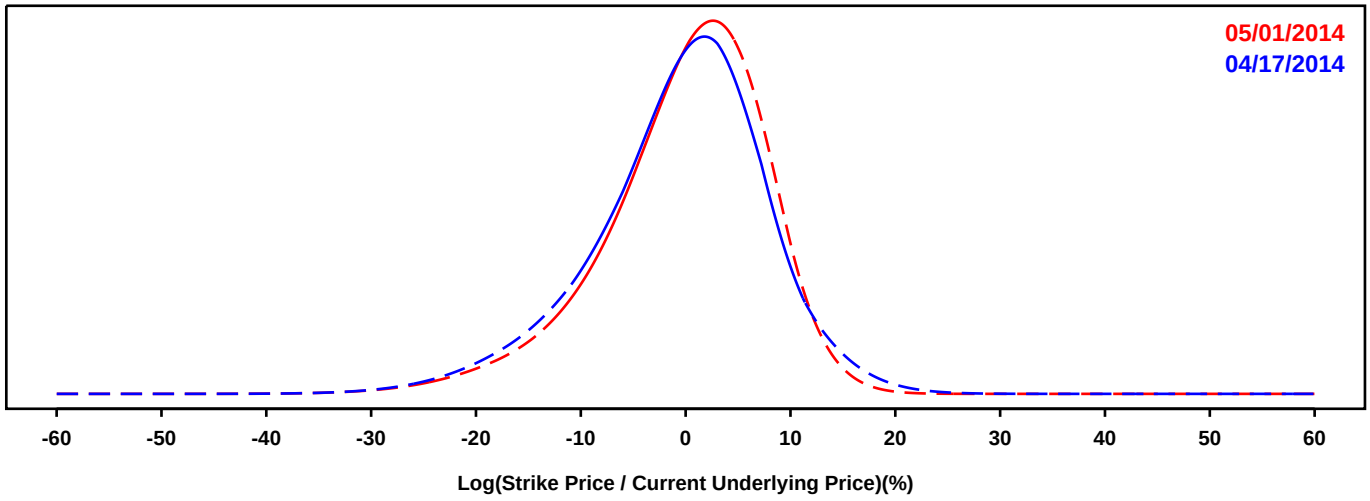
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- ALLSTATE

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

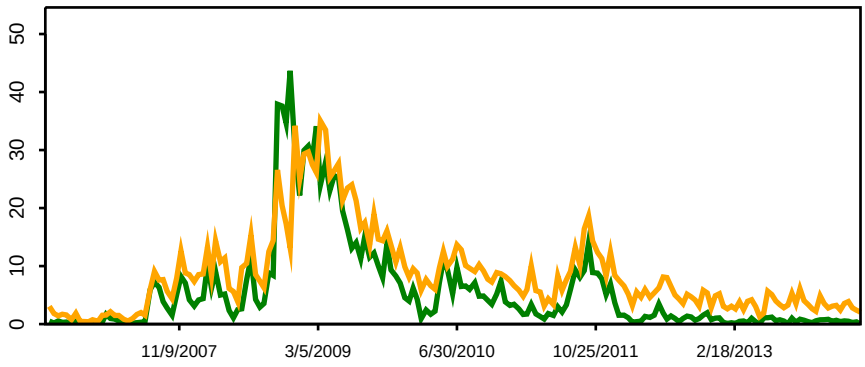
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

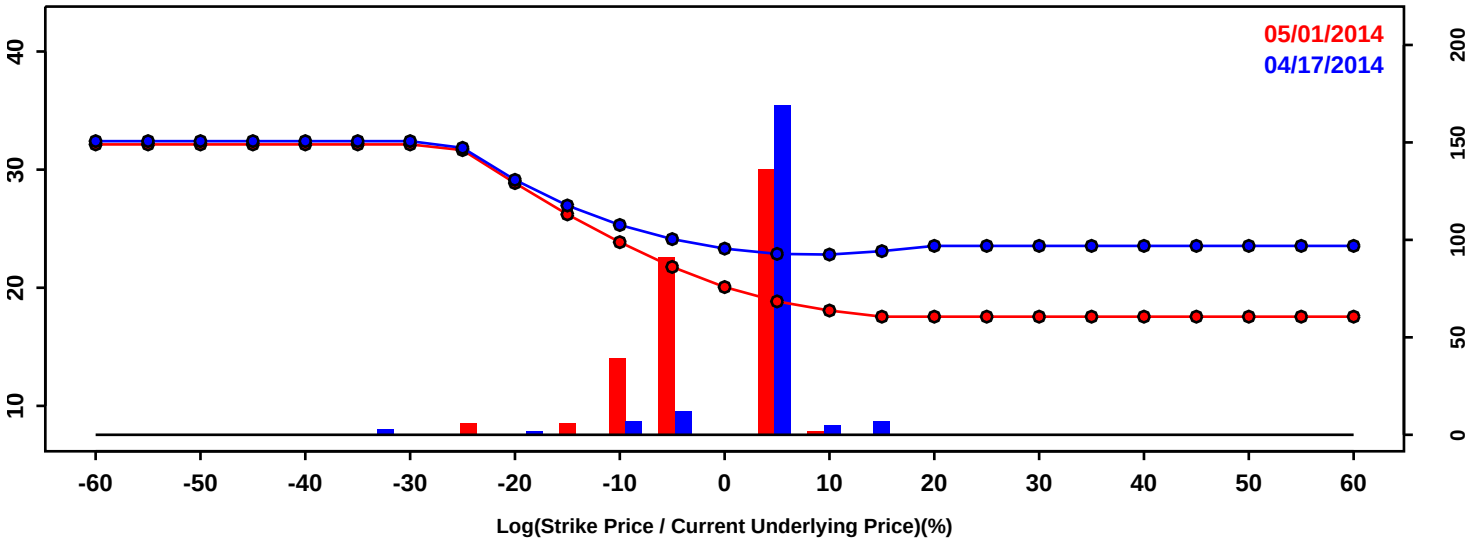
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-11.68%	-10.54%	1.14%
50th Pct	0.27%	0.86%	0.60%
90th Pct	9.04%	8.76%	-0.28%
Mean	-0.58%	-0.14%	0.44%
Std Dev	8.40%	7.88%	-0.53%
Skew	-0.53	-0.79	-0.26
Kurtosis	0.77	1.08	0.31

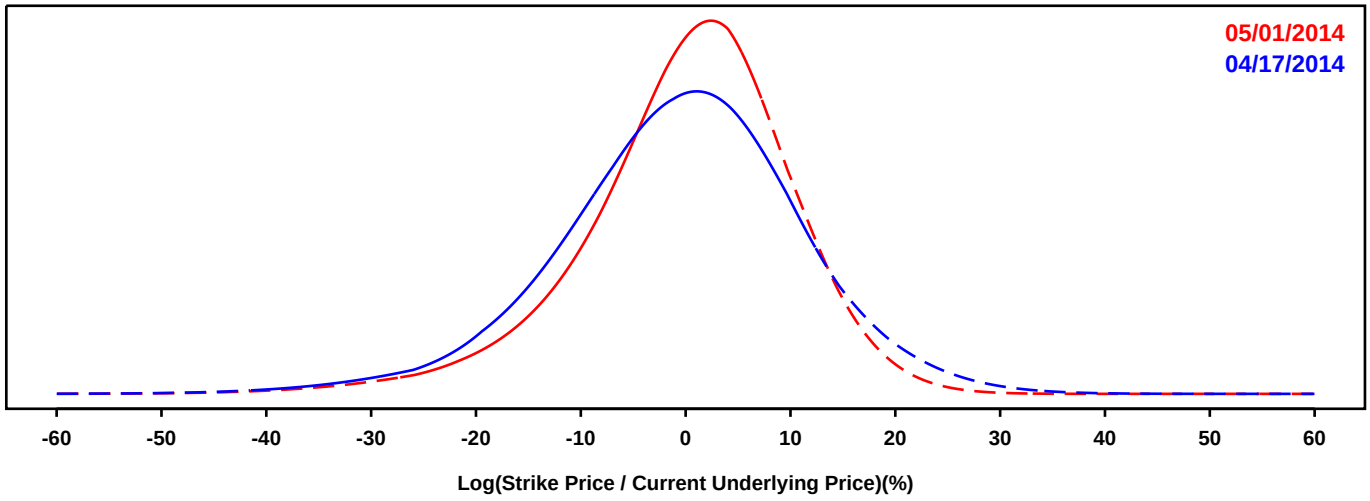
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AMERIPRISE

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

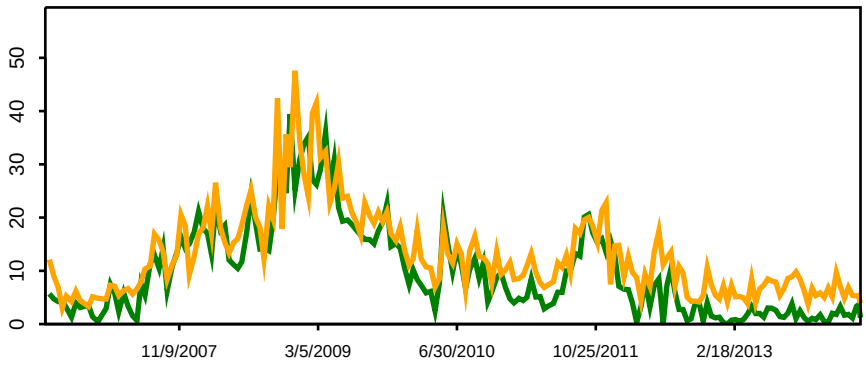
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

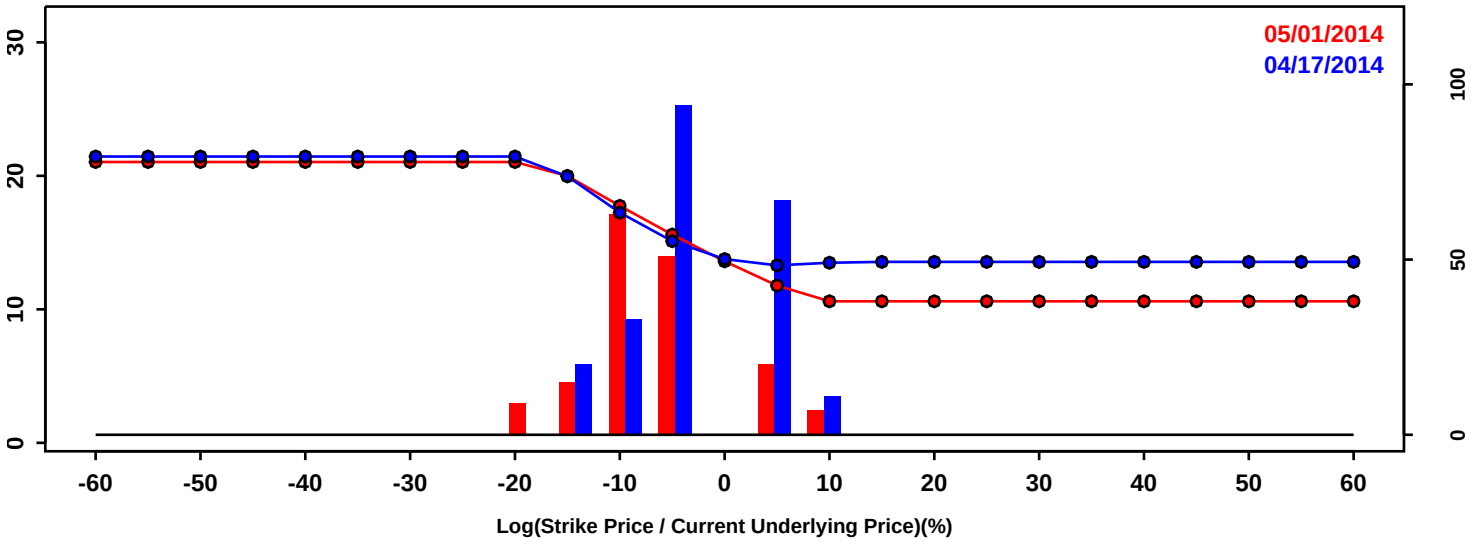
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-15.20%	-12.77%	2.43%
50th Pct	0.00%	1.02%	1.02%
90th Pct	13.52%	11.77%	-1.75%
Mean	-0.52%	0.07%	0.59%
Std Dev	11.71%	10.15%	-1.56%
Skew	-0.34	-0.73	-0.40
Kurtosis	0.82	1.50	0.68

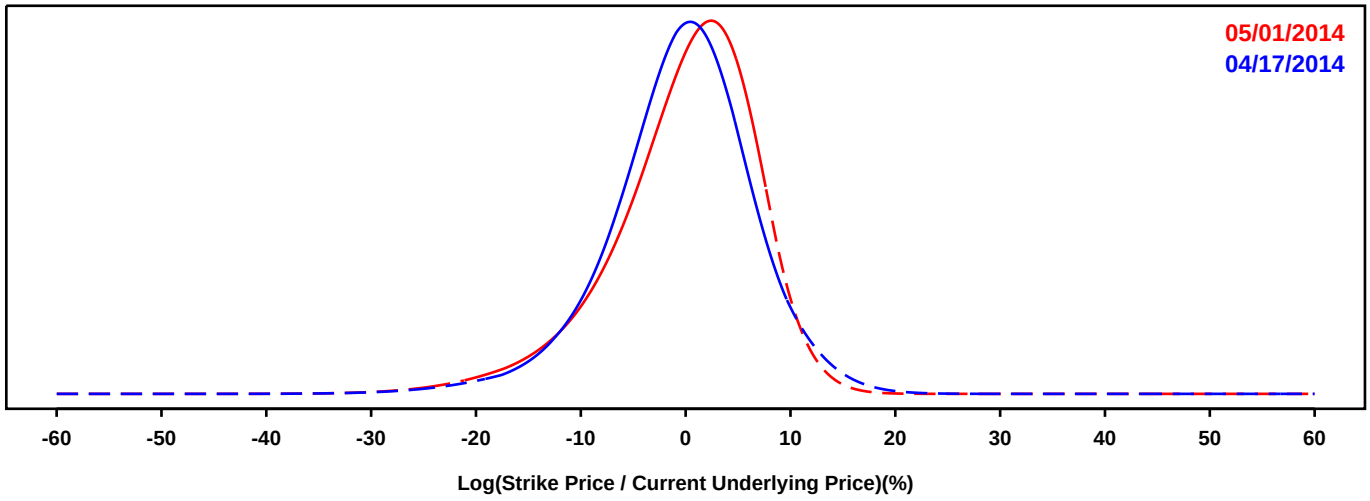
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CHUBB

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

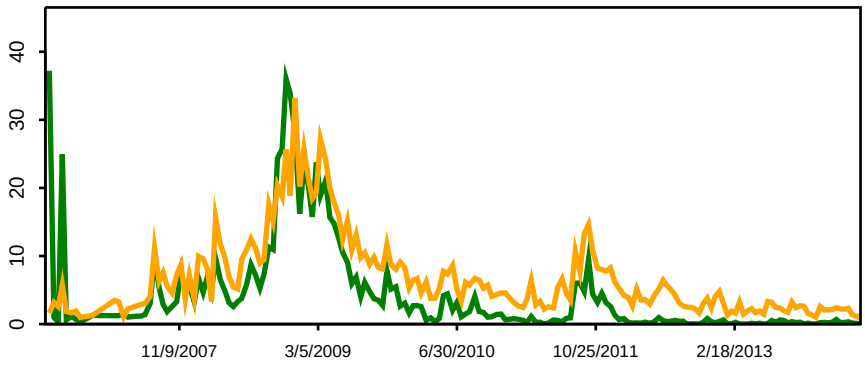
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



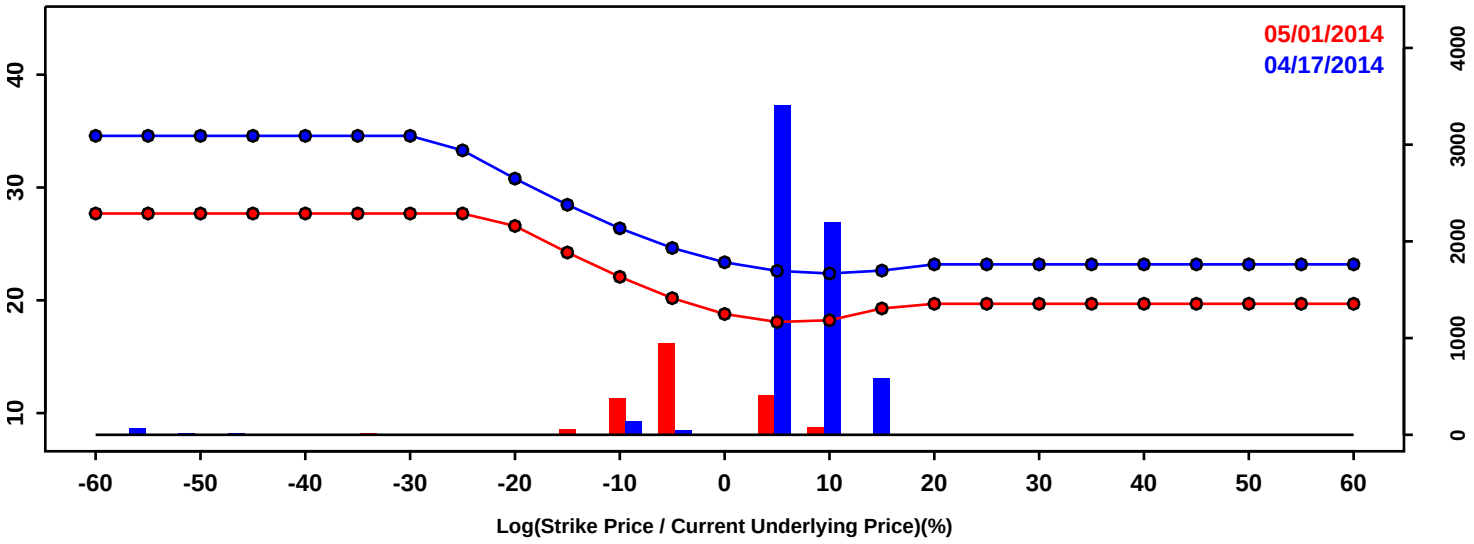
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-9.03%	-9.33%	-0.30%
50th Pct	-0.04%	0.77%	0.81%
90th Pct	7.66%	7.65%	-0.01%
Mean	-0.44%	-0.16%	0.28%
Std Dev	6.92%	7.00%	0.07%
Skew	-0.52	-0.88	-0.36
Kurtosis	1.33	1.40	0.07

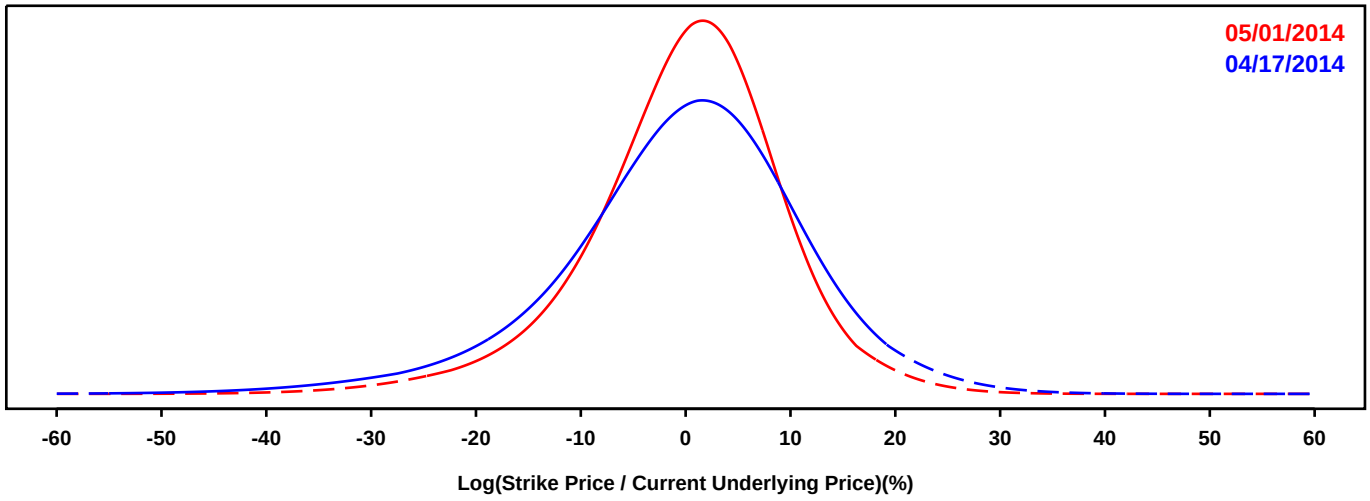
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- HARTFORD FINANCIAL

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

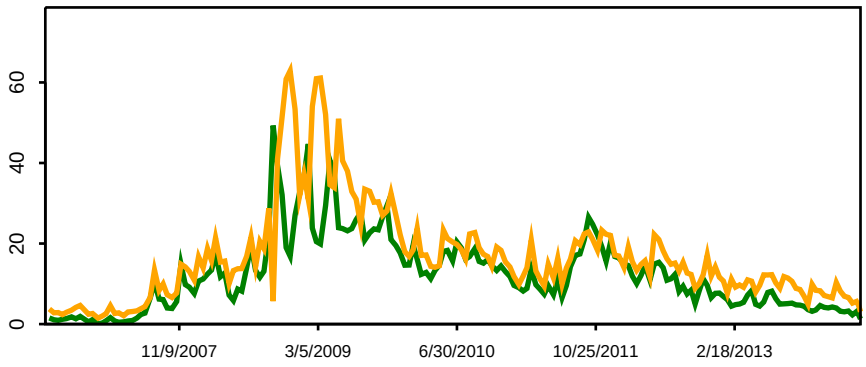
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



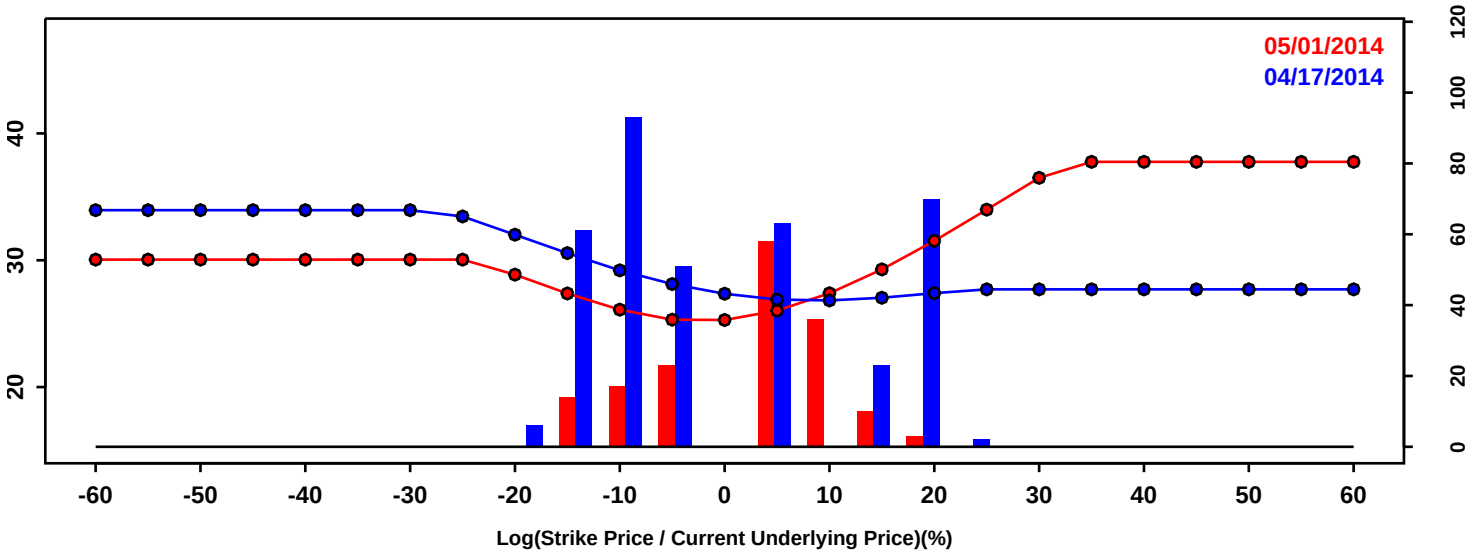
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-14.96%	-11.79%	3.18%
50th Pct	0.58%	0.66%	0.08%
90th Pct	13.38%	10.73%	-2.66%
Mean	-0.26%	-0.02%	0.24%
Std Dev	11.77%	9.39%	-2.38%
Skew	-0.54	-0.53	0.02
Kurtosis	1.24	1.31	0.07

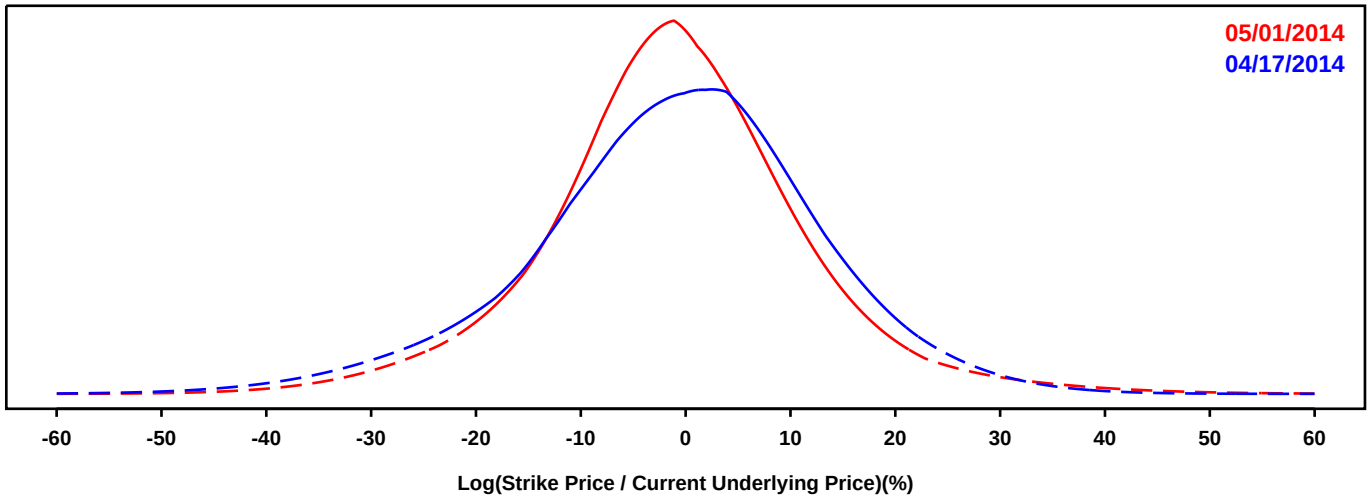
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- LINCOLN NATIONAL

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

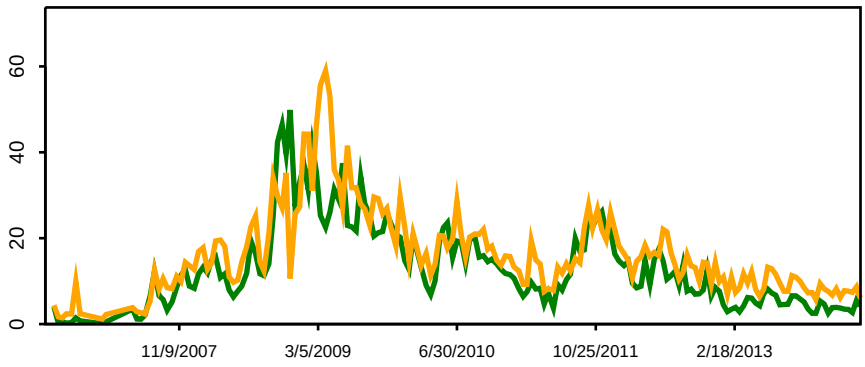
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

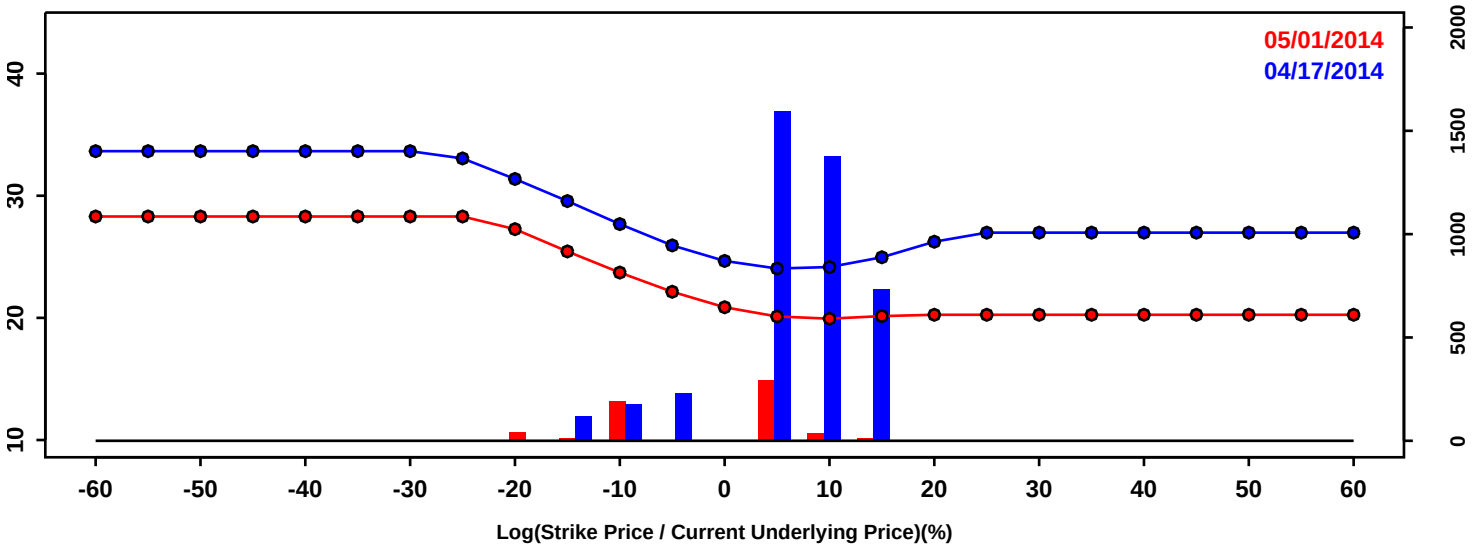
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-18.54%	-15.98%	2.56%
50th Pct	-0.22%	-1.11%	-0.89%
90th Pct	15.68%	13.91%	-1.77%
Mean	-0.91%	-0.92%	-0.01%
Std Dev	13.79%	12.60%	-1.19%
Skew	-0.32	0.15	0.47
Kurtosis	0.63	1.41	0.78

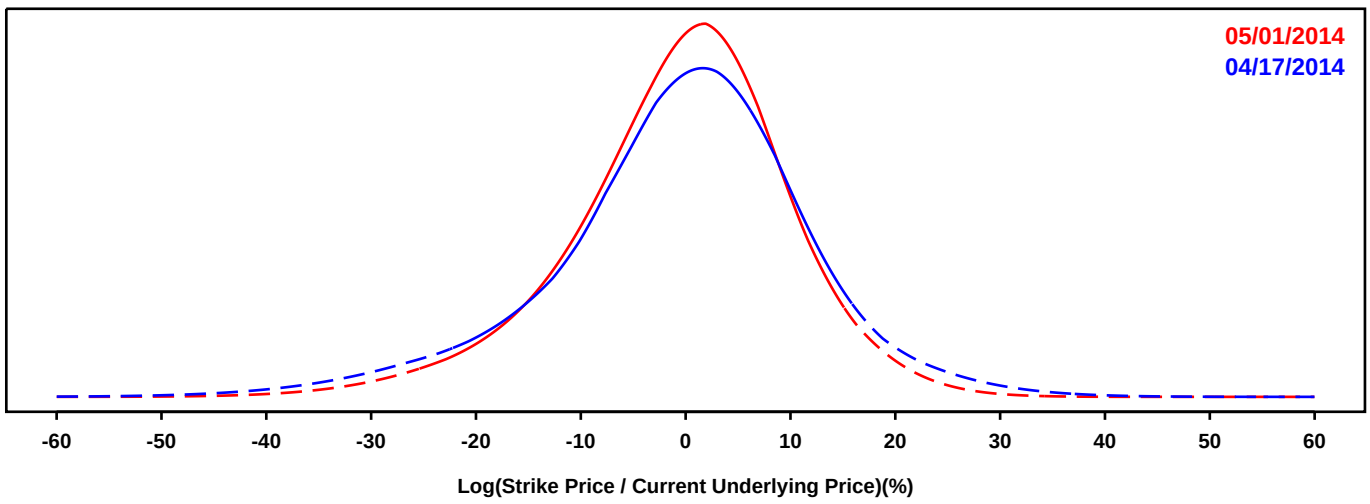
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- METLIFE

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

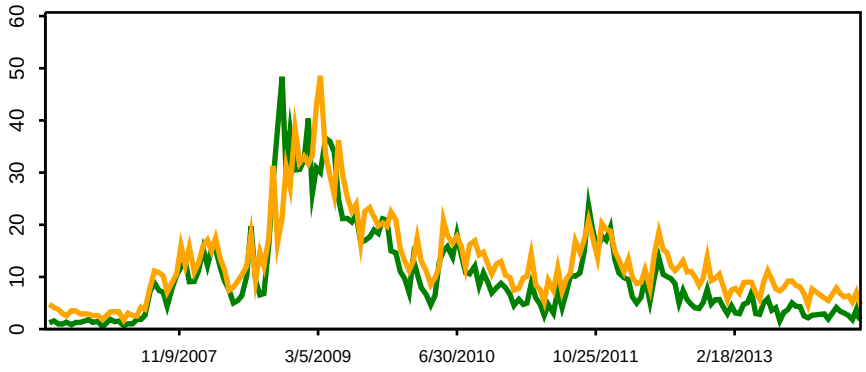
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

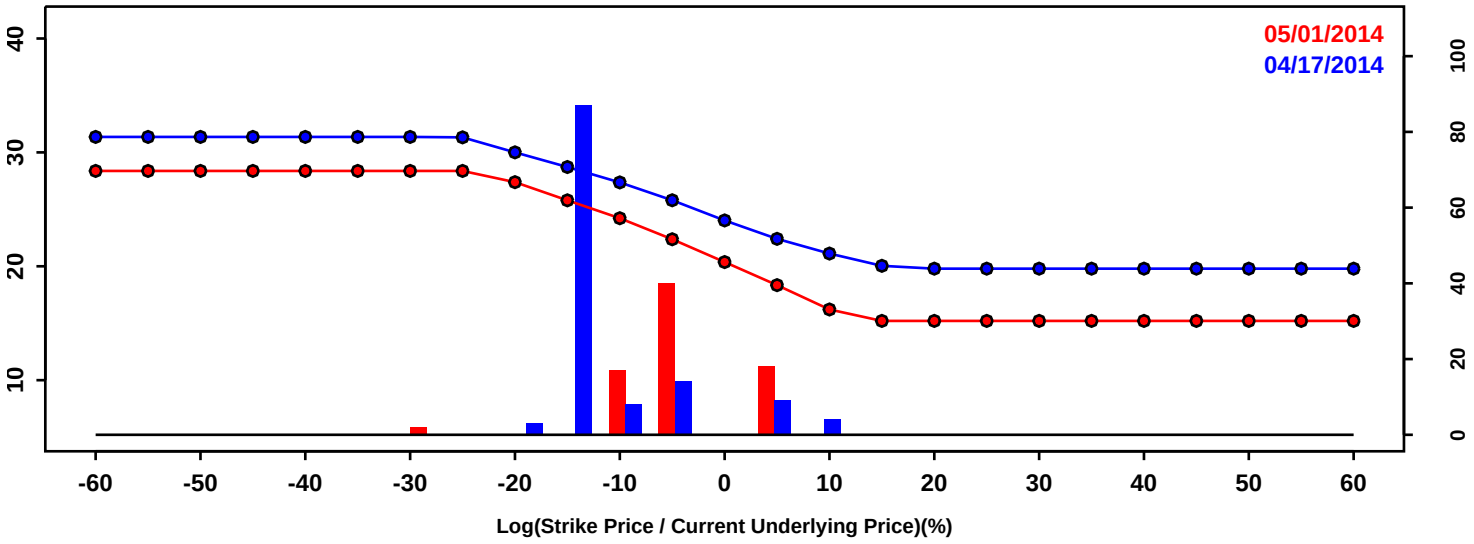
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-16.42%	-14.16%	2.26%
50th Pct	0.43%	0.24%	-0.18%
90th Pct	13.67%	11.73%	-1.93%
Mean	-0.50%	-0.59%	-0.08%
Std Dev	12.49%	10.56%	-1.93%
Skew	-0.48	-0.50	-0.01
Kurtosis	1.17	0.90	-0.27

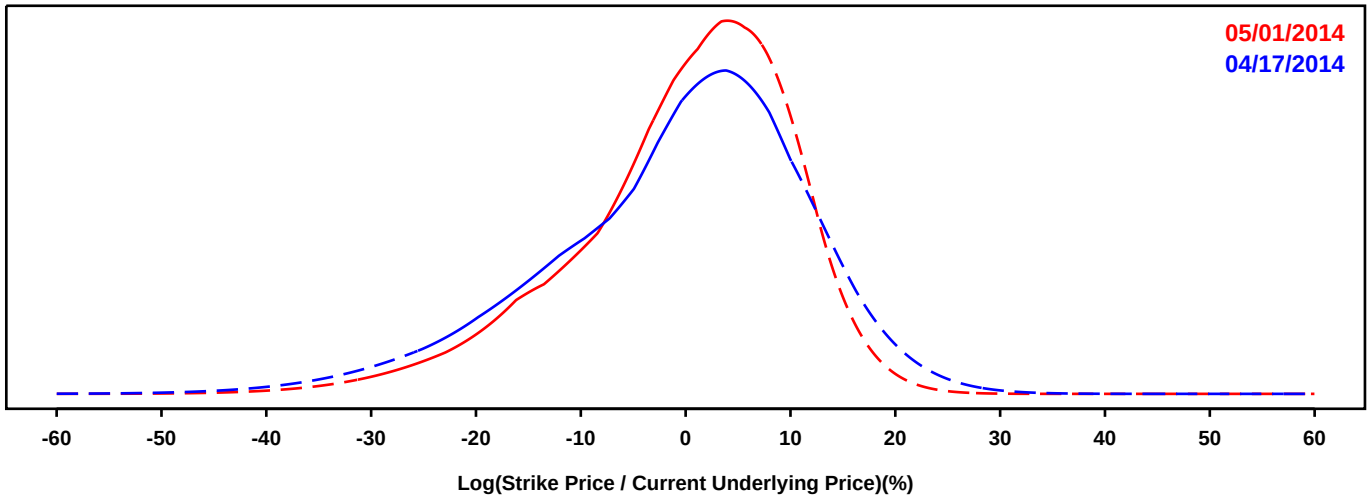
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PRINCIPAL FINANCIAL

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

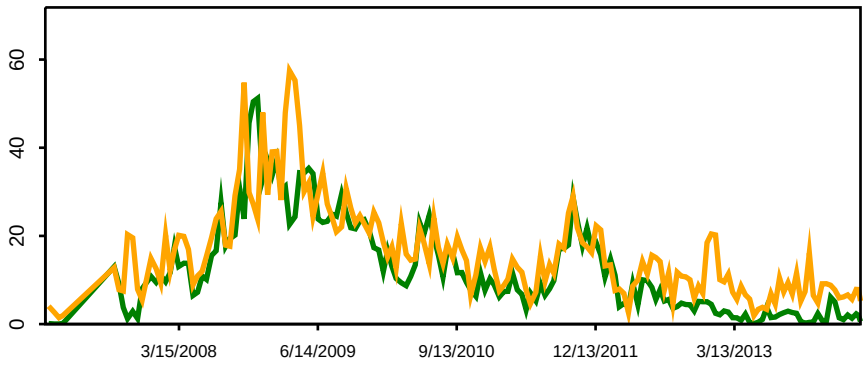
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

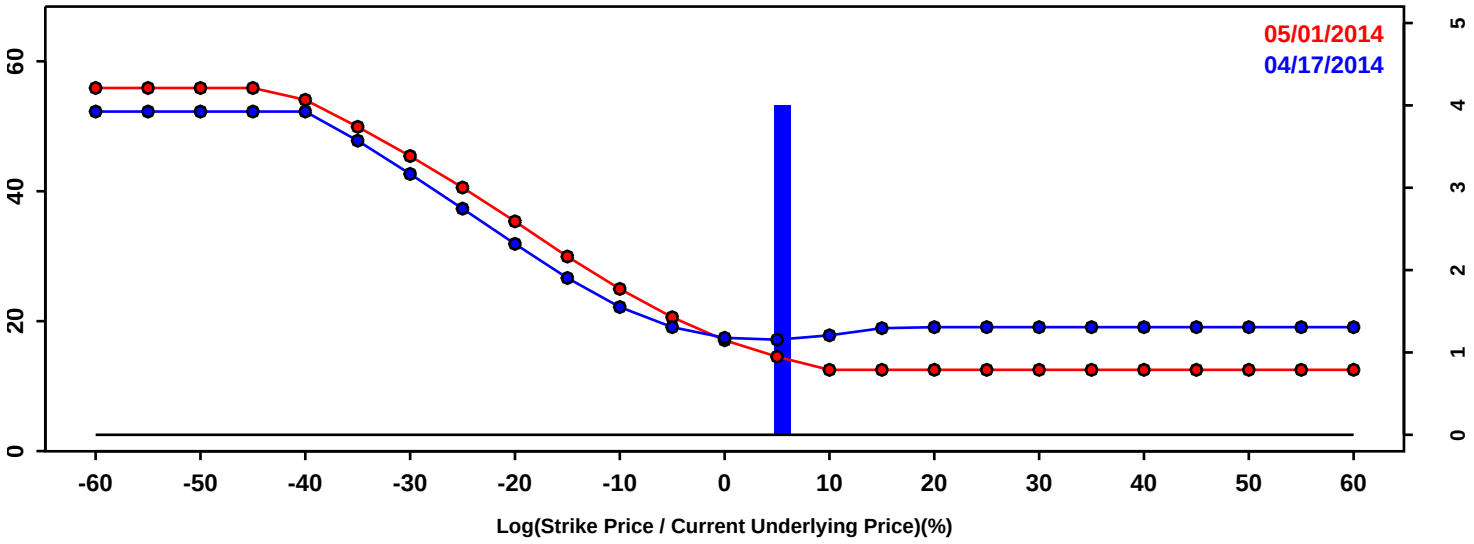
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-17.79%	-15.04%	2.75%
50th Pct	0.97%	1.39%	0.42%
90th Pct	13.43%	11.48%	-1.95%
Mean	-0.78%	-0.28%	0.49%
Std Dev	12.41%	10.57%	-1.84%
Skew	-0.65	-0.82	-0.17
Kurtosis	0.59	0.85	0.26

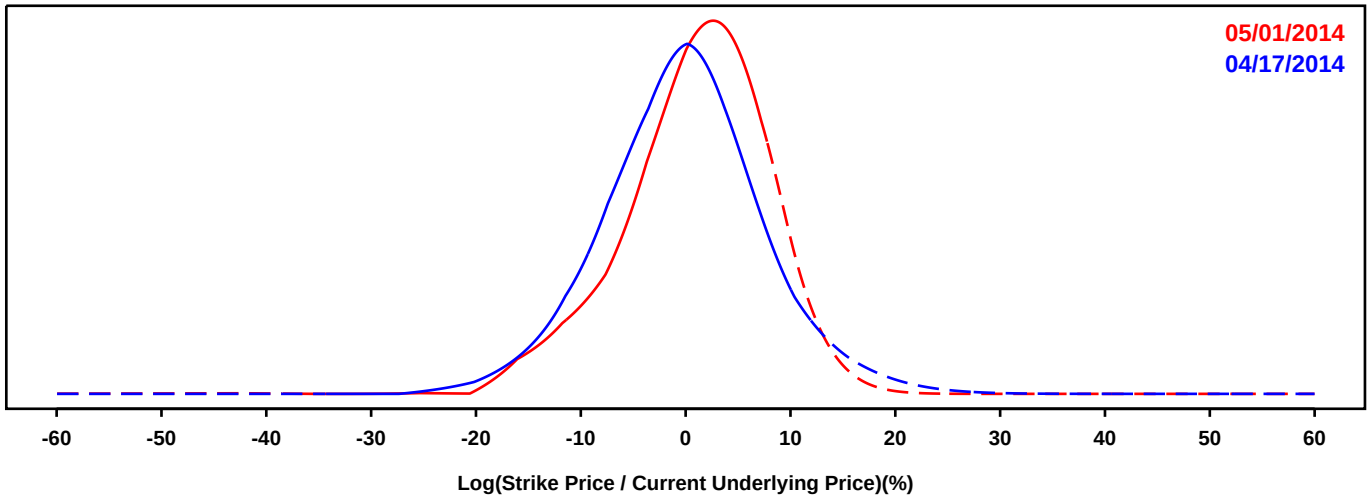
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PROGRESSIVE

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

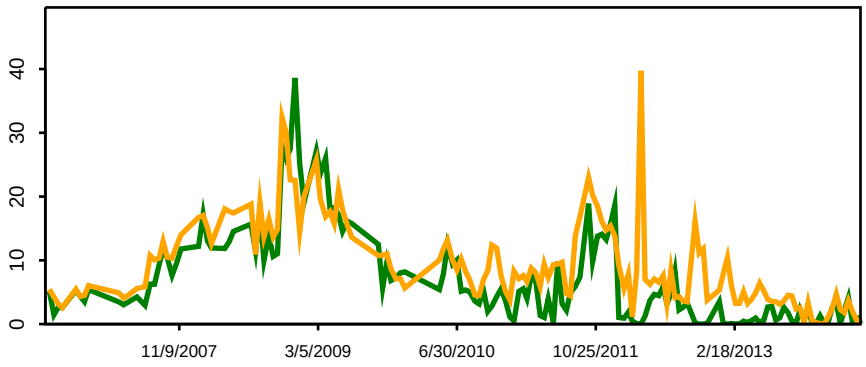
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



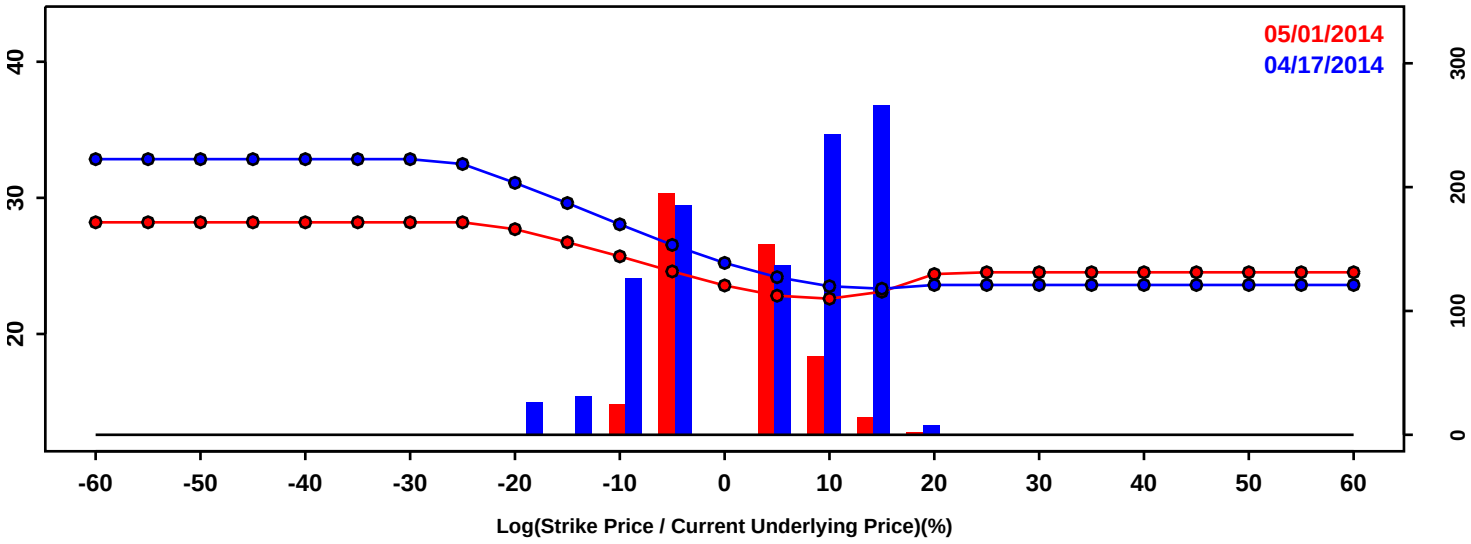
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-9.83%	-8.40%	1.43%
50th Pct	-0.15%	1.60%	1.76%
90th Pct	9.33%	9.18%	-0.14%
Mean	-0.16%	0.94%	1.10%
Std Dev	7.70%	7.22%	-0.47%
Skew	0.11	-1.20	-1.31
Kurtosis	0.51	7.33	6.82

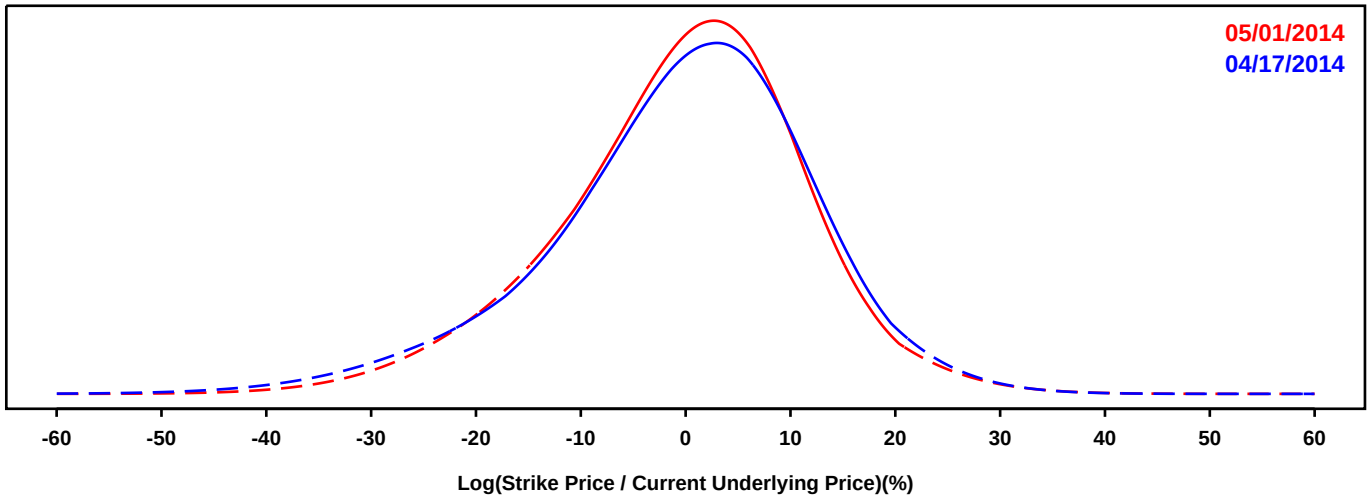
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PRUDENTIAL

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

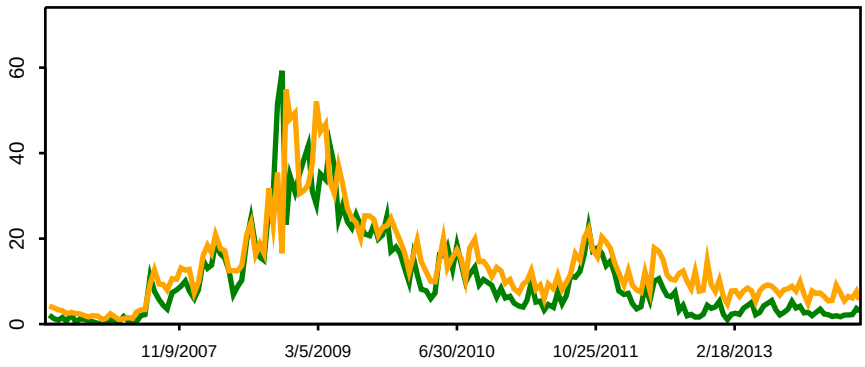
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

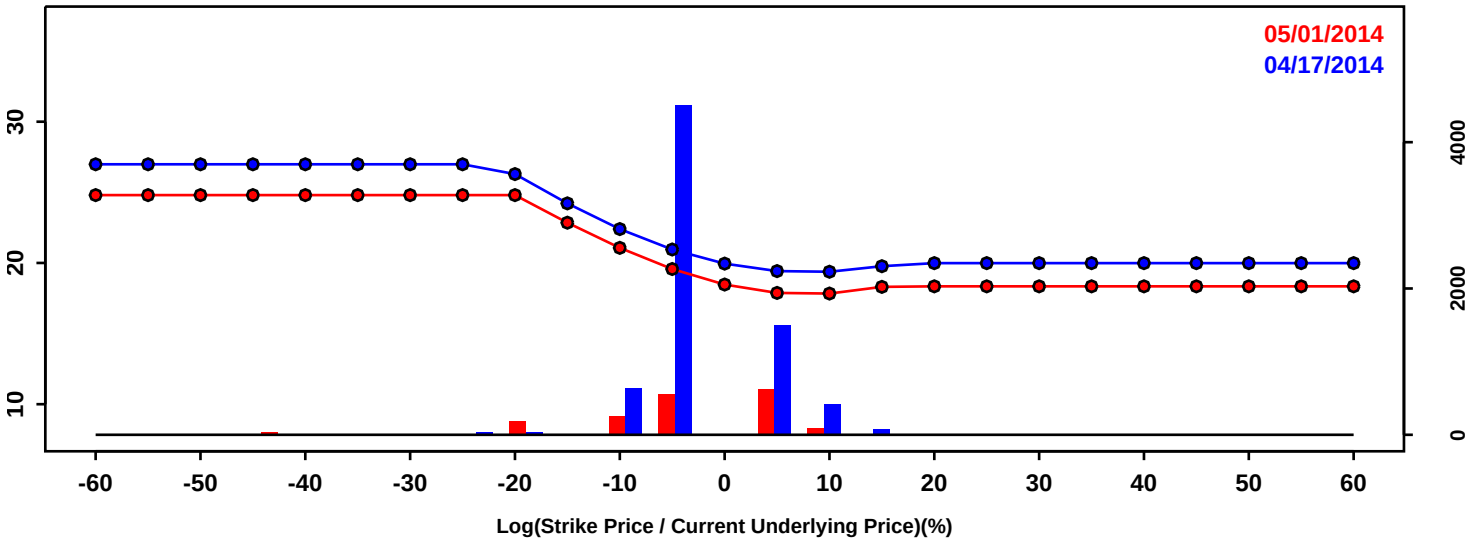
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-17.27%	-16.05%	1.23%
50th Pct	0.74%	0.60%	-0.14%
90th Pct	14.33%	13.41%	-0.91%
Mean	-0.44%	-0.35%	0.09%
Std Dev	12.77%	11.82%	-0.94%
Skew	-0.54	-0.36	0.18
Kurtosis	0.75	0.52	-0.23

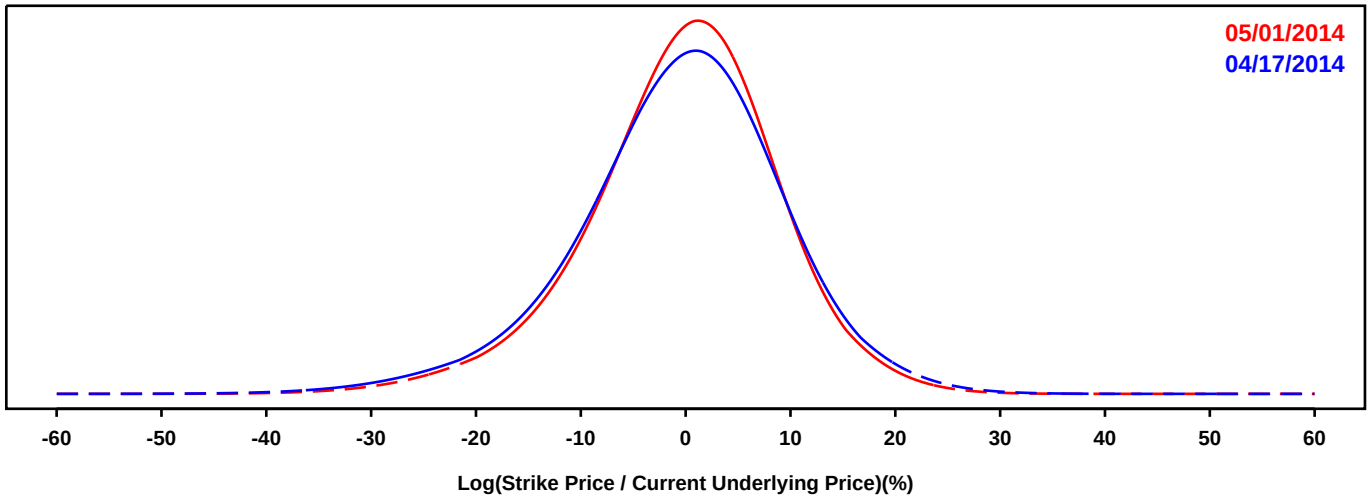
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AMERICAN EXPRESS

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

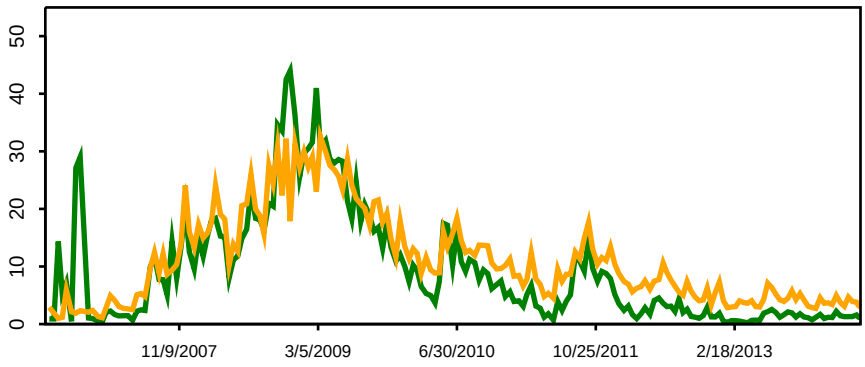
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



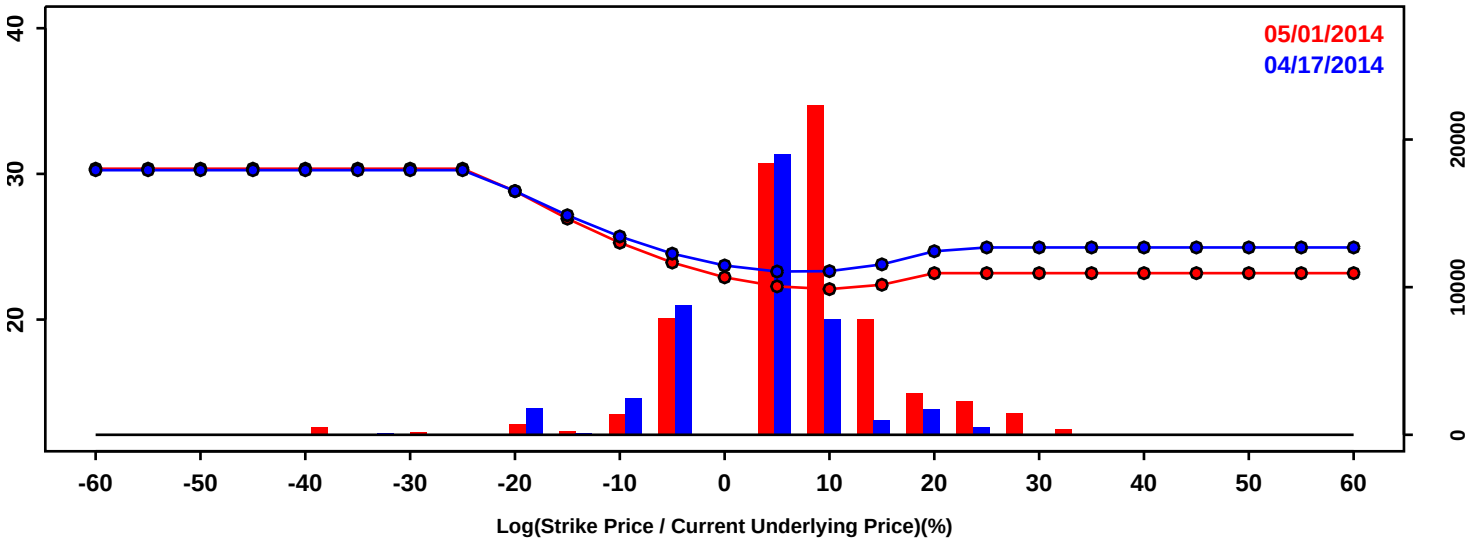
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-13.24%	-12.09%	1.14%
50th Pct	0.05%	0.29%	0.24%
90th Pct	11.40%	10.65%	-0.75%
Mean	-0.51%	-0.30%	0.21%
Std Dev	10.05%	9.27%	-0.78%
Skew	-0.41	-0.42	-0.01
Kurtosis	0.85	0.83	-0.01

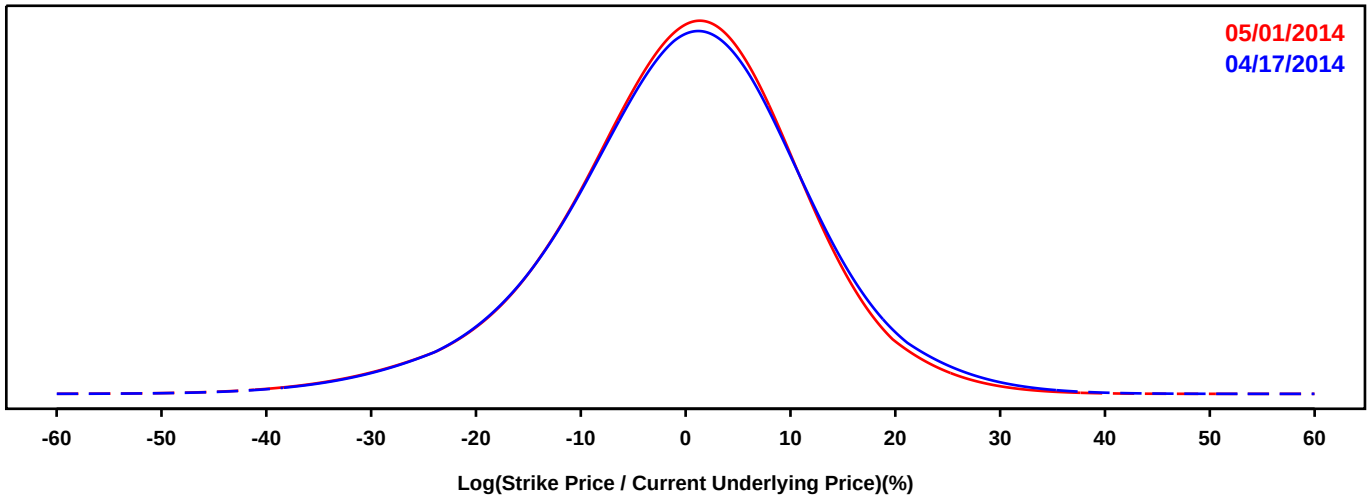
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BANK OF AMERICA

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

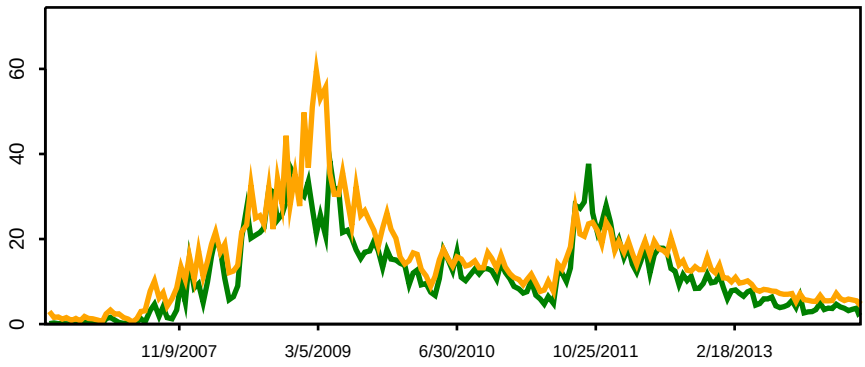
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

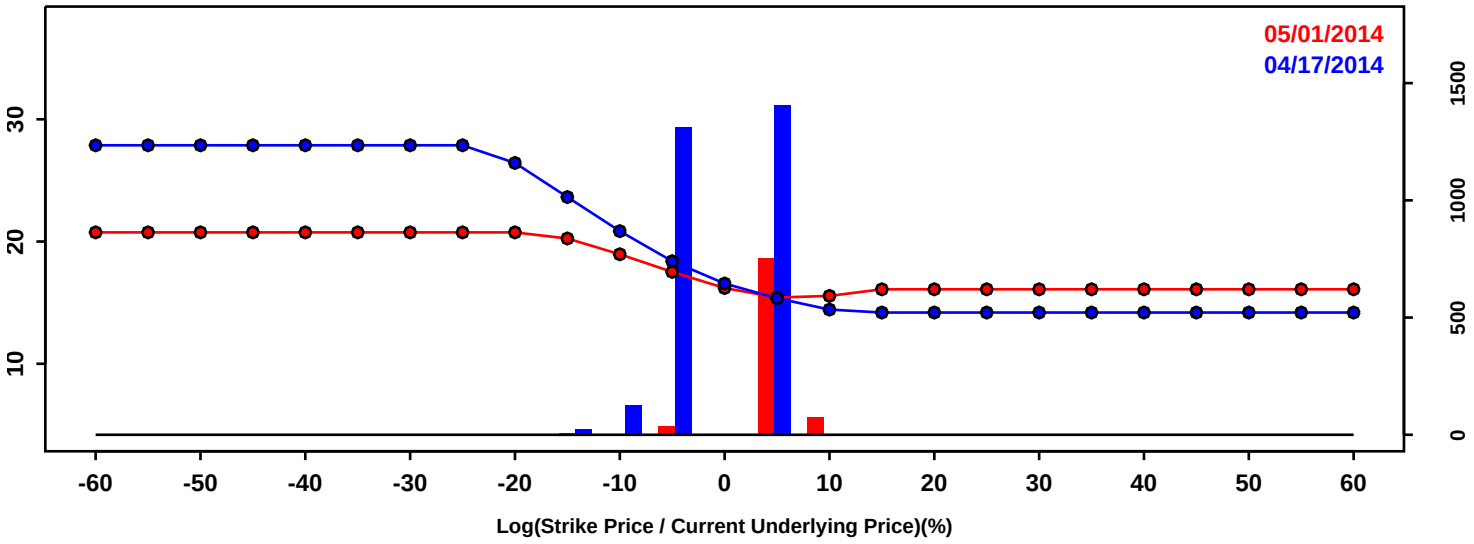
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-15.14%	-15.23%	-0.08%
50th Pct	0.37%	0.17%	-0.21%
90th Pct	14.00%	13.11%	-0.89%
Mean	-0.16%	-0.53%	-0.37%
Std Dev	11.86%	11.55%	-0.31%
Skew	-0.30	-0.41	-0.12
Kurtosis	0.72	0.80	0.08

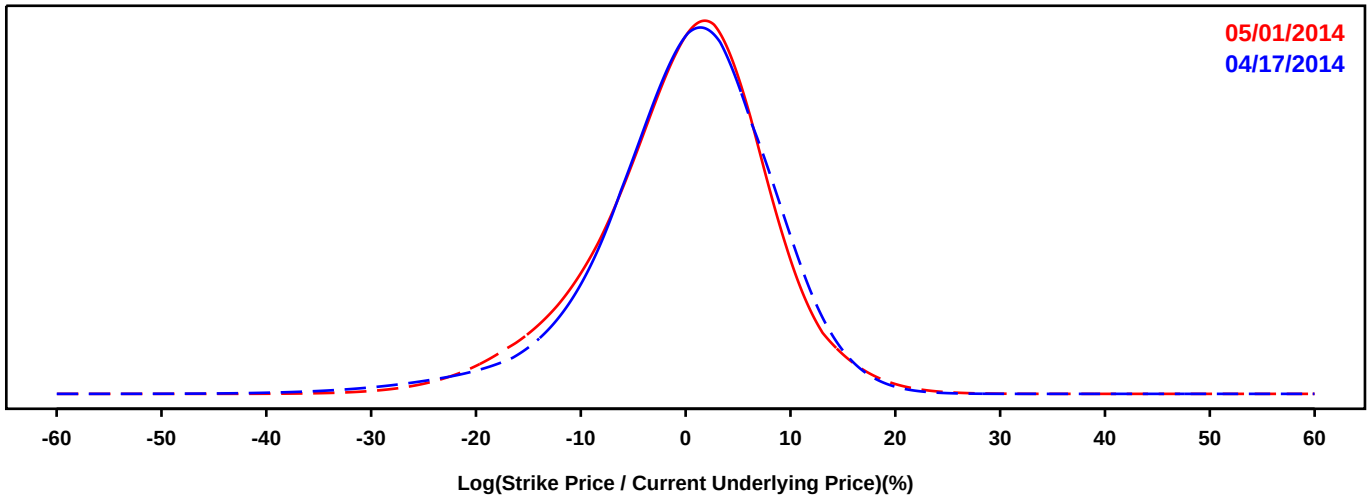
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BB&T

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

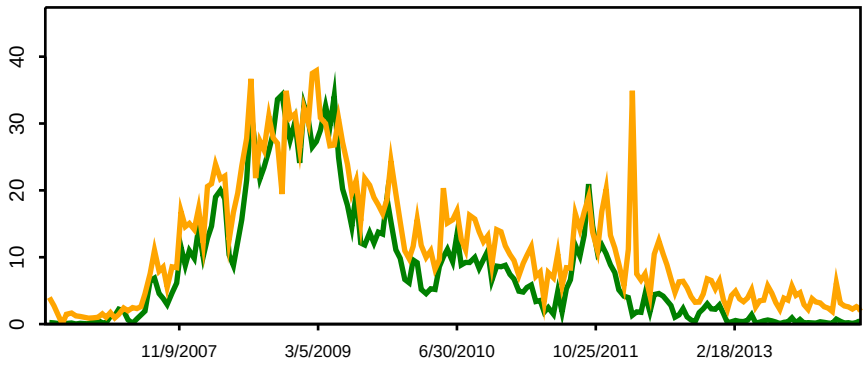
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

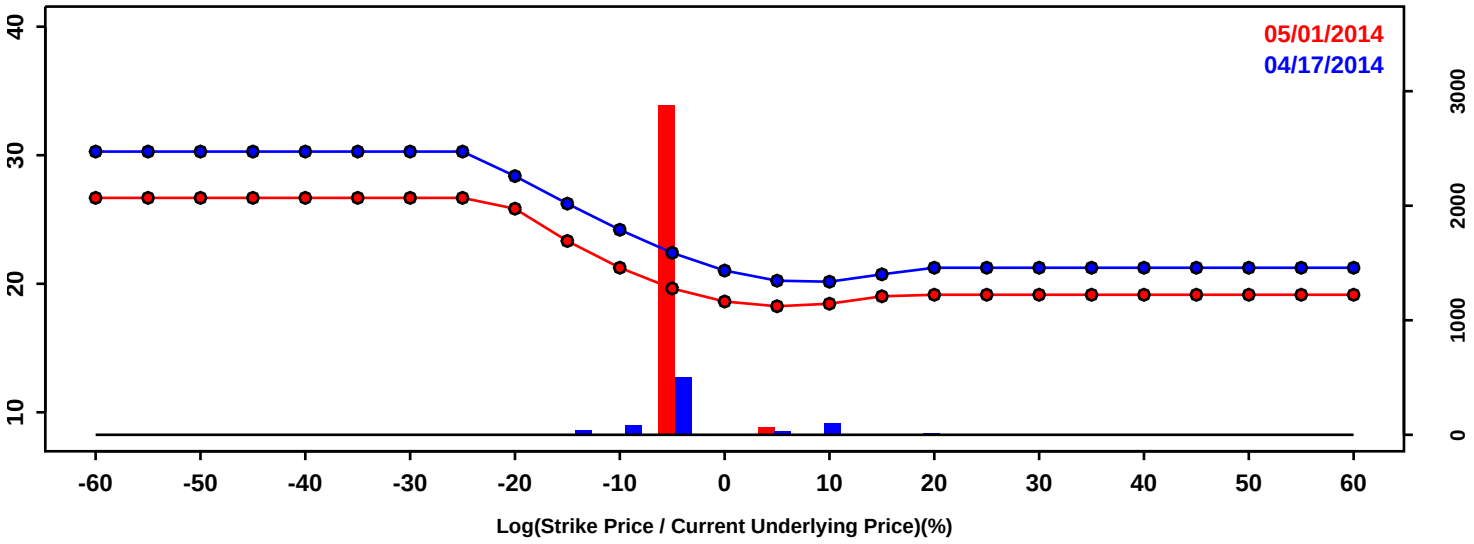
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-10.42%	-11.07%	-0.65%
50th Pct	0.64%	0.42%	-0.22%
90th Pct	9.58%	9.11%	-0.47%
Mean	-0.11%	-0.31%	-0.20%
Std Dev	8.43%	8.16%	-0.27%
Skew	-0.84	-0.48	0.35
Kurtosis	1.90	0.75	-1.15

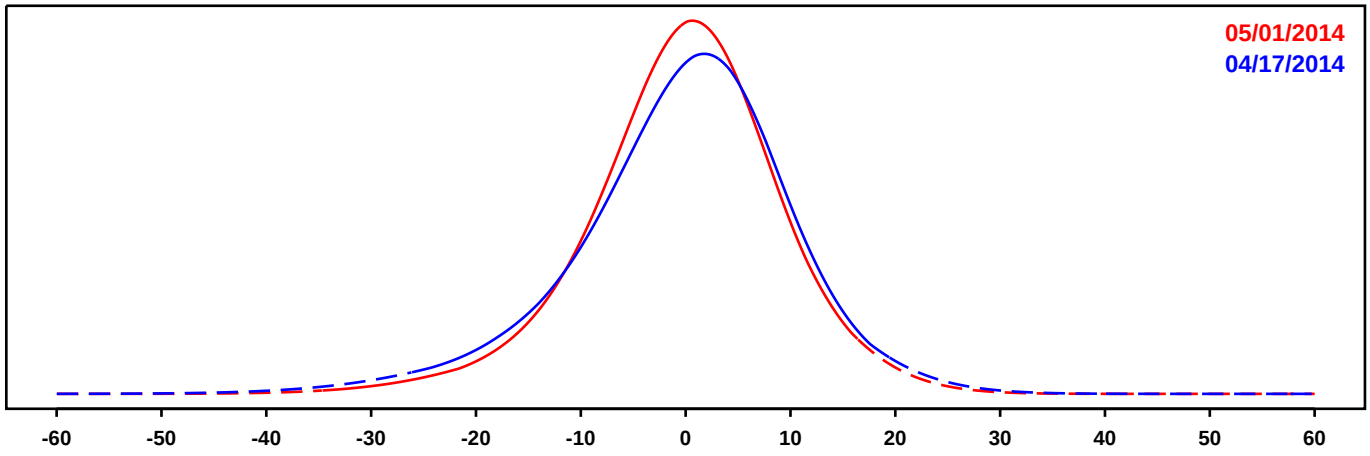
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BANK OF NEW YORK MELLON

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

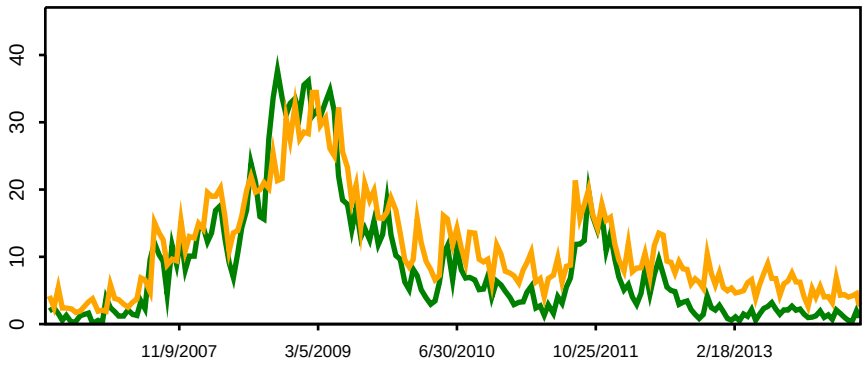
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

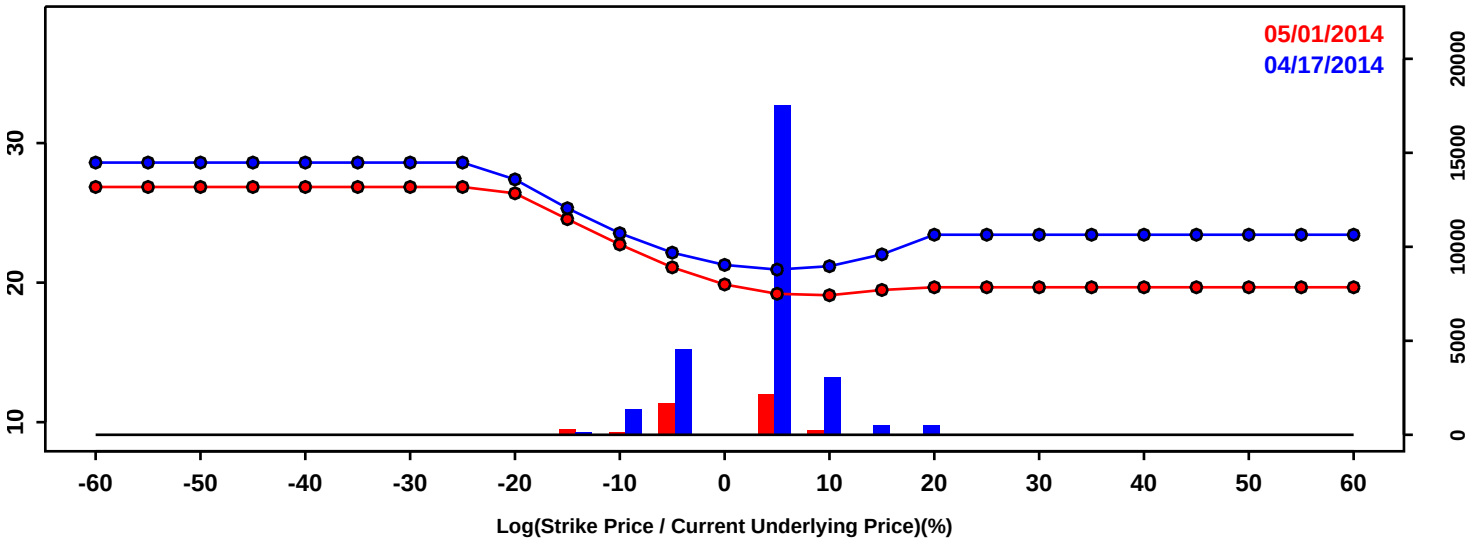
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-13.71%	-11.79%	1.92%
50th Pct	0.53%	0.24%	-0.29%
90th Pct	11.86%	10.95%	-0.91%
Mean	-0.29%	-0.19%	0.10%
Std Dev	10.58%	9.34%	-1.25%
Skew	-0.55	-0.38	0.17
Kurtosis	1.20	1.04	-0.16

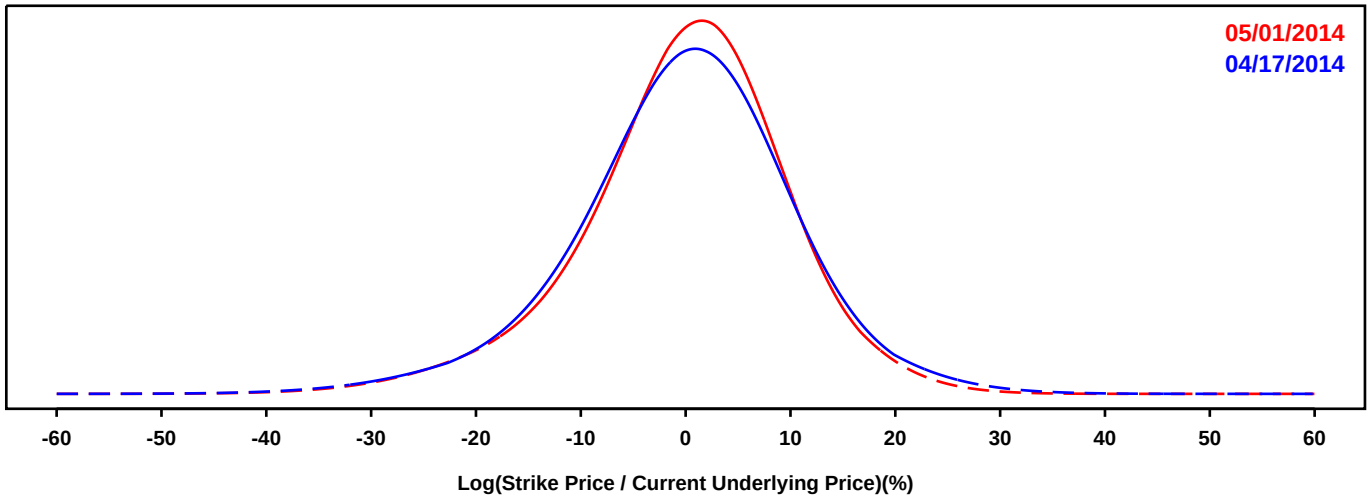
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CITIGROUP

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

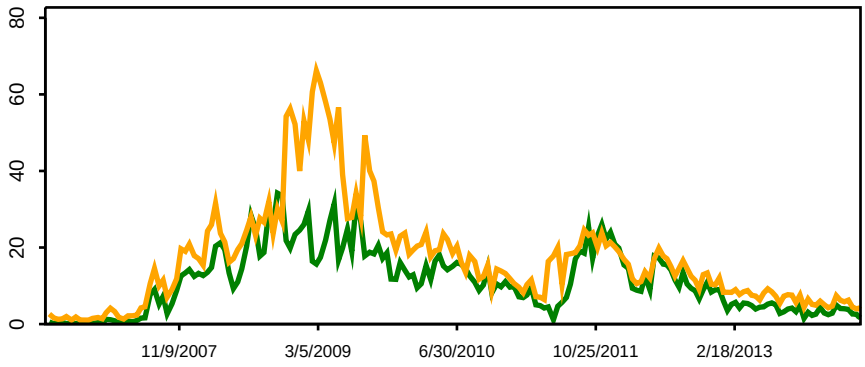
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

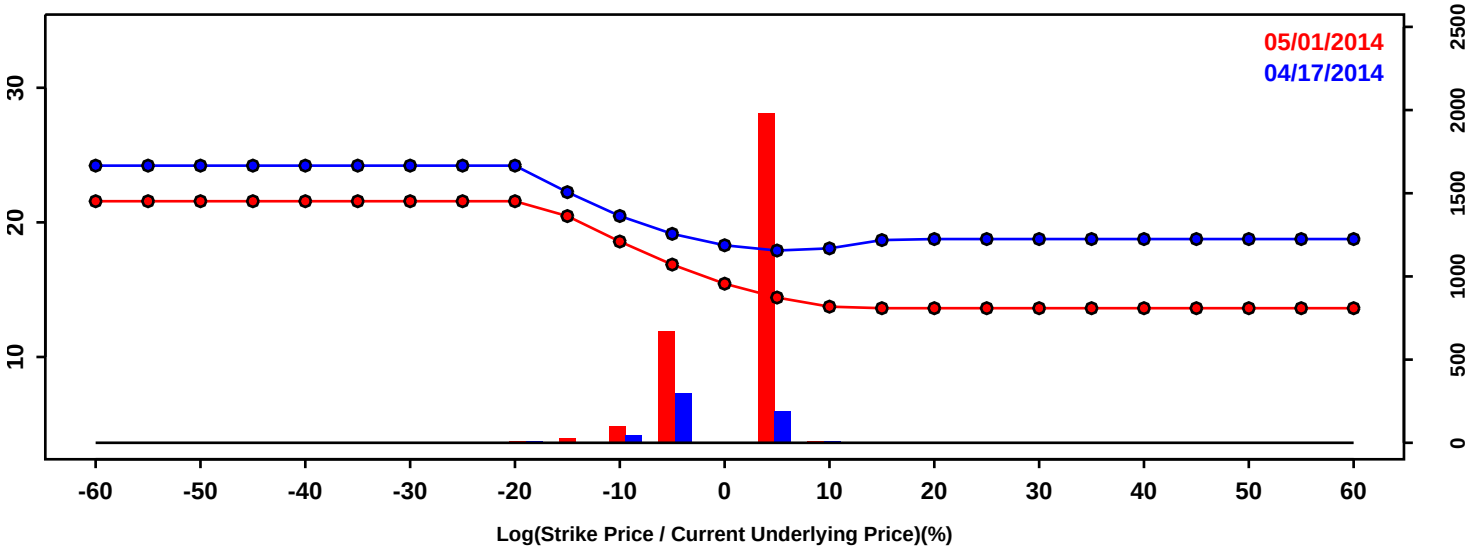
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-13.29%	-12.79%	0.50%
50th Pct	0.37%	0.58%	0.20%
90th Pct	12.53%	11.61%	-0.92%
Mean	-0.07%	-0.09%	-0.03%
Std Dev	10.63%	9.99%	-0.64%
Skew	-0.31	-0.47	-0.16
Kurtosis	0.94	0.94	0.00

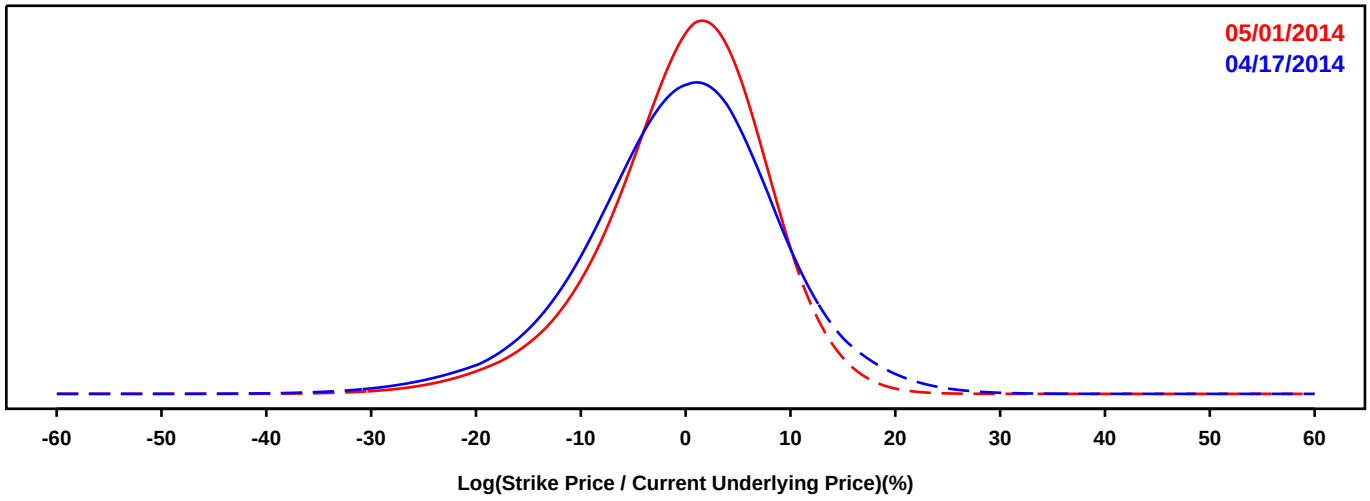
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CAPITAL ONE

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

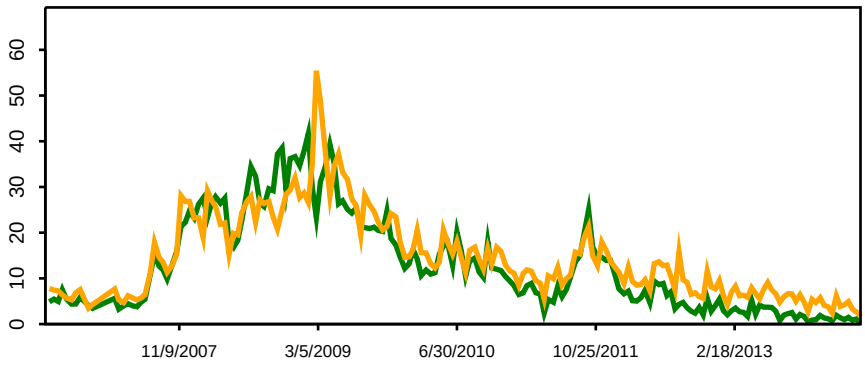
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



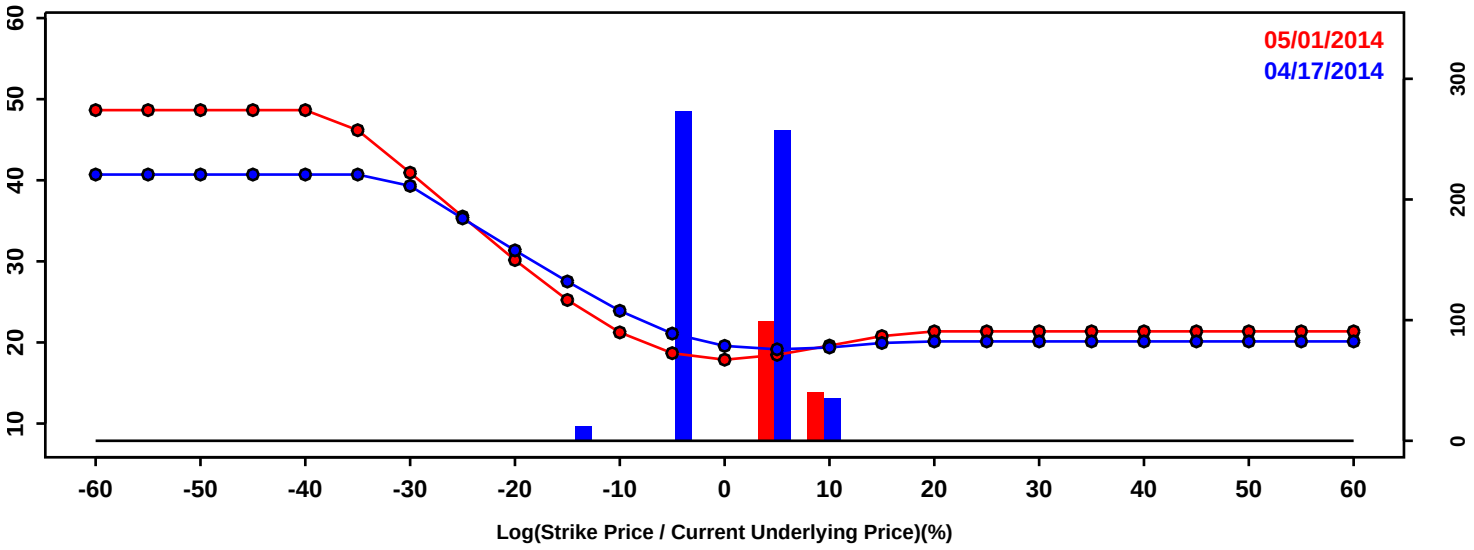
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-11.87%	-10.22%	1.65%
50th Pct	0.05%	0.60%	0.55%
90th Pct	10.55%	9.11%	-1.44%
Mean	-0.37%	-0.05%	0.32%
Std Dev	9.15%	7.82%	-1.33%
Skew	-0.33	-0.59	-0.26
Kurtosis	0.76	0.88	0.12

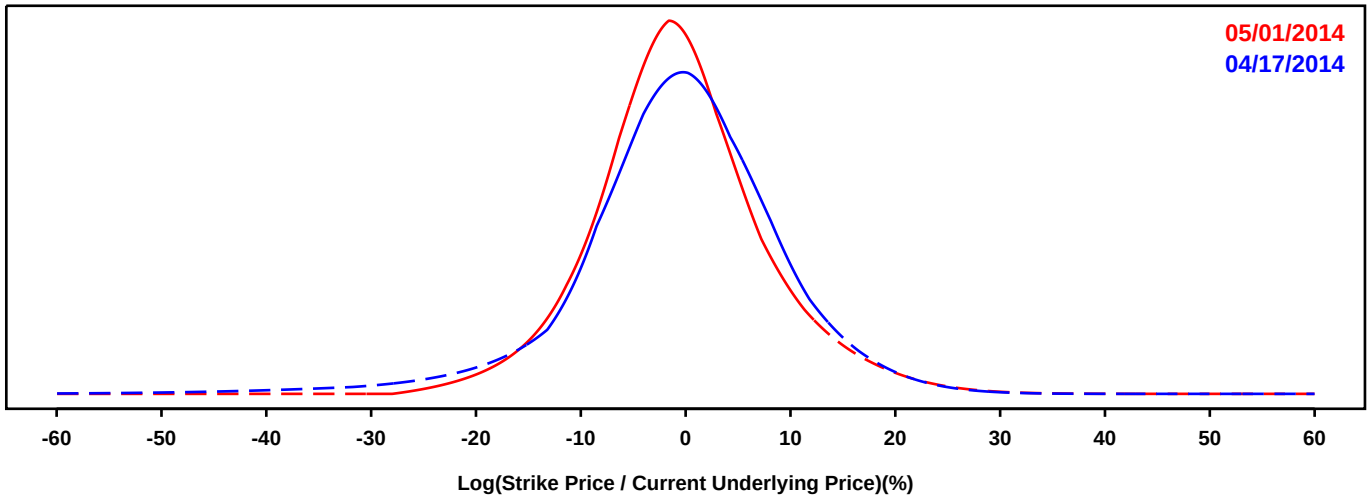
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- FIFTH THIRD

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

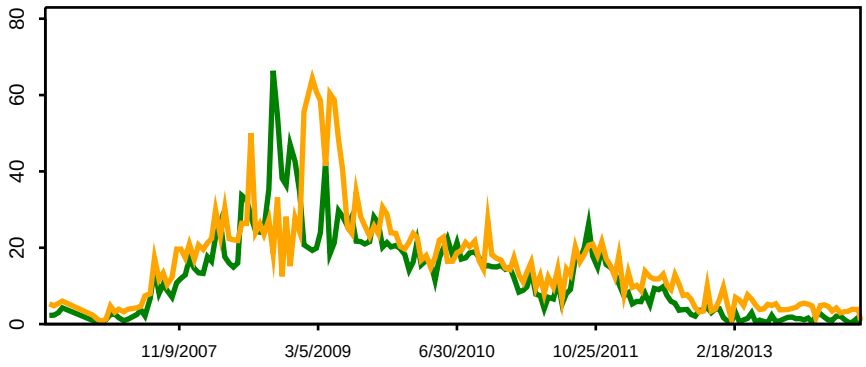
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

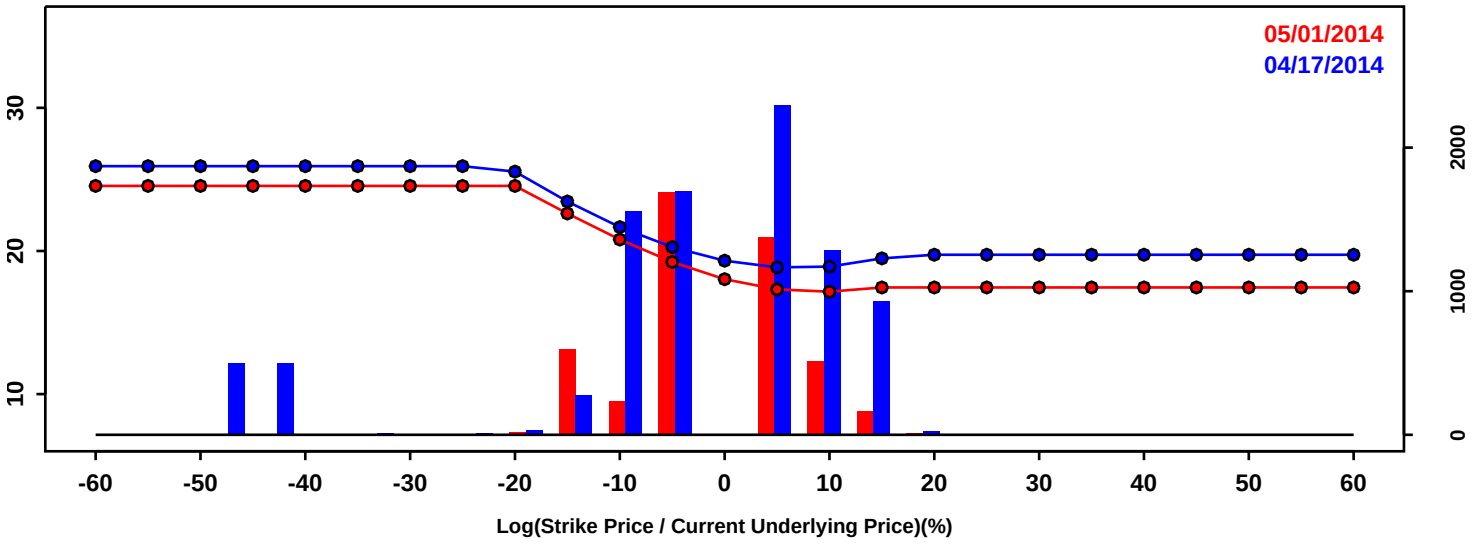
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-11.77%	-10.33%	1.44%
50th Pct	-0.31%	-0.91%	-0.60%
90th Pct	10.61%	9.89%	-0.72%
Mean	-0.76%	-0.50%	0.26%
Std Dev	10.04%	8.21%	-1.83%
Skew	-0.89	0.30	1.20
Kurtosis	3.45	0.80	-2.65

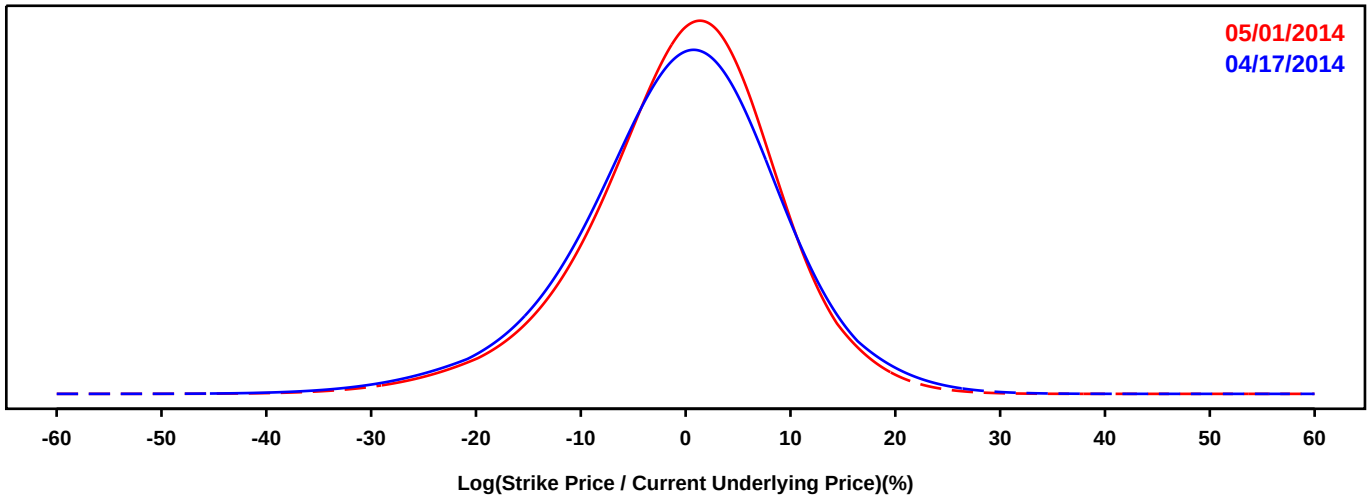
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- GOLDMAN SACHS

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

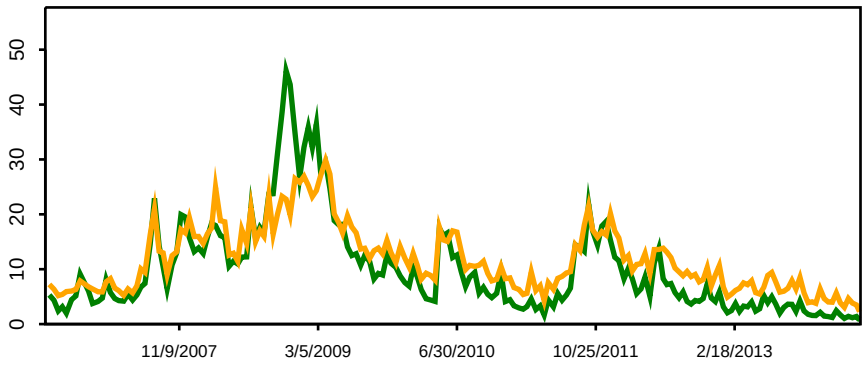
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

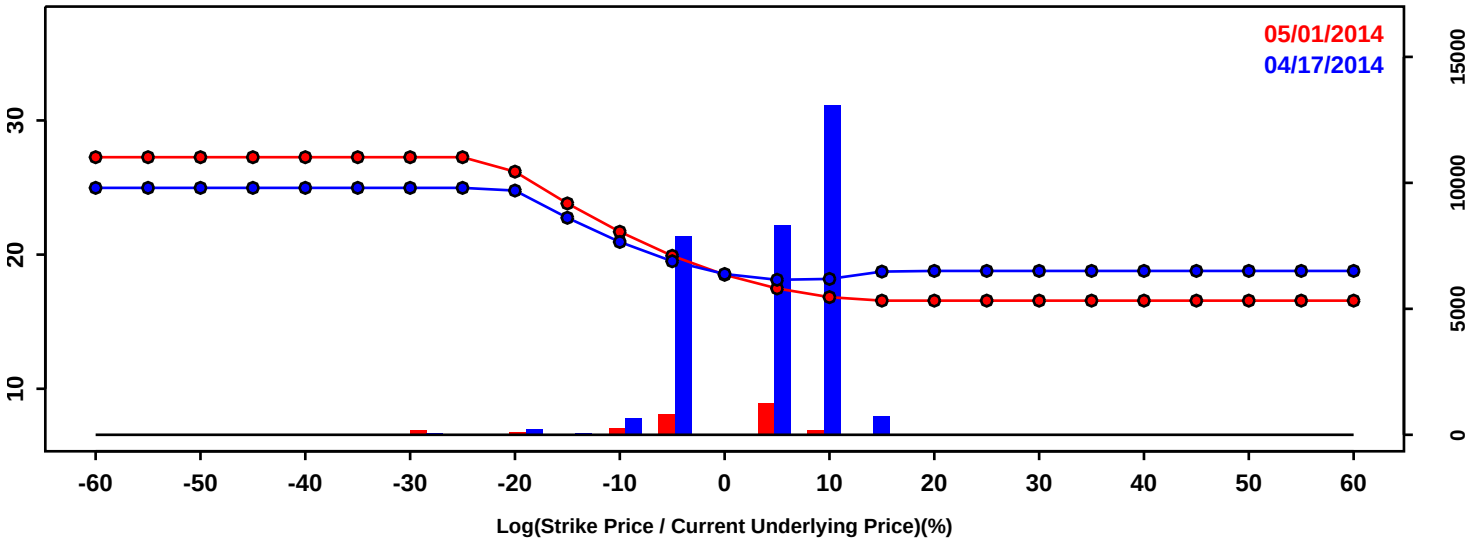
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-12.88%	-11.93%	0.95%
50th Pct	-0.04%	0.34%	0.38%
90th Pct	11.00%	10.30%	-0.70%
Mean	-0.58%	-0.33%	0.25%
Std Dev	9.75%	9.08%	-0.67%
Skew	-0.38	-0.48	-0.09
Kurtosis	0.82	0.87	0.05

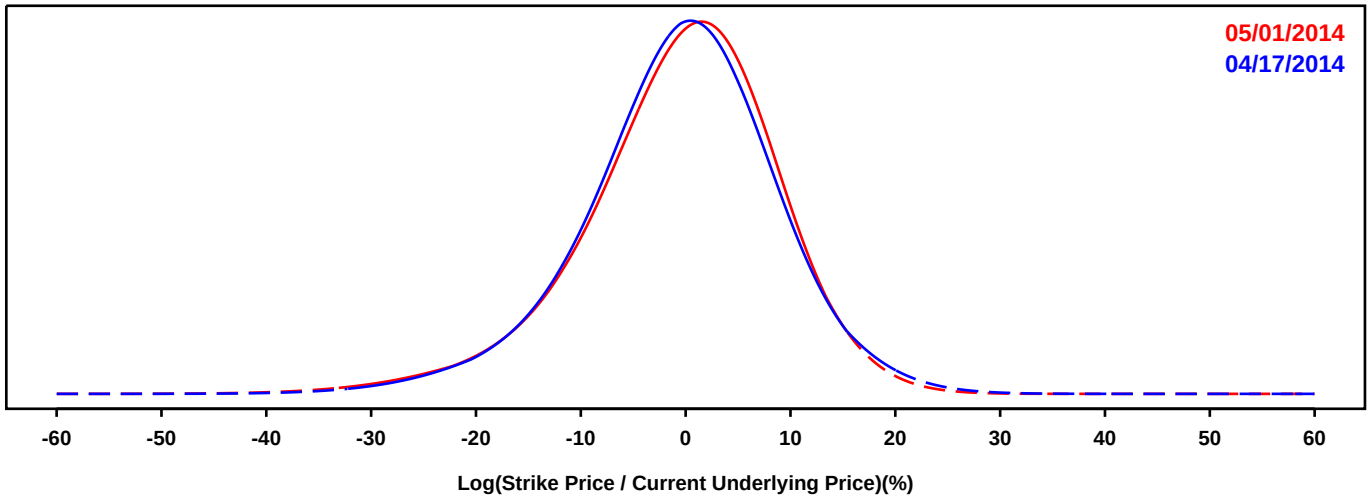
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- JP MORGAN

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

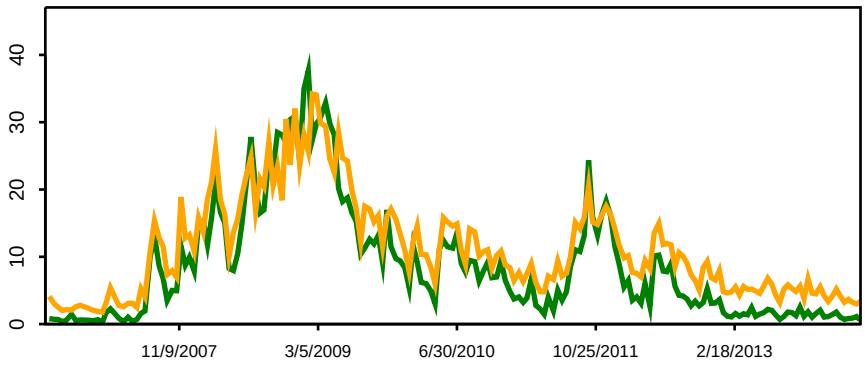
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

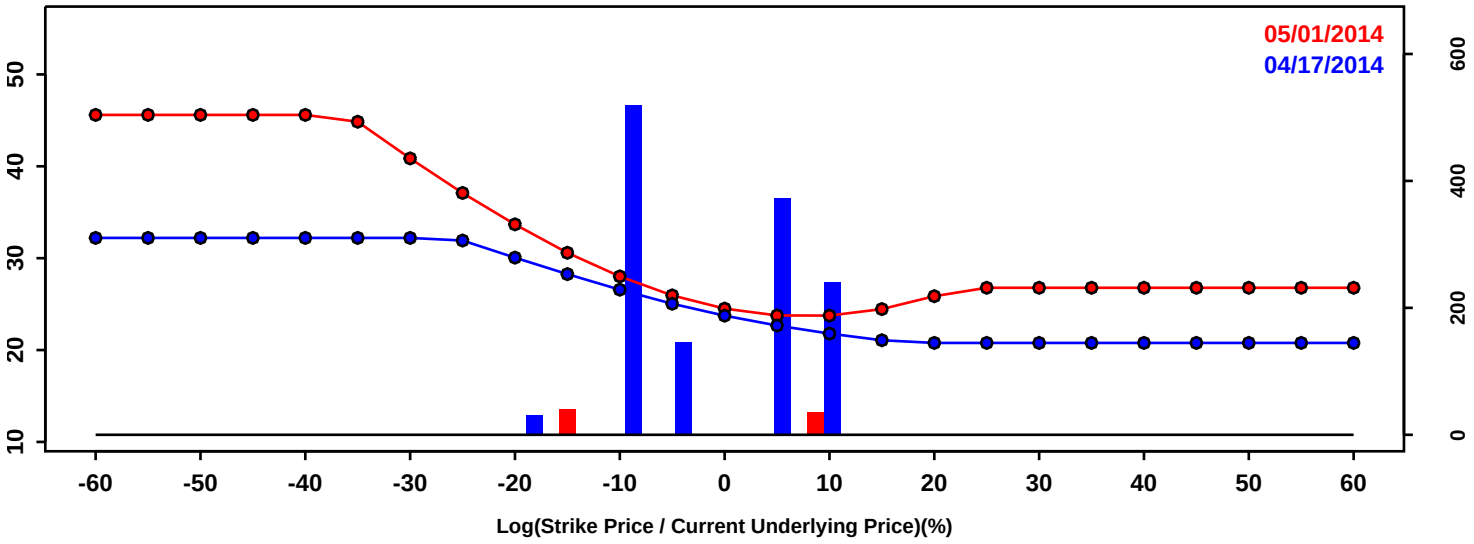
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-12.29%	-12.47%	-0.18%
50th Pct	-0.05%	0.24%	0.29%
90th Pct	10.60%	10.39%	-0.21%
Mean	-0.52%	-0.54%	-0.02%
Std Dev	9.32%	9.39%	0.07%
Skew	-0.37	-0.62	-0.25
Kurtosis	0.82	1.10	0.28

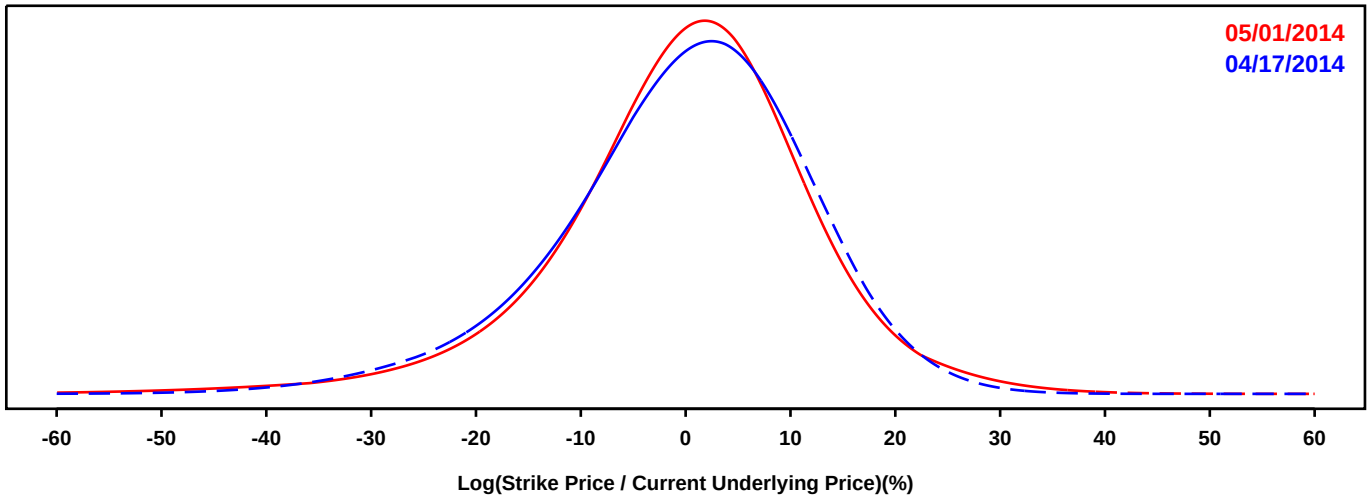
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- KEYCORP

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

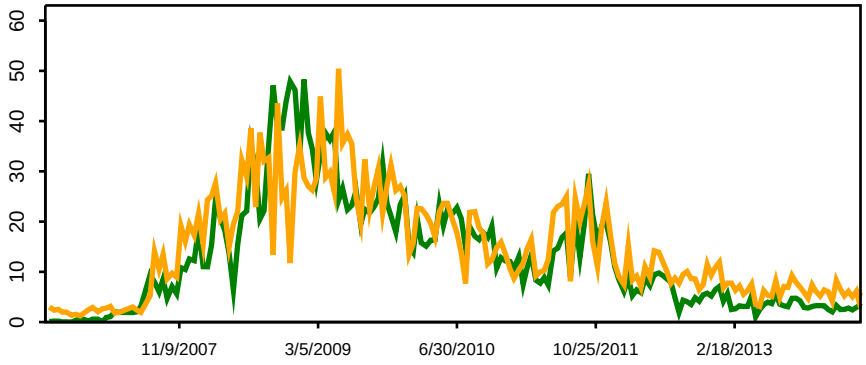
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



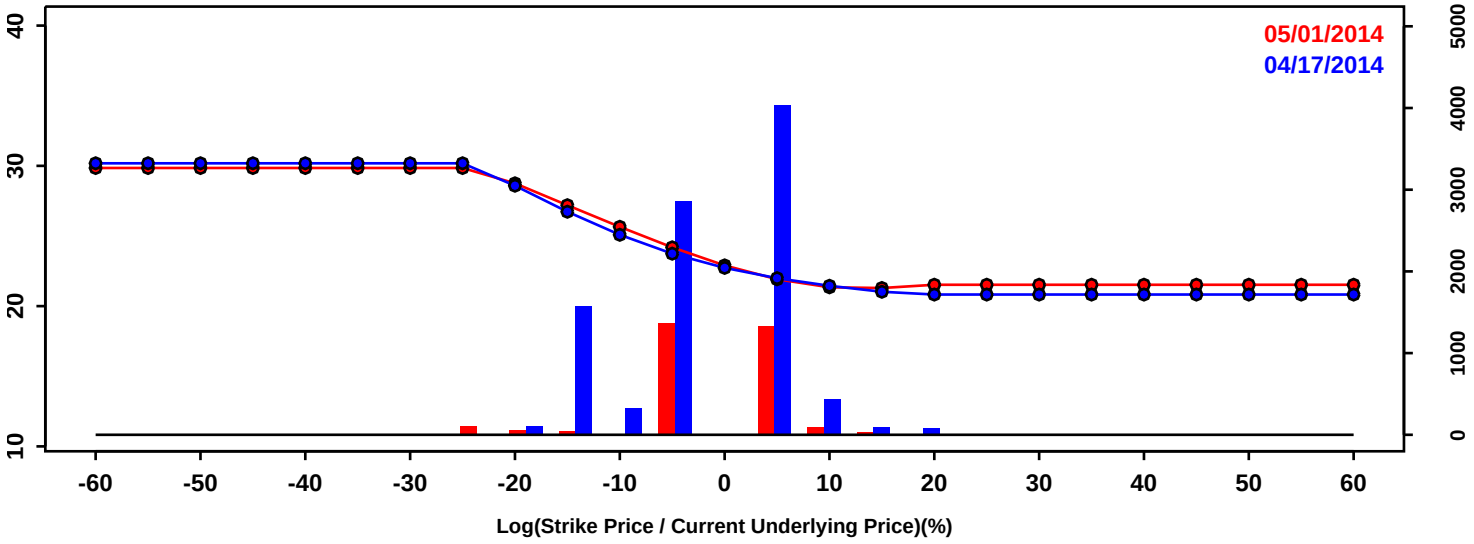
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-15.69%	-15.10%	0.58%
50th Pct	0.85%	0.72%	-0.13%
90th Pct	14.00%	13.96%	-0.04%
Mean	-0.17%	-0.14%	0.02%
Std Dev	11.99%	12.51%	0.51%
Skew	-0.56	-0.70	-0.14
Kurtosis	0.78	2.29	1.51

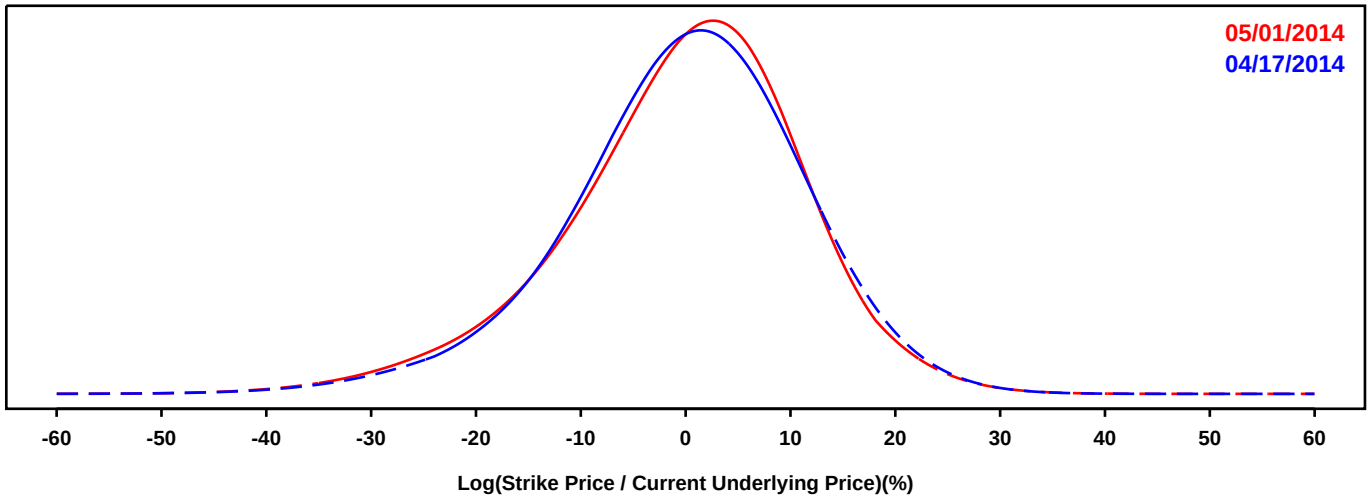
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- MORGAN STANLEY

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

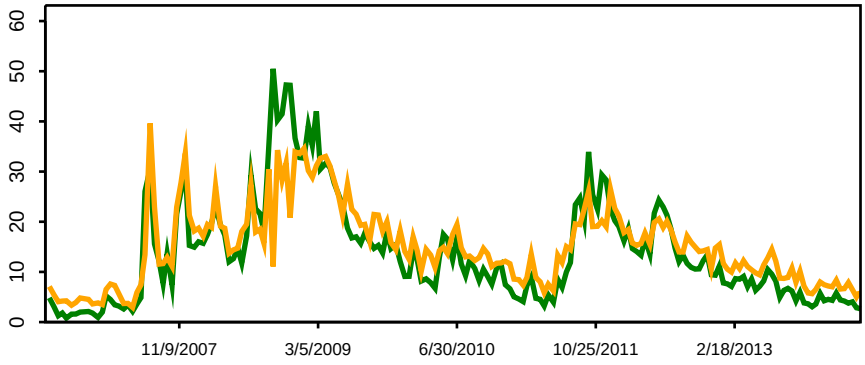
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

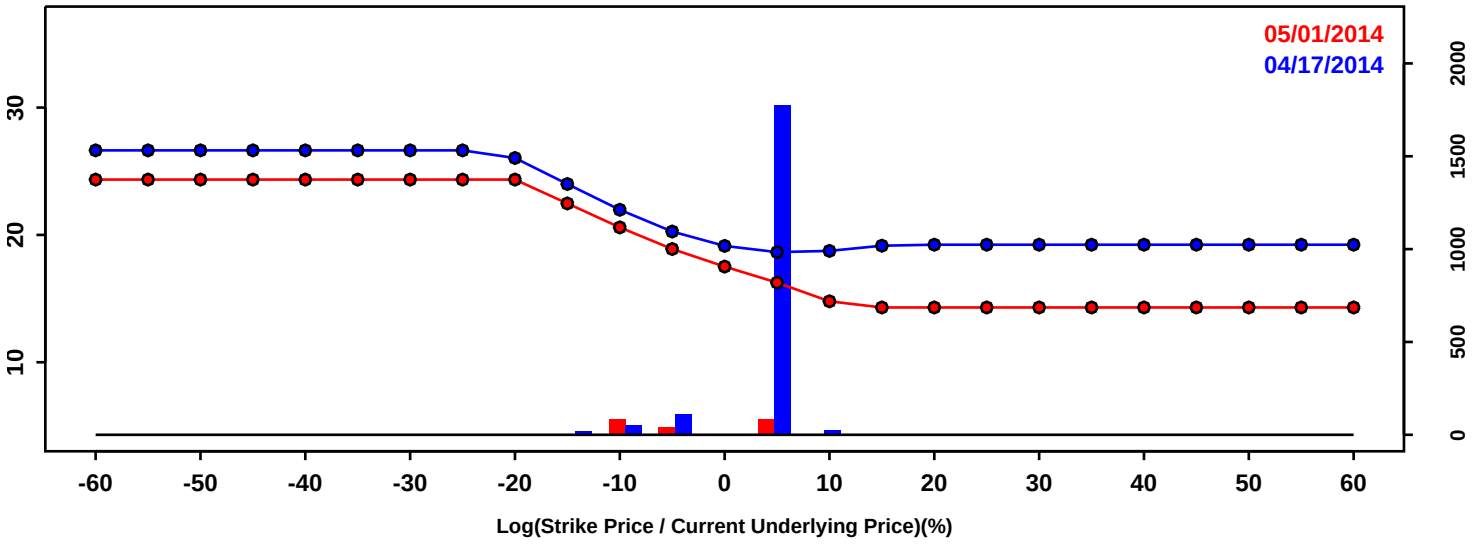
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-14.54%	-15.31%	-0.77%
50th Pct	0.58%	0.77%	0.18%
90th Pct	13.71%	13.15%	-0.57%
Mean	-0.03%	-0.25%	-0.22%
Std Dev	11.40%	11.53%	0.13%
Skew	-0.43	-0.51	-0.08
Kurtosis	0.68	0.74	0.06

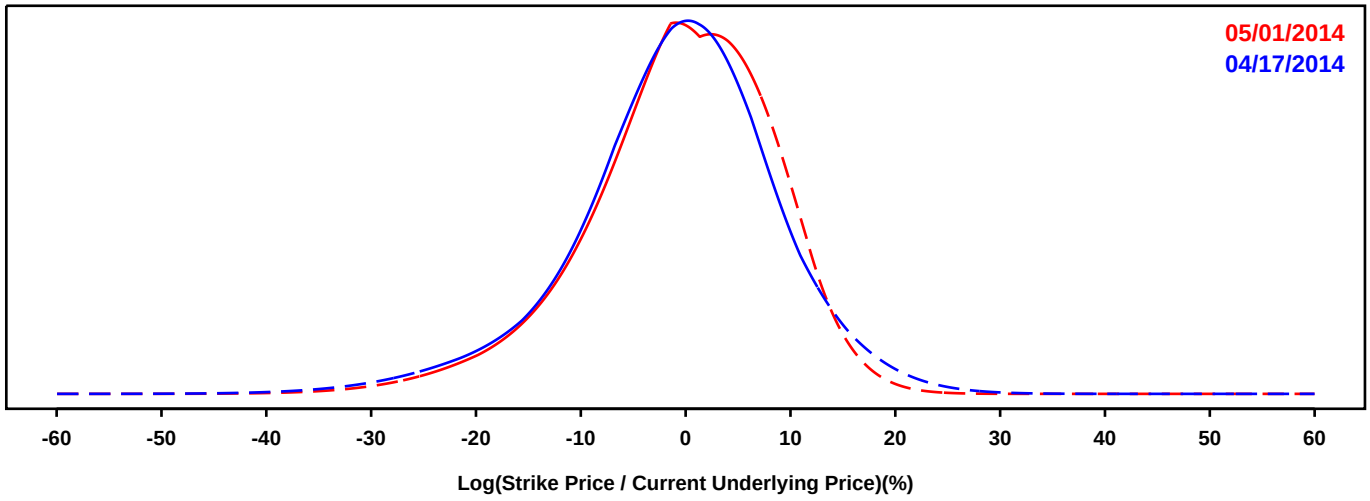
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PNC FINANCIAL

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

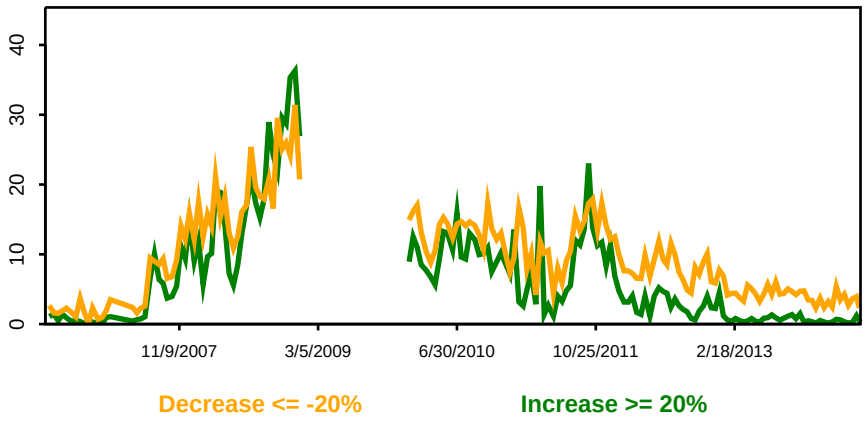
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



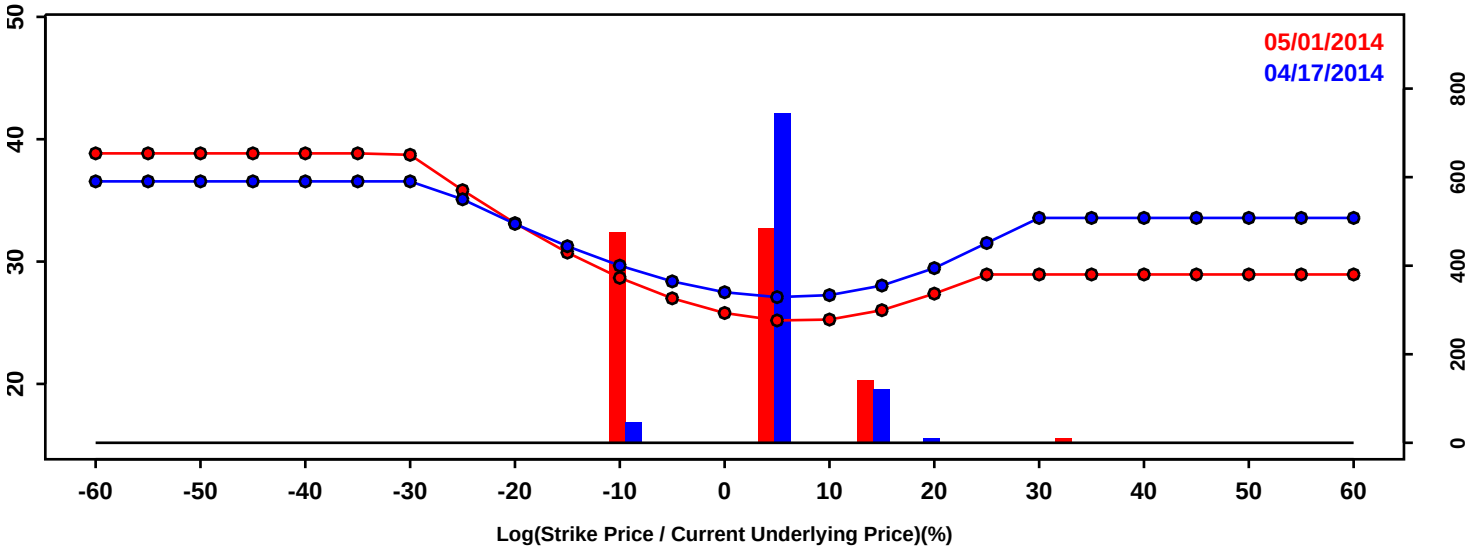
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-13.03%	-12.11%	0.92%
50th Pct	-0.31%	0.25%	0.56%
90th Pct	10.51%	10.08%	-0.43%
Mean	-0.89%	-0.49%	0.41%
Std Dev	9.72%	8.95%	-0.76%
Skew	-0.48	-0.63	-0.15
Kurtosis	1.06	0.80	-0.26

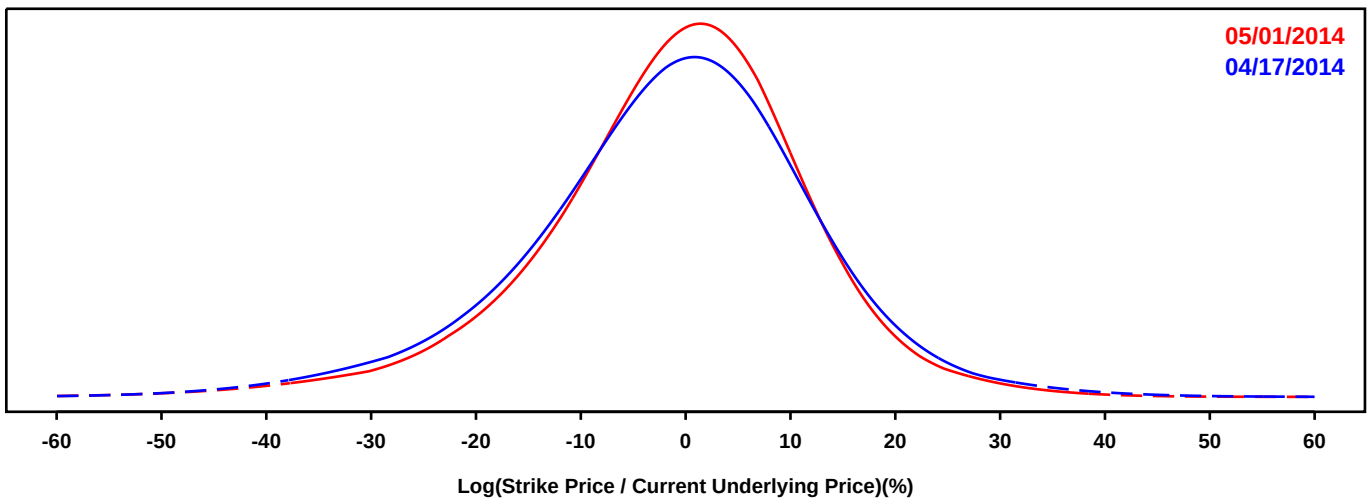
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- REGIONS FINANCIAL

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

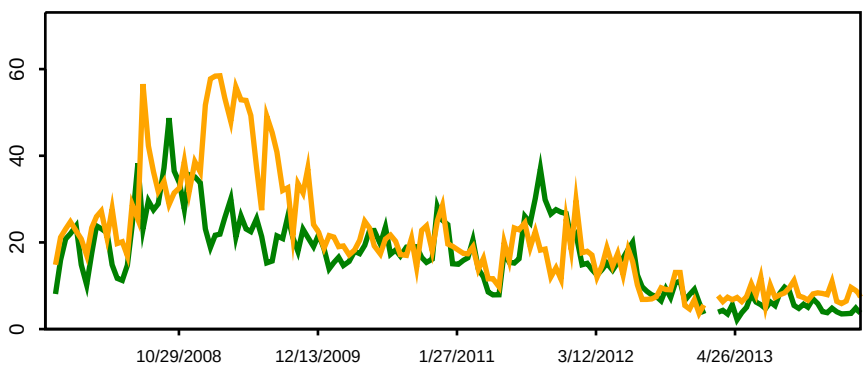
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

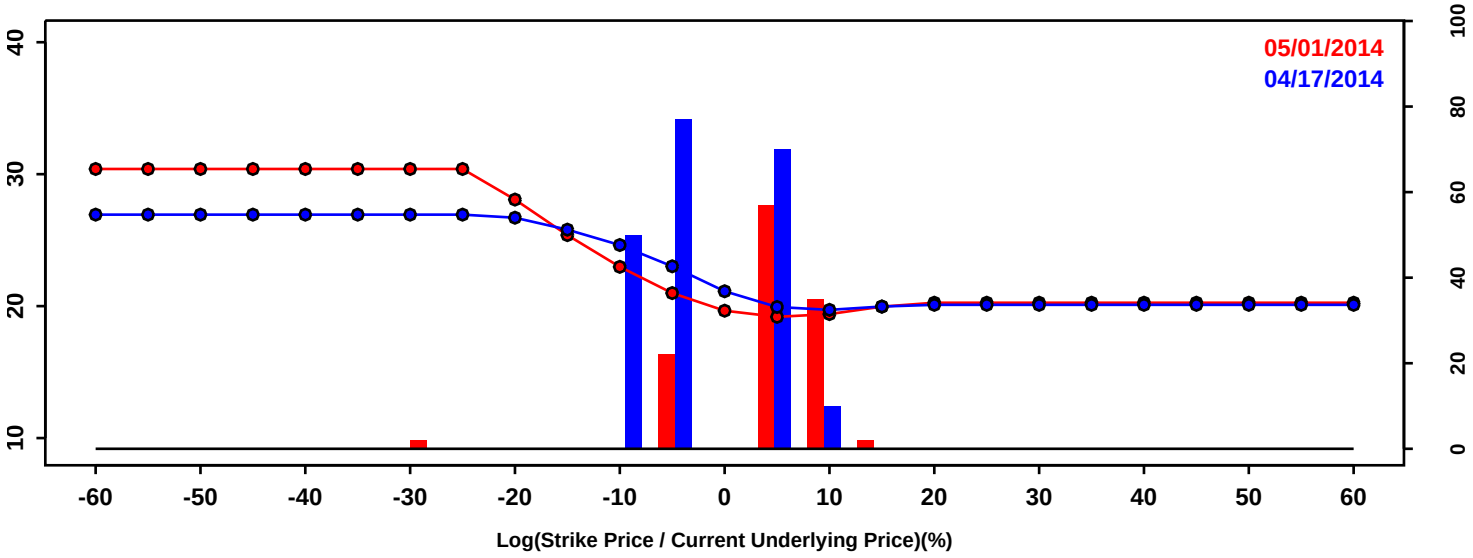
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-18.82%	-17.15%	1.67%
50th Pct	-0.47%	-0.04%	0.43%
90th Pct	14.88%	13.76%	-1.12%
Mean	-1.29%	-1.02%	0.27%
Std Dev	13.93%	12.96%	-0.97%
Skew	-0.35	-0.53	-0.19
Kurtosis	1.03	1.46	0.43

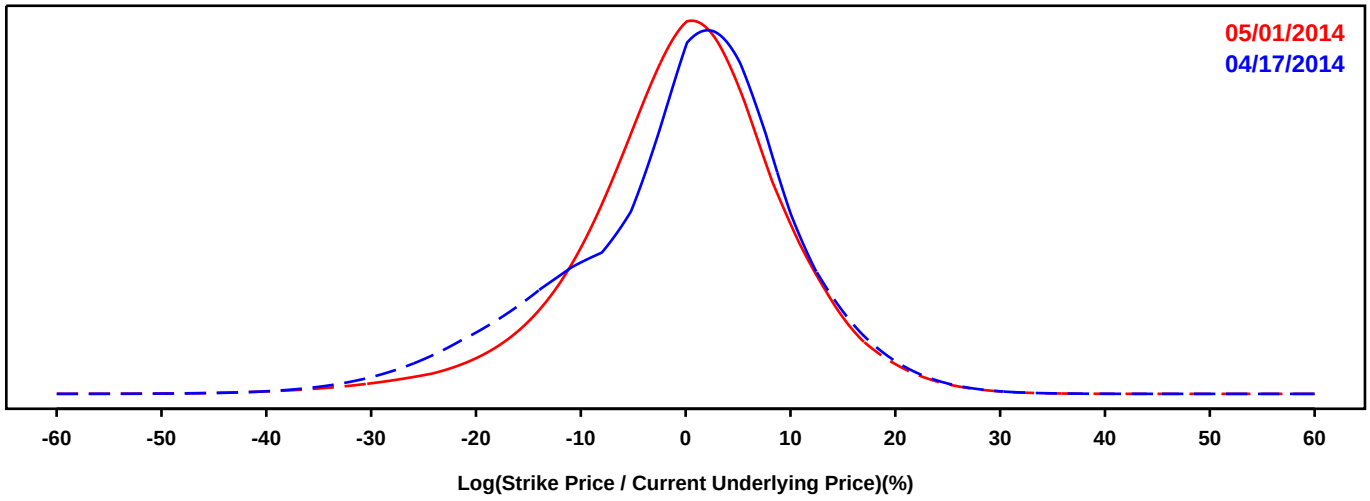
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SUNTRUST

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

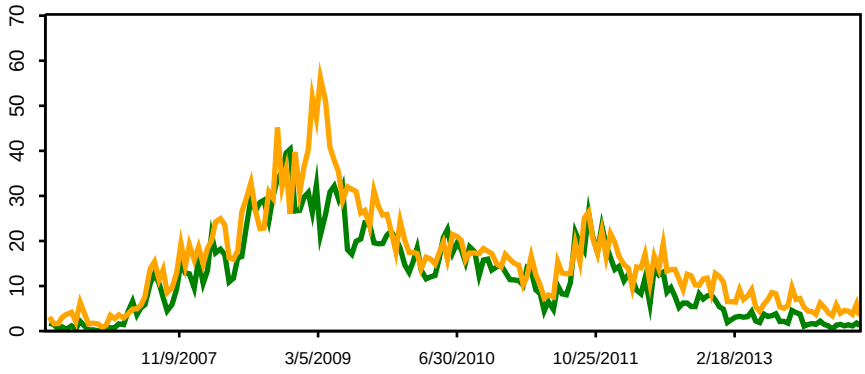
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



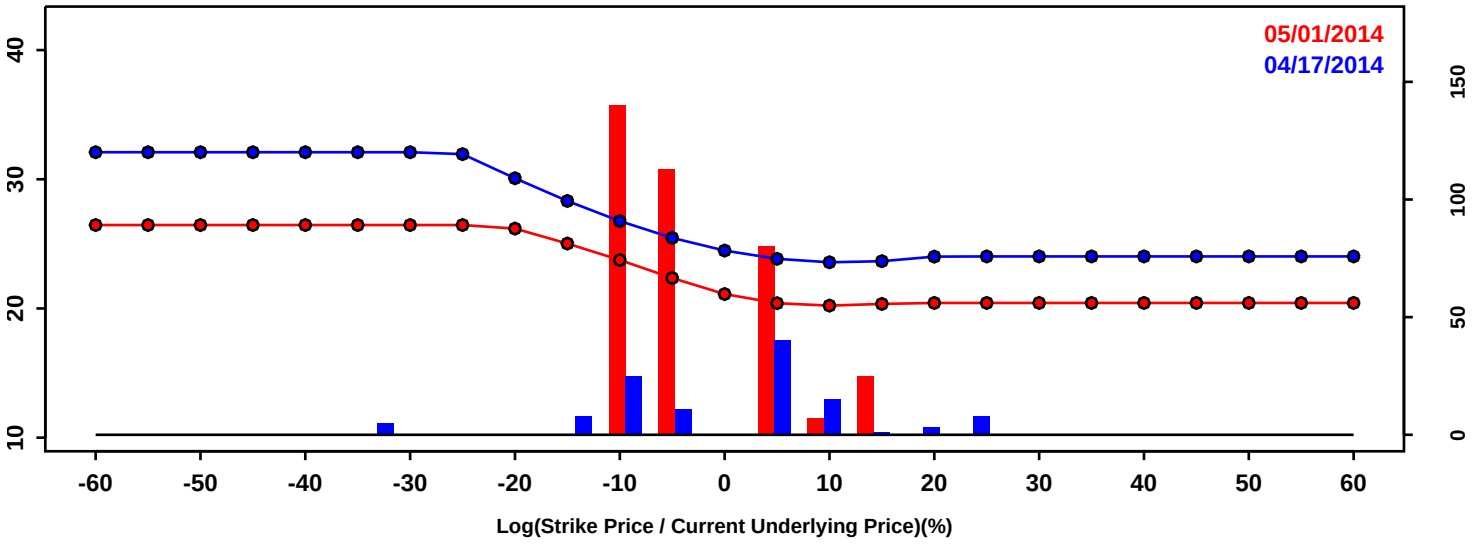
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-15.85%	-12.36%	3.49%
50th Pct	0.88%	0.29%	-0.59%
90th Pct	11.71%	11.35%	-0.37%
Mean	-0.60%	-0.25%	0.35%
Std Dev	10.95%	9.90%	-1.05%
Skew	-0.59	-0.52	0.07
Kurtosis	0.69	1.47	0.78

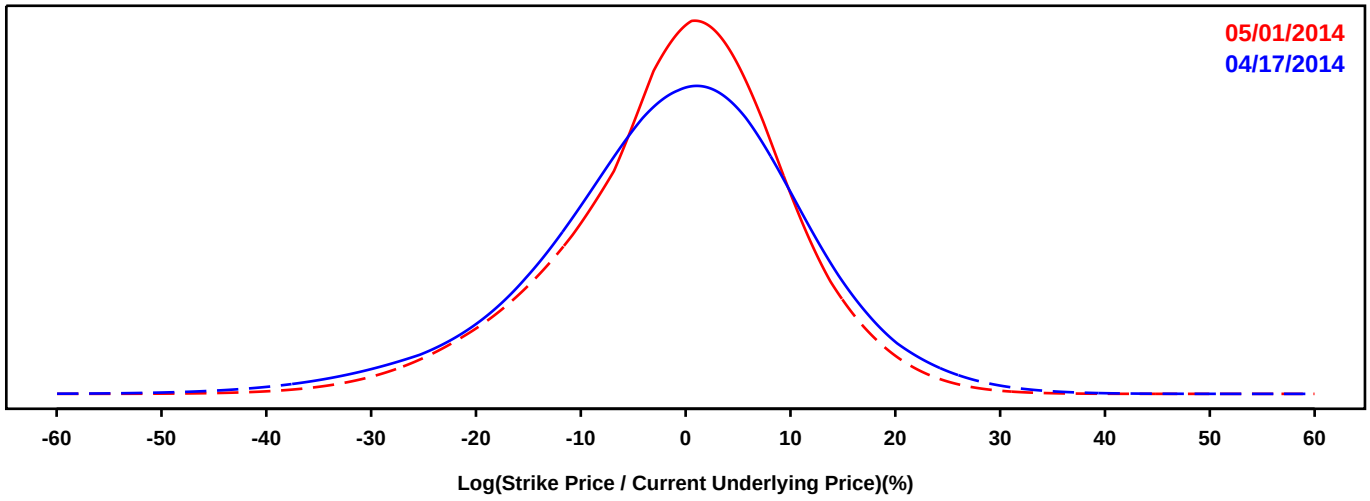
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- STATE STREET

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

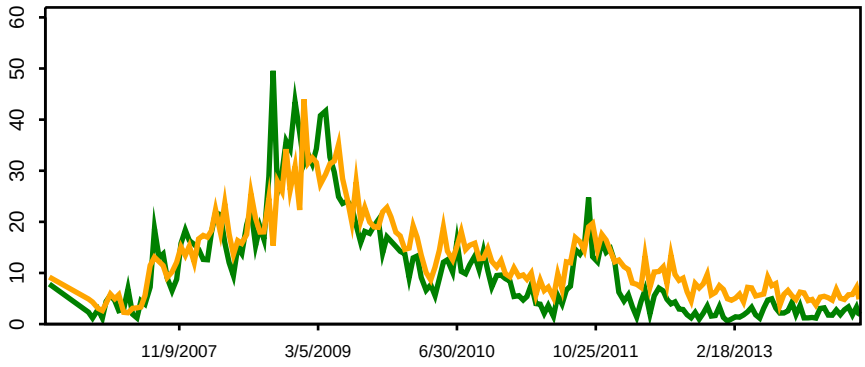
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



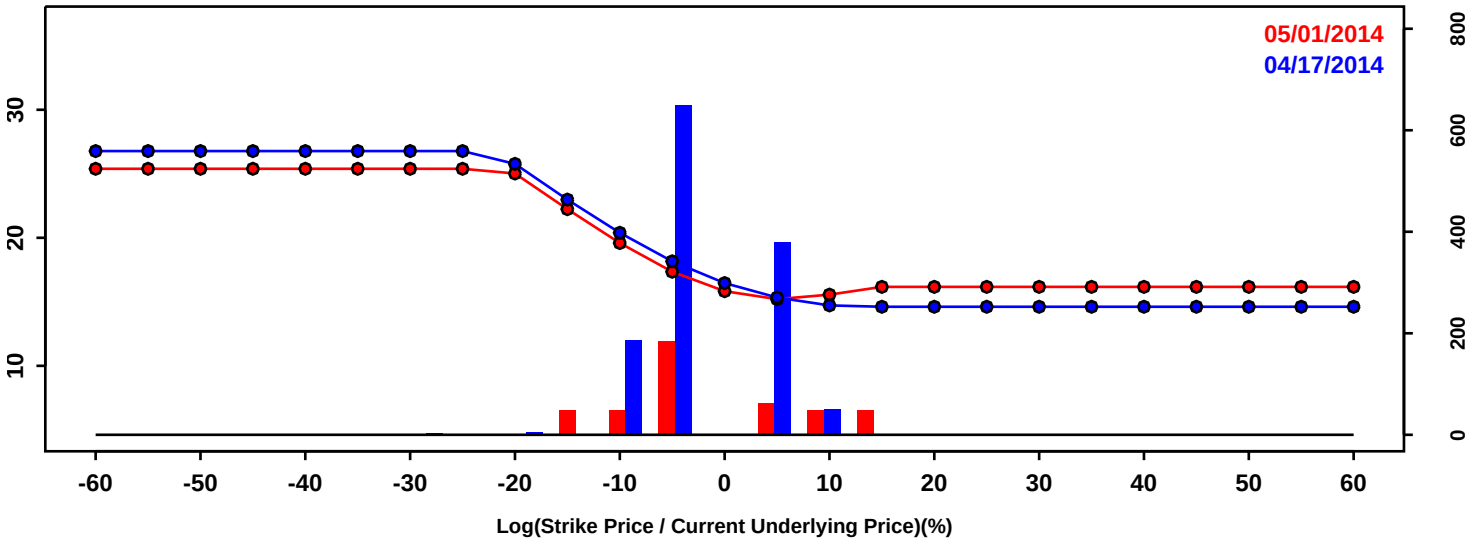
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-17.00%	-15.32%	1.68%
50th Pct	-0.35%	0.04%	0.39%
90th Pct	13.56%	11.81%	-1.75%
Mean	-1.16%	-0.88%	0.28%
Std Dev	12.40%	10.82%	-1.58%
Skew	-0.42	-0.44	-0.02
Kurtosis	0.74	0.60	-0.14

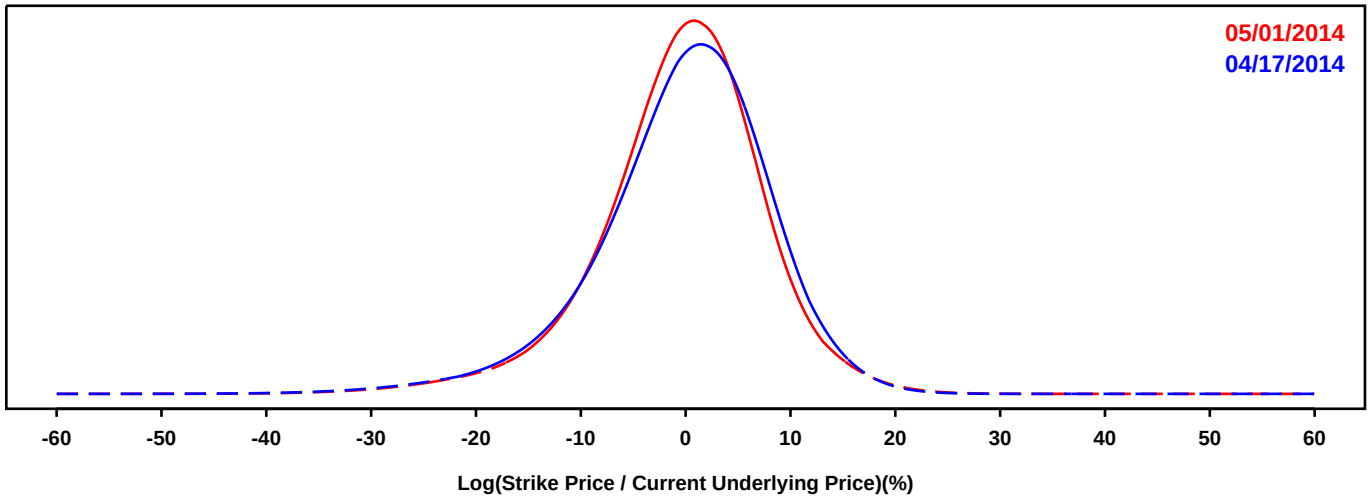
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- US BANCORP

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

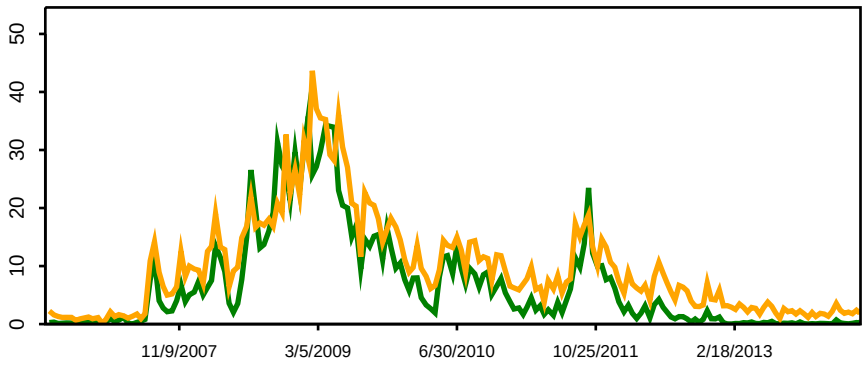
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

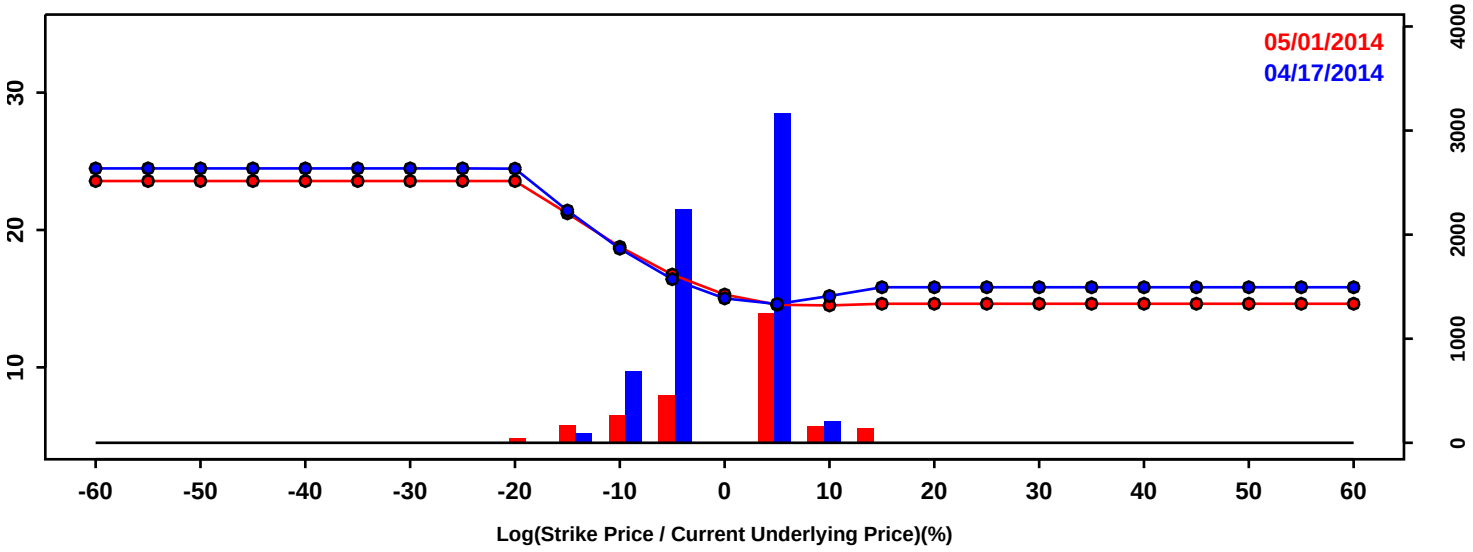
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-10.65%	-10.17%	0.48%
50th Pct	0.53%	0.15%	-0.39%
90th Pct	9.33%	8.63%	-0.70%
Mean	-0.20%	-0.44%	-0.24%
Std Dev	8.34%	7.97%	-0.36%
Skew	-0.75	-0.64	0.11
Kurtosis	1.59	1.70	0.11

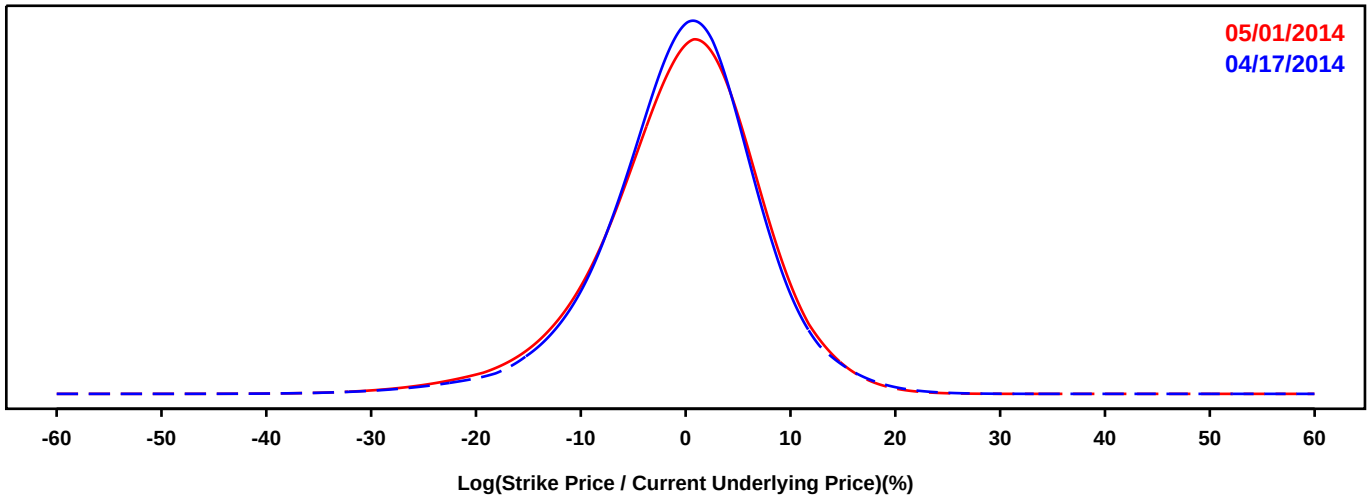
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- WELLS FARGO

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

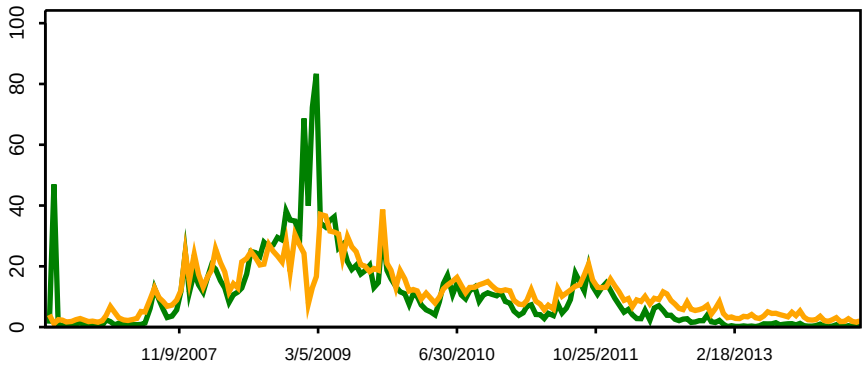
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

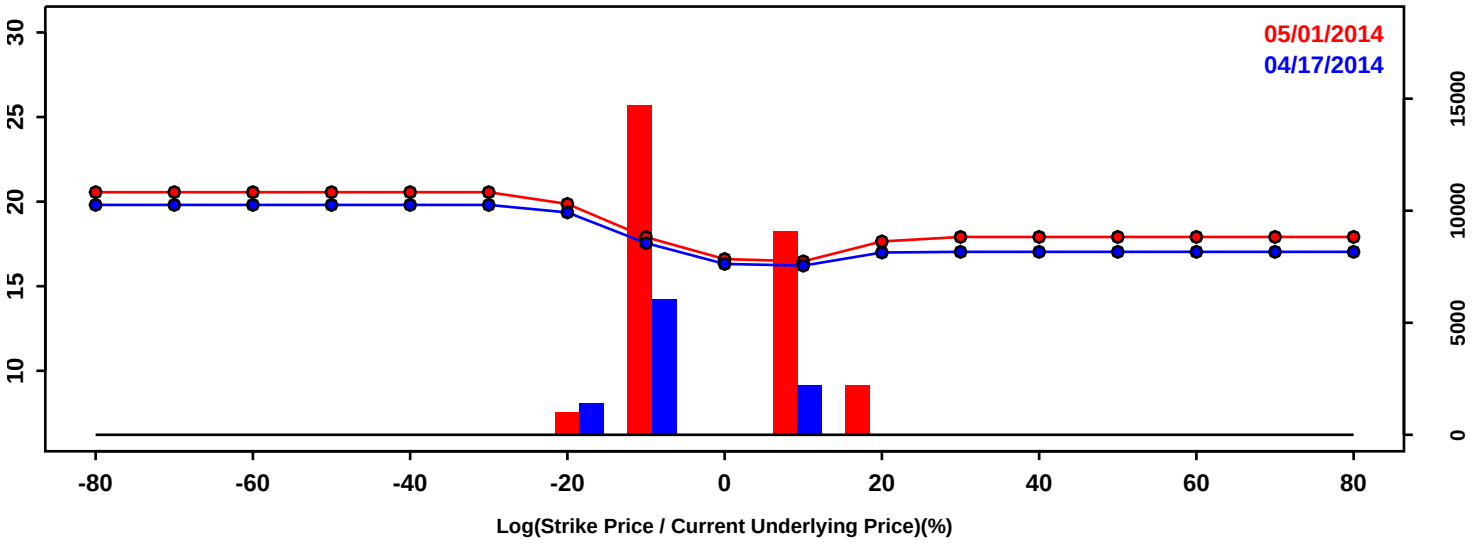
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-9.55%	-10.23%	-0.67%
50th Pct	0.05%	0.10%	0.04%
90th Pct	8.25%	8.50%	0.25%
Mean	-0.39%	-0.49%	-0.10%
Std Dev	7.52%	7.77%	0.25%
Skew	-0.55	-0.61	-0.06
Kurtosis	1.64	1.32	-0.32

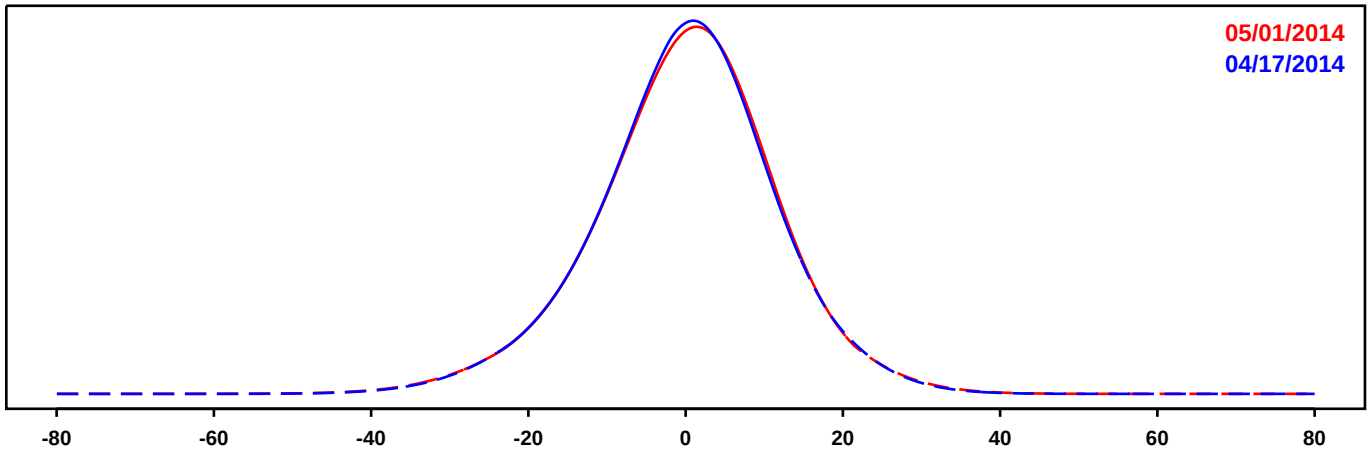
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CRUDE OIL FUTURES (Brent)

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

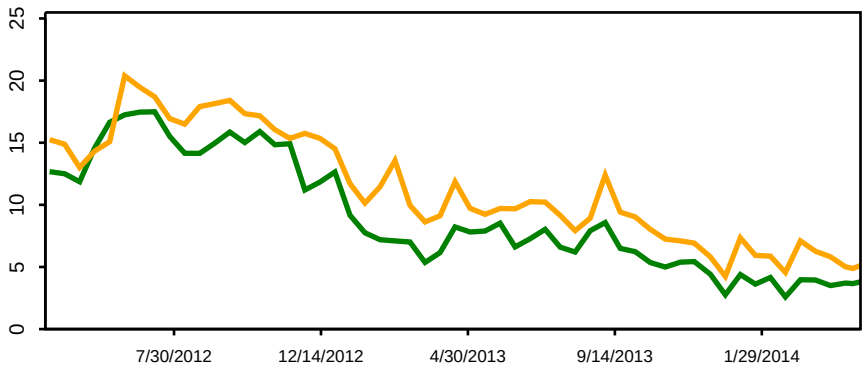
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

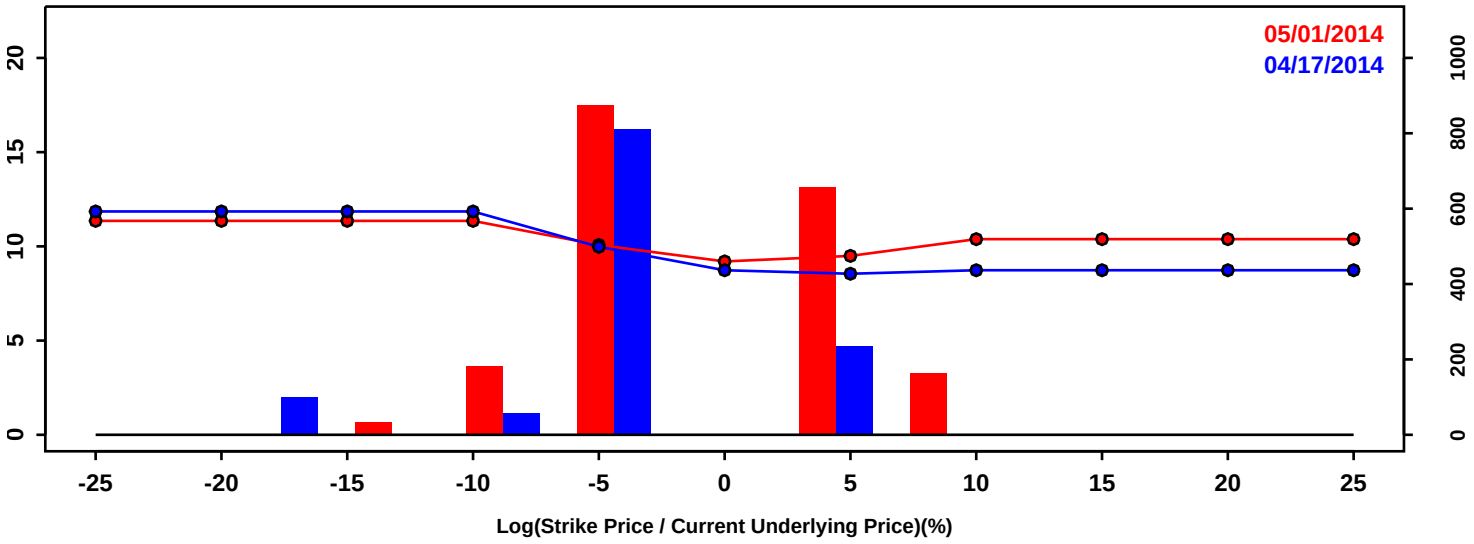
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-14.78%	-14.83%	-0.06%
50th Pct	0.34%	0.48%	0.14%
90th Pct	13.93%	14.01%	0.08%
Mean	-0.06%	0.02%	0.08%
Std Dev	11.55%	11.70%	0.16%
Skew	-0.23	-0.24	-0.02
Kurtosis	0.58	0.67	0.09

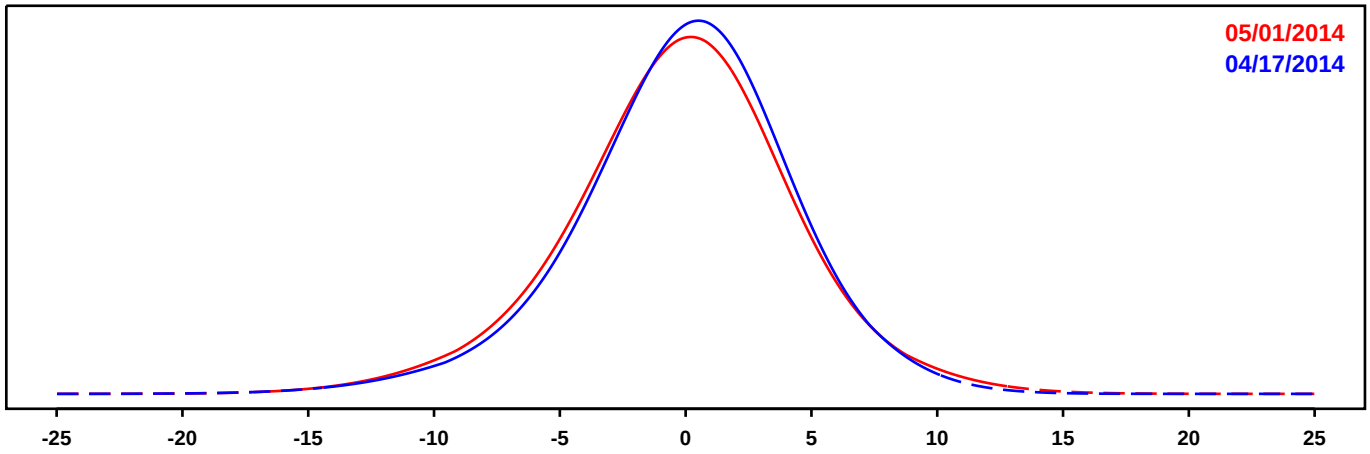
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CATTLE FUTURES

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

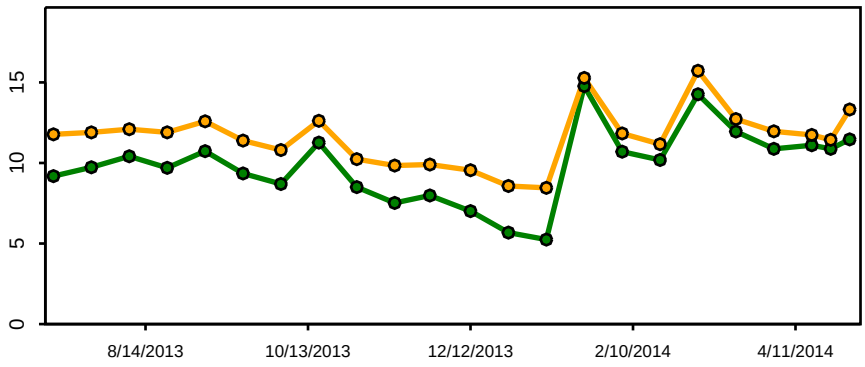
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -5% Increase >= 5%

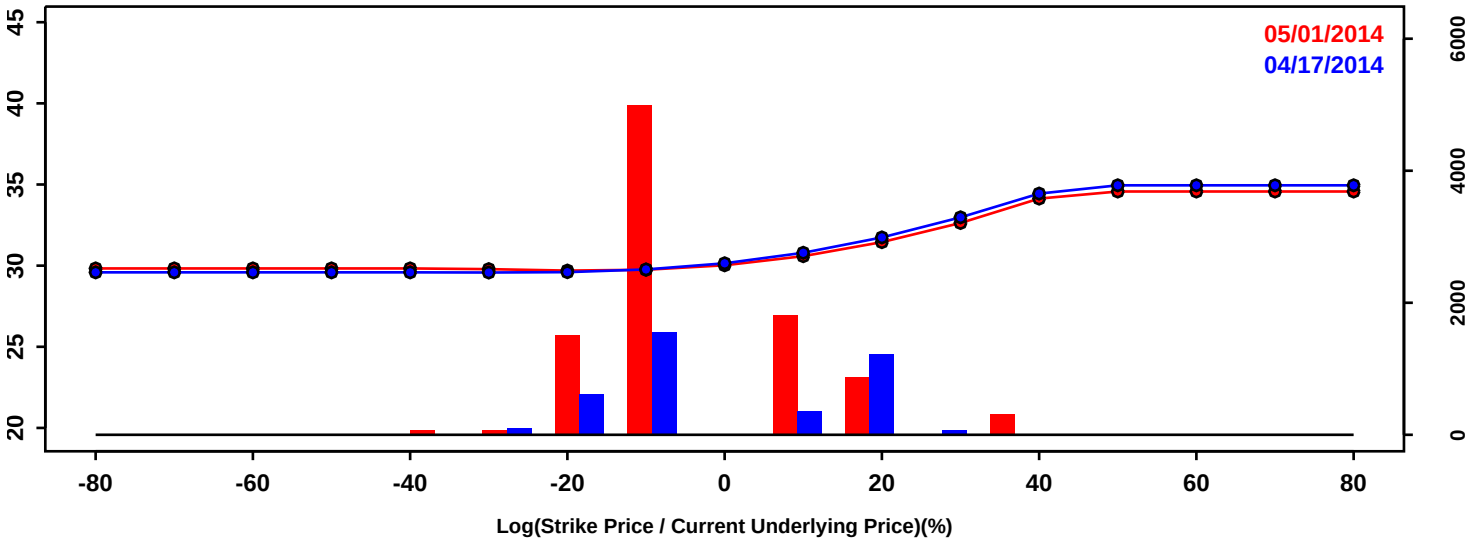
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-5.48%	-5.90%	-0.42%
50th Pct	0.21%	-0.03%	-0.24%
90th Pct	5.22%	5.35%	0.13%
Mean	0.01%	-0.15%	-0.16%
Std Dev	4.37%	4.59%	0.22%
Skew	-0.36	-0.18	0.19
Kurtosis	0.83	0.73	-0.10

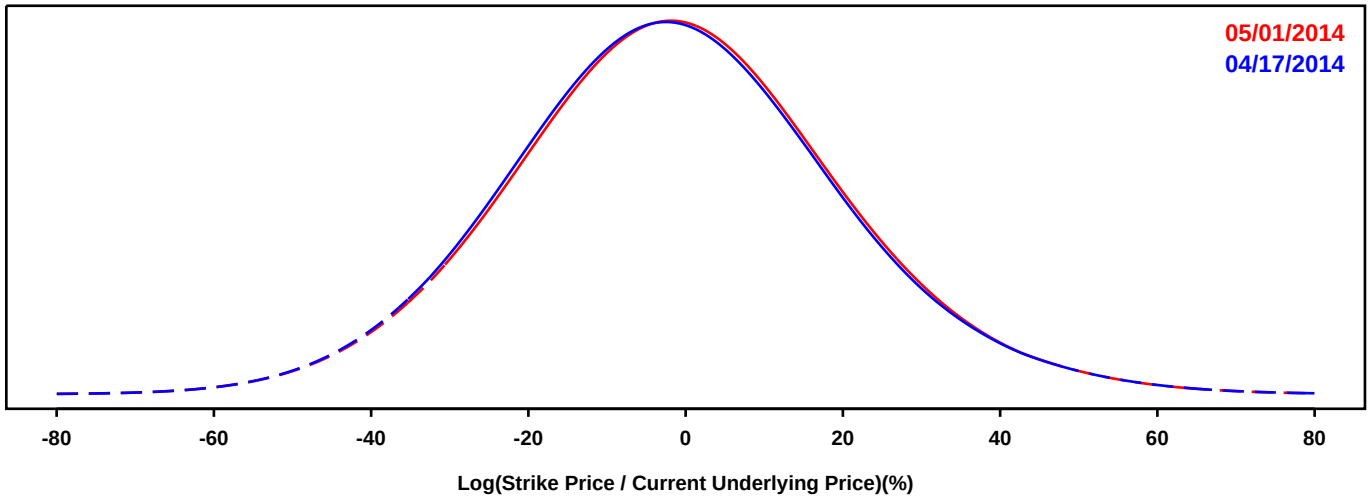
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CORN FUTURES

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

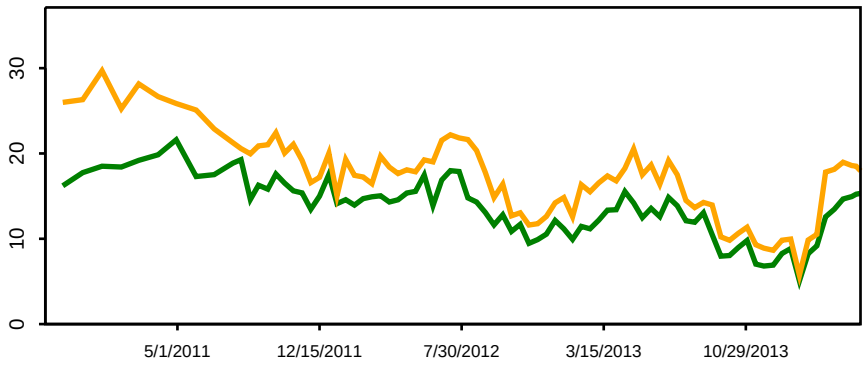
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

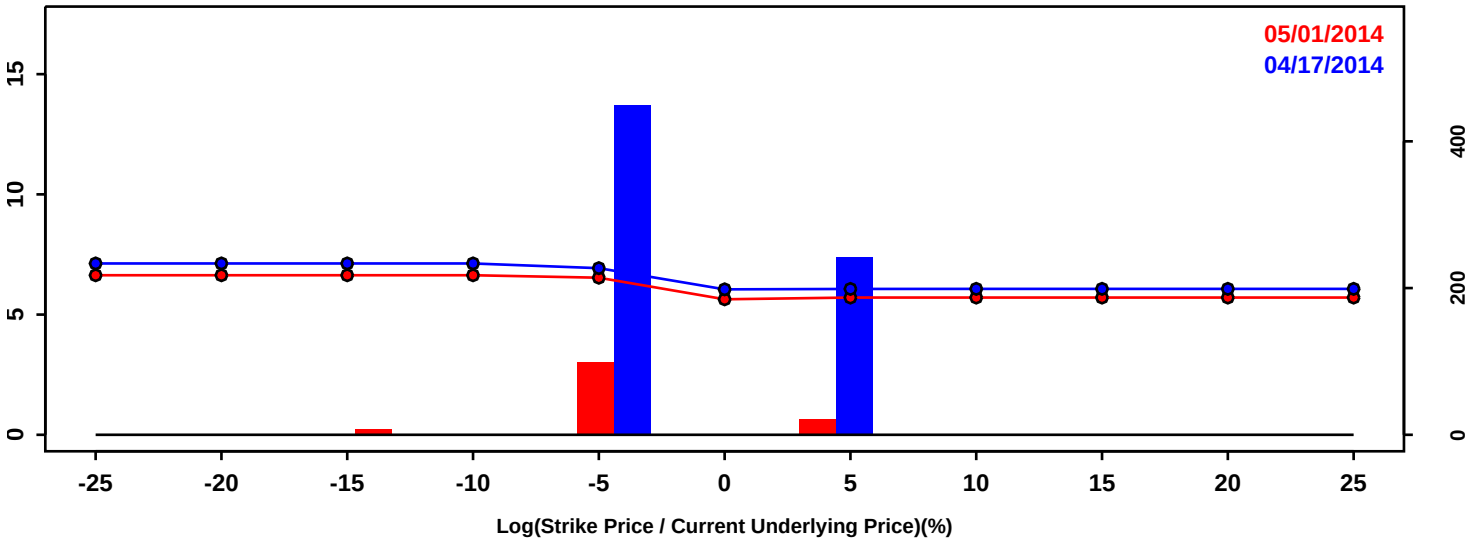
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-27.99%	-27.56%	0.43%
50th Pct	-1.89%	-1.43%	0.46%
90th Pct	25.53%	25.85%	0.31%
Mean	-1.42%	-1.02%	0.40%
Std Dev	21.21%	21.16%	-0.05%
Skew	0.16	0.13	-0.03
Kurtosis	0.29	0.28	-0.01

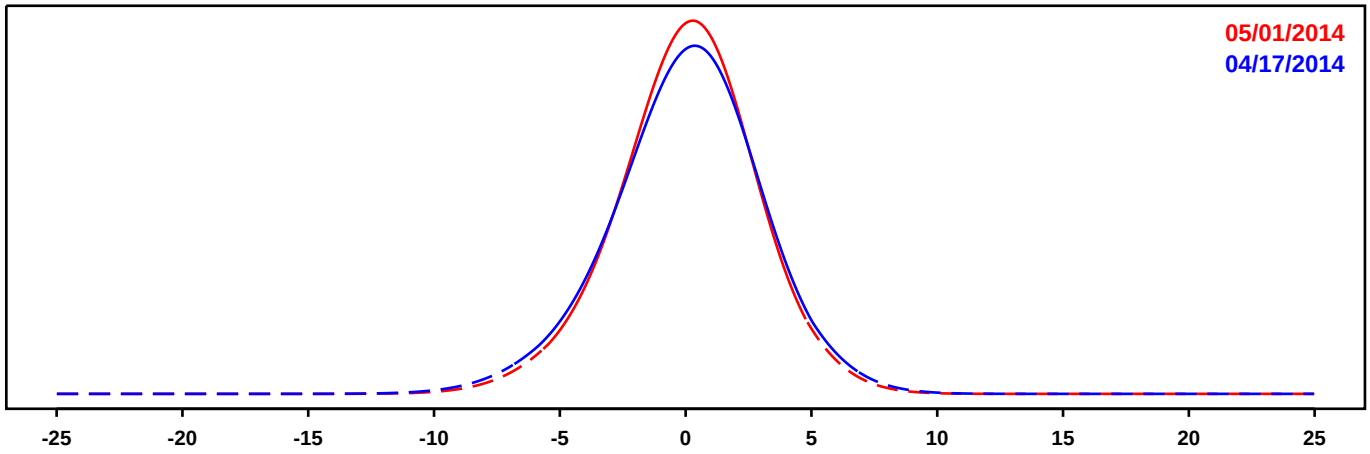
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-EURO EXCHANGE RATE FUTURES

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

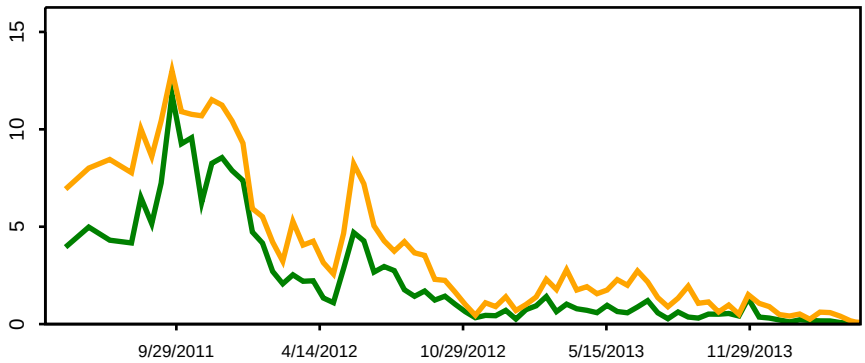
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



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

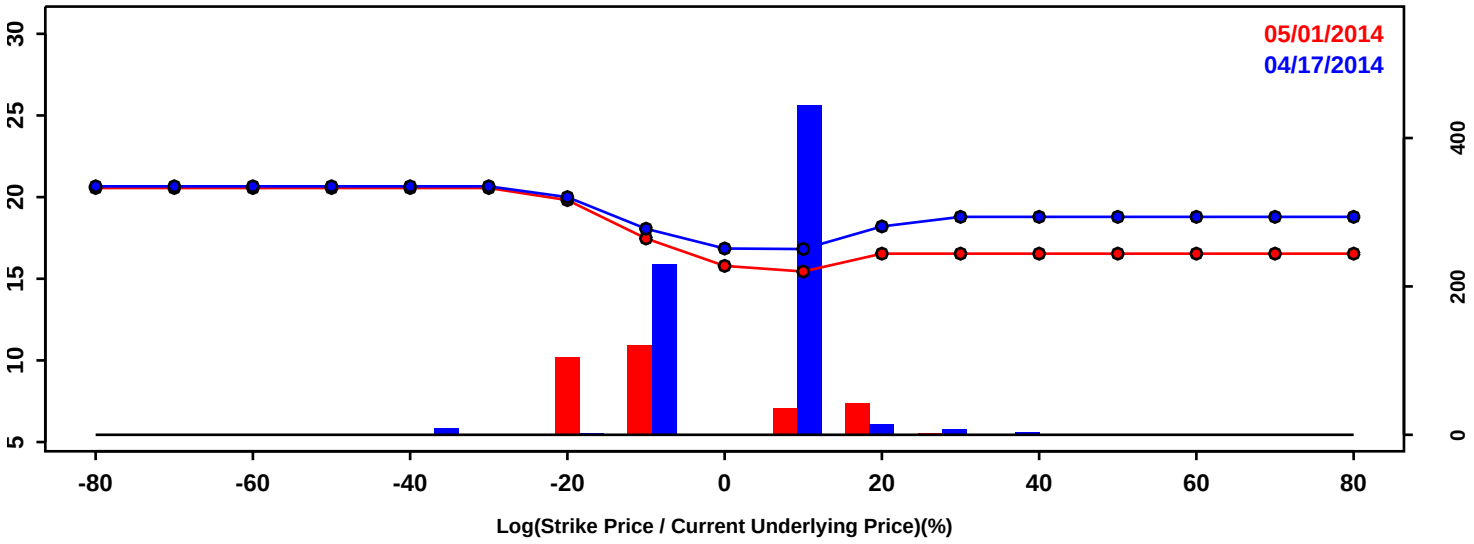
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-3.81%	-3.55%	0.26%
50th Pct	0.12%	0.15%	0.02%
90th Pct	3.71%	3.48%	-0.23%
Mean	0.06%	0.08%	0.02%
Std Dev	3.02%	2.81%	-0.21%
Skew	-0.22	-0.19	0.03
Kurtosis	0.41	0.41	0.00

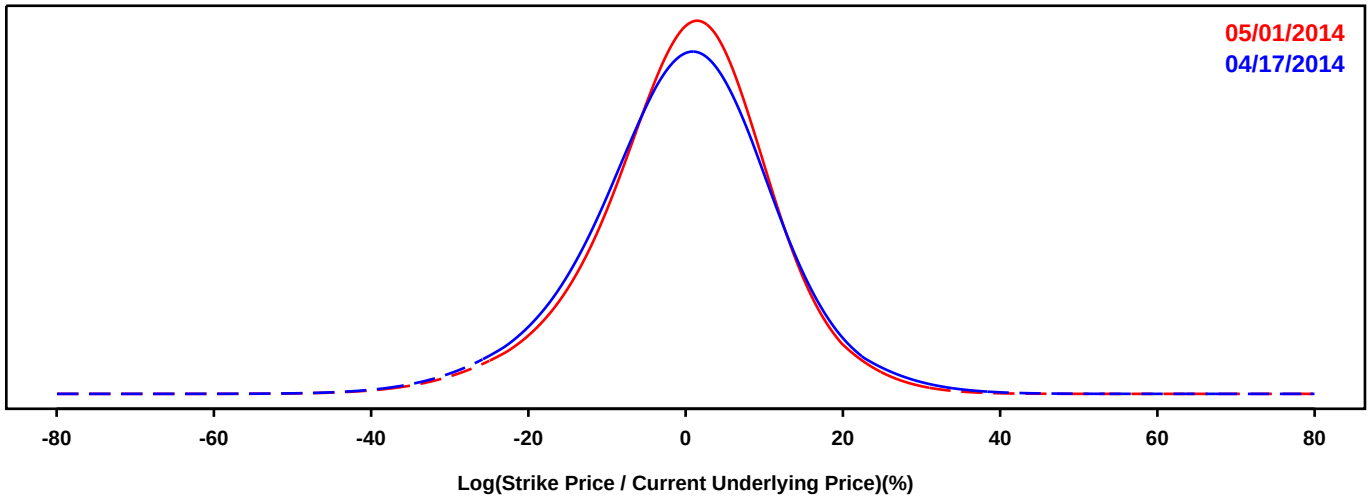
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- GOLD FUTURES

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

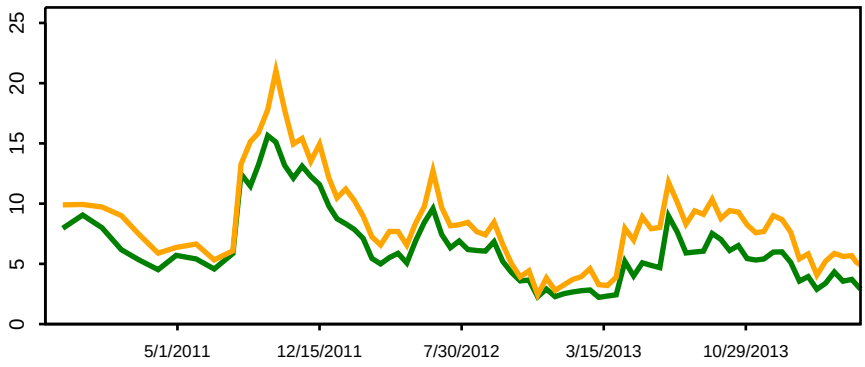
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

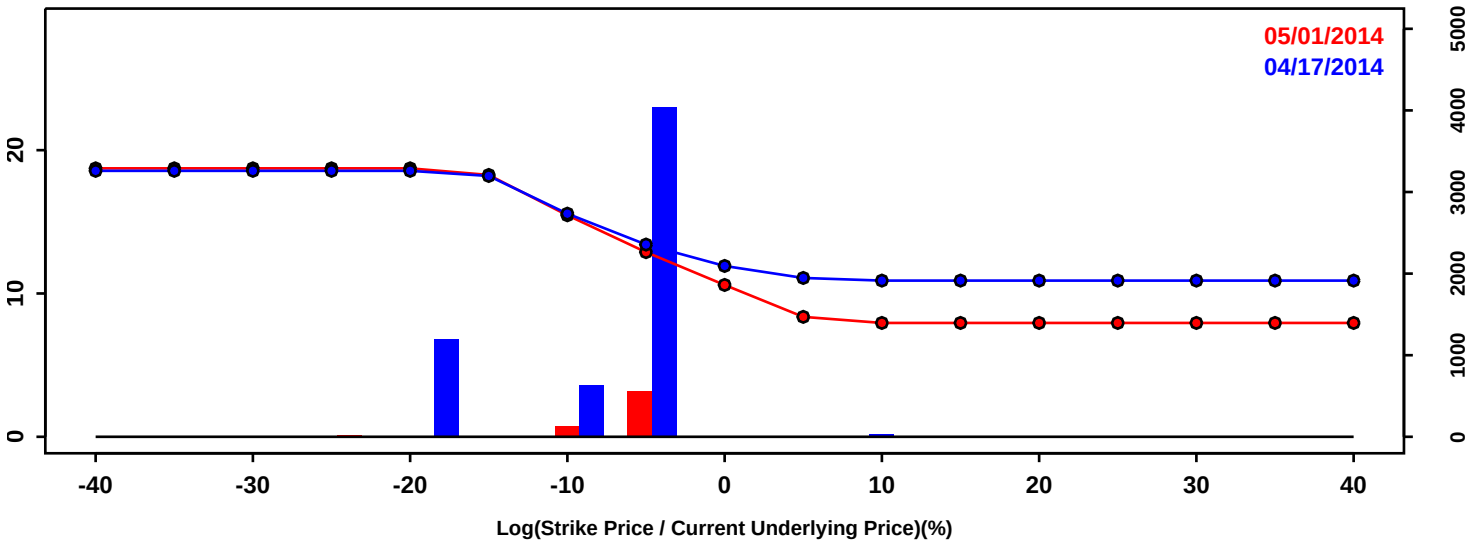
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-15.49%	-14.33%	1.16%
50th Pct	0.10%	0.50%	0.40%
90th Pct	13.82%	13.06%	-0.76%
Mean	-0.40%	-0.14%	0.26%
Std Dev	11.91%	11.19%	-0.72%
Skew	-0.23	-0.37	-0.14
Kurtosis	0.68	0.82	0.14

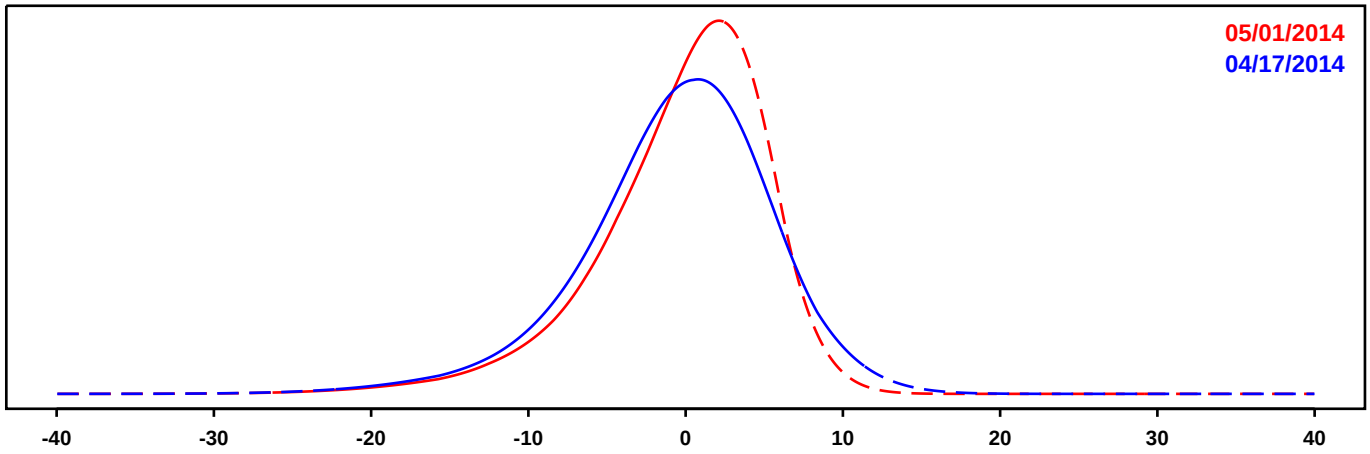
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- iSHARES DOW JONES US REAL ESTATE

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

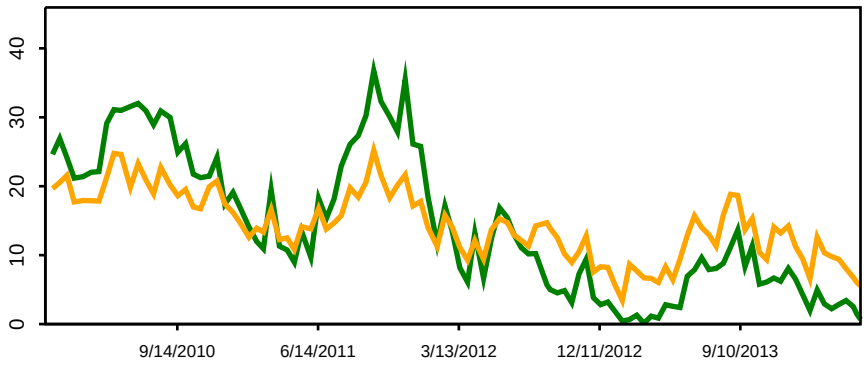
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -10% Increase >= 10%

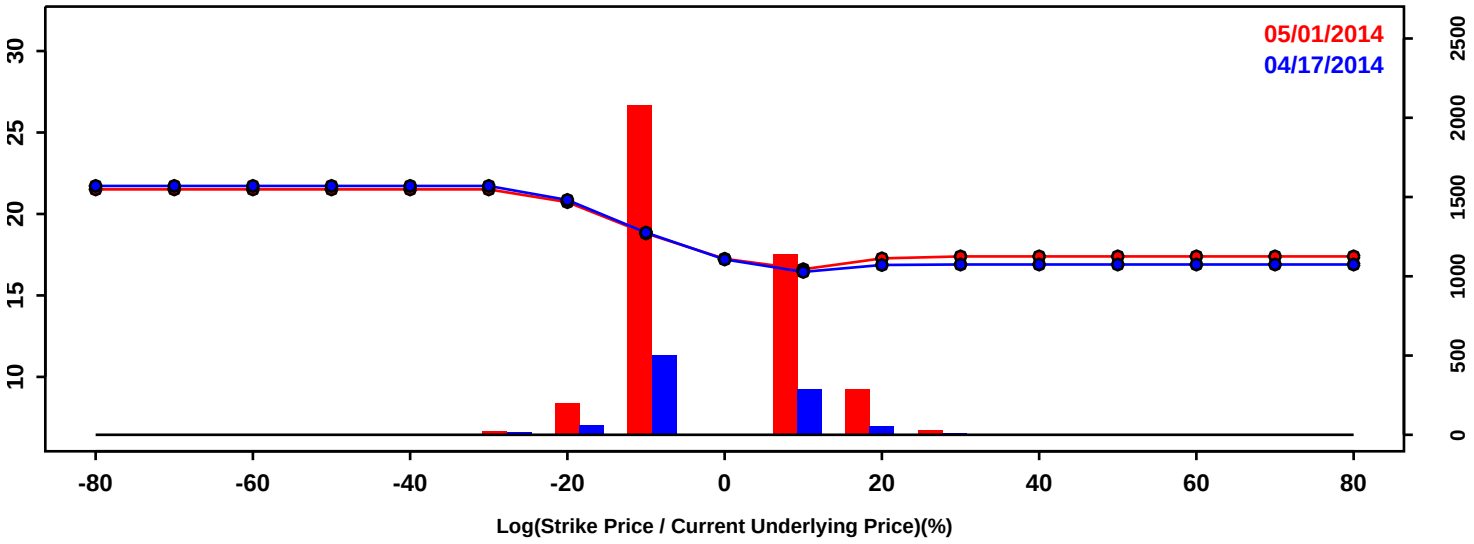
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-8.24%	-7.34%	0.90%
50th Pct	-0.05%	0.60%	0.65%
90th Pct	6.45%	5.70%	-0.75%
Mean	-0.57%	-0.23%	0.34%
Std Dev	6.09%	5.50%	-0.59%
Skew	-0.64	-1.06	-0.41
Kurtosis	1.27	2.05	0.77

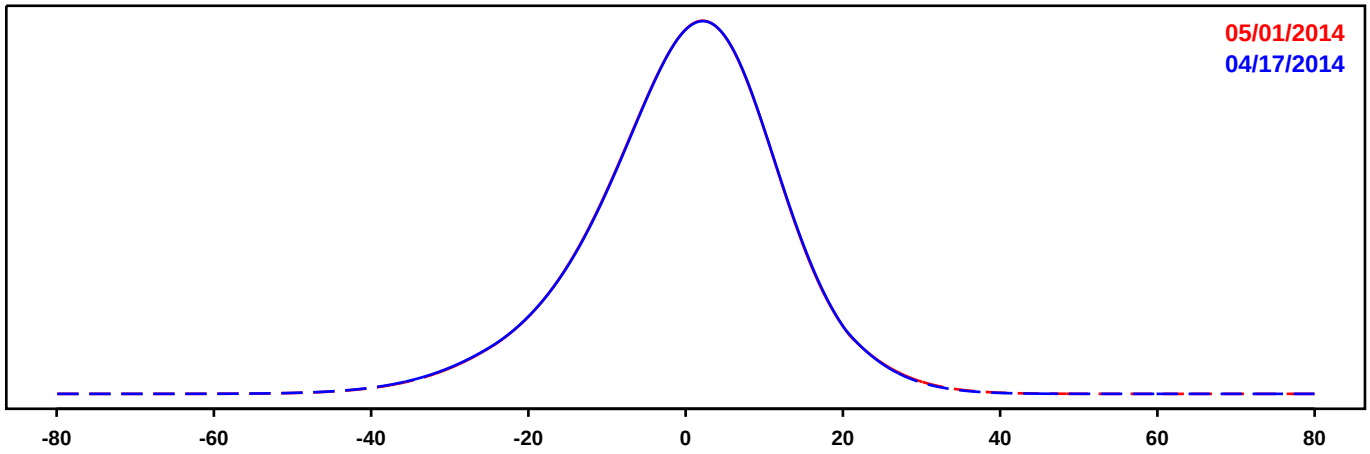
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CRUDE OIL FUTURES (WTI)

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

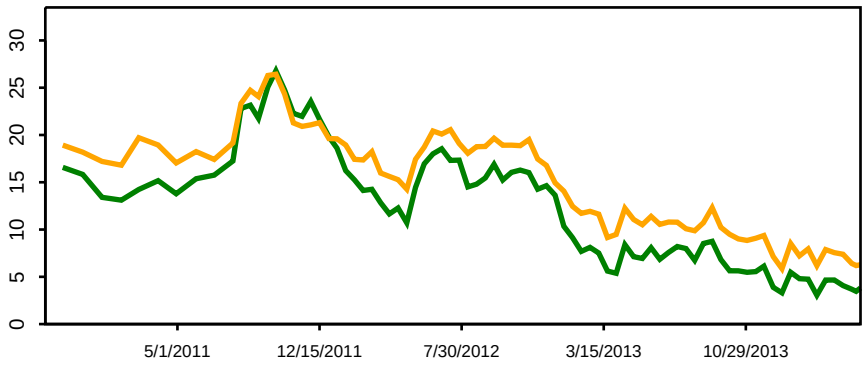
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

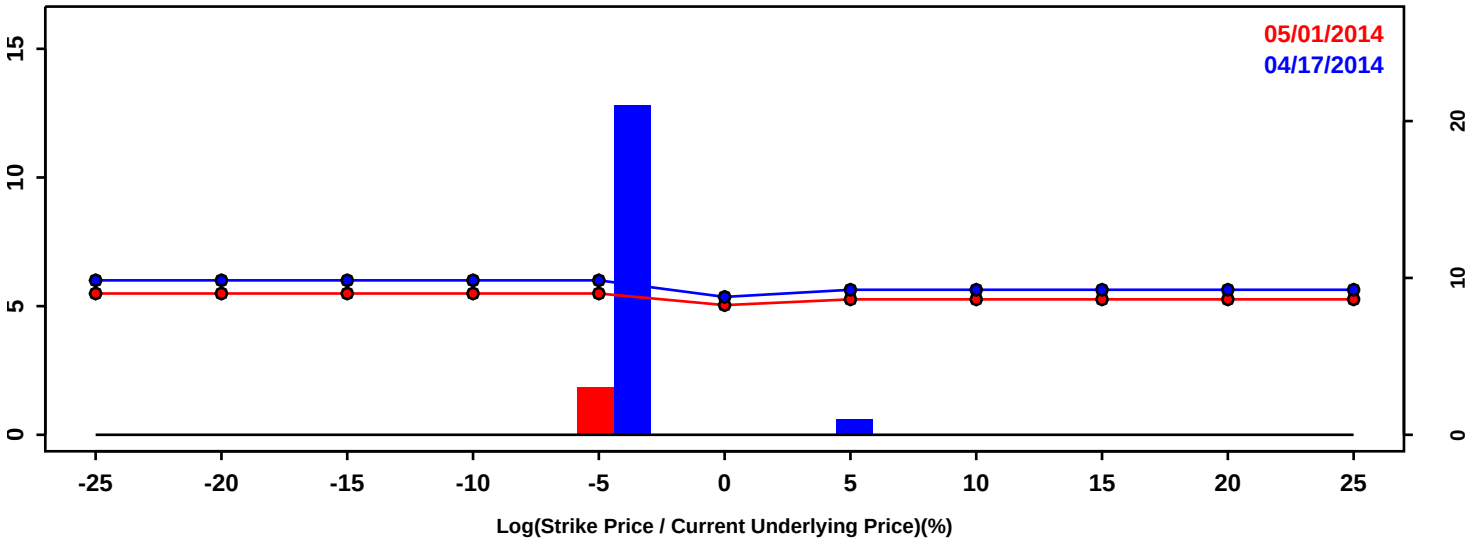
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-16.13%	-16.04%	0.08%
50th Pct	0.64%	0.62%	-0.02%
90th Pct	14.23%	14.26%	0.03%
Mean	-0.23%	-0.17%	0.05%
Std Dev	12.23%	12.22%	-0.01%
Skew	-0.41	-0.37	0.04
Kurtosis	0.64	0.63	-0.01

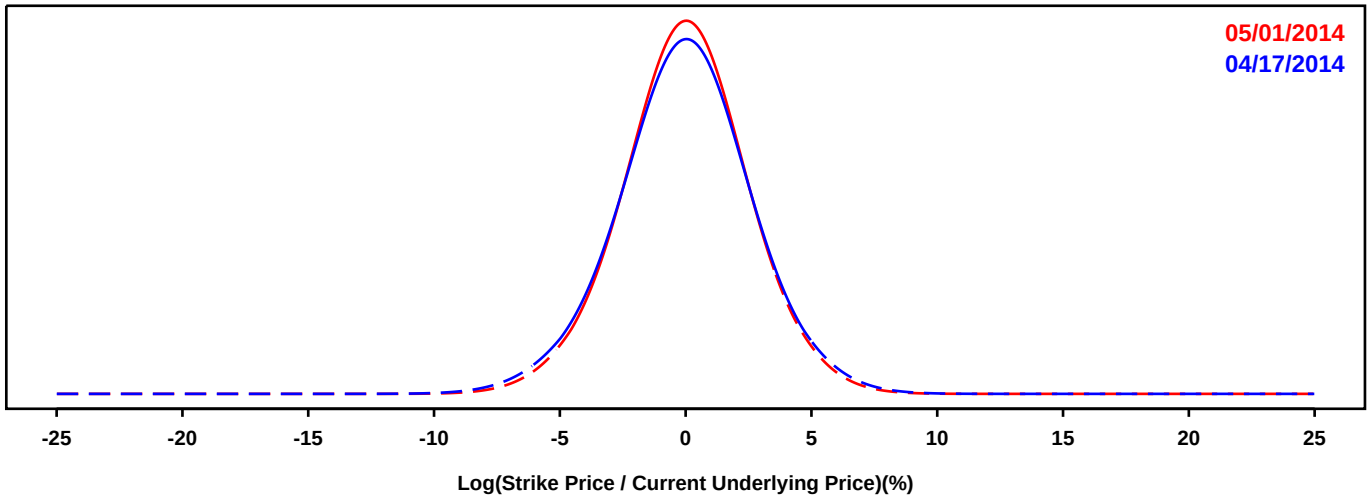
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-POUND EXCHANGE RATE FUTURES

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

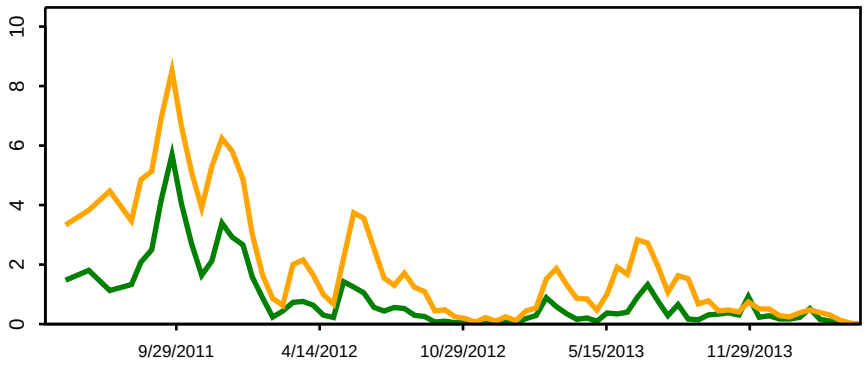
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



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

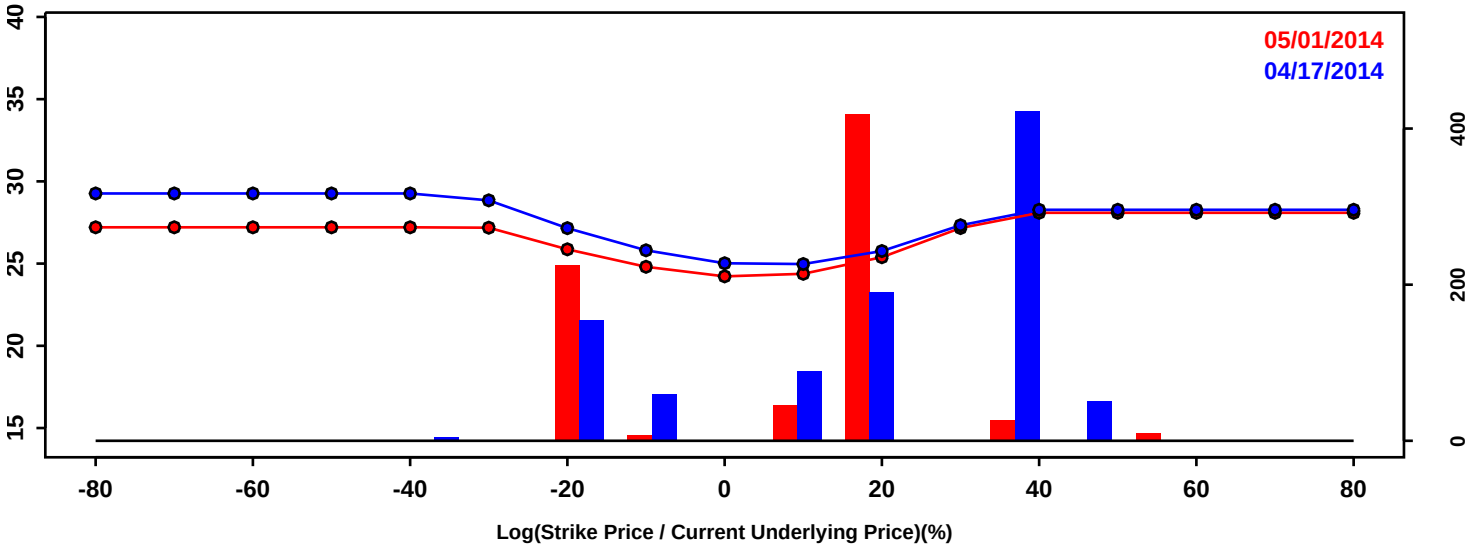
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-3.37%	-3.19%	0.19%
50th Pct	0.00%	0.00%	0.00%
90th Pct	3.30%	3.13%	-0.17%
Mean	-0.00%	0.03%	0.03%
Std Dev	2.67%	2.51%	-0.16%
Skew	-0.07	-0.04	0.03
Kurtosis	0.34	0.26	-0.08

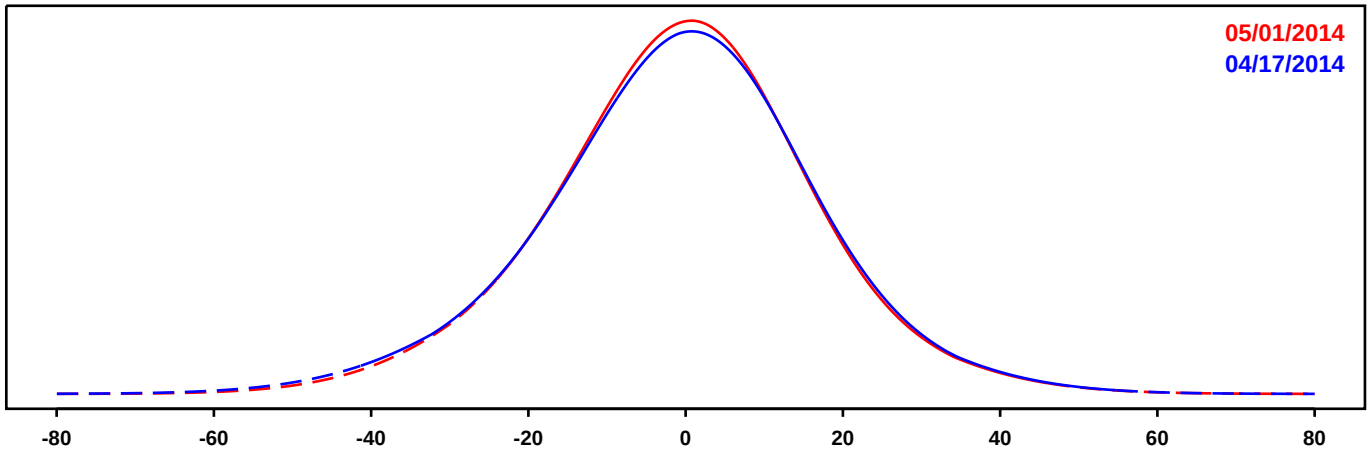
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SILVER FUTURES

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

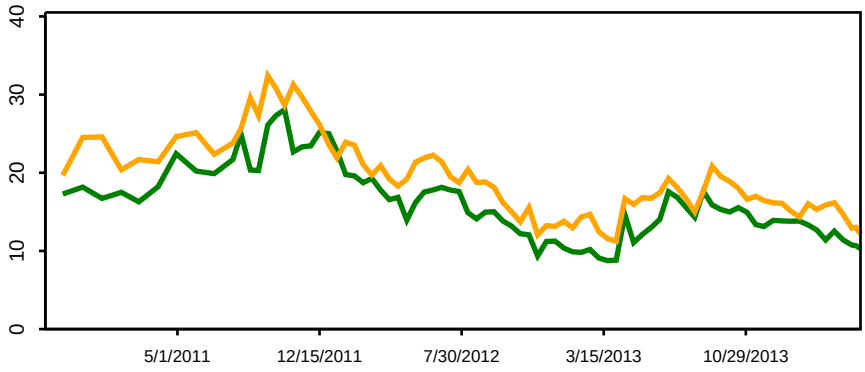
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

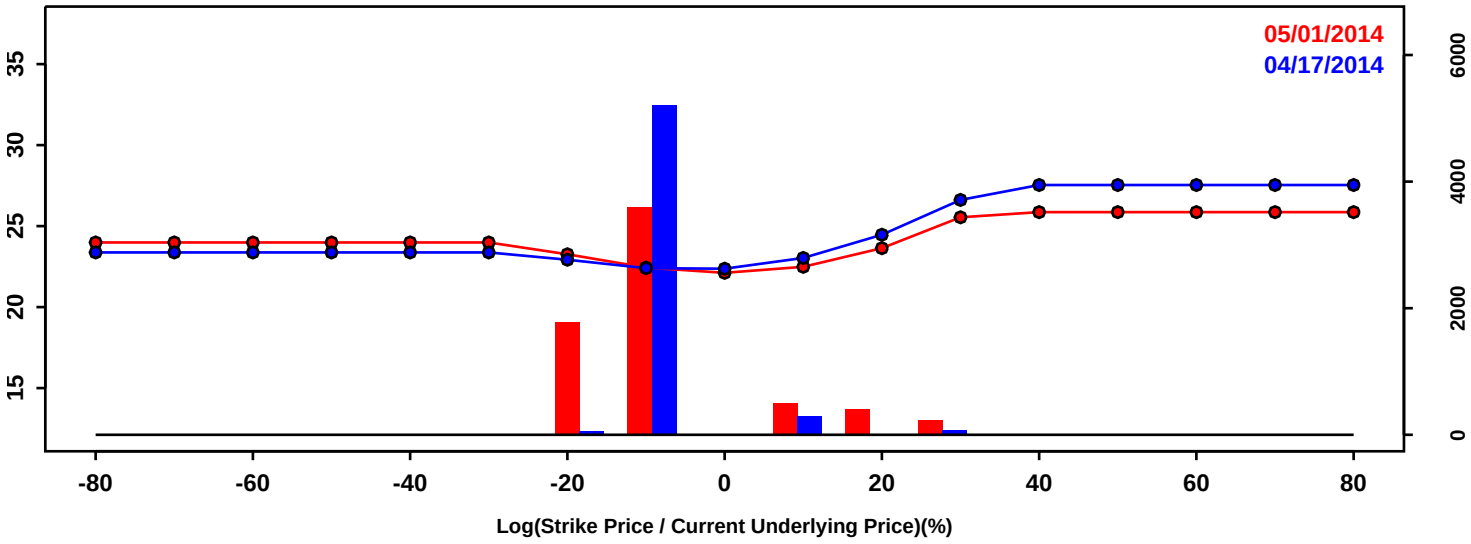
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-23.03%	-22.17%	0.86%
50th Pct	-0.16%	-0.22%	-0.07%
90th Pct	20.74%	20.26%	-0.48%
Mean	-0.66%	-0.53%	0.13%
Std Dev	17.67%	17.08%	-0.58%
Skew	-0.14	-0.06	0.08
Kurtosis	0.58	0.53	-0.05

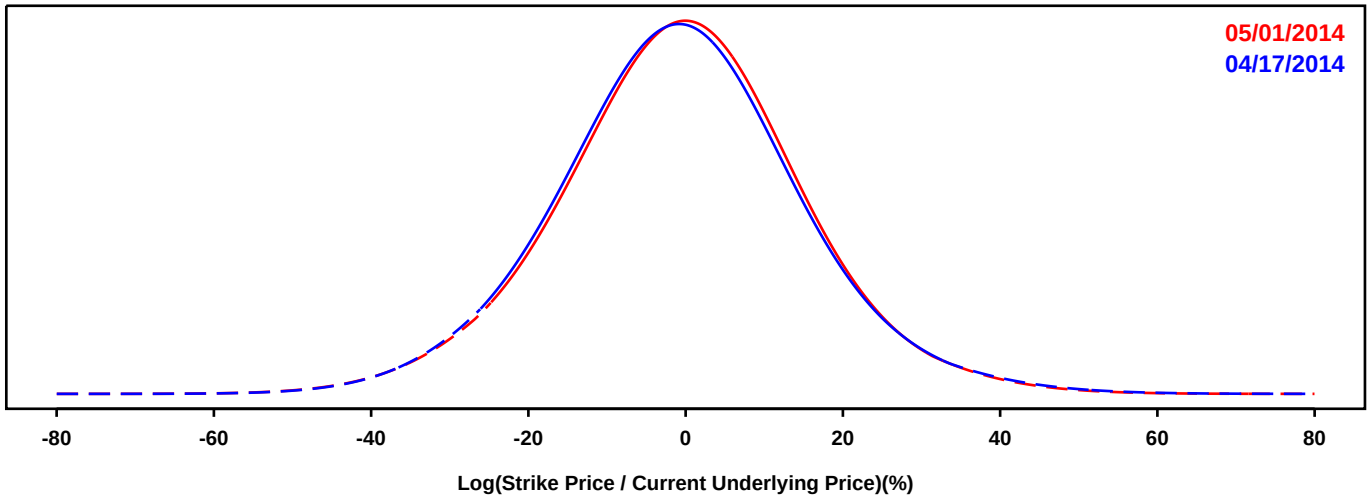
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SOYBEAN FUTURES

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

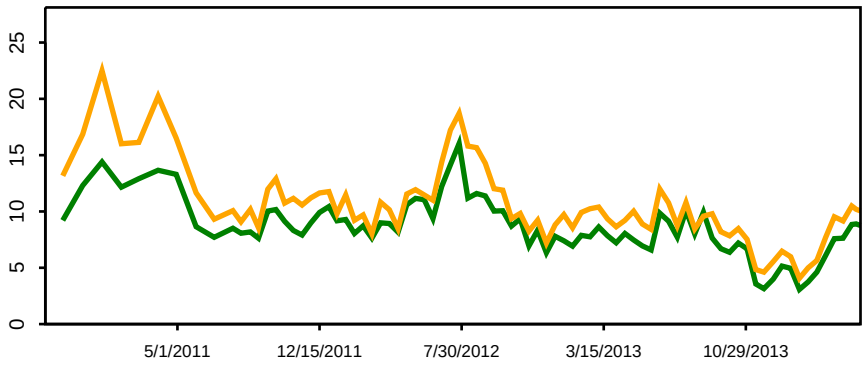
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

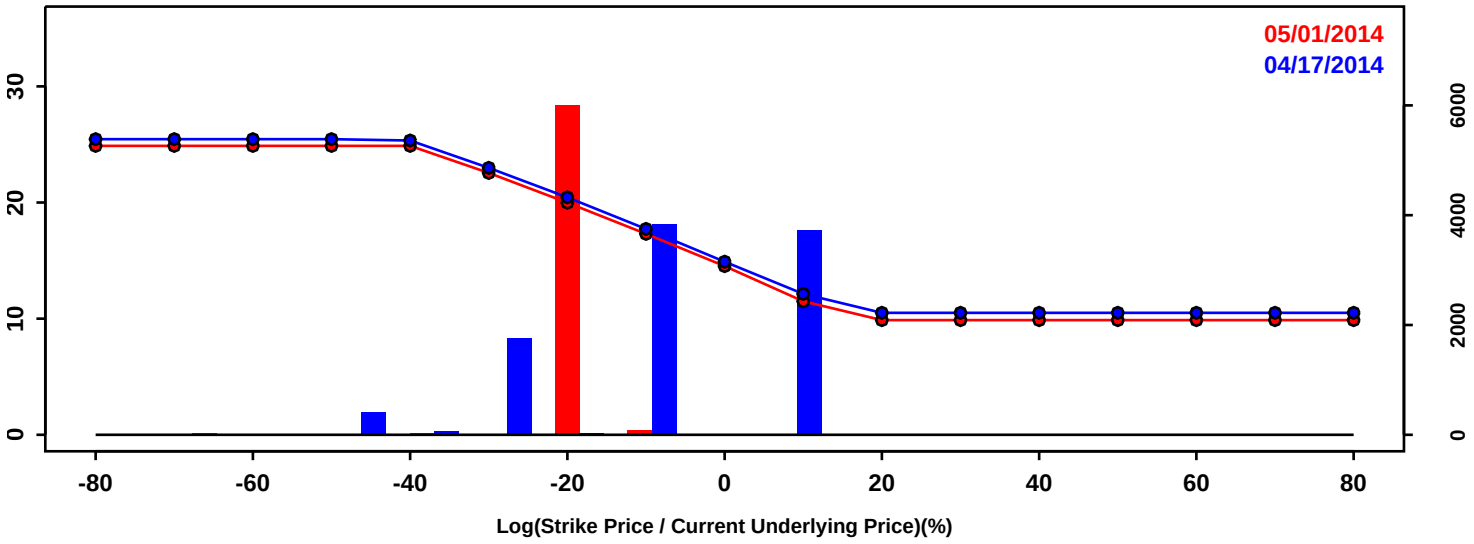
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-20.43%	-20.07%	0.36%
50th Pct	-0.86%	-0.40%	0.46%
90th Pct	18.80%	18.77%	-0.02%
Mean	-0.74%	-0.44%	0.30%
Std Dev	15.76%	15.58%	-0.18%
Skew	0.11	0.01	-0.10
Kurtosis	0.51	0.47	-0.04

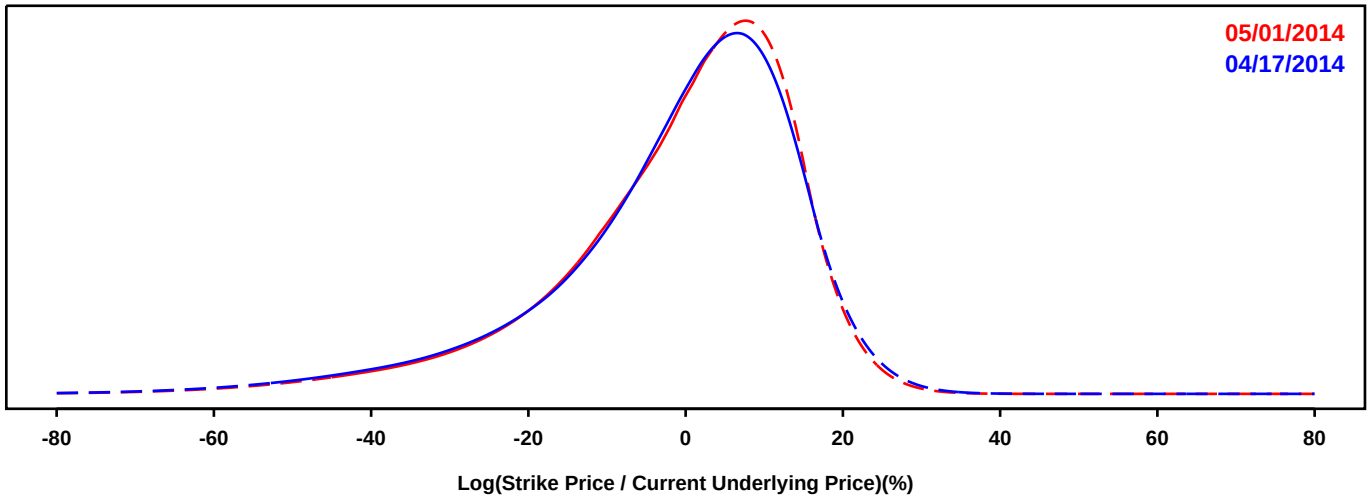
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- S&P 500

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%

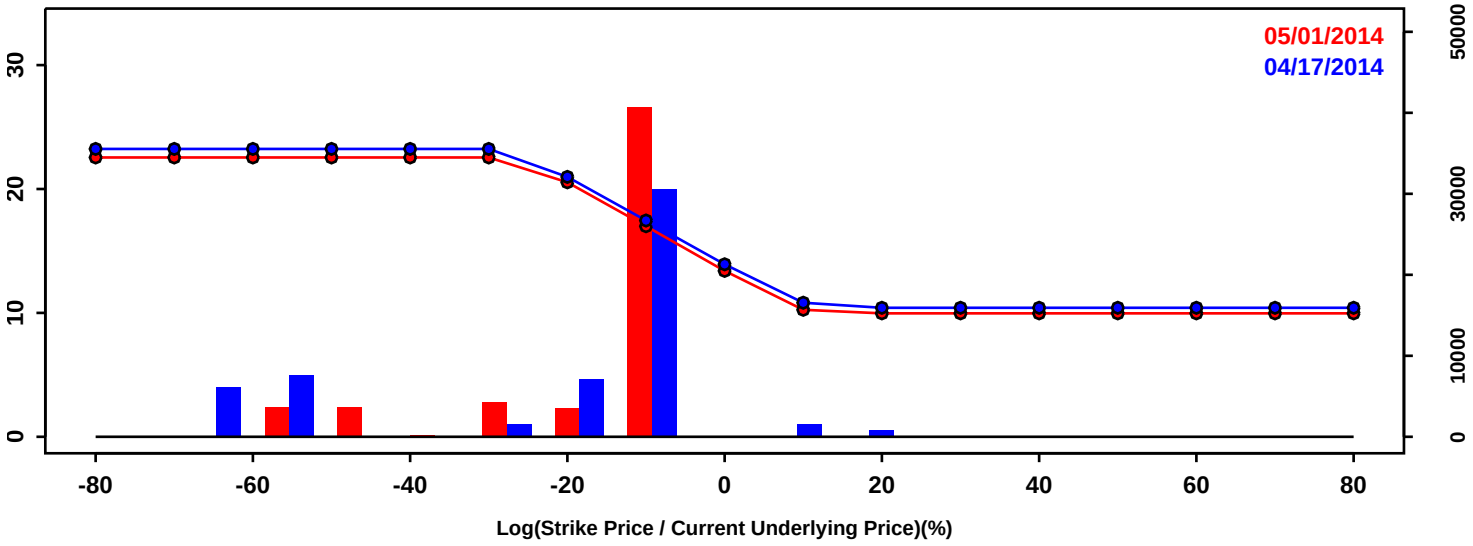
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-22.62%	-21.53%	1.09%
50th Pct	1.94%	2.21%	0.28%
90th Pct	15.29%	14.92%	-0.37%
Mean	-1.28%	-1.01%	0.27%
Std Dev	16.07%	15.54%	-0.53%
Skew	-1.25	-1.26	-0.01
Kurtosis	2.27	2.28	0.01

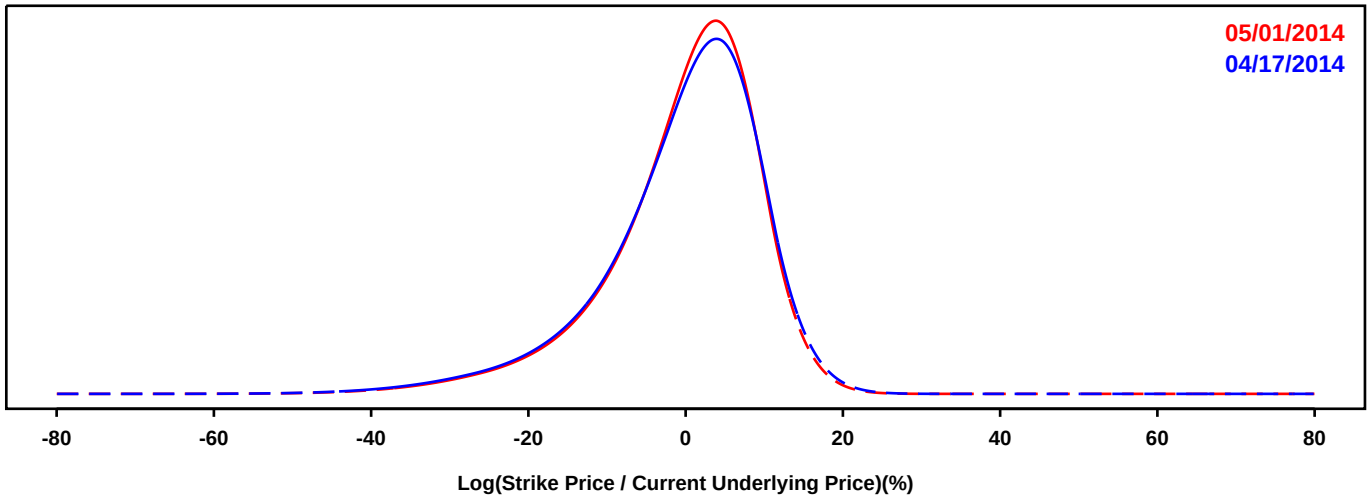
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- S&P 500

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

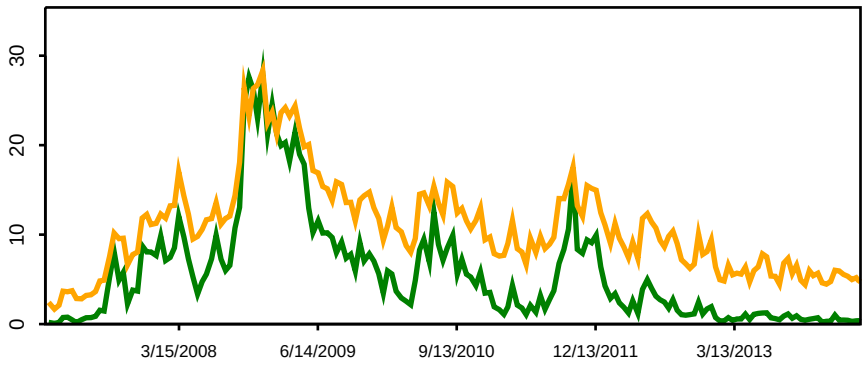
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

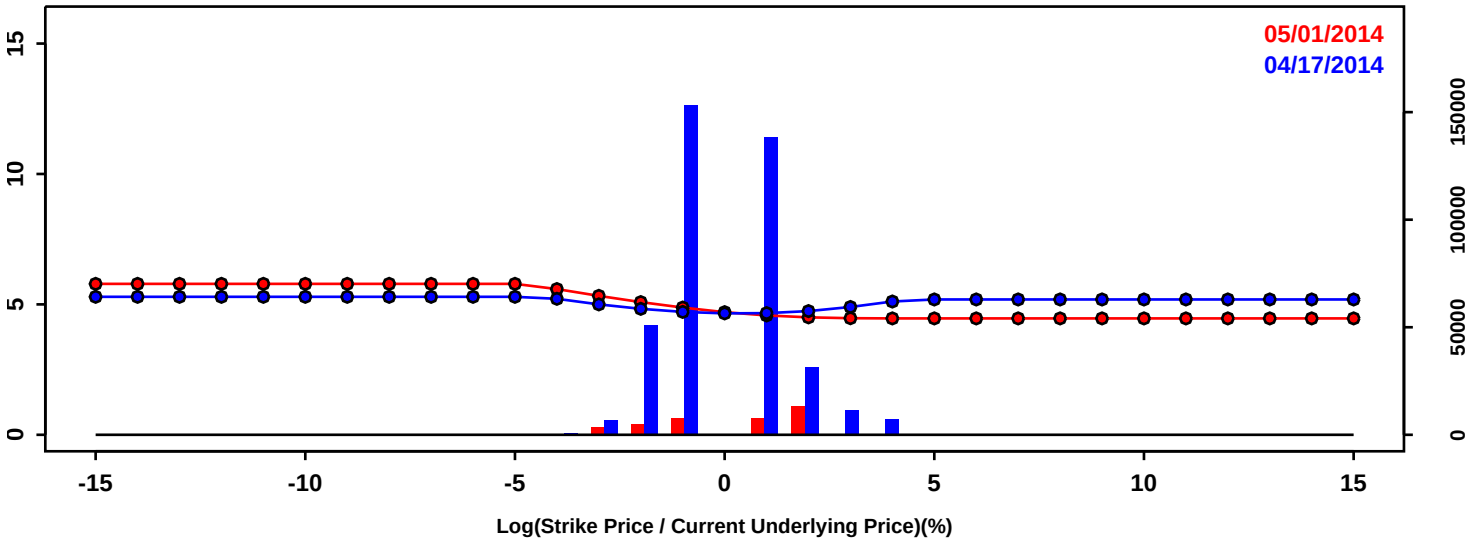
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-13.91%	-13.21%	0.70%
50th Pct	1.30%	1.37%	0.06%
90th Pct	10.58%	10.17%	-0.41%
Mean	-0.42%	-0.32%	0.11%
Std Dev	10.31%	9.90%	-0.41%
Skew	-1.11	-1.13	-0.02
Kurtosis	2.04	2.12	0.08

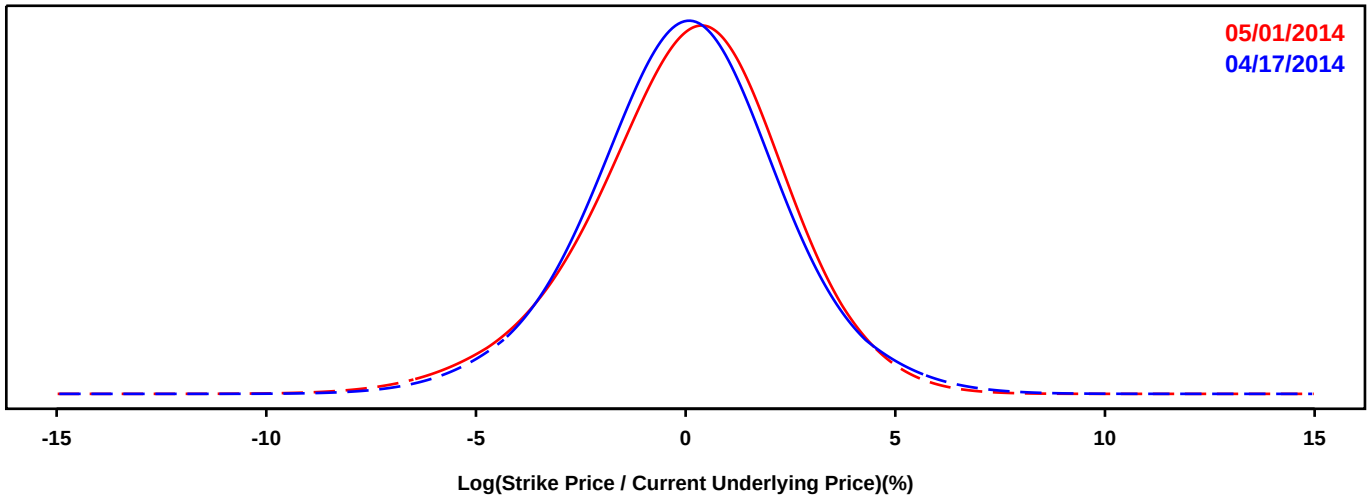
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- TEN YEAR TREASURY

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

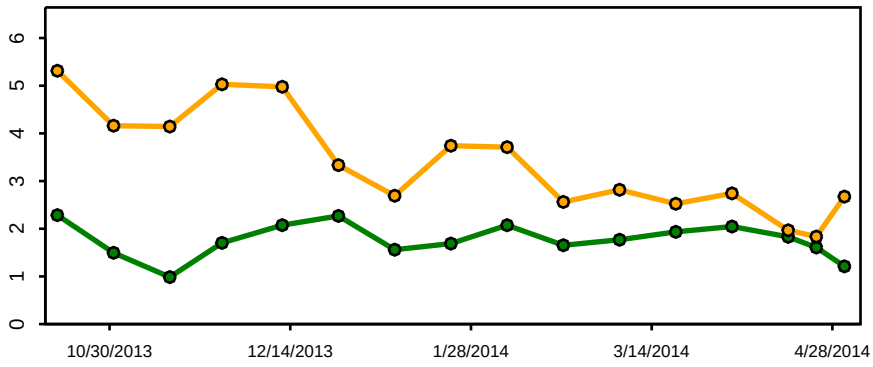
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -5% Increase >= 5%

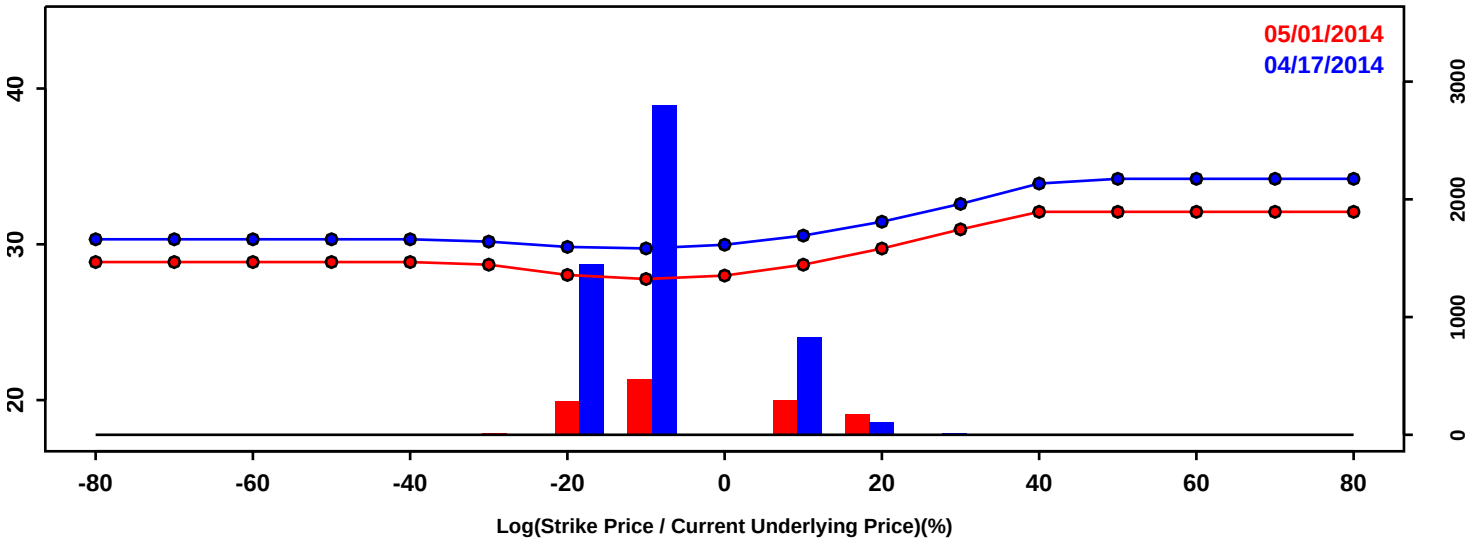
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-2.93%	-3.03%	-0.11%
50th Pct	0.00%	0.16%	0.16%
90th Pct	2.88%	2.86%	-0.02%
Mean	0.04%	0.04%	-0.01%
Std Dev	2.32%	2.35%	0.03%
Skew	-0.05	-0.34	-0.29
Kurtosis	0.48	0.48	-0.00

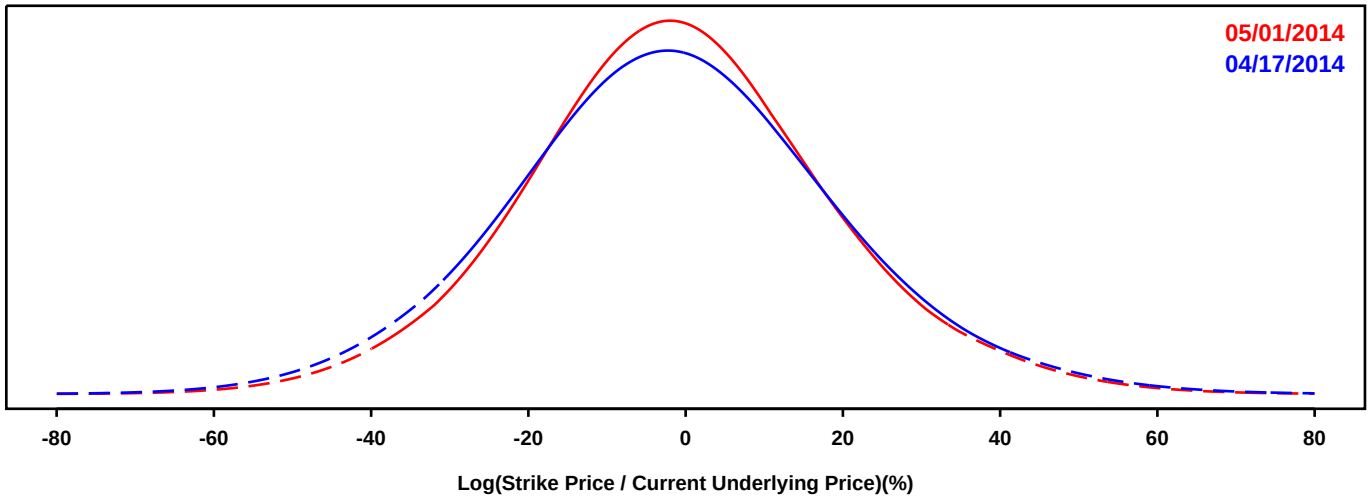
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- WHEAT FUTURES

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

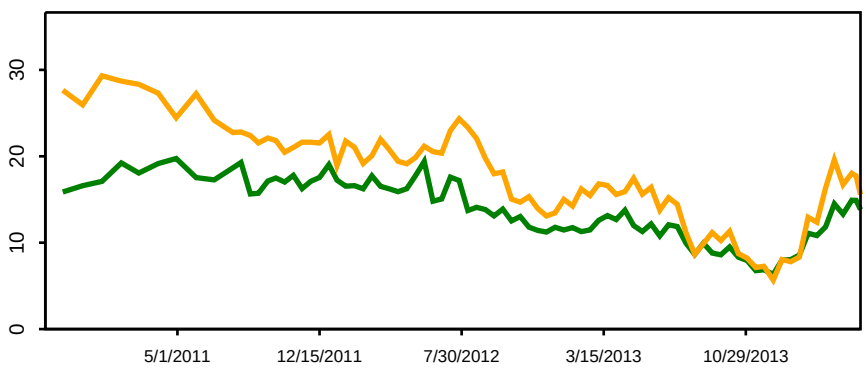
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease <= -20% Increase >= 20%

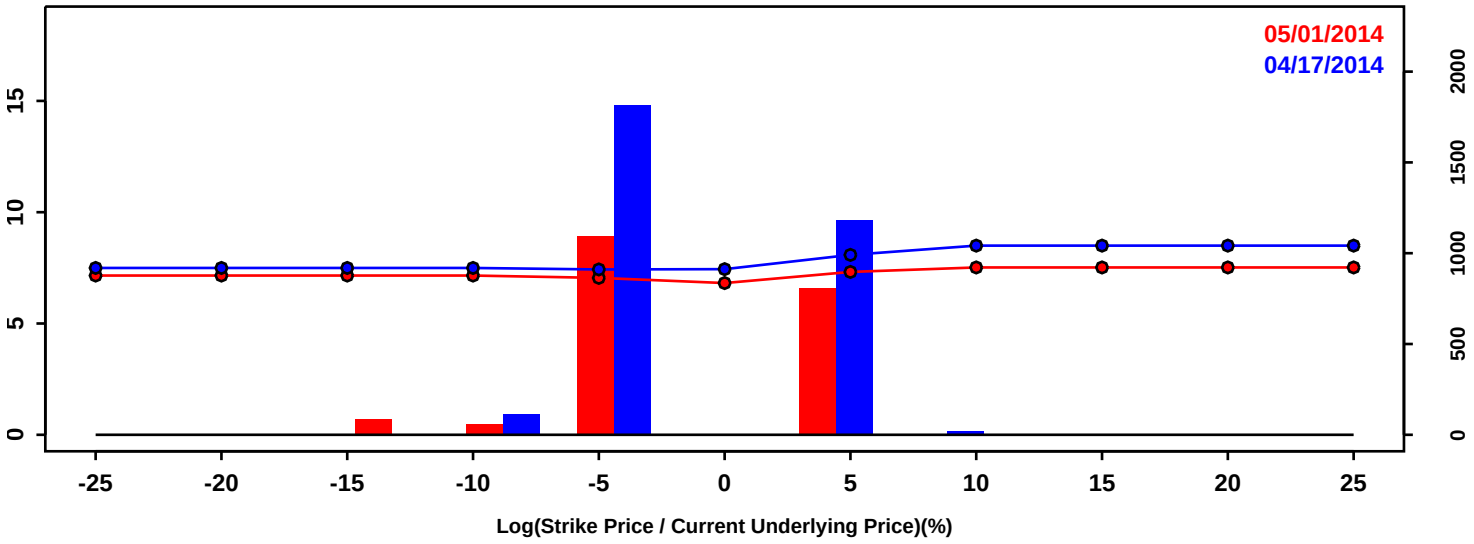
Statistics of the Log Return Distributions

	04/17/2014	05/01/2014	Change
10th Pct	-27.65%	-25.25%	2.40%
50th Pct	-1.67%	-1.32%	0.36%
90th Pct	25.45%	24.21%	-1.24%
Mean	-1.29%	-0.82%	0.47%
Std Dev	21.10%	19.76%	-1.34%
Skew	0.12	0.14	0.02
Kurtosis	0.31	0.39	0.07

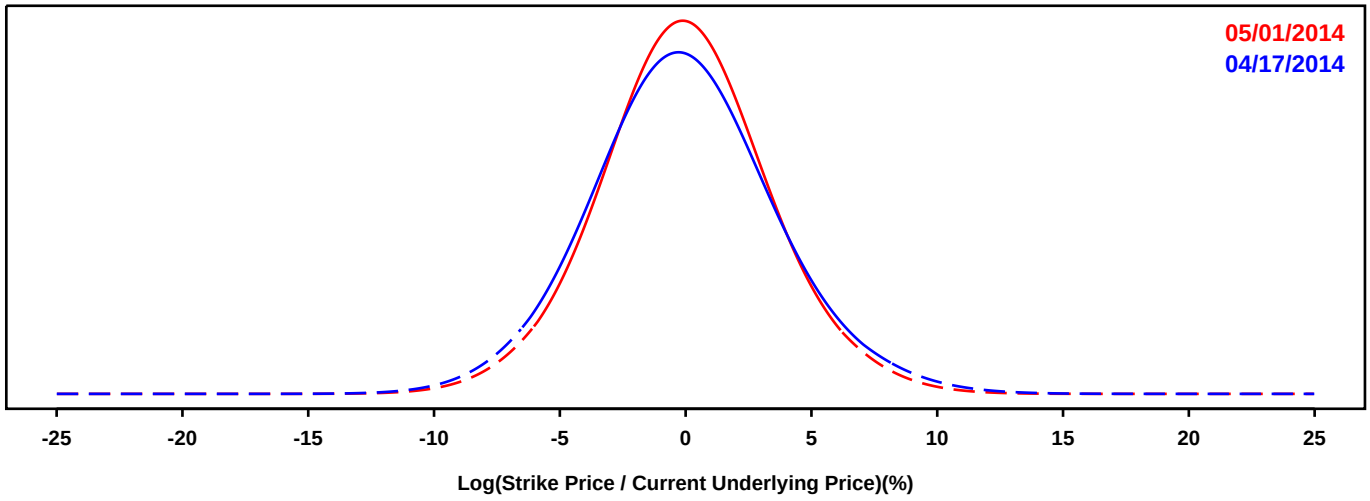
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-YEN EXCHANGE RATE FUTURES

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

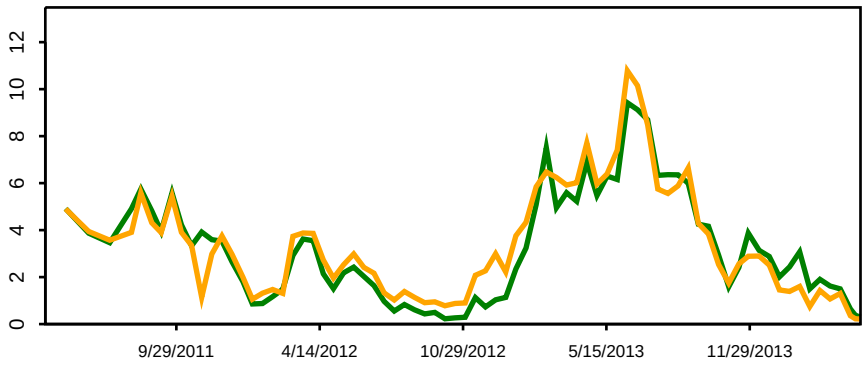
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



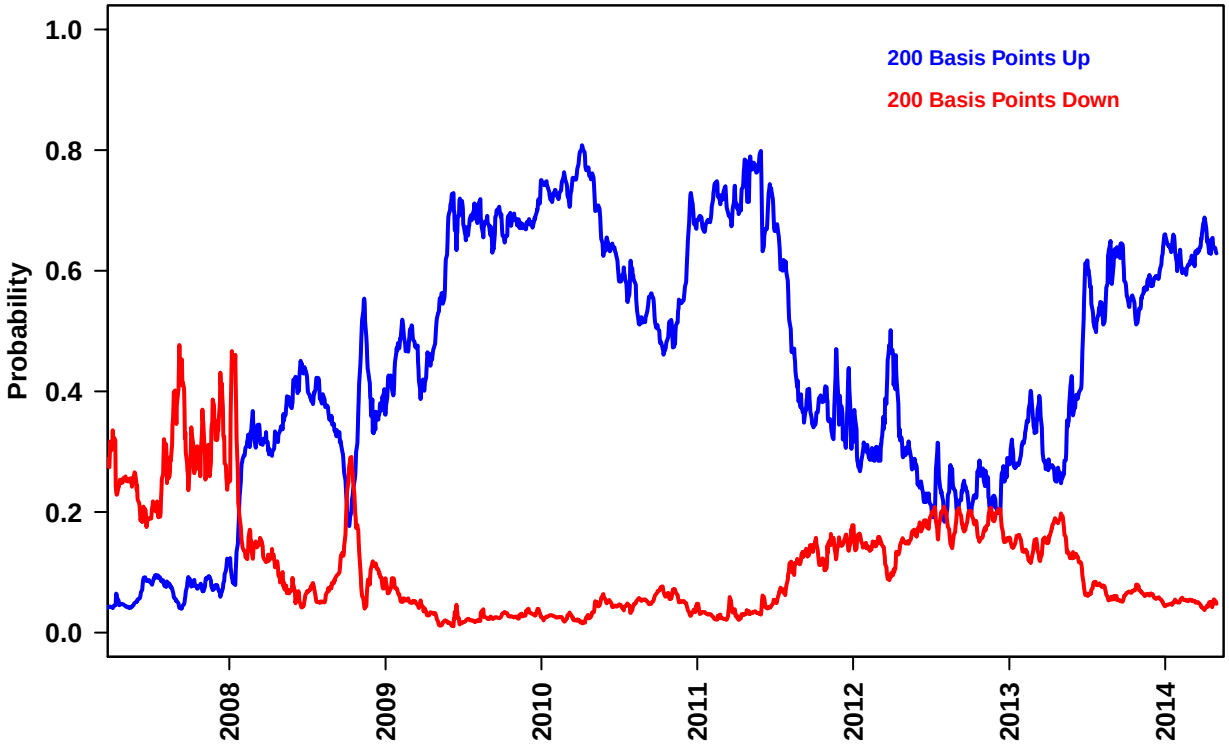
Decrease <= -10% [stronger $] Increase >= 10% [weaker $]

Statistics of the Log Return Distributions

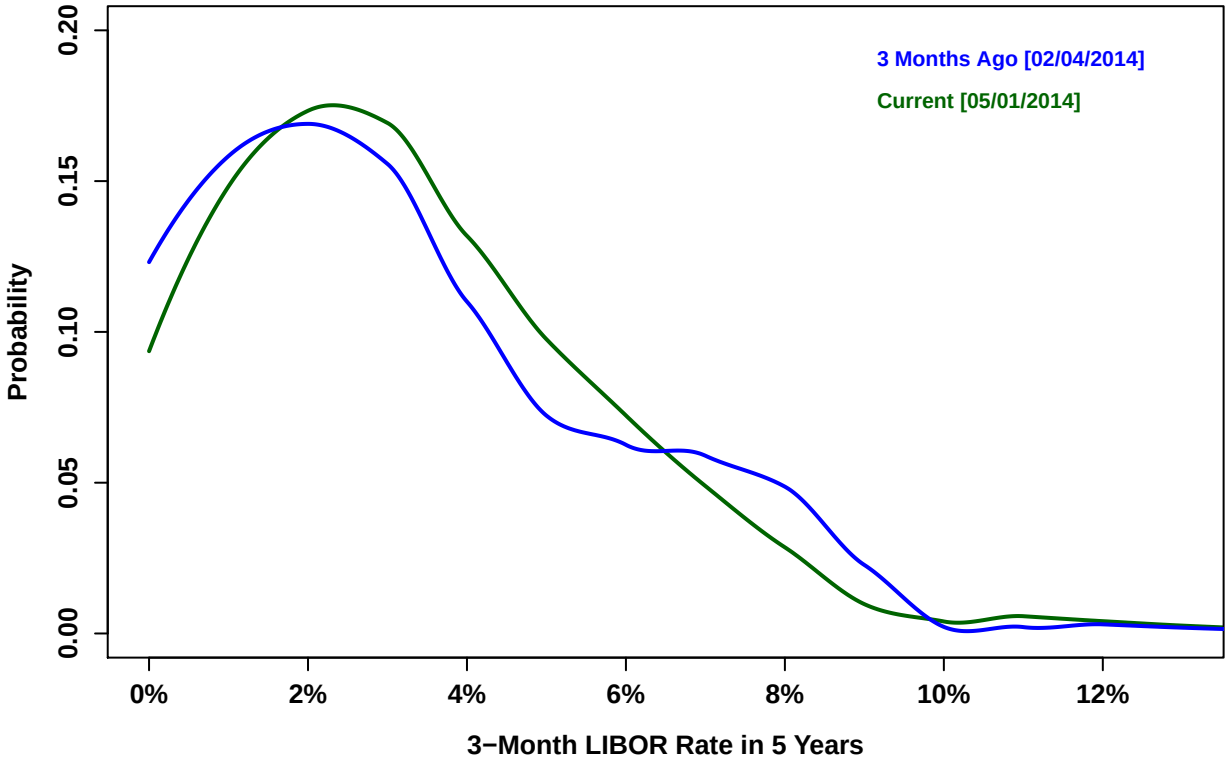
	04/17/2014	05/01/2014	Change
10th Pct	-4.69%	-4.29%	0.40%
50th Pct	-0.12%	-0.07%	0.05%
90th Pct	4.65%	4.32%	-0.33%
Mean	-0.03%	0.03%	0.05%
Std Dev	3.71%	3.40%	-0.31%
Skew	0.15	0.06	-0.08
Kurtosis	0.31	0.30	-0.01

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS −− Interest Rate Caps & Floors

Probability of 200 Basis Point Moves for 3−Month LIBOR, 5 Years Out
5−Day Rolling Average

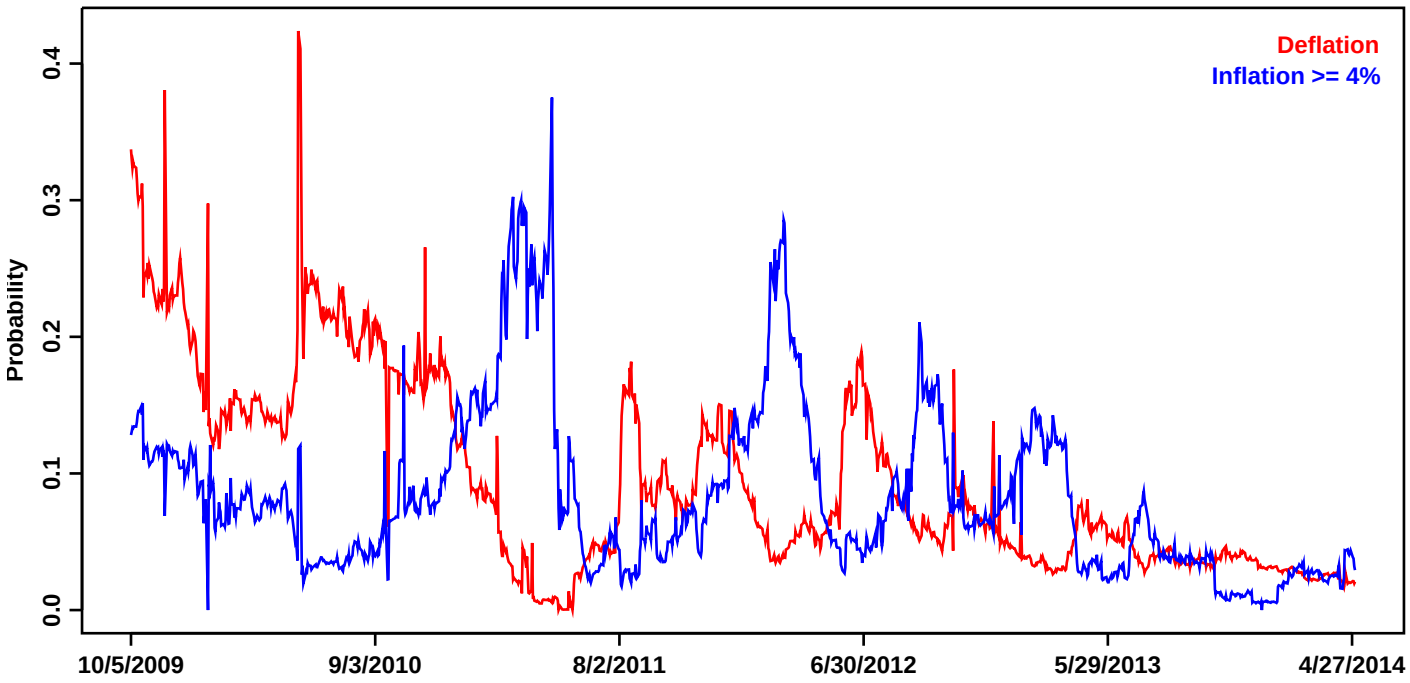


Risk Neutral Density Function for 3−Month LIBOR, 5 Years Out

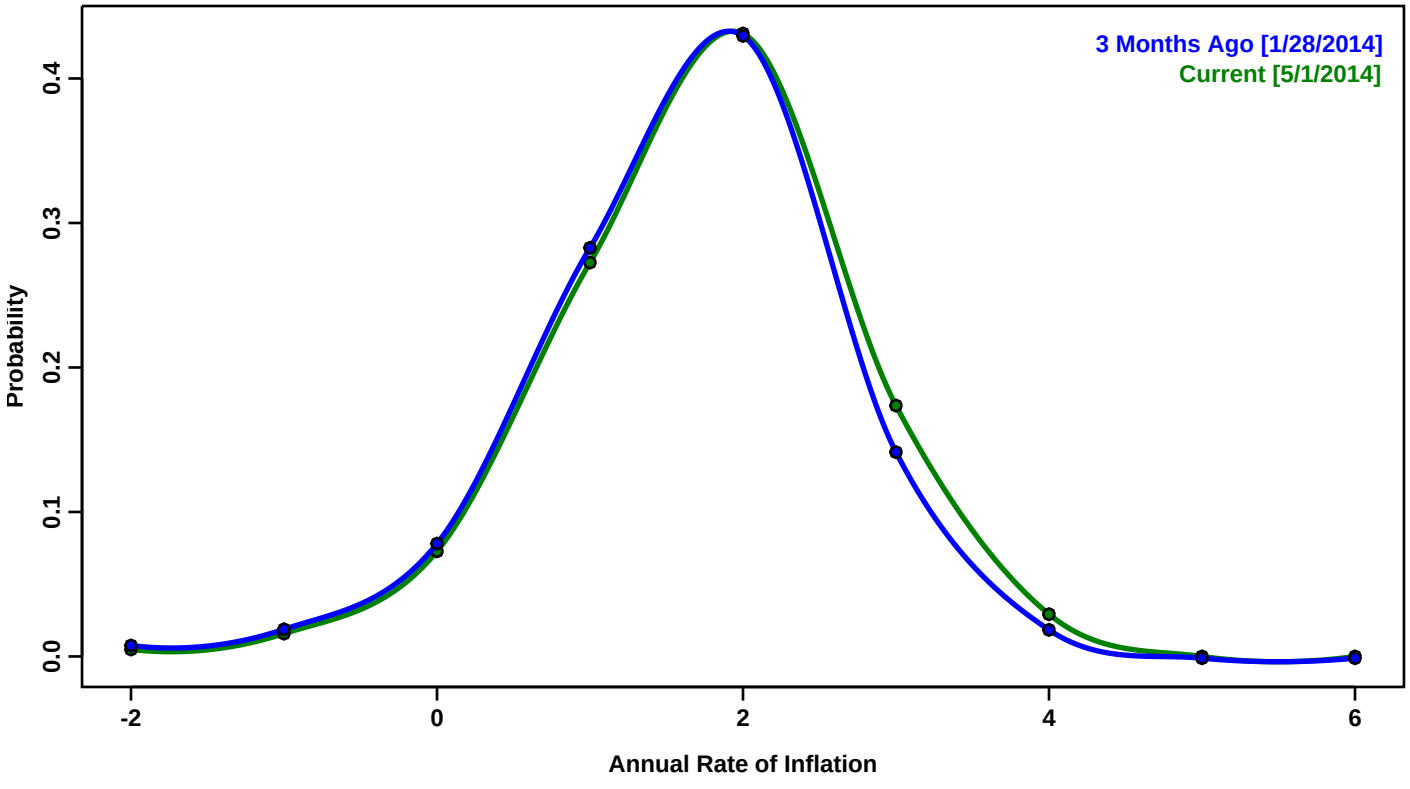


RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- Inflation Caps & Floors

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