

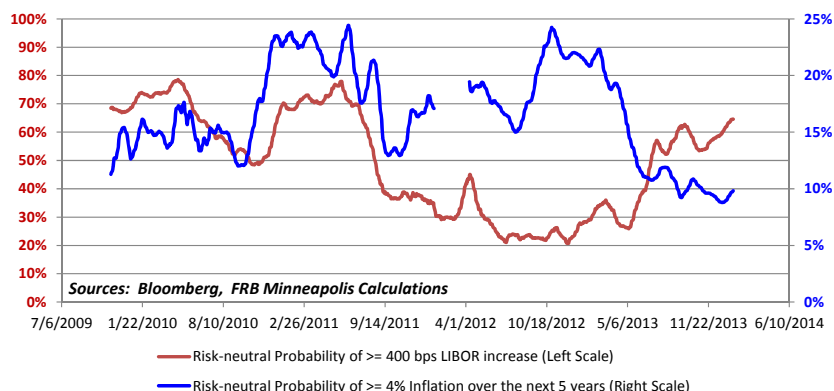
FEDERAL RESERVE BANK OF MINNEAPOLIS
BANKING AND POLICY STUDIES

Minneapolis Options Report – January 23rd

Inflation & LIBOR

Long-term expectations for higher short-term rates remain elevated relative to a year ago and 3 months ago (see *inflation and interest rate reports*). The current upward movement in the probability of higher short-term rates relative to the probability of higher inflation is different from the fall of 2010. In 2010, risk neutral probabilities for higher short rates followed risk neutral probabilities for higher inflation upward. Recently, probabilities for higher inflation have remained low.

Risk Neutral Probabilities for Long-term Changes in
LIBOR and Inflation



Banks & Insurance Companies

Options trading volumes rose as many firms reported their earnings but RNPDP statistics changed very little. Banks stock performance was in line with the market. Among the banks we follow, the median share price change was about -40 basis points. The insurance company stocks fared worse falling over -4%.

Additional Notes:

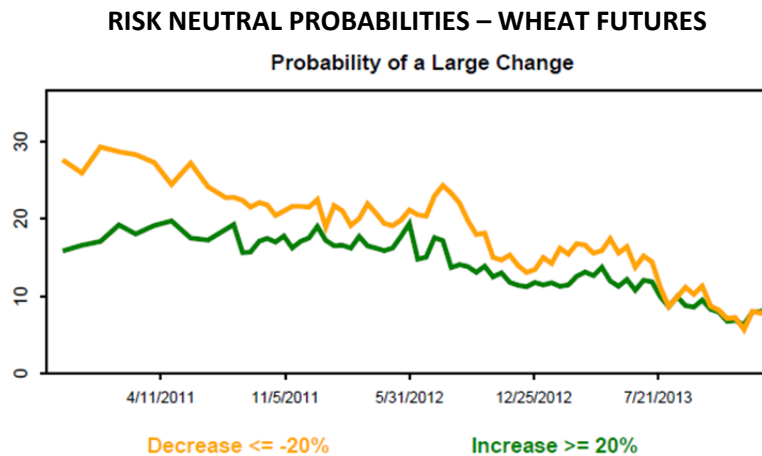
- MS and WFC volumes were relatively high but RNPDPs statistics were largely unchanged. (See *MS and WFC reports*)
- Tail risks fell as measured by the RNPDP standard deviation derived from options on COF shares. (See *COF report*)
- Investors traded STI options at strikes well below the current spot price. The RNPDP skewed more negatively. (See *STI report*)

Other Commodity Markets

S&P 500 prices continued to fall dropping -53 basis points over the period. Commodity prices were mostly higher. Oil and precious metals rebounded as did corn and soybeans. Wheat dropped another -2.3%. The dollar was mixed.

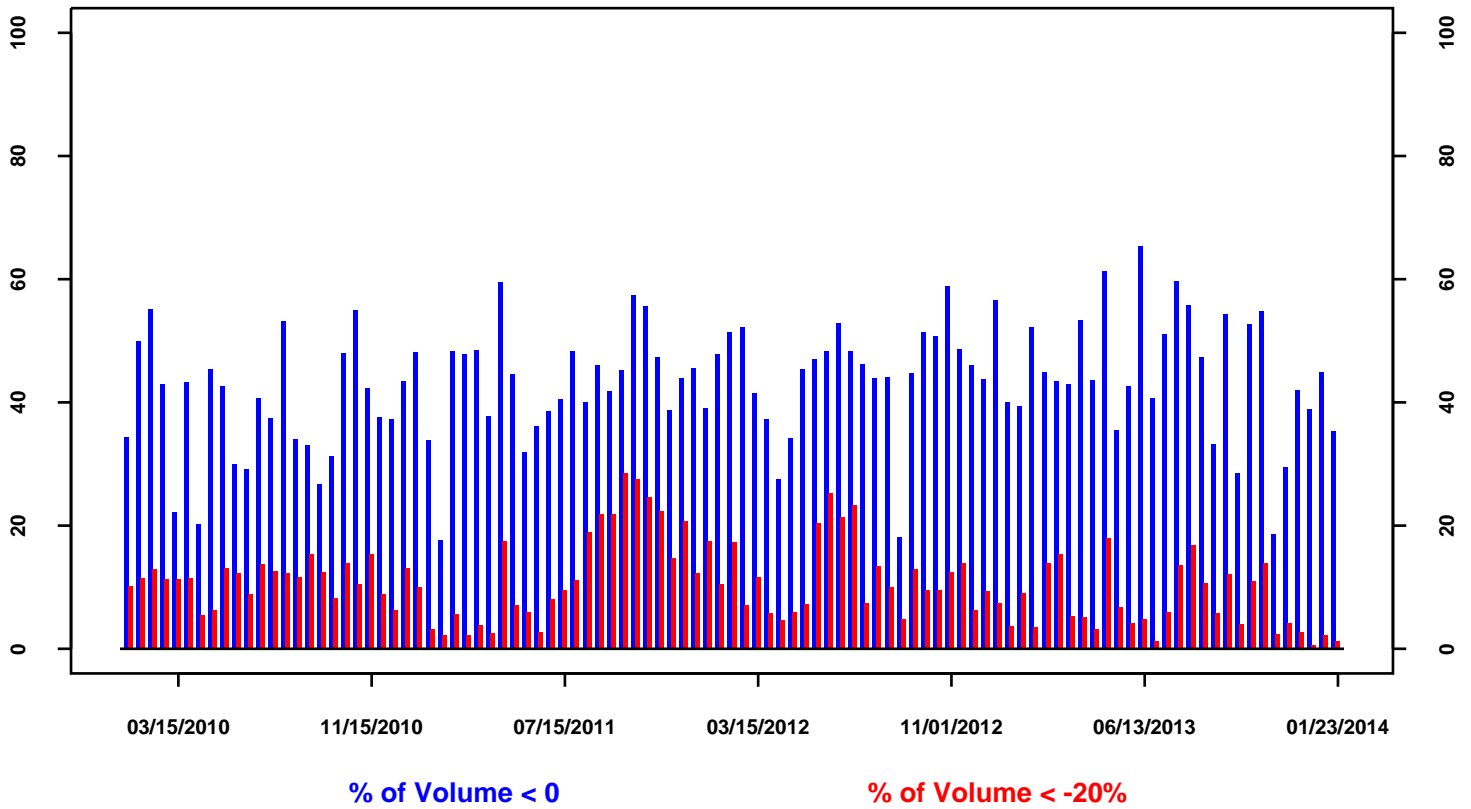
Additional notes:

- Crude oil RNPD standard deviations retraced some of the increase noted in the last report declining approximately 100 basis points. (See *Brent and WTI reports*)
- Tail risks in precious metals fell last week. RNPD standard deviations derived from options on gold and silver futures dropped -173 and -50 basis points respectively relative to our last report. RNPD skews derived from options on both gold and silver were largely unchanged. (See *Gold and Silver reports*)
- Tail risks in corn and soybeans declined markedly last week. In contrast, risk neutral probabilities of large price changes for wheat moved higher. The probability of large increases now exceed the probability of large decreases. The RNPD skew for wheat is positive while the skews for corn and beans are negative. (See *Corn, Soybean, and Wheat reports*)

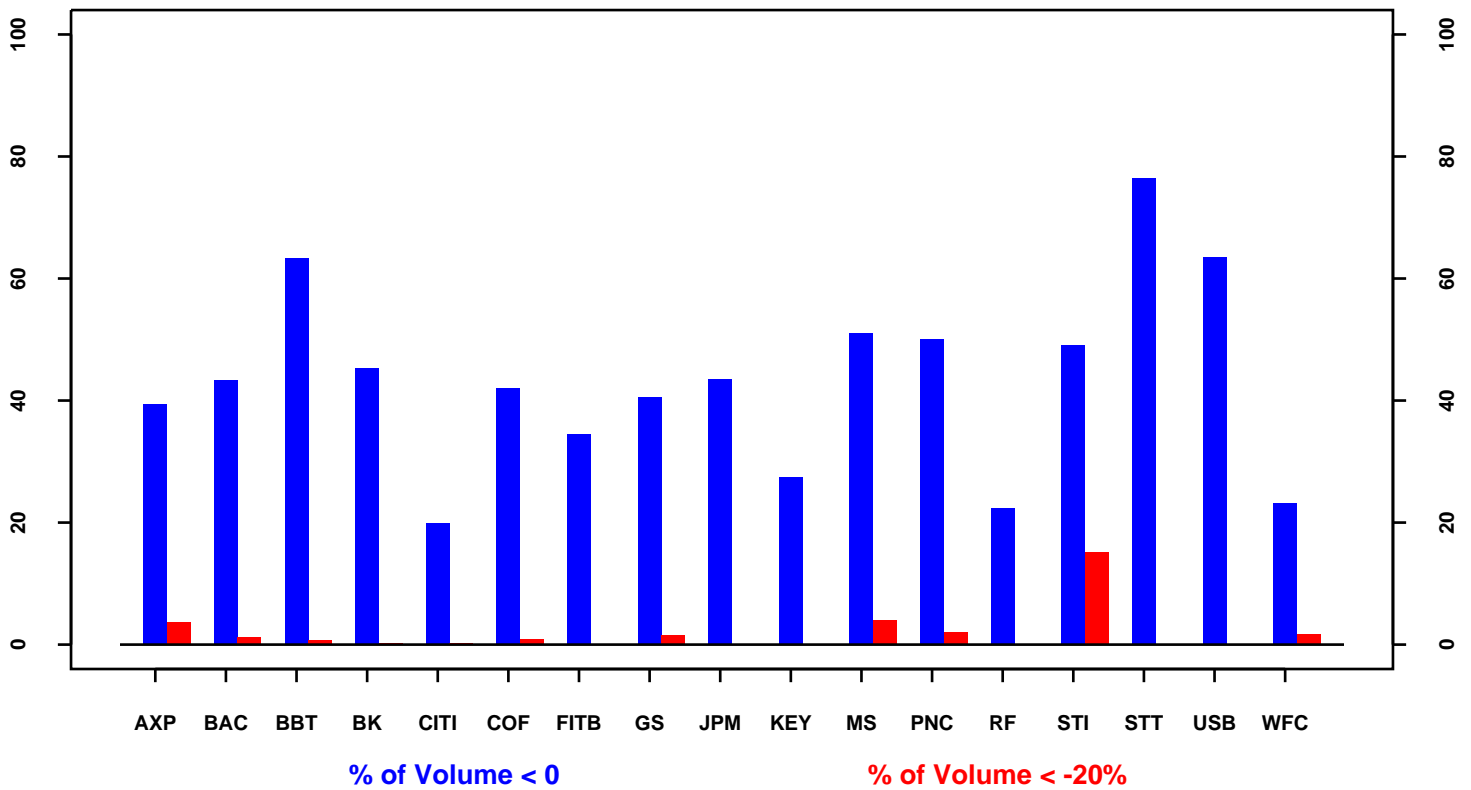


- The RNPD standard deviations derived from options on the DJ Real Estate ETF dropped another 100 basis points last week. (See *Real Estate Report*)

Aggregate Volumes for Options on CCAR Banks

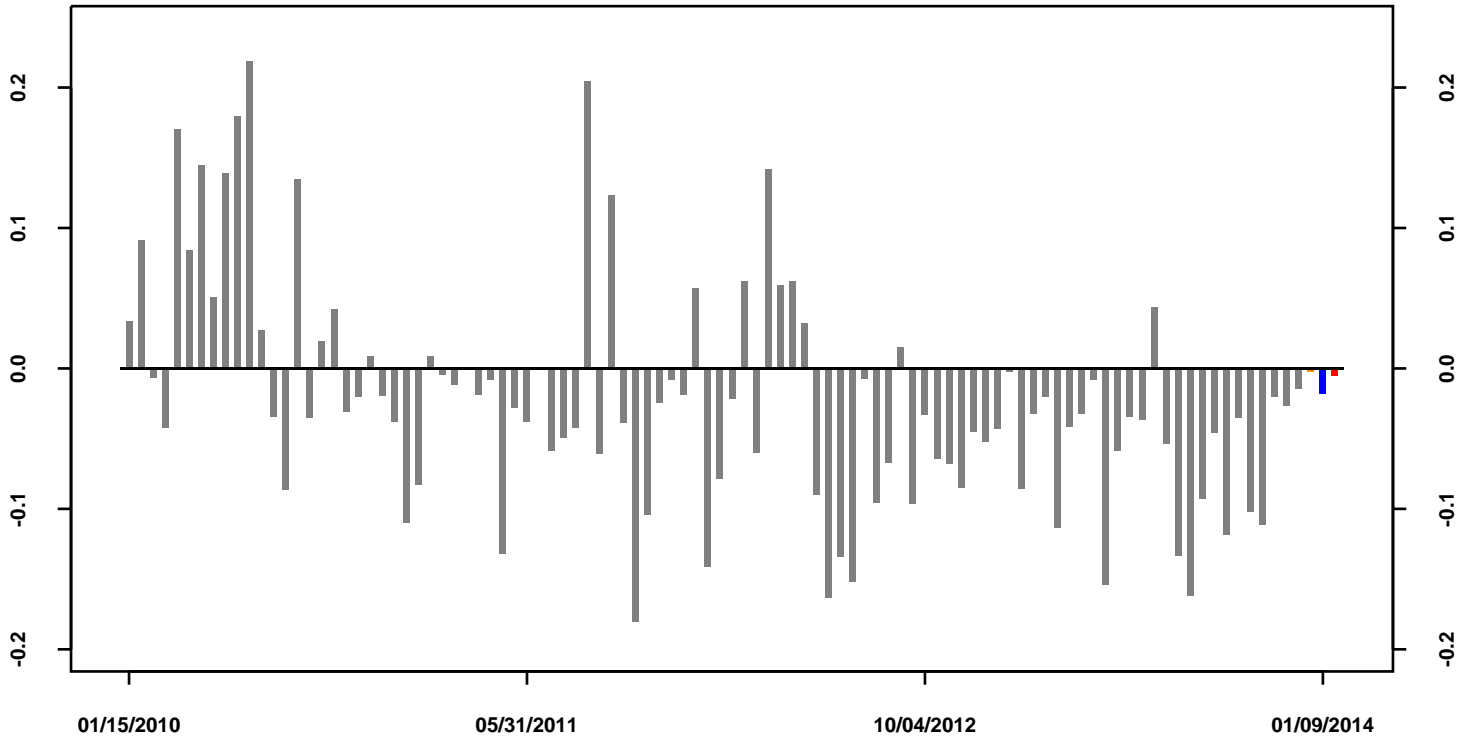


Volumes for Options on CCAR Banks

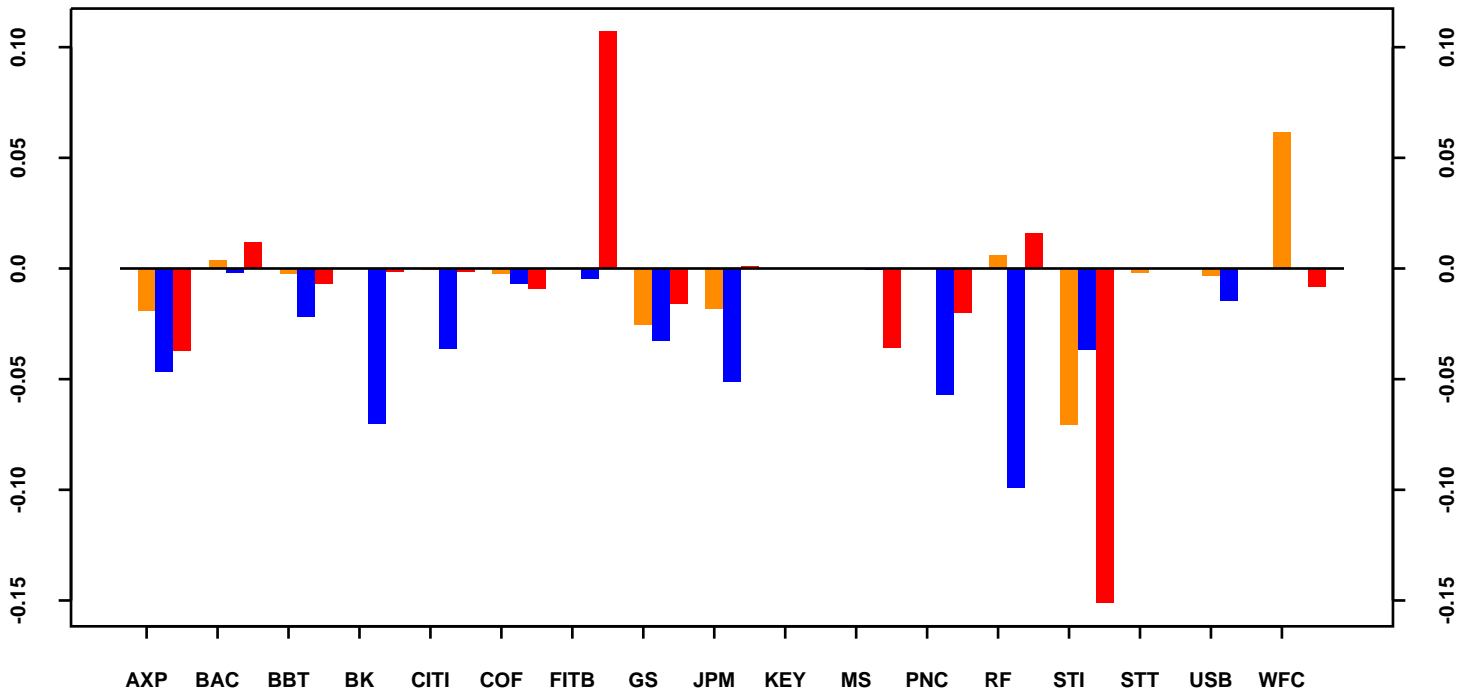


Aggregate Volume Skew--CCAR Banks

(% 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



12/26/2013

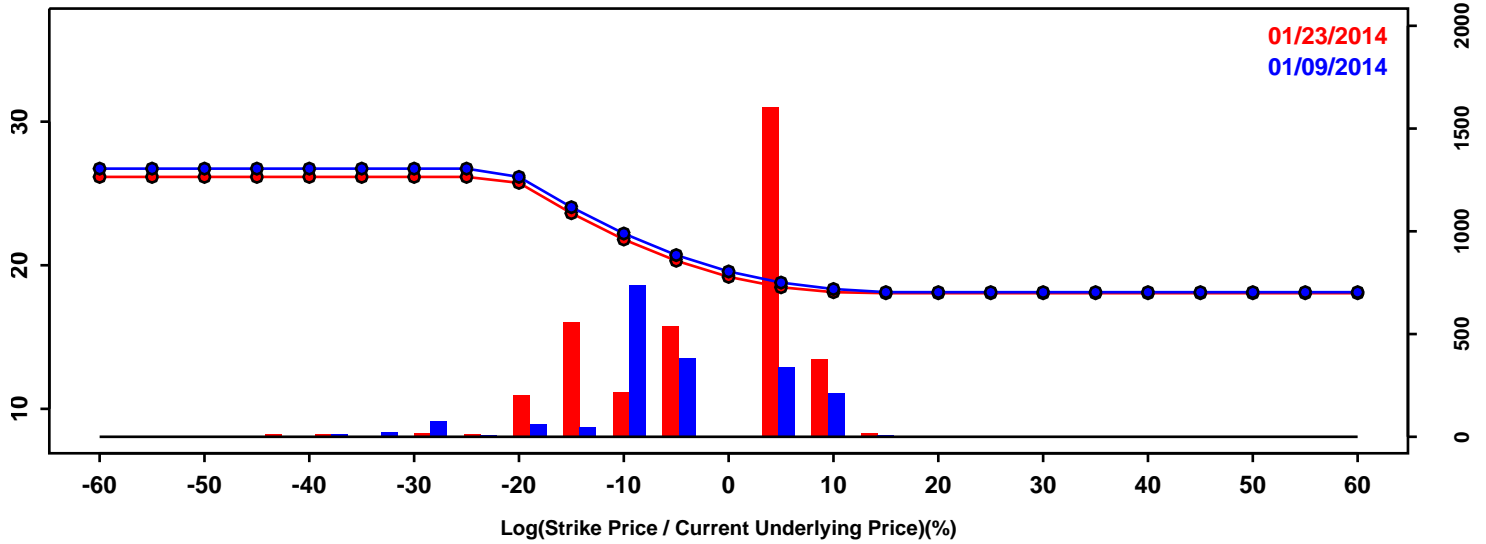
01/09/2014

01/23/2014

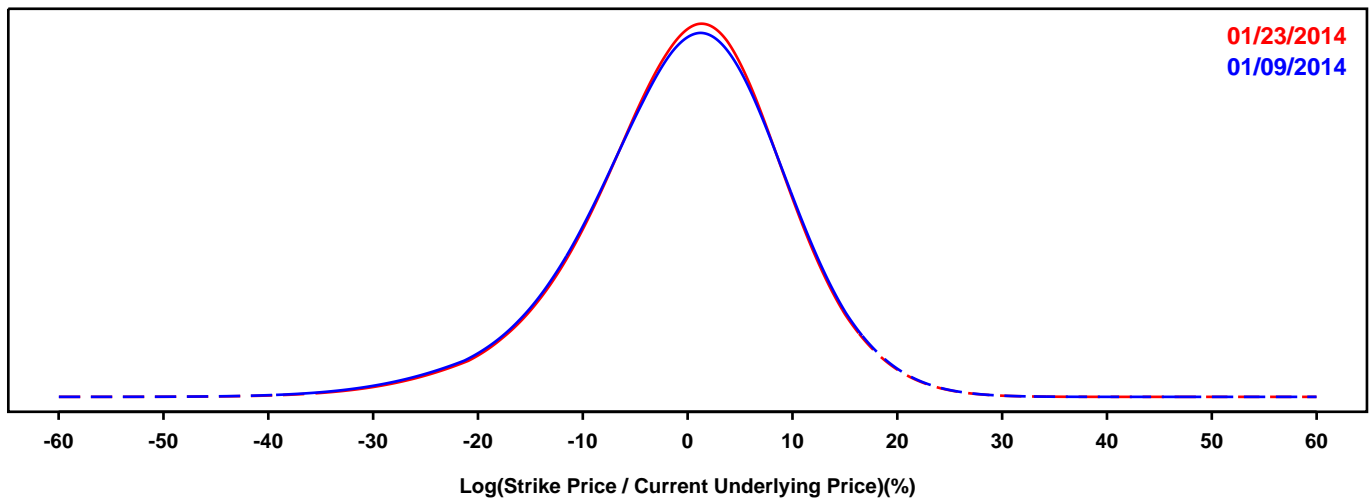
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AMERICAN EXPRESS

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

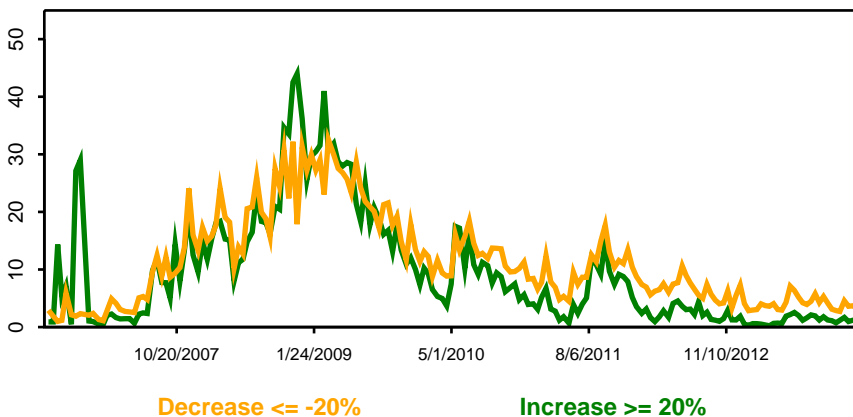
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

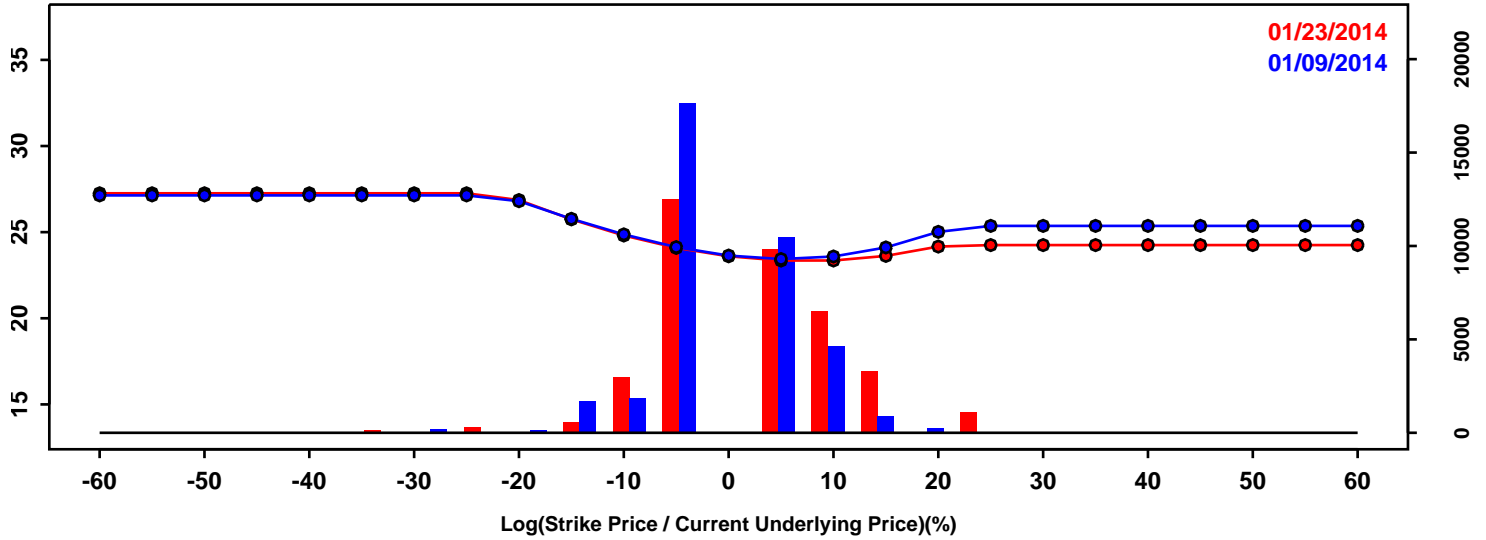


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -13.08% | -12.70% | 0.38% |
| 50th Pct | 0.21% | 0.28% | 0.06% |
| 90th Pct | 11.31% | 11.18% | -0.13% |
| Mean | -0.45% | -0.35% | 0.10% |
| Std Dev | 9.89% | 9.68% | -0.21% |
| Skew | -0.48 | -0.46 | 0.02 |
| Kurtosis | 0.80 | 0.80 | -0.00 |

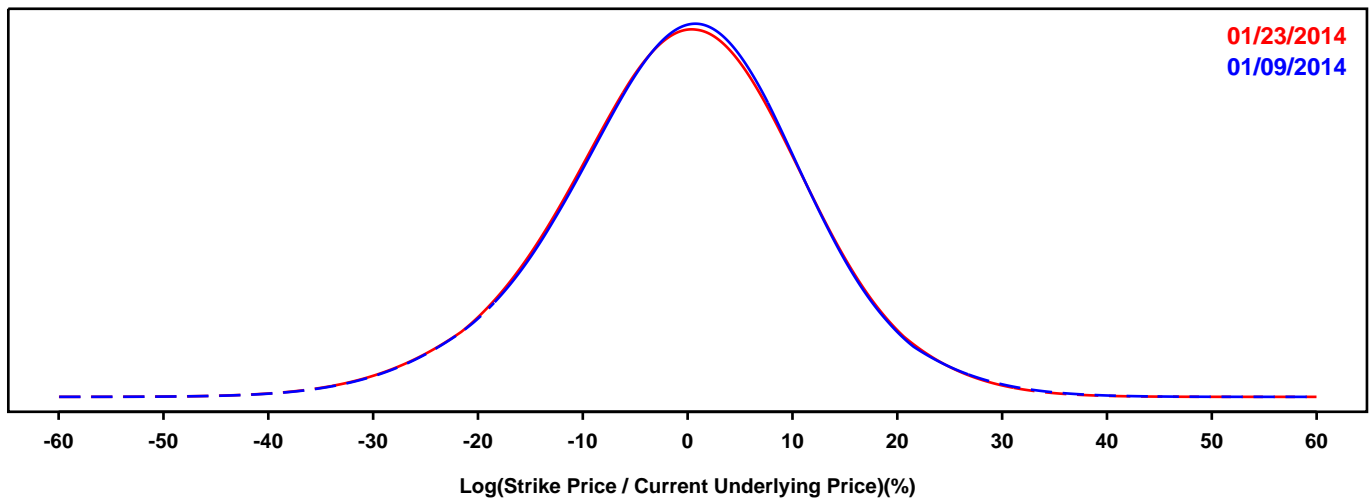
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BANK OF AMERICA

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

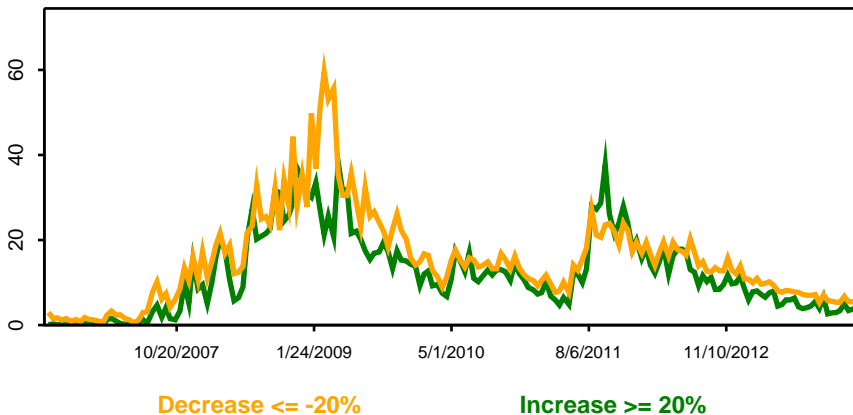
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

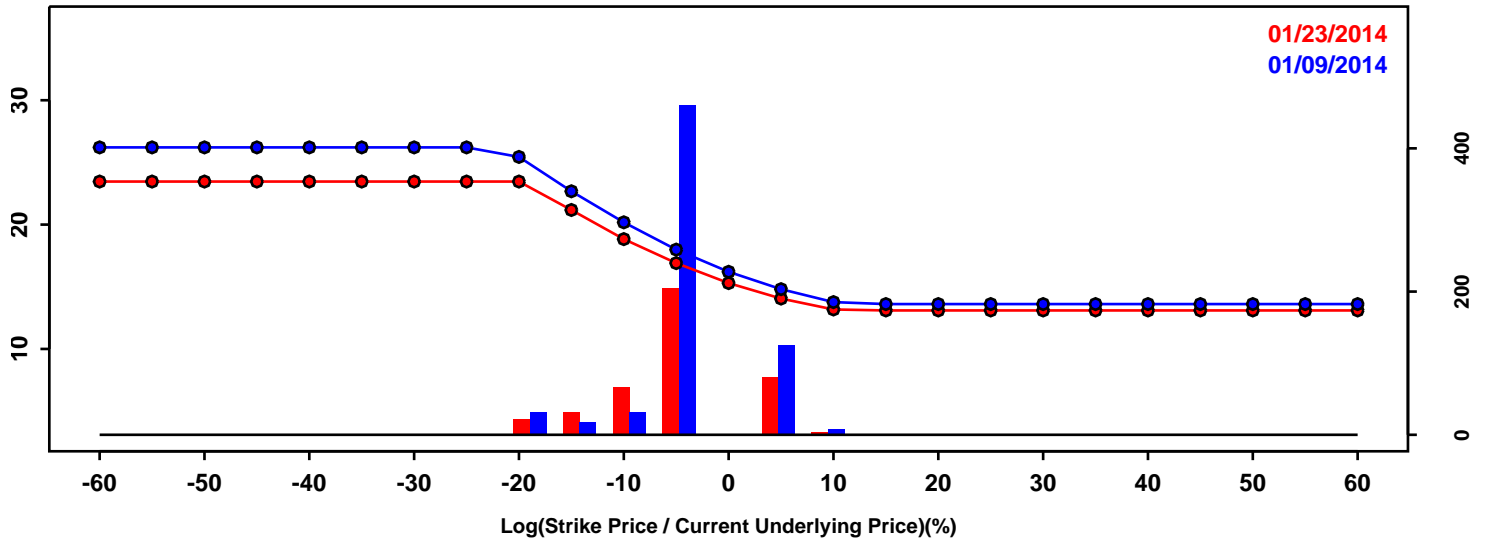


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -15.49% | -15.64% | -0.16% |
| 50th Pct | -0.05% | -0.18% | -0.13% |
| 90th Pct | 13.94% | 13.97% | 0.03% |
| Mean | -0.41% | -0.53% | -0.12% |
| Std Dev | 11.79% | 11.82% | 0.02% |
| Skew | -0.16 | -0.18 | -0.02 |
| Kurtosis | 0.43 | 0.37 | -0.07 |

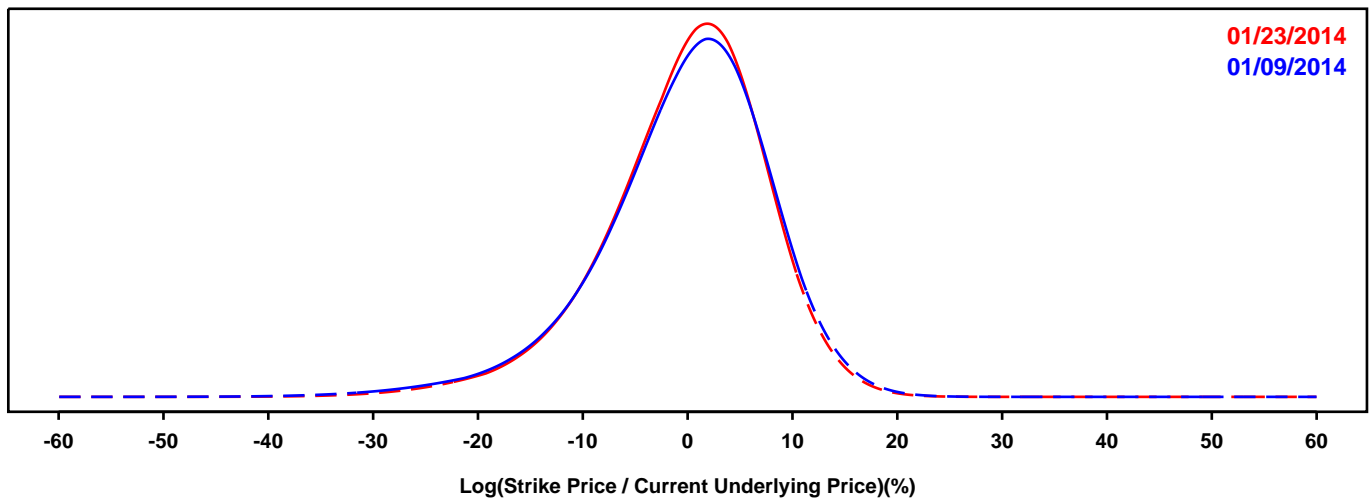
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BB&T

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

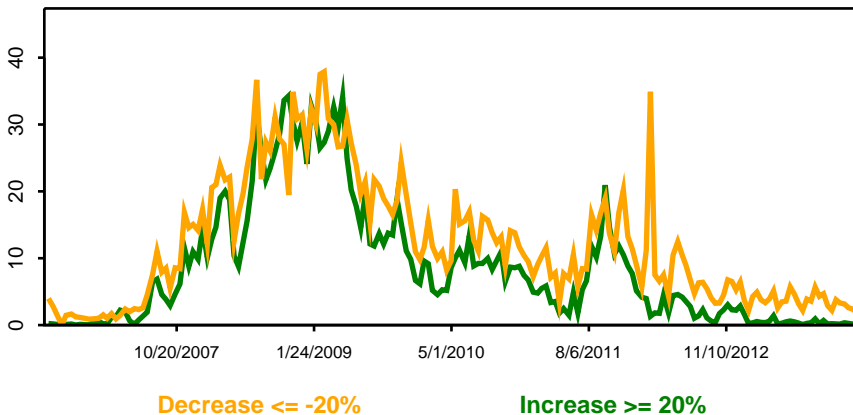
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

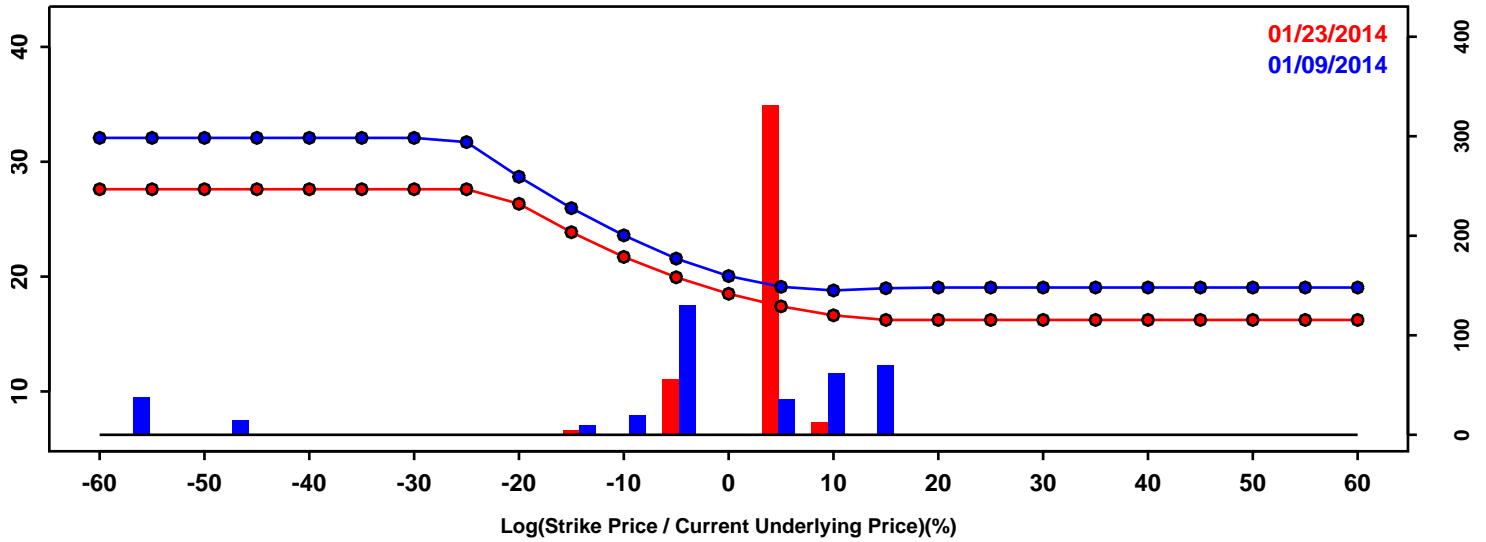


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -10.79% | -10.31% | 0.48% |
| 50th Pct | 0.65% | 0.55% | -0.09% |
| 90th Pct | 9.11% | 8.75% | -0.36% |
| Mean | -0.27% | -0.25% | 0.01% |
| Std Dev | 8.25% | 7.80% | -0.45% |
| Skew | -0.80 | -0.70 | 0.09 |
| Kurtosis | 1.52 | 1.20 | -0.32 |

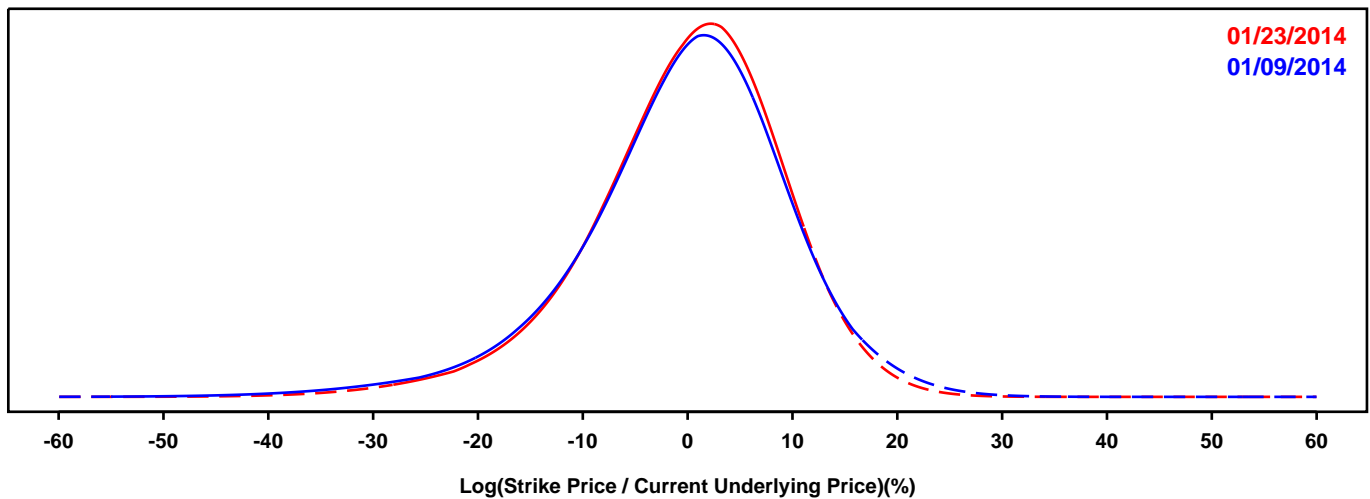
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BANK OF NEW YORK MELLON

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

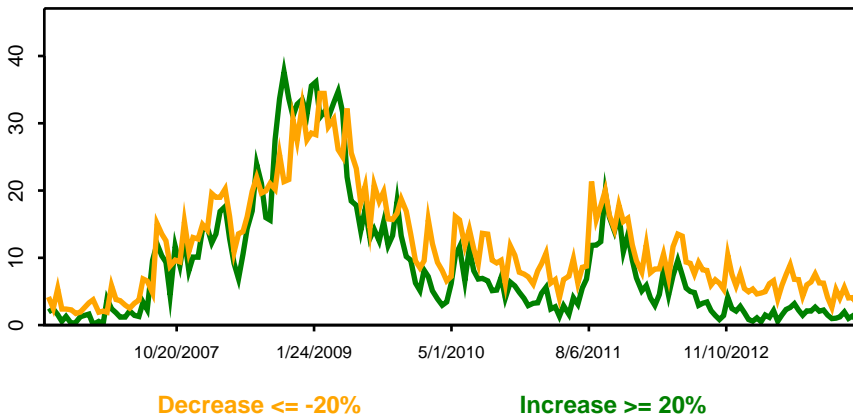
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

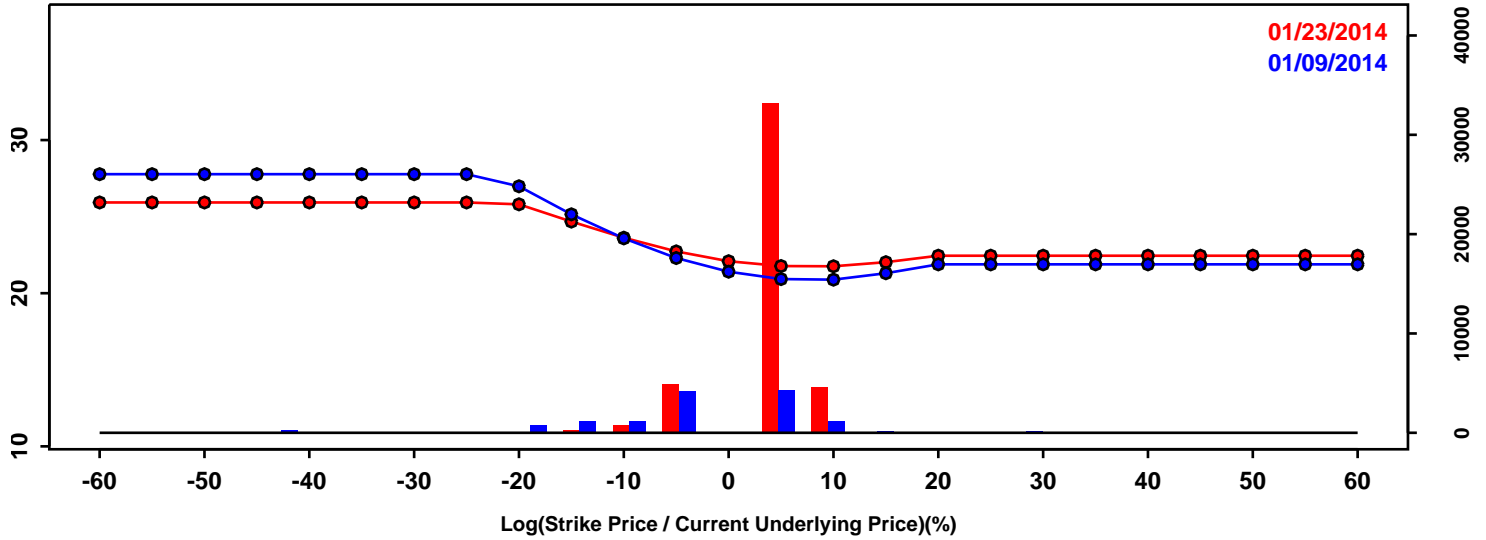


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -13.06% | -12.12% | 0.93% |
| 50th Pct | 0.55% | 0.66% | 0.12% |
| 90th Pct | 11.33% | 10.79% | -0.54% |
| Mean | -0.34% | -0.14% | 0.20% |
| Std Dev | 10.18% | 9.38% | -0.81% |
| Skew | -0.68 | -0.63 | 0.05 |
| Kurtosis | 1.53 | 1.09 | -0.44 |

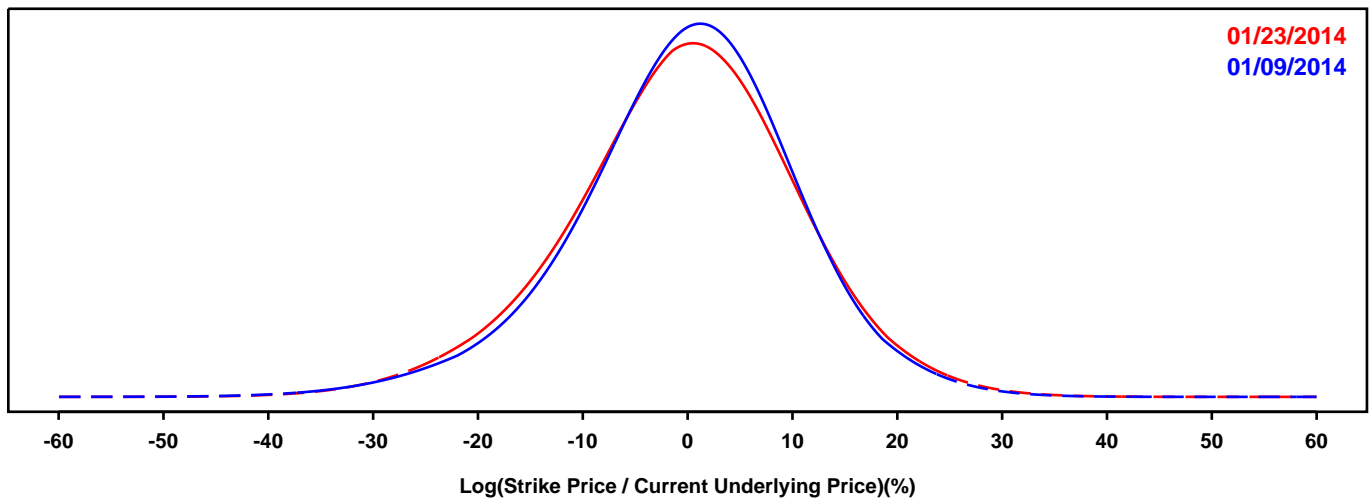
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CITIGROUP

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

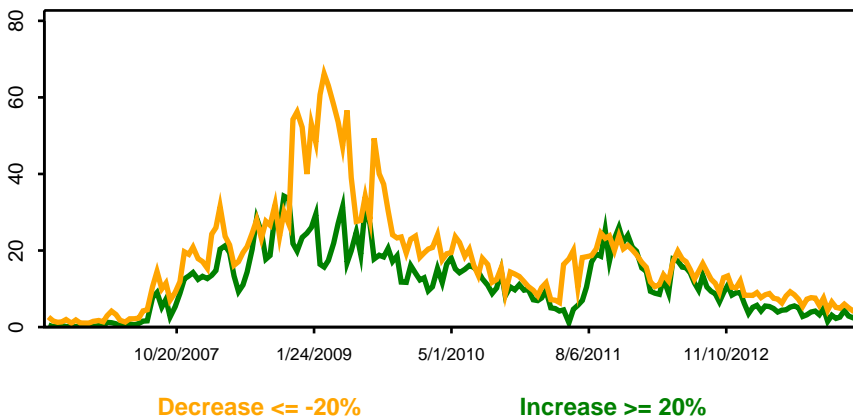
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

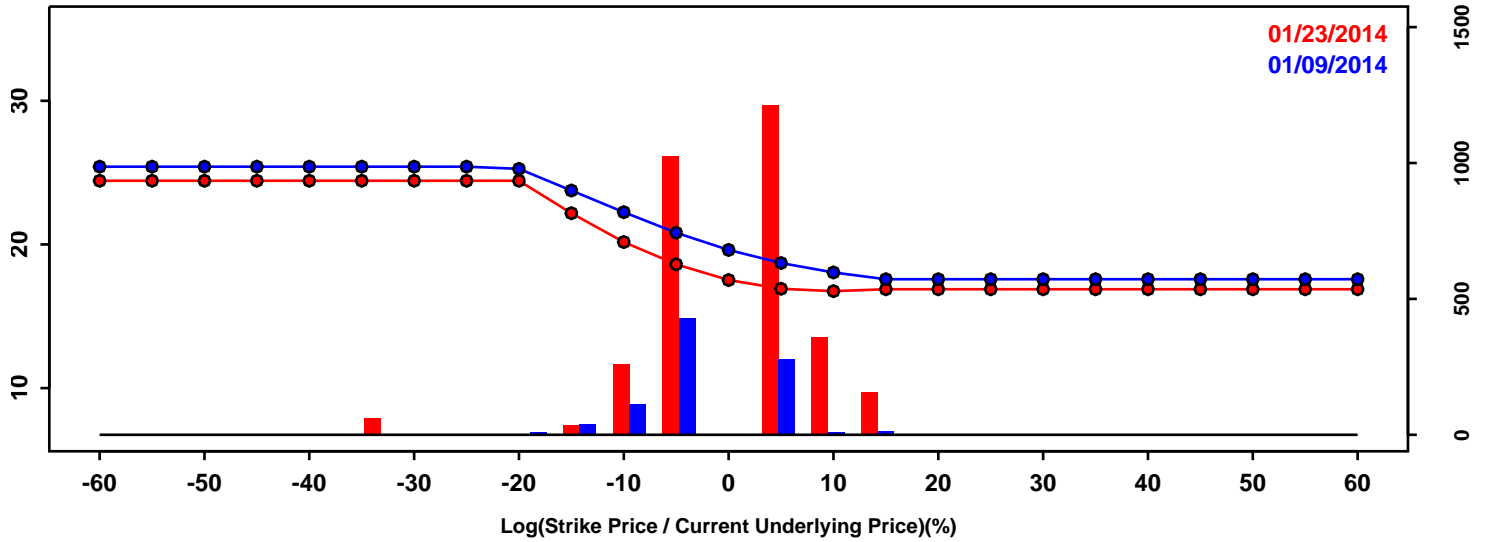


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -13.79% | -14.64% | -0.85% |
| 50th Pct | 0.40% | 0.05% | -0.35% |
| 90th Pct | 12.66% | 13.13% | 0.46% |
| Mean | -0.16% | -0.38% | -0.23% |
| Std Dev | 10.73% | 11.08% | 0.35% |
| Skew | -0.34 | -0.23 | 0.11 |
| Kurtosis | 0.73 | 0.42 | -0.30 |

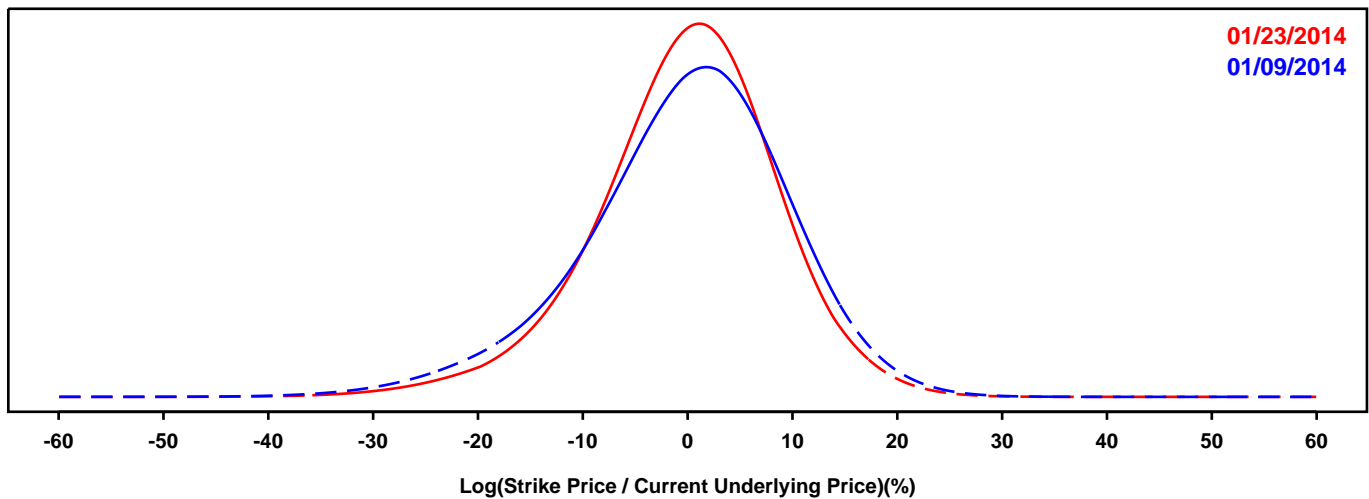
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CAPITAL ONE

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

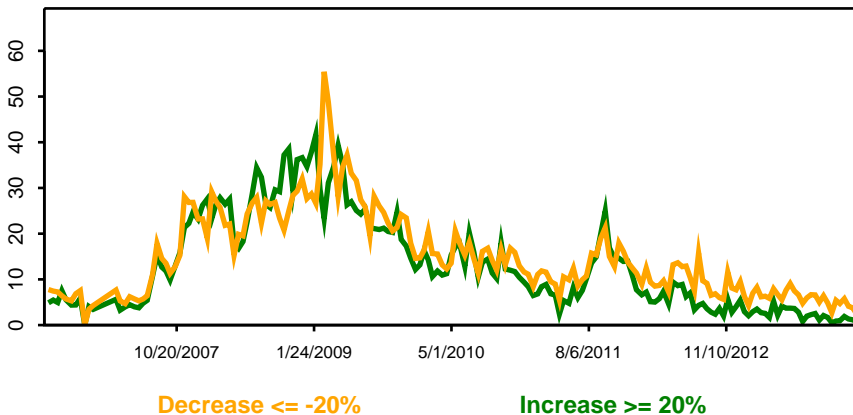
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

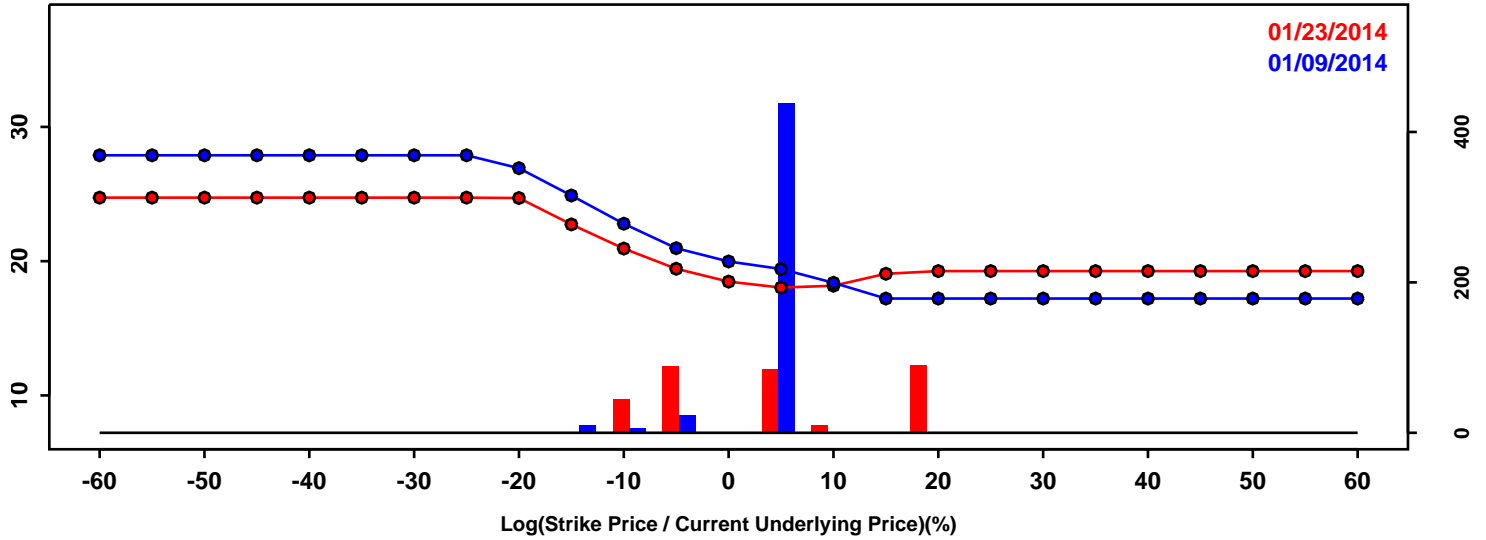


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -13.17% | -11.33% | 1.84% |
| 50th Pct | 0.55% | 0.33% | -0.21% |
| 90th Pct | 11.55% | 10.33% | -1.22% |
| Mean | -0.22% | -0.17% | 0.05% |
| Std Dev | 9.91% | 8.81% | -1.10% |
| Skew | -0.49 | -0.44 | 0.05 |
| Kurtosis | 0.63 | 0.87 | 0.23 |

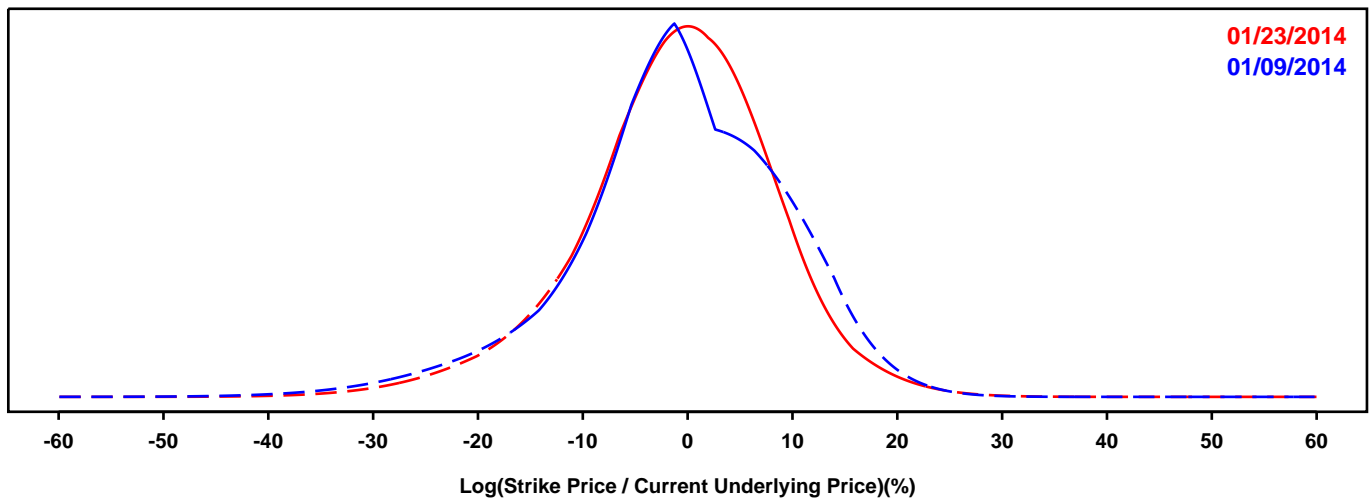
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- FIFTH THIRD

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

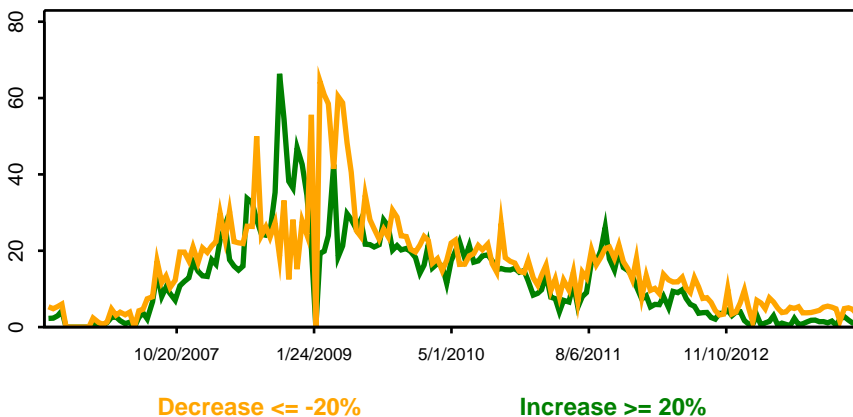
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

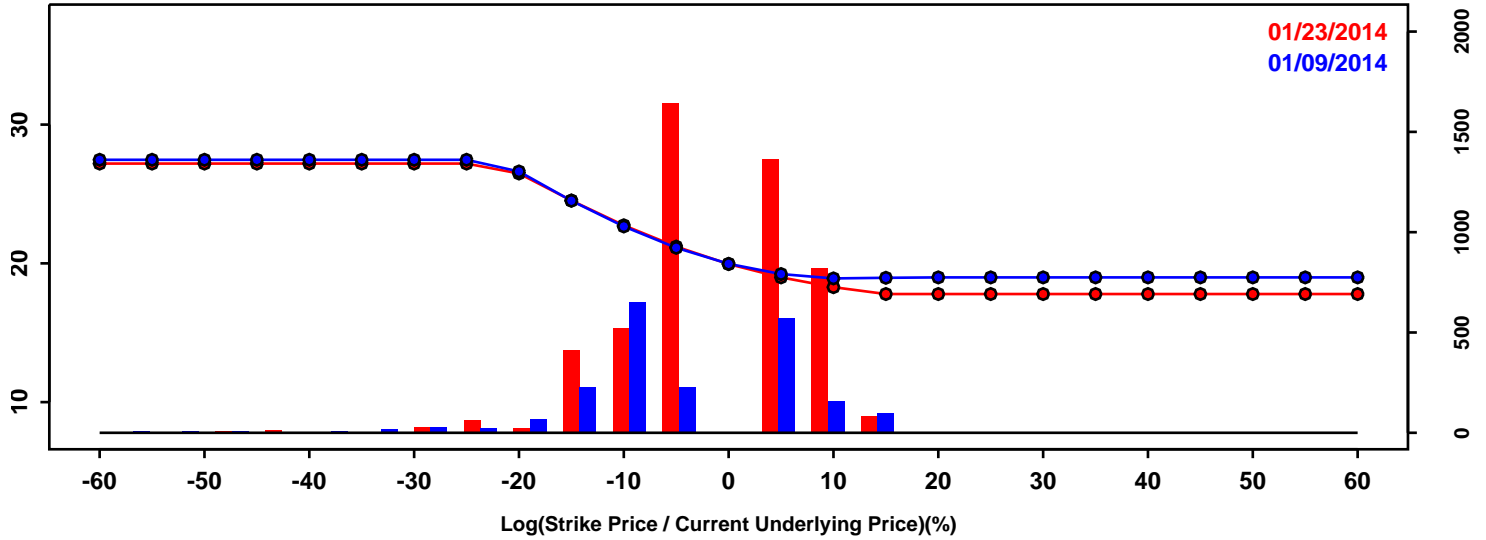


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -13.70% | -12.80% | 0.90% |
| 50th Pct | -0.56% | -0.44% | 0.13% |
| 90th Pct | 11.81% | 10.03% | -1.78% |
| Mean | -0.82% | -0.95% | -0.14% |
| Std Dev | 10.30% | 9.34% | -0.96% |
| Skew | -0.54 | -0.42 | 0.12 |
| Kurtosis | 0.89 | 0.87 | -0.01 |

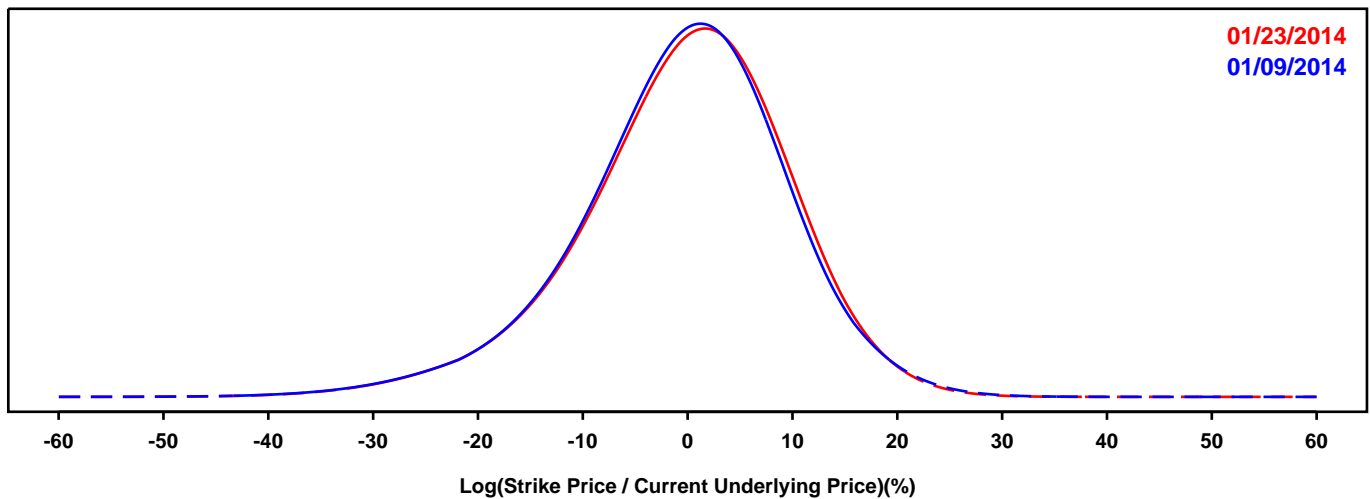
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- GOLDMAN SACHS

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

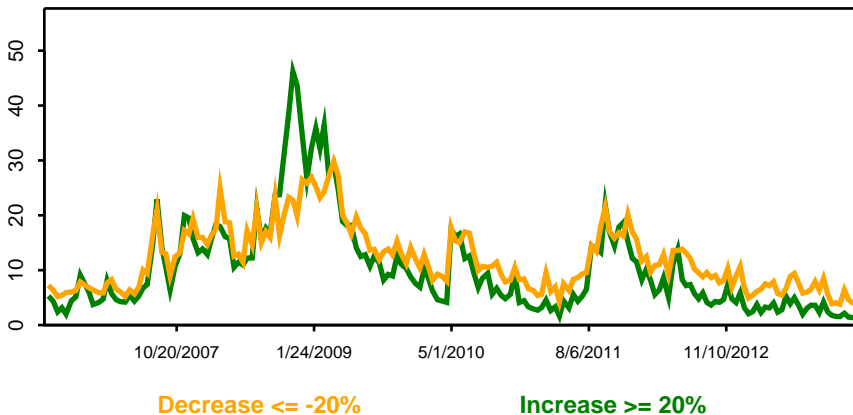
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

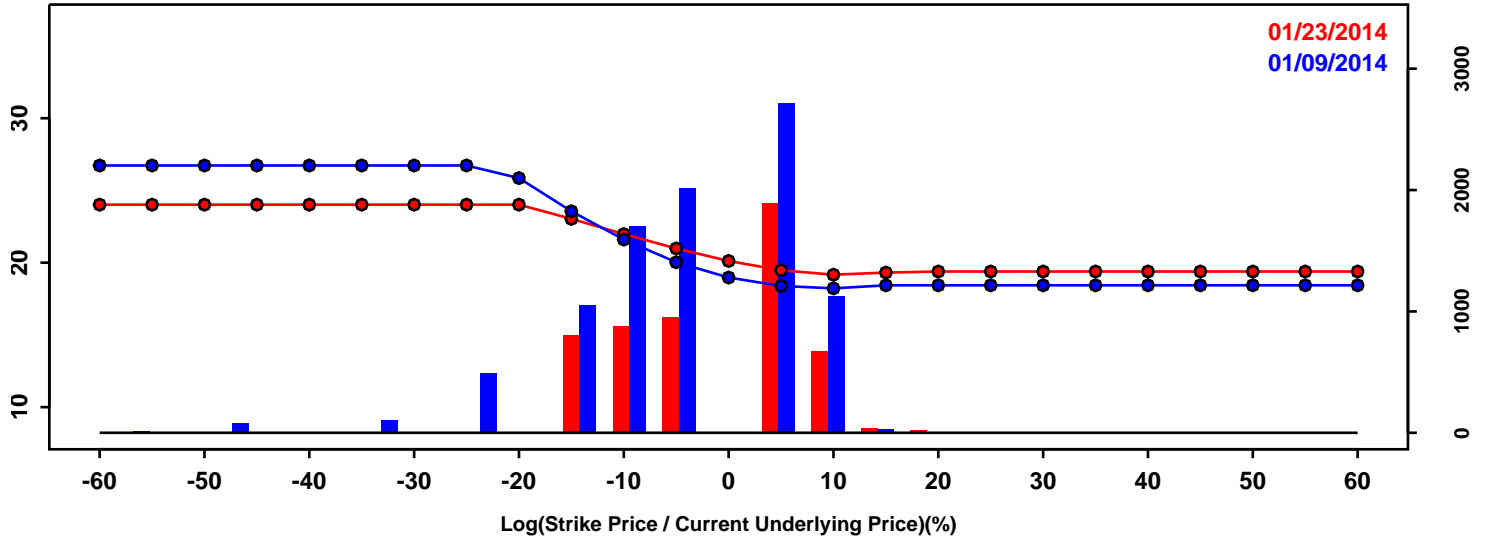


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -13.43% | -13.32% | 0.10% |
| 50th Pct | 0.17% | 0.46% | 0.29% |
| 90th Pct | 11.35% | 11.63% | 0.28% |
| Mean | -0.55% | -0.32% | 0.23% |
| Std Dev | 10.10% | 10.09% | -0.01% |
| Skew | -0.49 | -0.53 | -0.04 |
| Kurtosis | 0.87 | 0.79 | -0.08 |

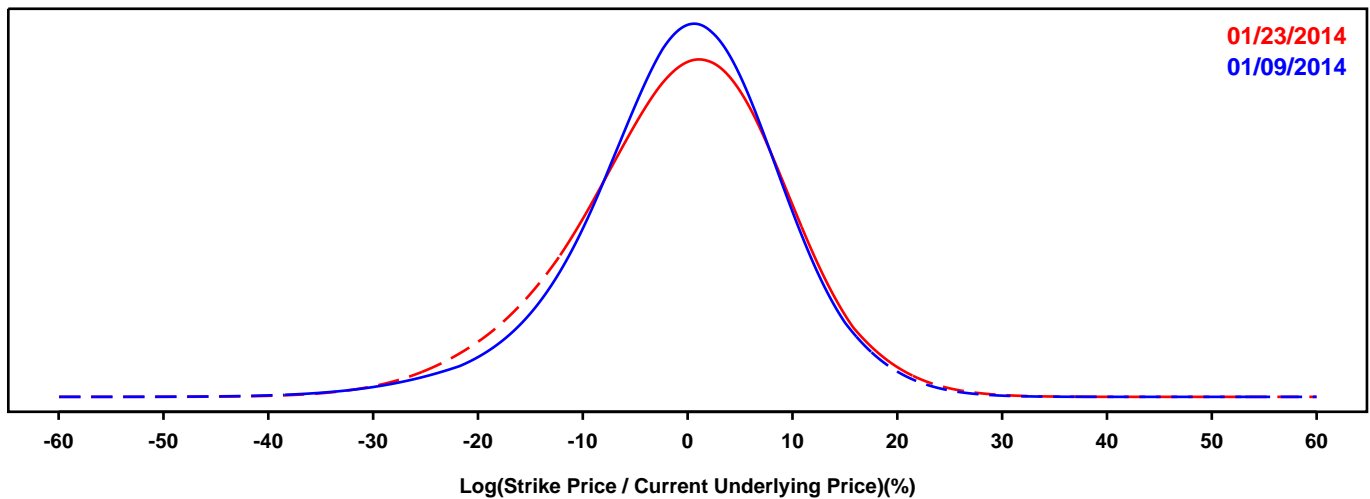
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- JP MORGAN

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

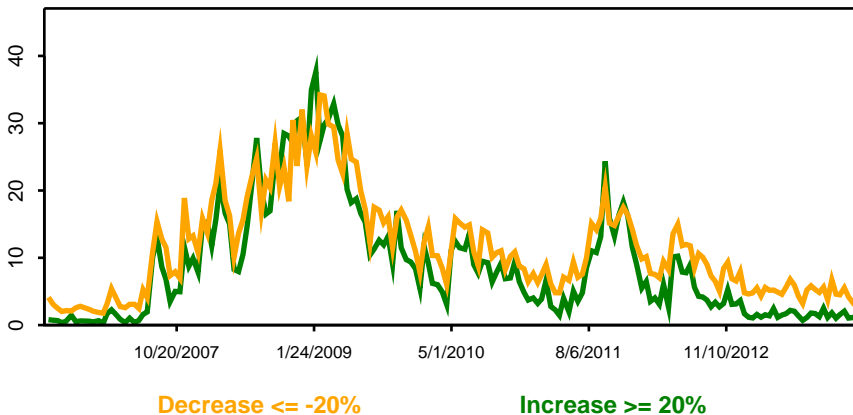
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

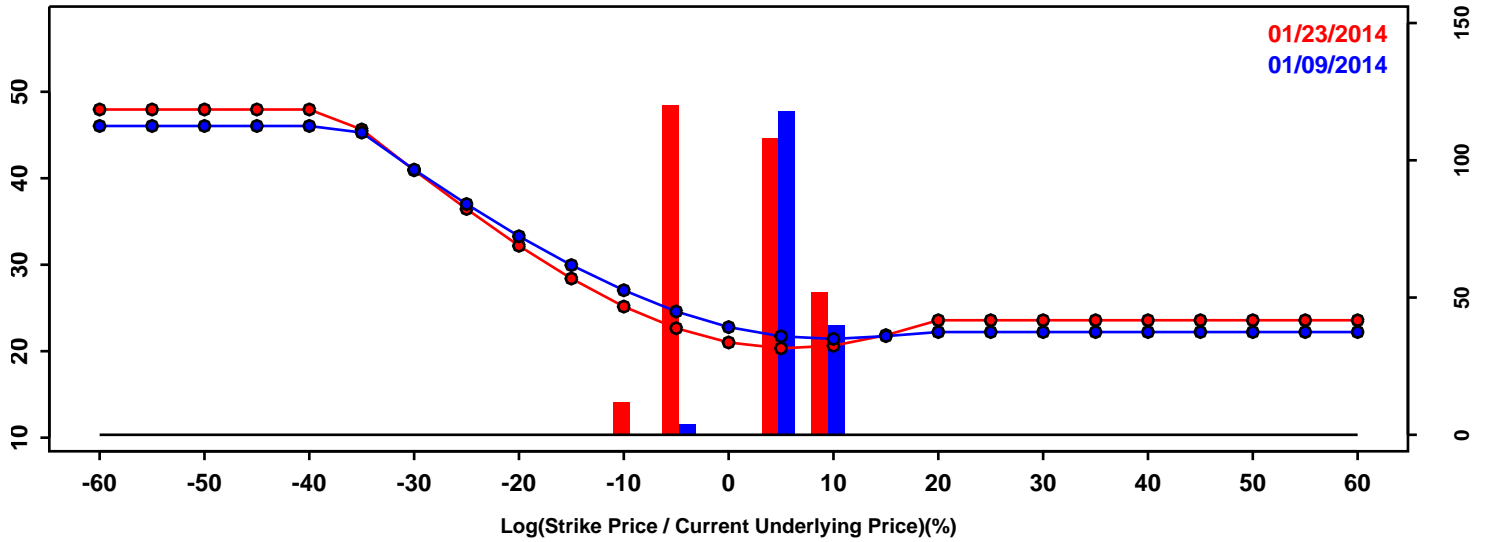


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -12.61% | -14.21% | -1.60% |
| 50th Pct | 0.00% | -0.18% | -0.18% |
| 90th Pct | 10.83% | 11.34% | 0.51% |
| Mean | -0.56% | -0.84% | -0.29% |
| Std Dev | 9.58% | 10.17% | 0.58% |
| Skew | -0.46 | -0.34 | 0.12 |
| Kurtosis | 0.93 | 0.38 | -0.55 |

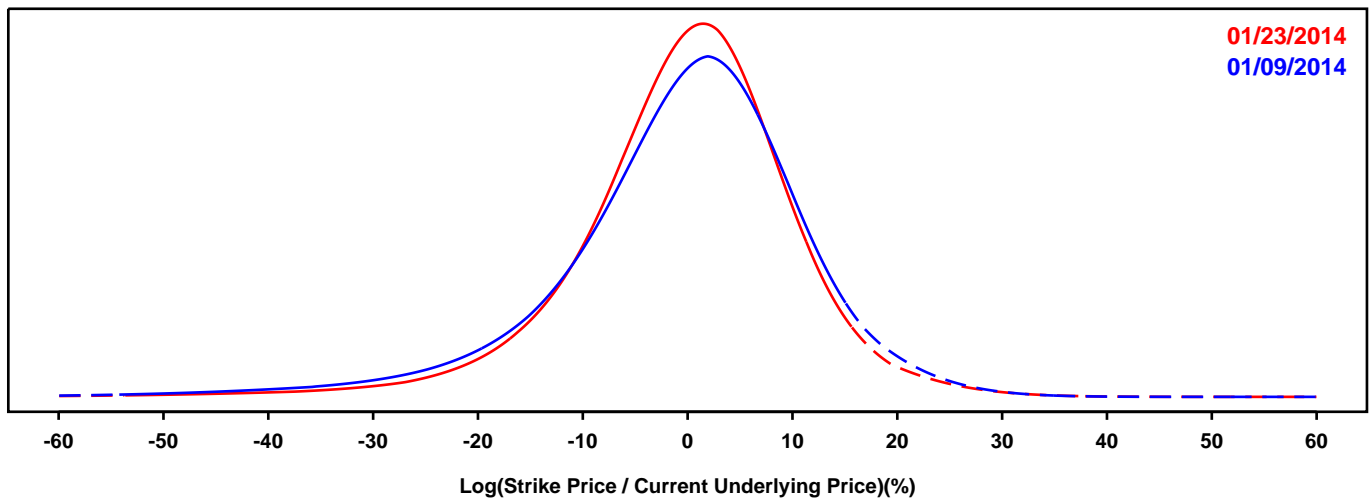
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- KEYCORP

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

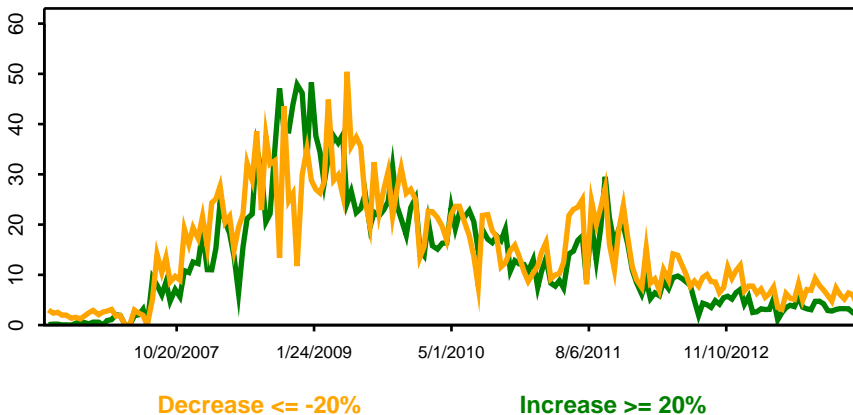
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

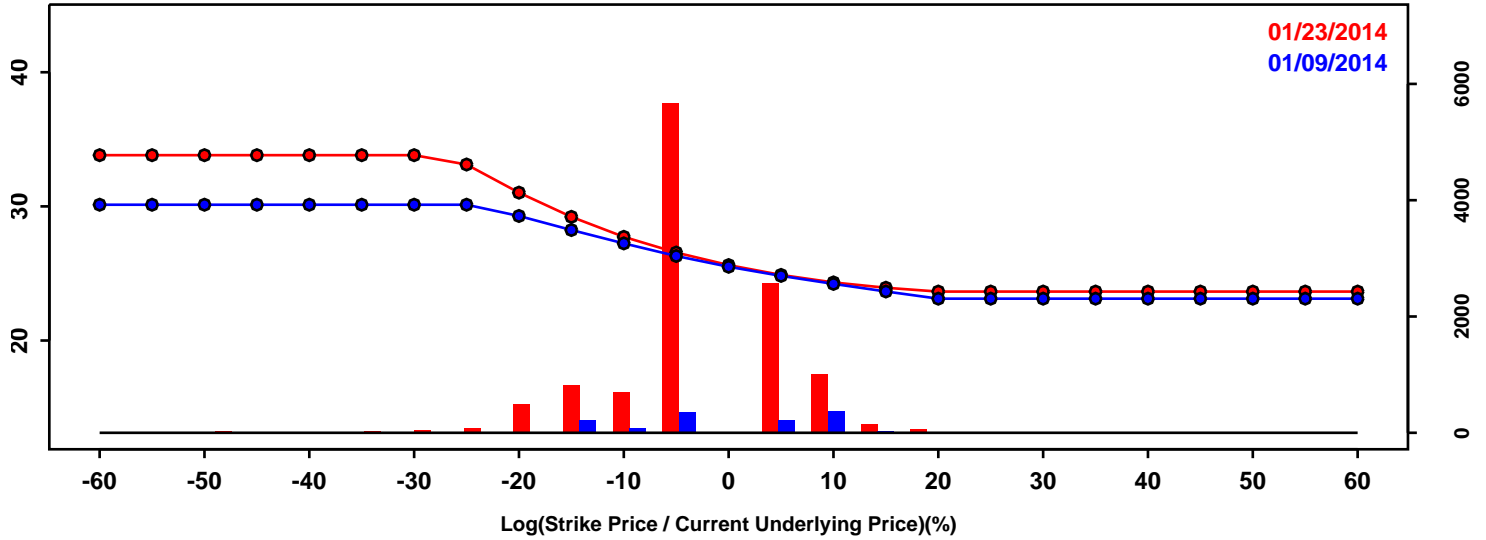


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -14.97% | -12.80% | 2.18% |
| 50th Pct | 0.65% | 0.50% | -0.15% |
| 90th Pct | 12.57% | 11.55% | -1.03% |
| Mean | -0.58% | -0.30% | 0.28% |
| Std Dev | 12.08% | 10.80% | -1.28% |
| Skew | -1.02 | -0.93 | 0.09 |
| Kurtosis | 3.03 | 3.71 | 0.68 |

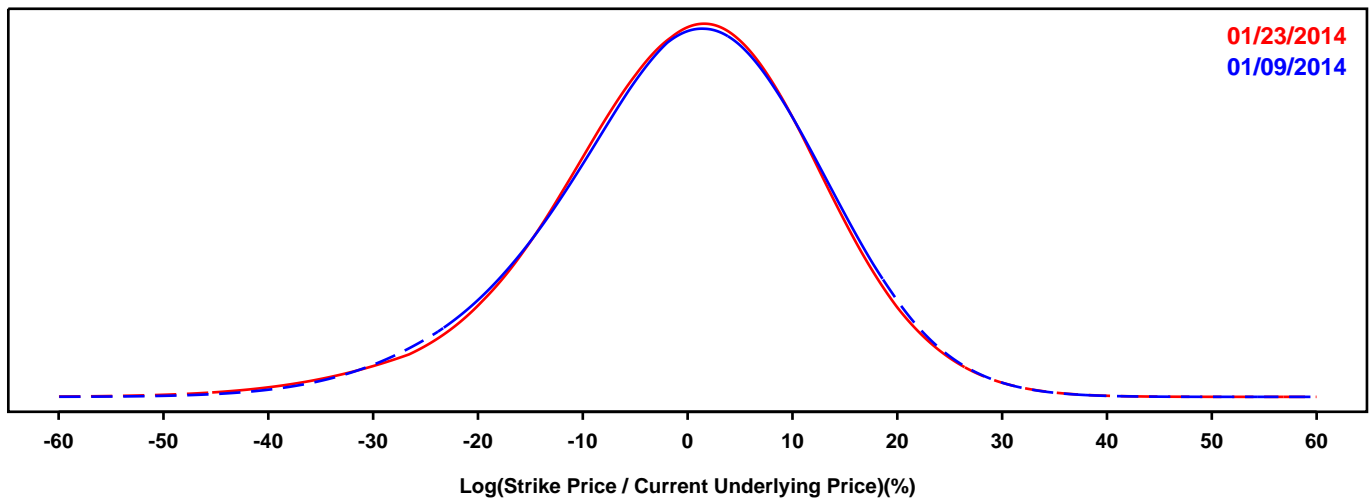
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- MORGAN STANLEY

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

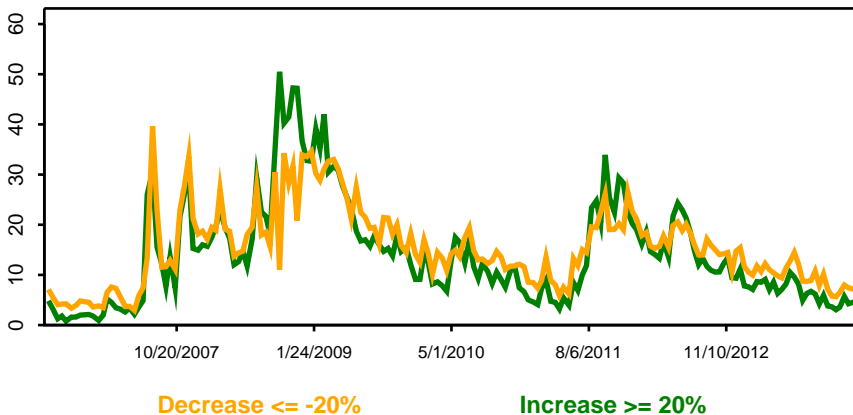
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

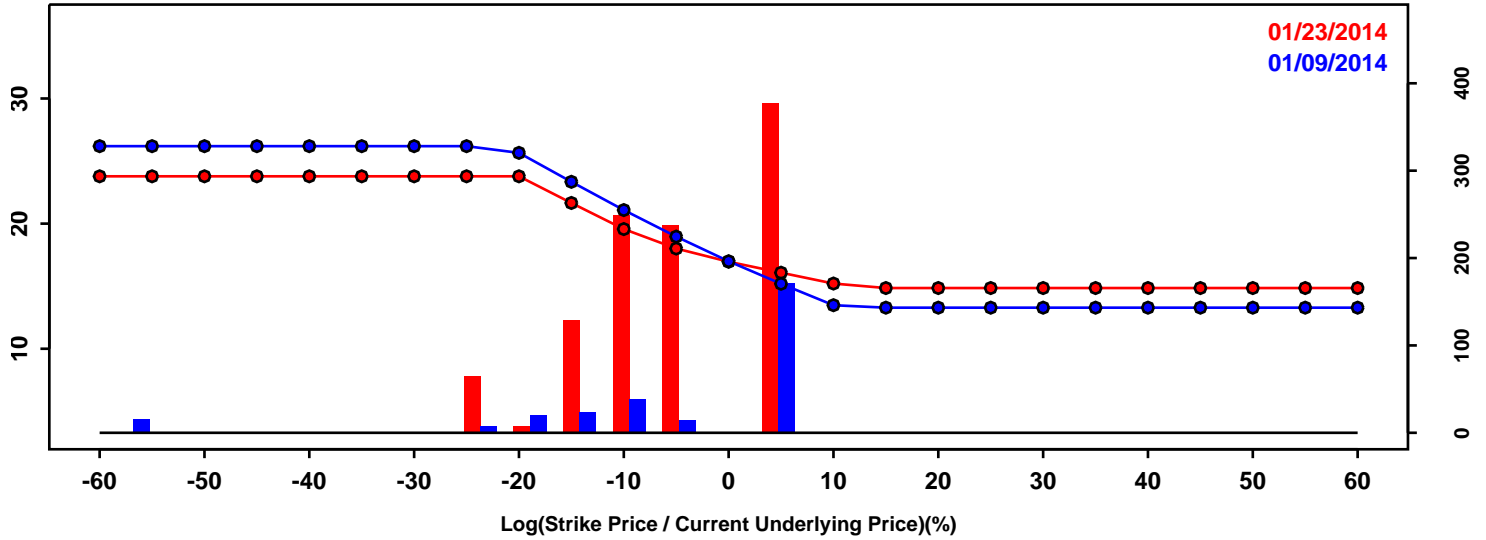


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -17.15% | -16.93% | 0.22% |
| 50th Pct | 0.35% | 0.28% | -0.07% |
| 90th Pct | 15.38% | 15.08% | -0.30% |
| Mean | -0.32% | -0.49% | -0.16% |
| Std Dev | 12.84% | 12.90% | 0.06% |
| Skew | -0.33 | -0.41 | -0.08 |
| Kurtosis | 0.29 | 0.63 | 0.34 |

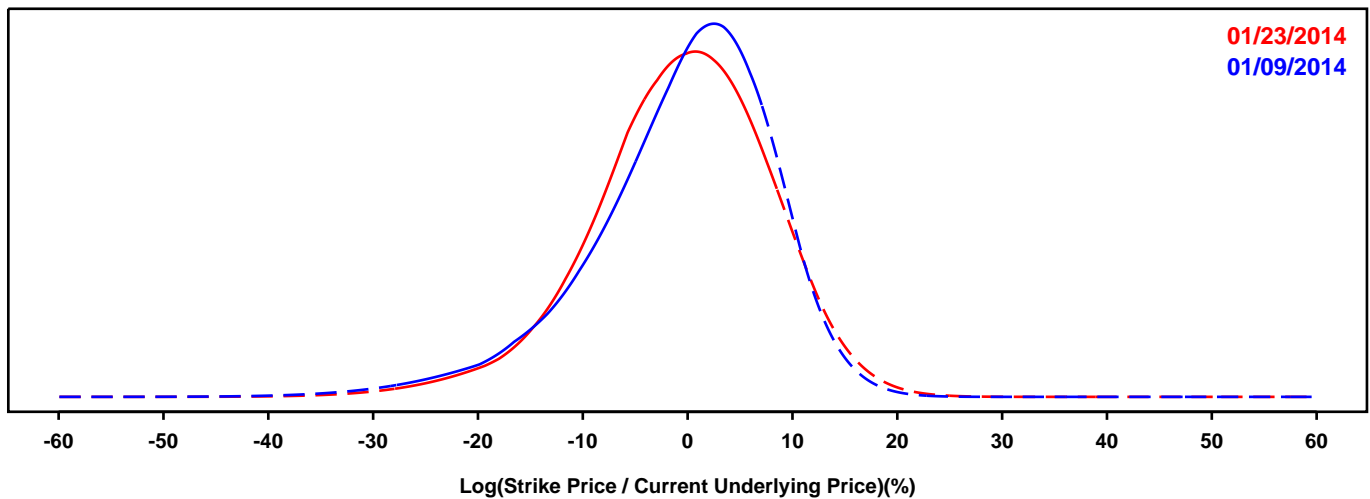
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PNC FINANCIAL

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

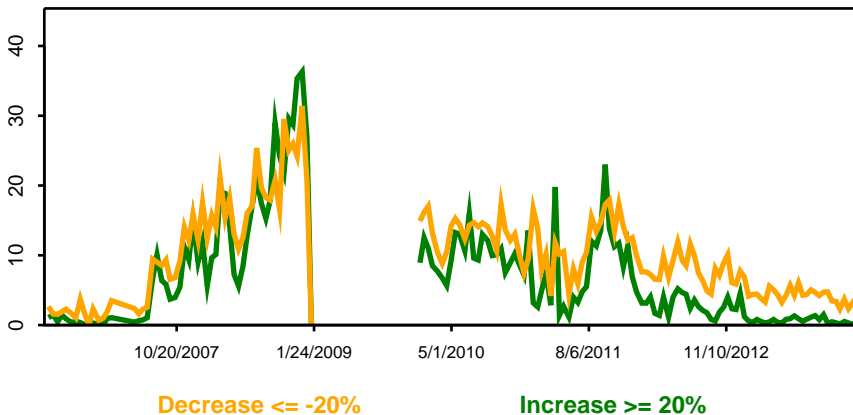
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

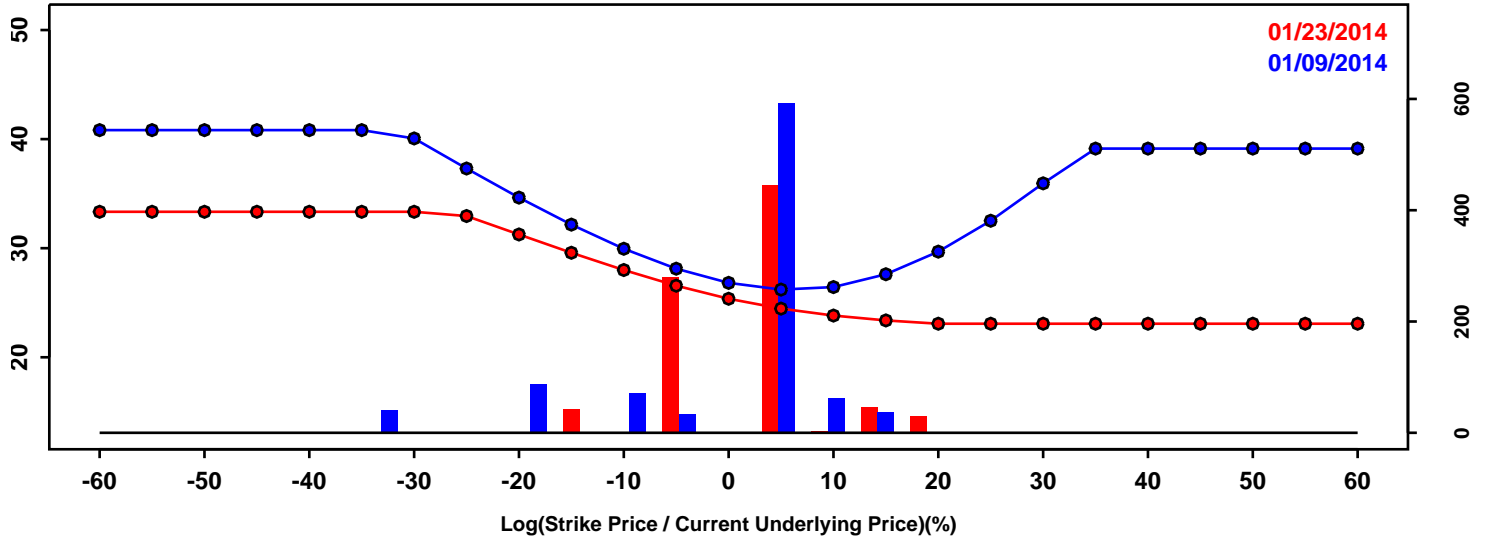


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -12.08% | -11.53% | 0.56% |
| 50th Pct | 0.64% | -0.16% | -0.79% |
| 90th Pct | 9.33% | 9.71% | 0.38% |
| Mean | -0.56% | -0.65% | -0.10% |
| Std Dev | 8.80% | 8.58% | -0.22% |
| Skew | -0.87 | -0.49 | 0.37 |
| Kurtosis | 1.36 | 0.77 | -0.59 |

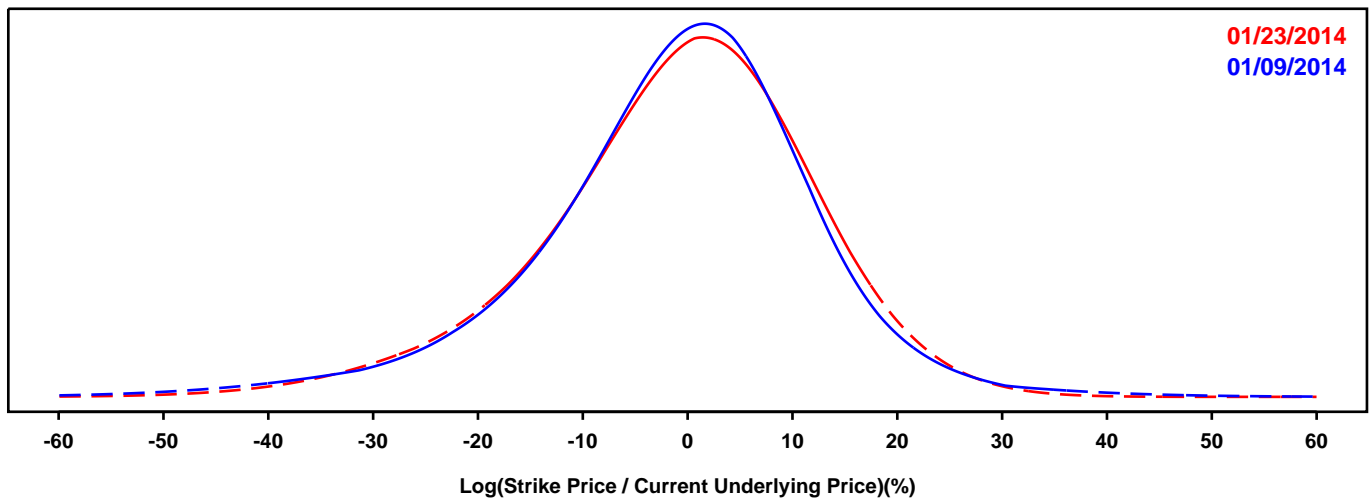
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- REGIONS FINANCIAL

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

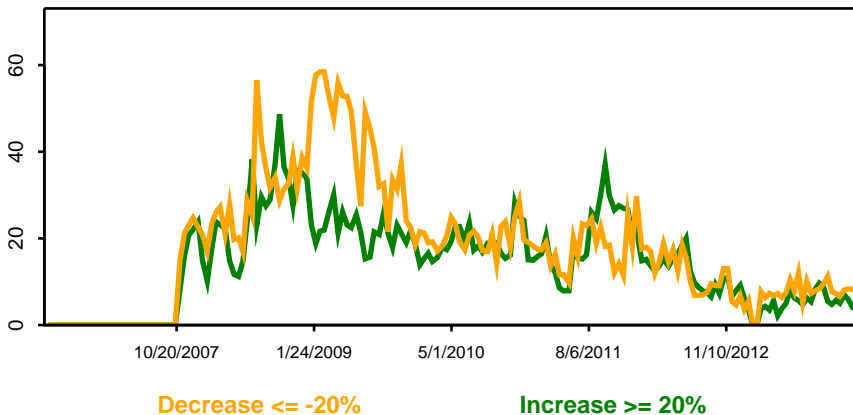
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

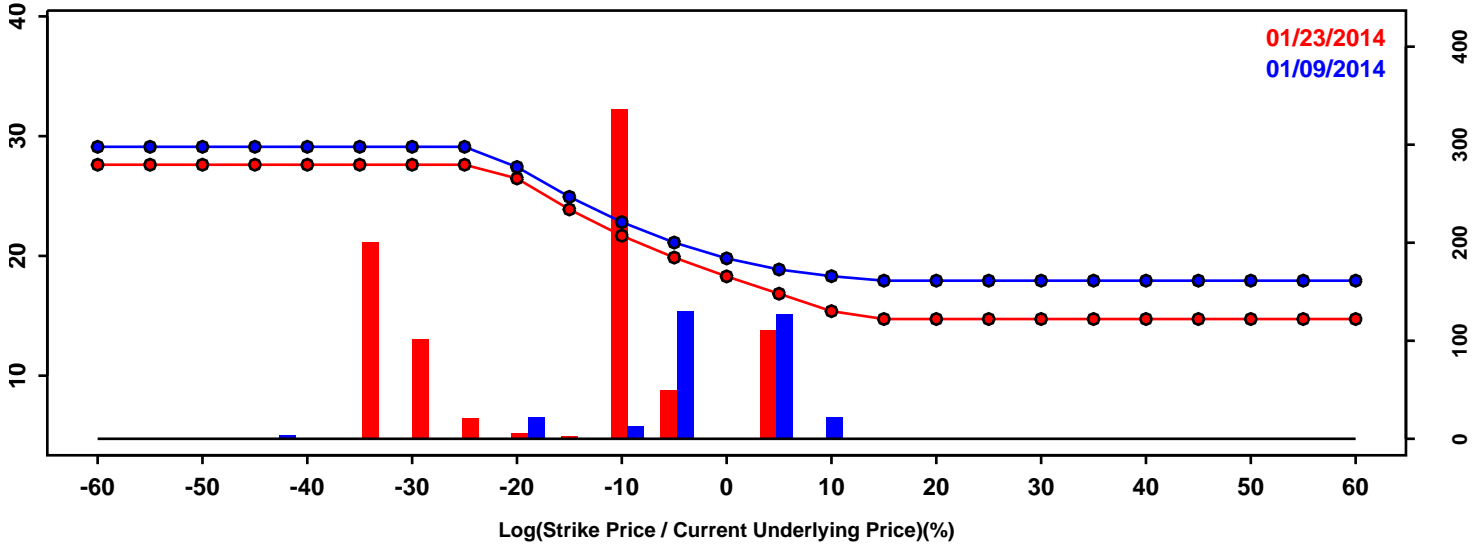


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -17.96% | -17.81% | 0.15% |
| 50th Pct | -0.07% | 0.16% | 0.23% |
| 90th Pct | 13.93% | 14.46% | 0.53% |
| Mean | -1.16% | -0.88% | 0.28% |
| Std Dev | 13.64% | 12.97% | -0.67% |
| Skew | -0.53 | -0.51 | 0.02 |
| Kurtosis | 1.82 | 0.69 | -1.12 |

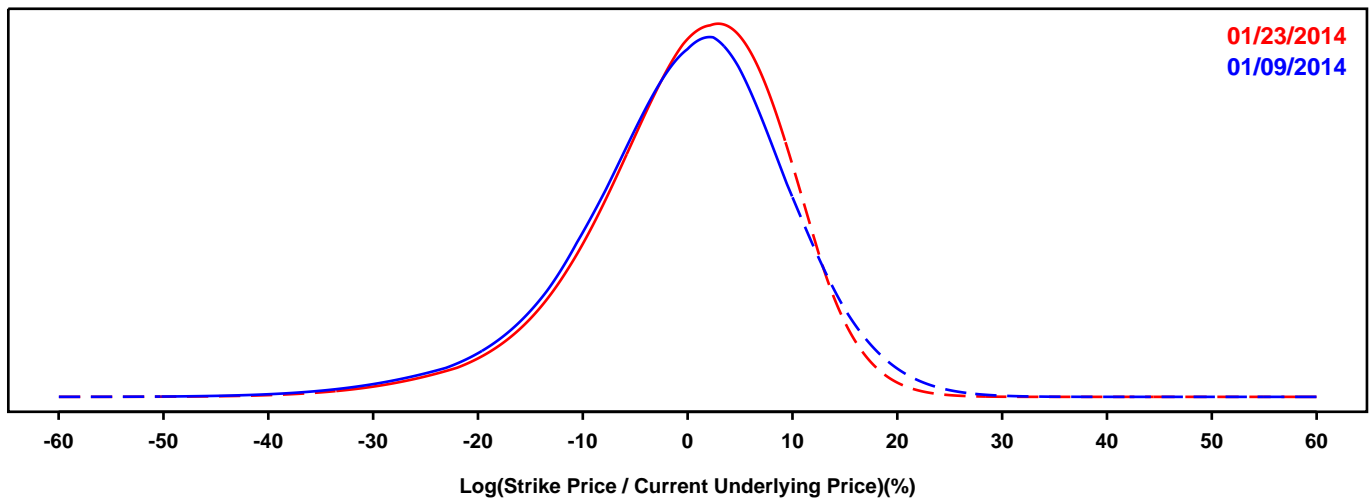
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SUNTRUST

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

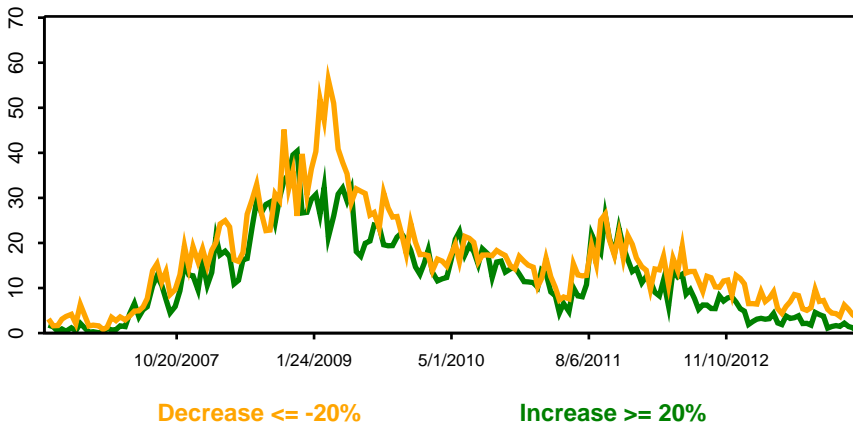
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

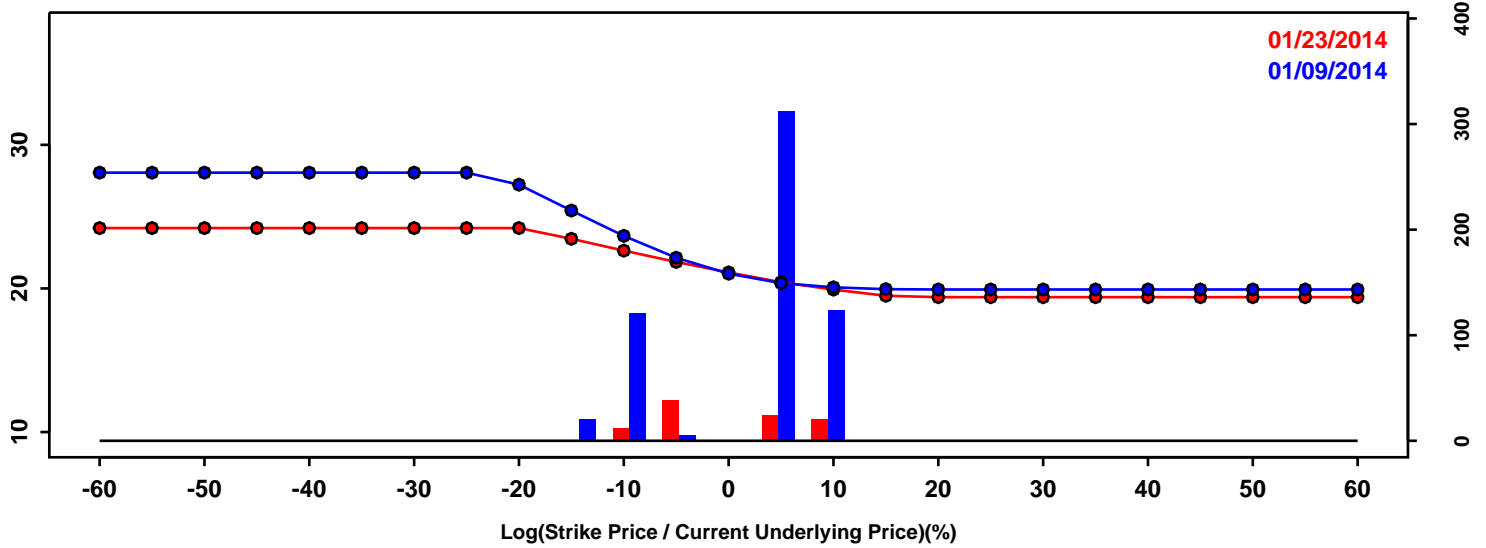


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -13.33% | -12.34% | 0.99% |
| 50th Pct | 0.38% | 0.87% | 0.48% |
| 90th Pct | 11.46% | 10.68% | -0.78% |
| Mean | -0.46% | -0.16% | 0.30% |
| Std Dev | 10.13% | 9.42% | -0.72% |
| Skew | -0.59 | -0.74 | -0.15 |
| Kurtosis | 1.06 | 1.10 | 0.04 |

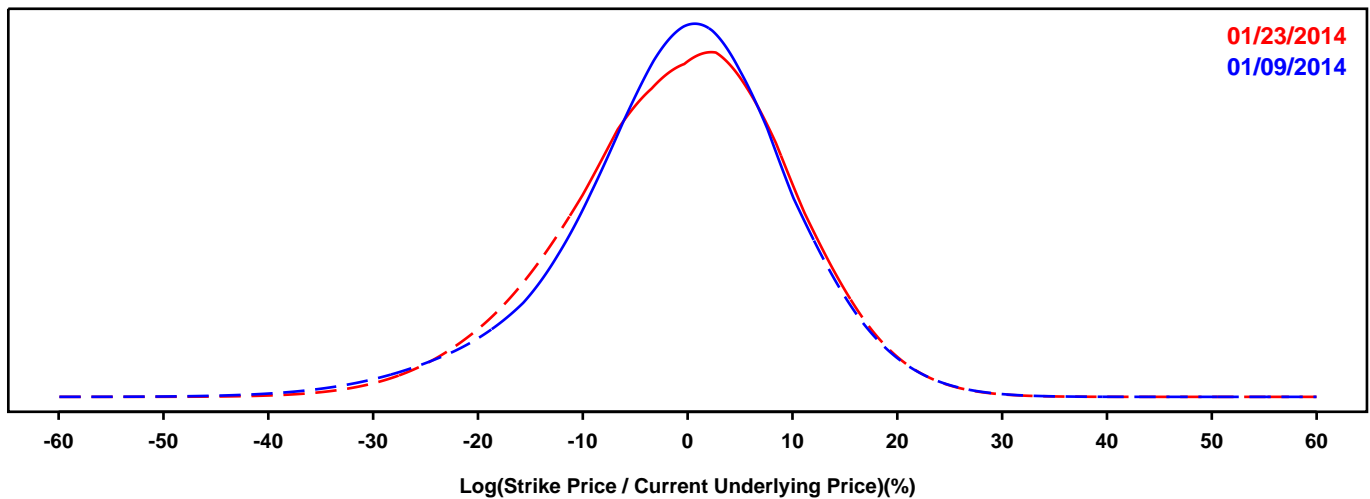
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- STATE STREET

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

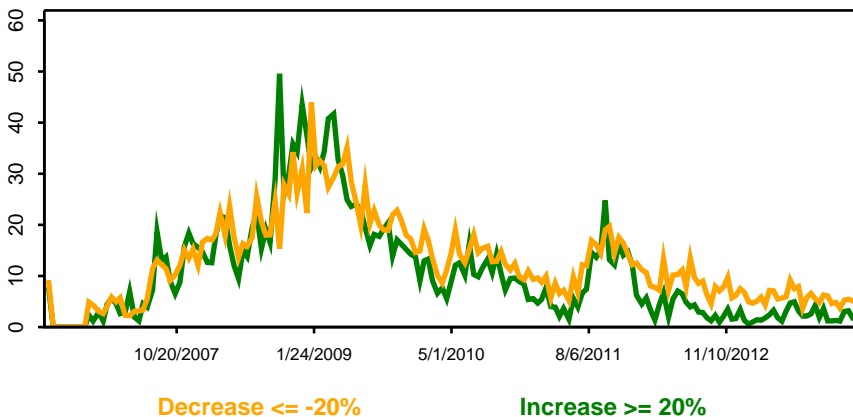
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

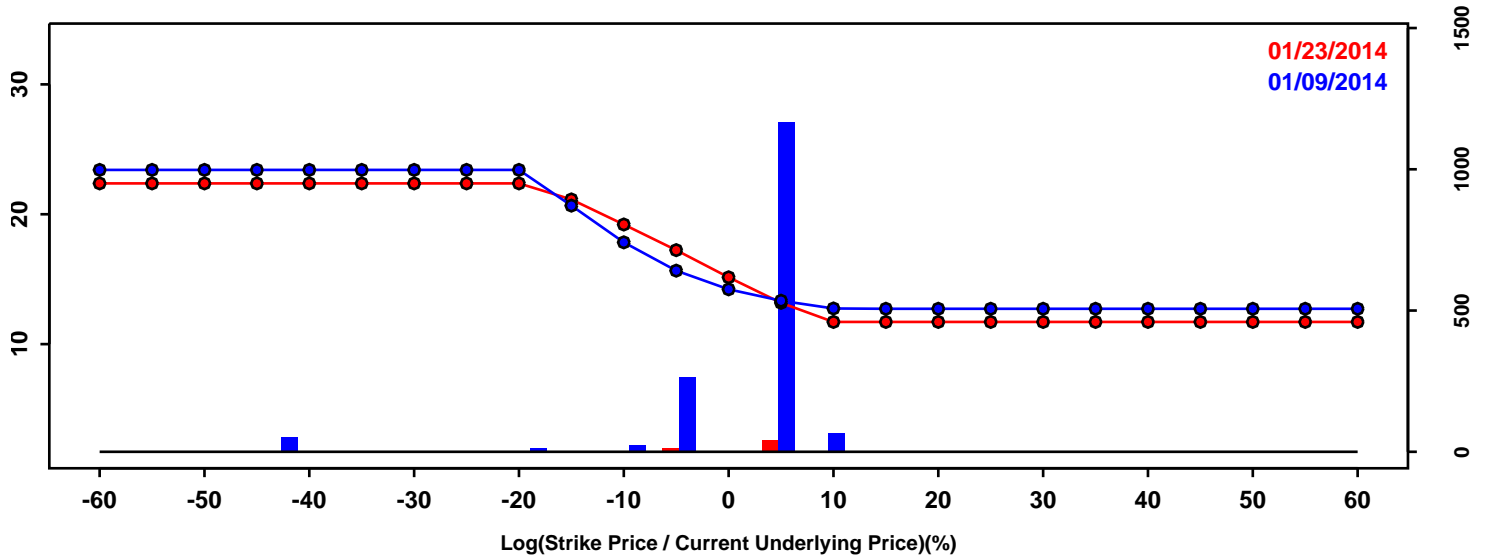


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -14.64% | -14.99% | -0.35% |
| 50th Pct | -0.19% | -0.28% | -0.09% |
| 90th Pct | 11.91% | 12.13% | 0.23% |
| Mean | -0.89% | -0.91% | -0.02% |
| Std Dev | 10.74% | 10.68% | -0.07% |
| Skew | -0.47 | -0.30 | 0.18 |
| Kurtosis | 0.80 | 0.20 | -0.61 |

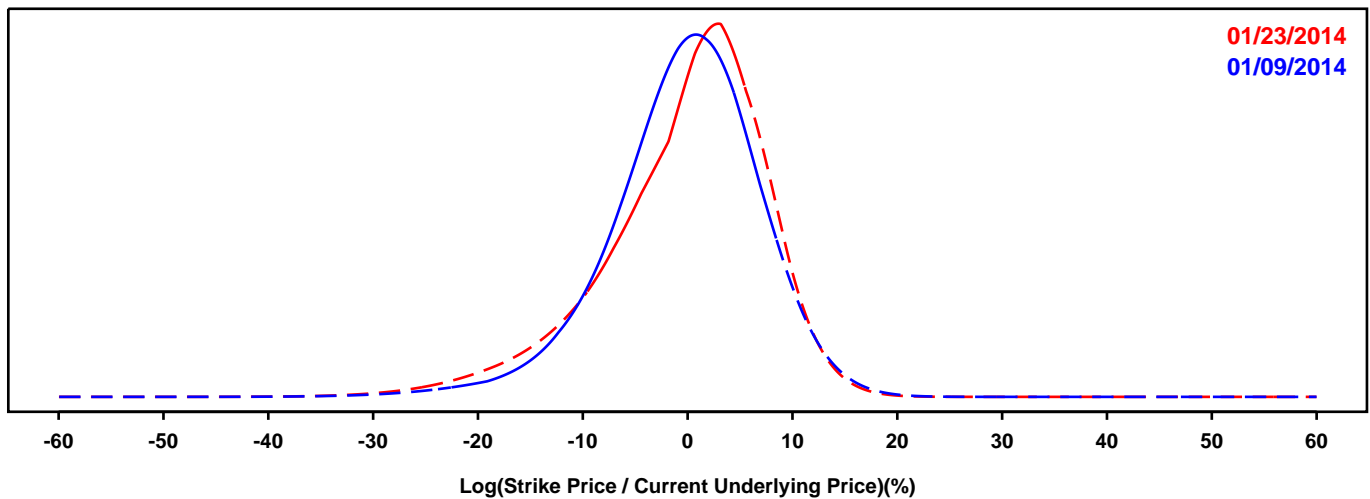
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- US BANCORP

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

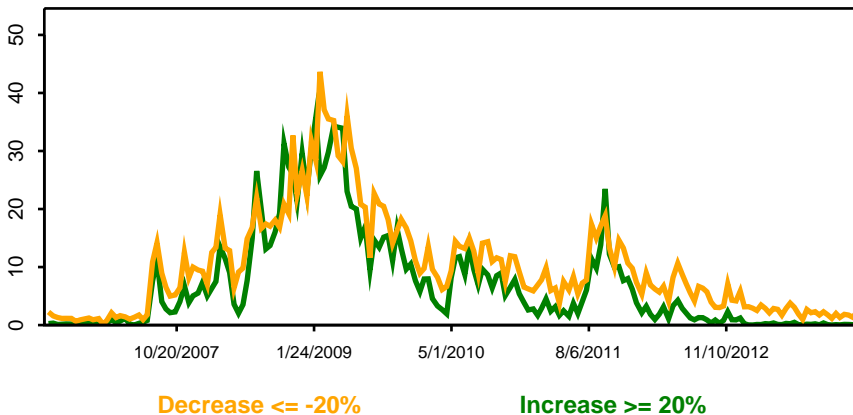
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

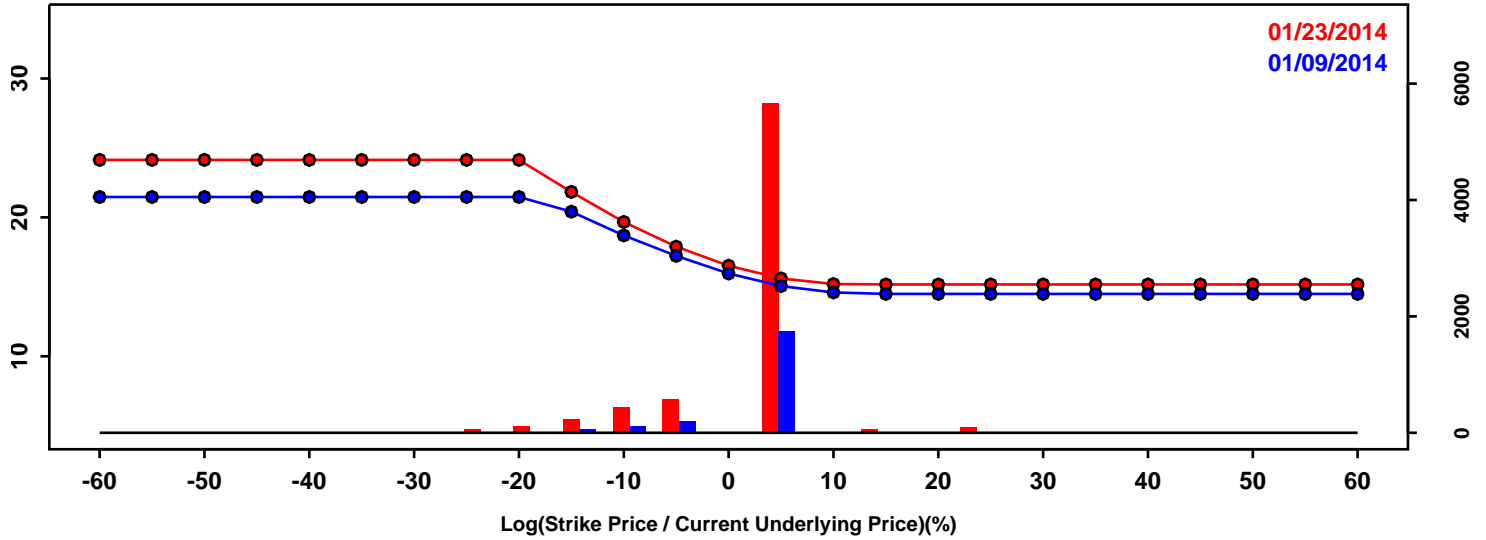


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -9.32% | -10.80% | -1.48% |
| 50th Pct | 0.20% | 0.96% | 0.76% |
| 90th Pct | 8.19% | 8.39% | 0.20% |
| Mean | -0.31% | -0.29% | 0.02% |
| Std Dev | 7.21% | 7.84% | 0.63% |
| Skew | -0.63 | -0.88 | -0.25 |
| Kurtosis | 1.38 | 1.22 | -0.16 |

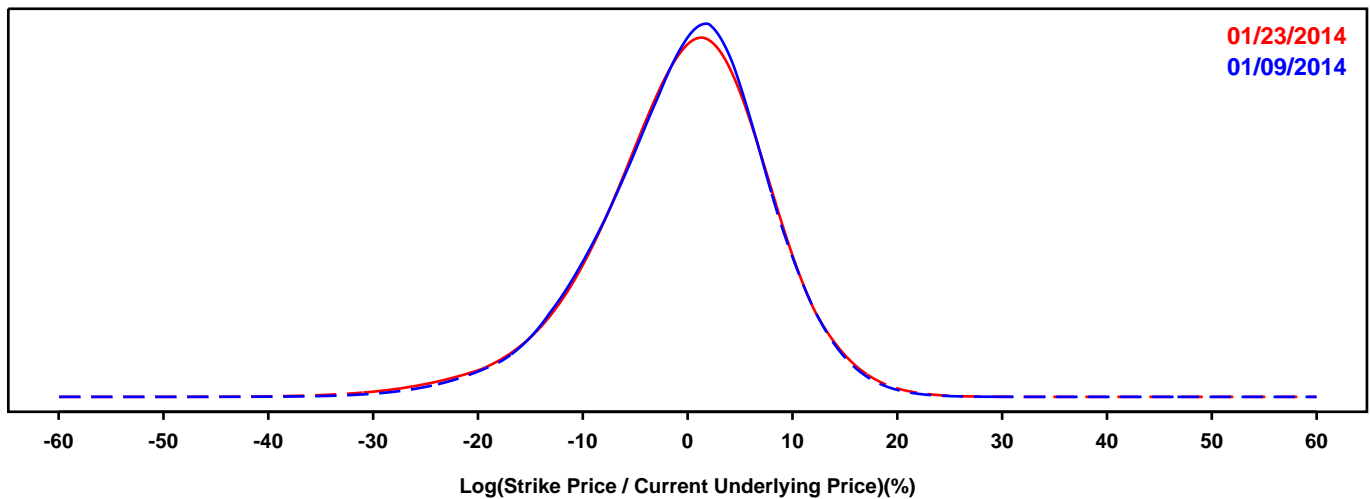
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- WELLS FARGO

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

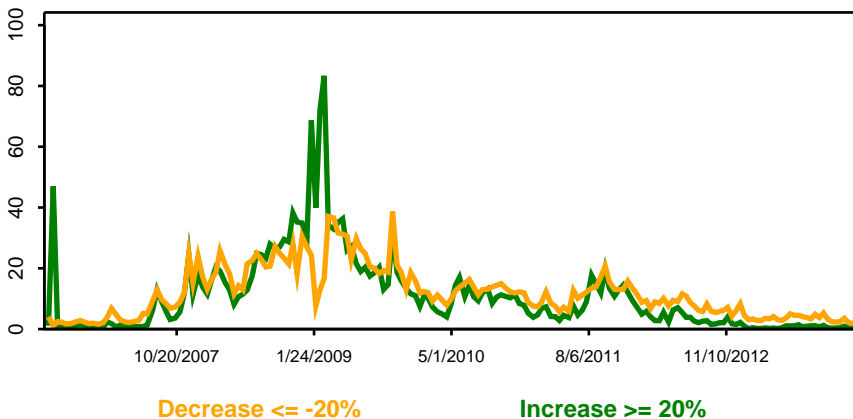
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

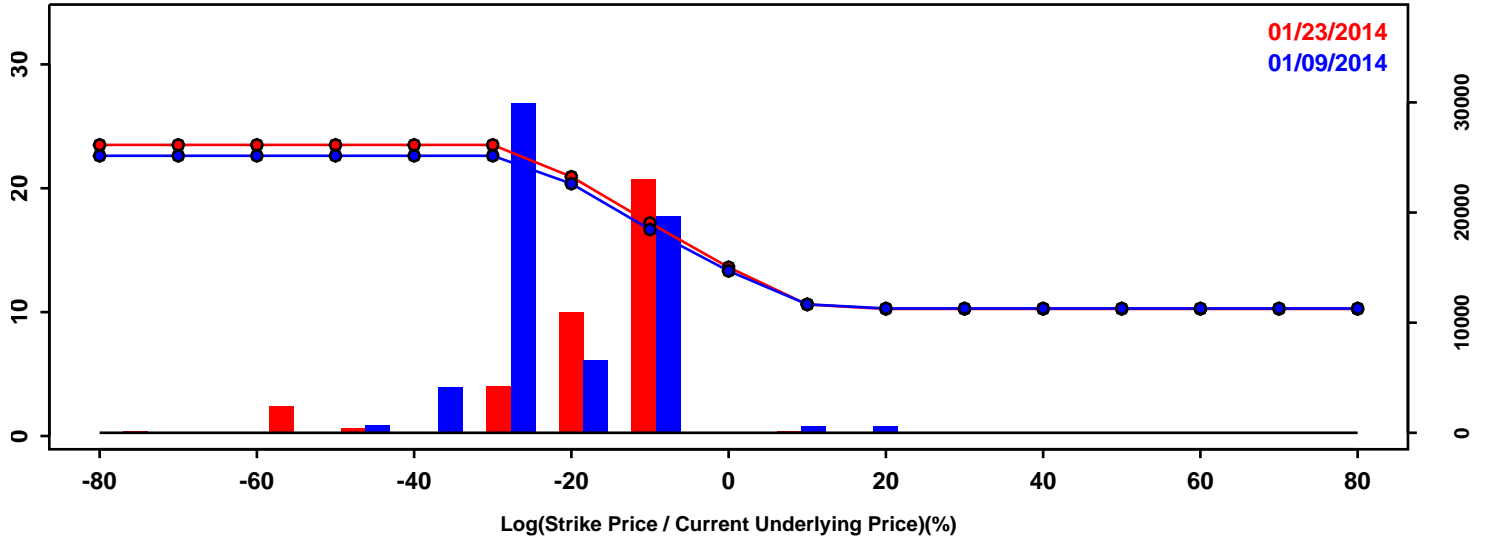


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -11.01% | -11.26% | -0.25% |
| 50th Pct | 0.20% | 0.14% | -0.06% |
| 90th Pct | 9.06% | 9.19% | 0.13% |
| Mean | -0.46% | -0.57% | -0.11% |
| Std Dev | 8.06% | 8.39% | 0.33% |
| Skew | -0.50 | -0.59 | -0.09 |
| Kurtosis | 0.70 | 1.05 | 0.36 |

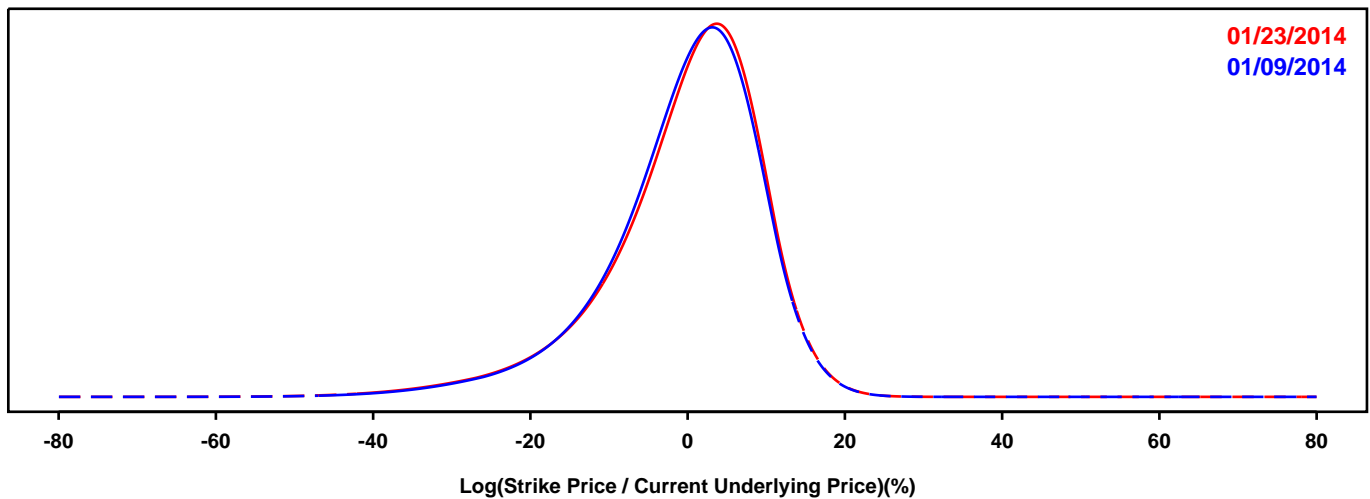
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- S&P 500

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

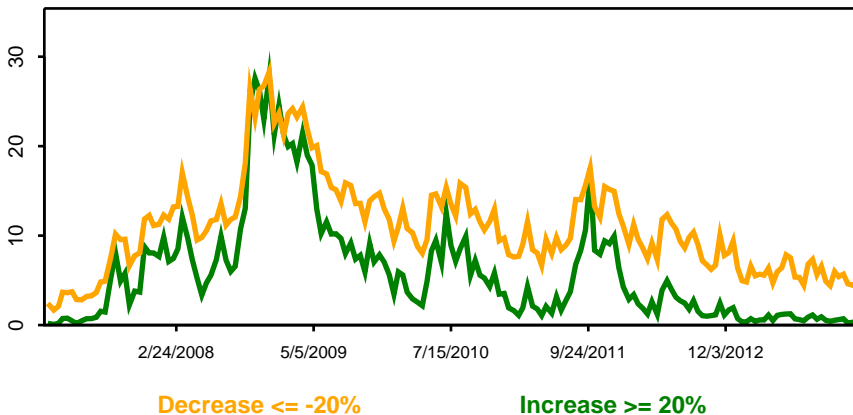
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

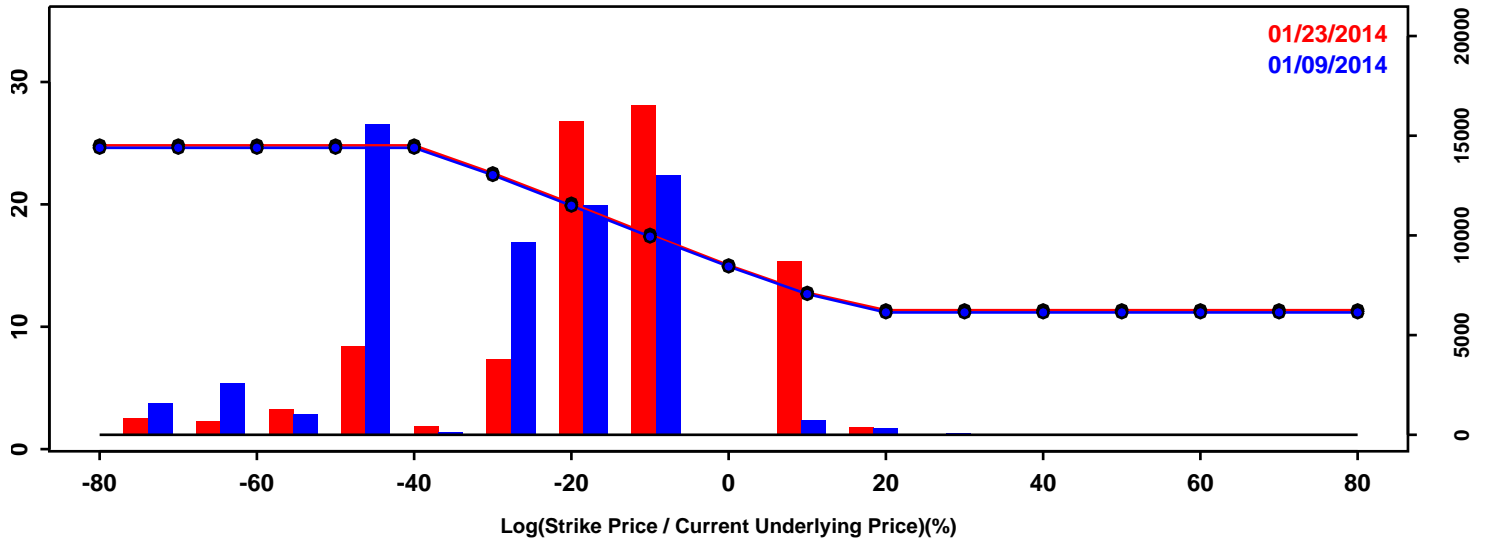


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -13.14% | -13.36% | -0.22% |
| 50th Pct | 0.94% | 1.28% | 0.34% |
| 90th Pct | 10.20% | 10.40% | 0.20% |
| Mean | -0.50% | -0.36% | 0.14% |
| Std Dev | 9.83% | 10.06% | 0.23% |
| Skew | -1.04 | -1.13 | -0.08 |
| Kurtosis | 2.02 | 2.21 | 0.19 |

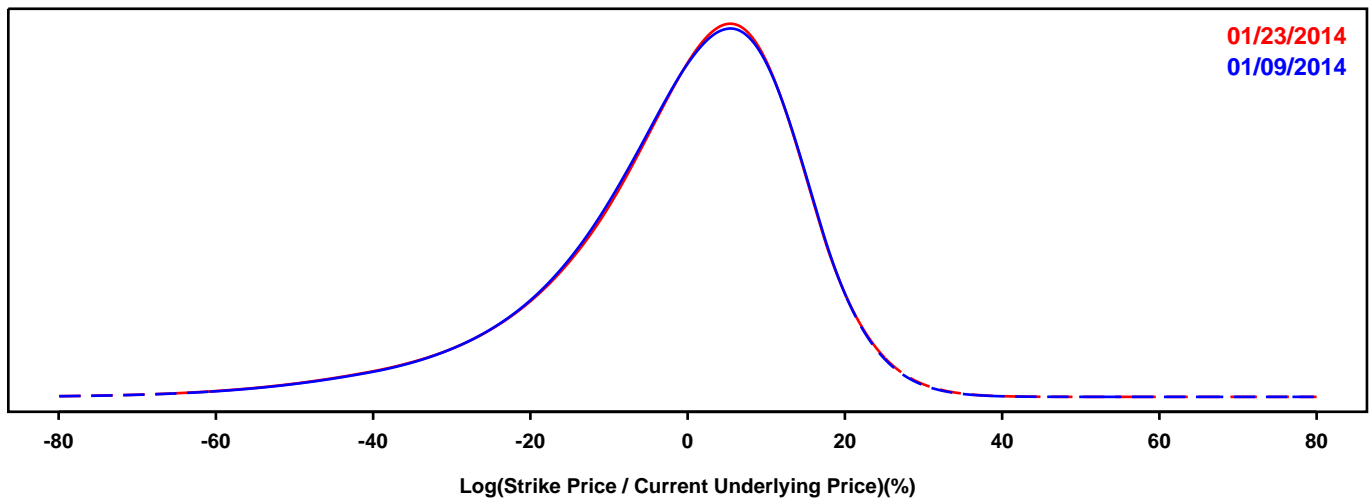
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- S&P 500

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

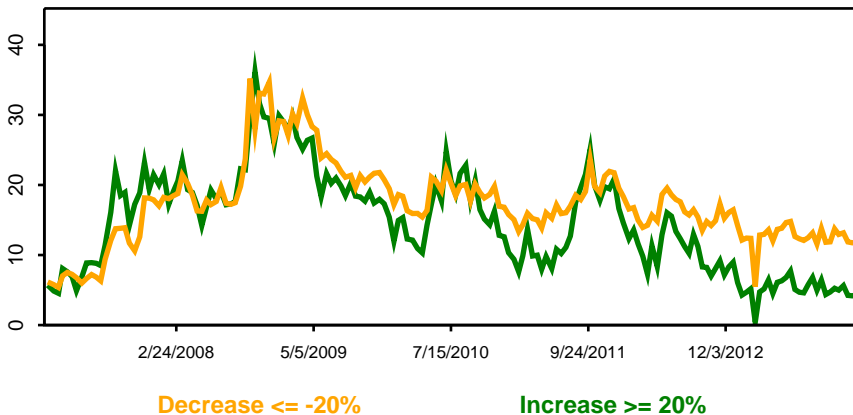
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

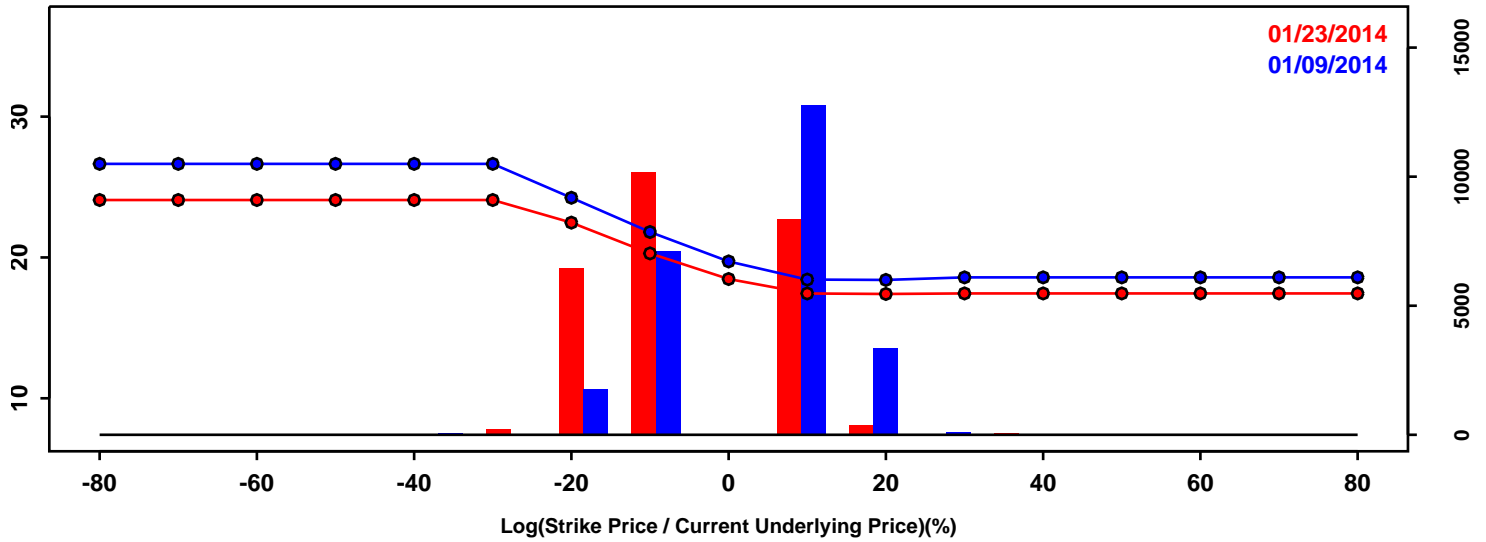


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -22.29% | -22.42% | -0.12% |
| 50th Pct | 1.23% | 1.35% | 0.12% |
| 90th Pct | 15.54% | 15.59% | 0.05% |
| Mean | -1.45% | -1.41% | 0.04% |
| Std Dev | 15.86% | 15.97% | 0.11% |
| Skew | -1.09 | -1.10 | -0.01 |
| Kurtosis | 1.91 | 1.95 | 0.04 |

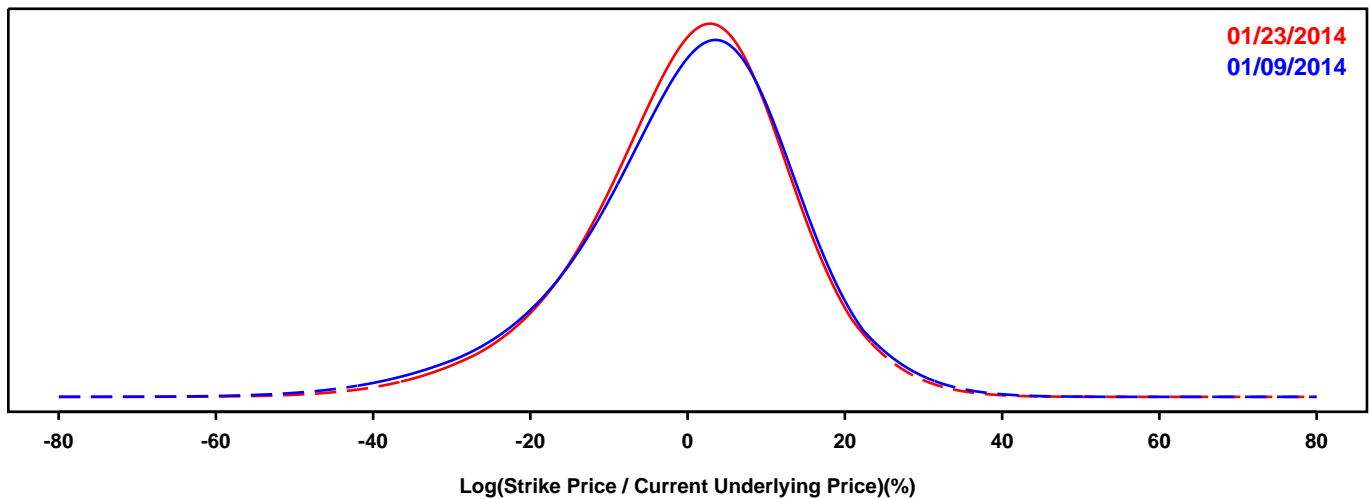
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CRUDE OIL FUTURES (WTI)

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

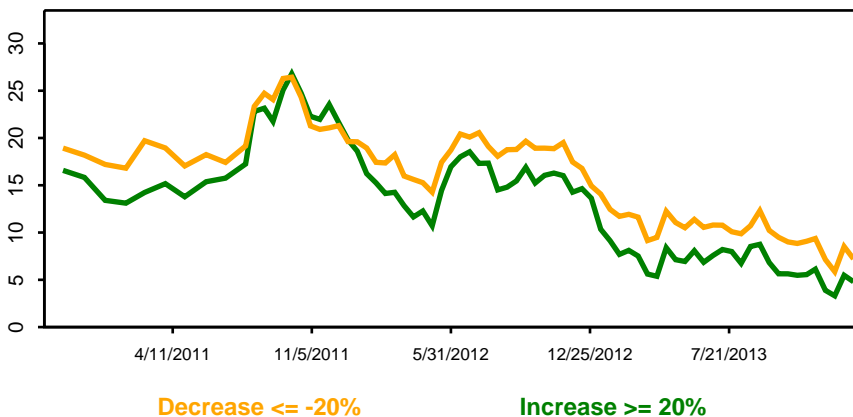
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

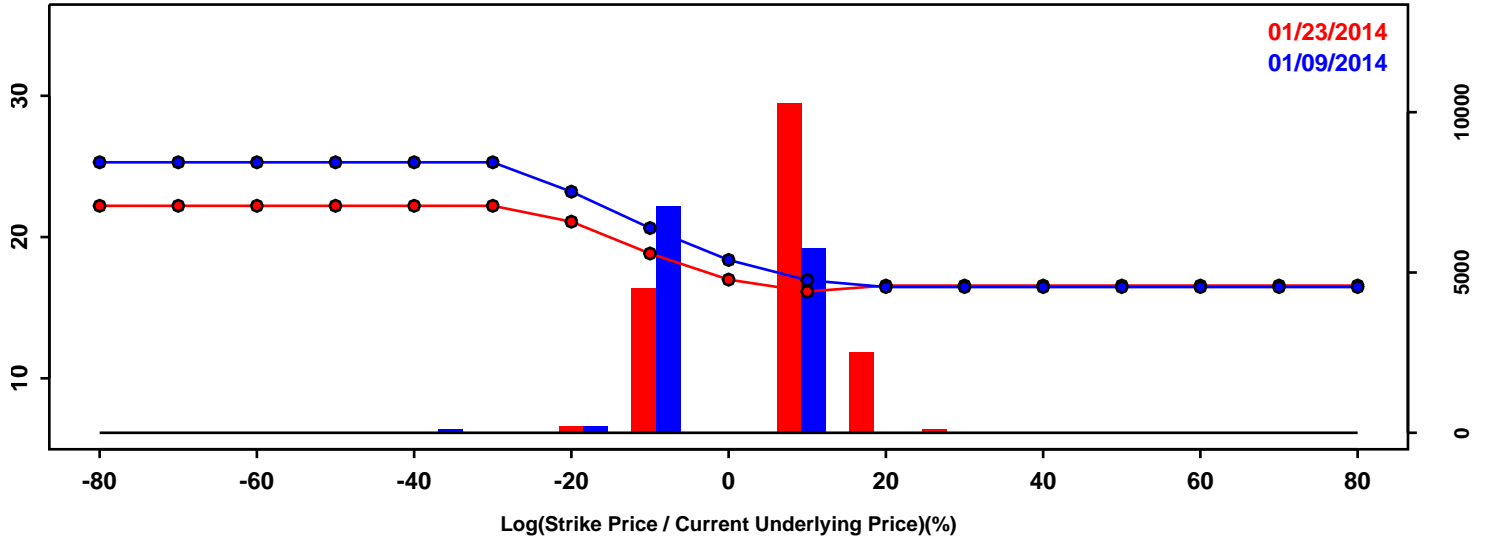


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -18.28% | -16.90% | 1.38% |
| 50th Pct | 1.33% | 1.13% | -0.20% |
| 90th Pct | 16.13% | 15.52% | -0.62% |
| Mean | -0.00% | 0.10% | 0.10% |
| Std Dev | 14.02% | 13.09% | -0.93% |
| Skew | -0.56 | -0.47 | 0.10 |
| Kurtosis | 0.90 | 0.72 | -0.18 |

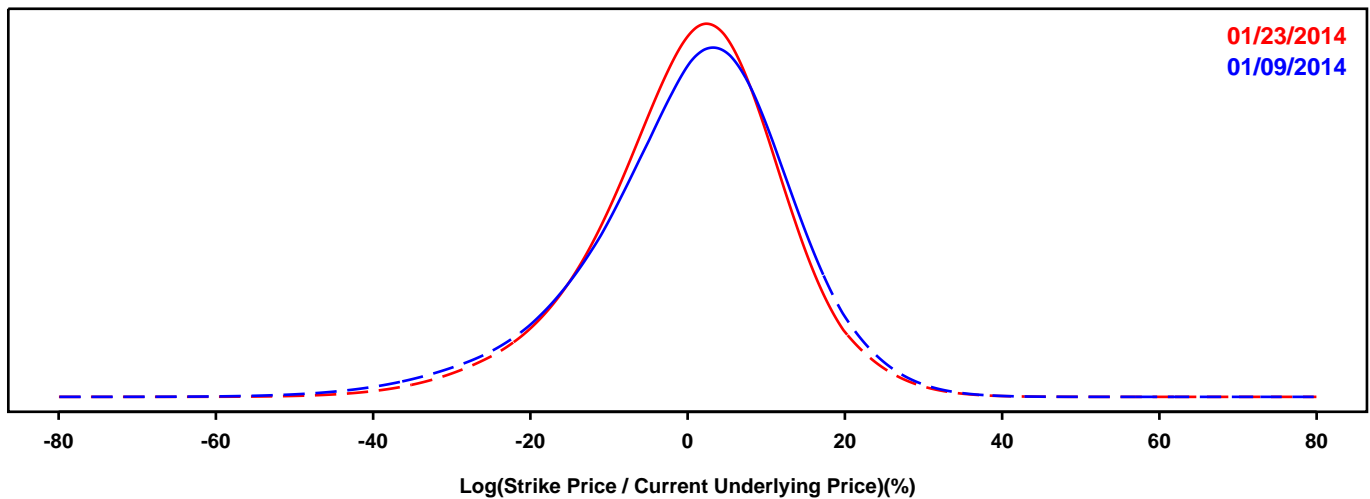
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CRUDE OIL FUTURES (Brent)

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

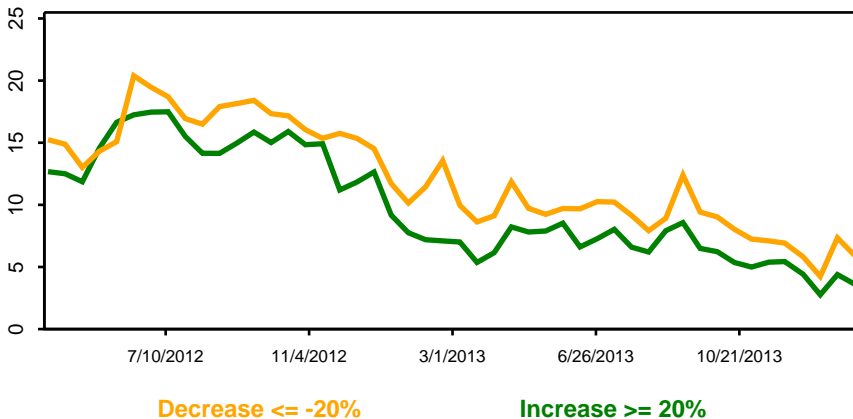
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

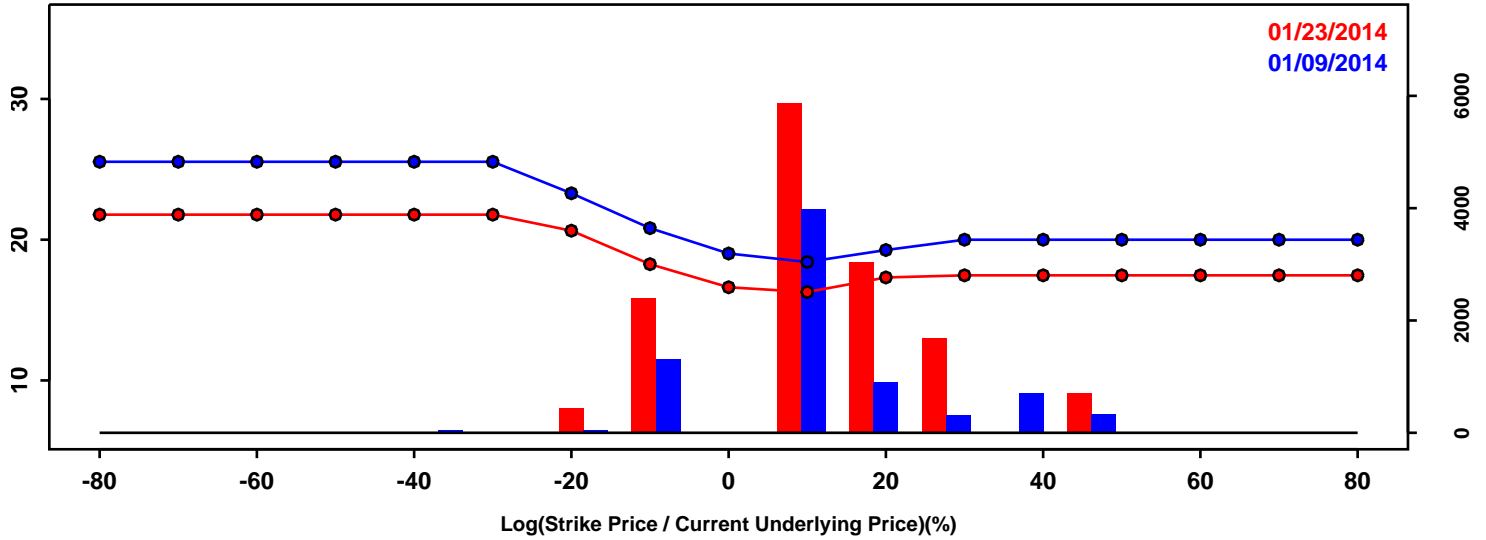


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -16.87% | -15.43% | 1.44% |
| 50th Pct | 1.40% | 1.03% | -0.37% |
| 90th Pct | 15.28% | 14.19% | -1.09% |
| Mean | 0.14% | 0.11% | -0.03% |
| Std Dev | 13.09% | 12.02% | -1.07% |
| Skew | -0.61 | -0.46 | 0.16 |
| Kurtosis | 0.95 | 0.78 | -0.17 |

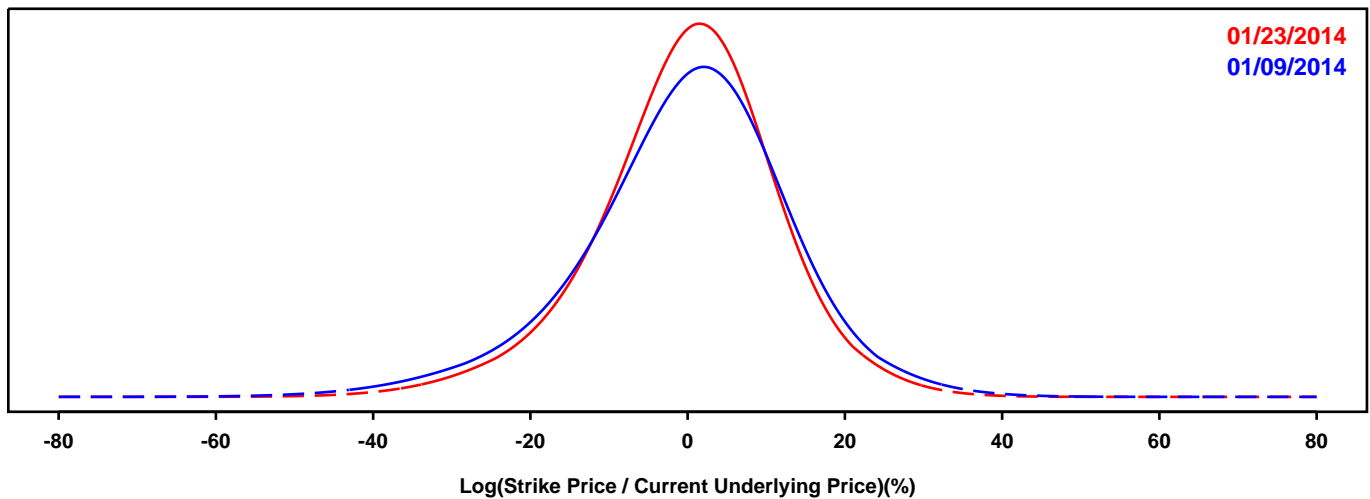
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- GOLD FUTURES

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

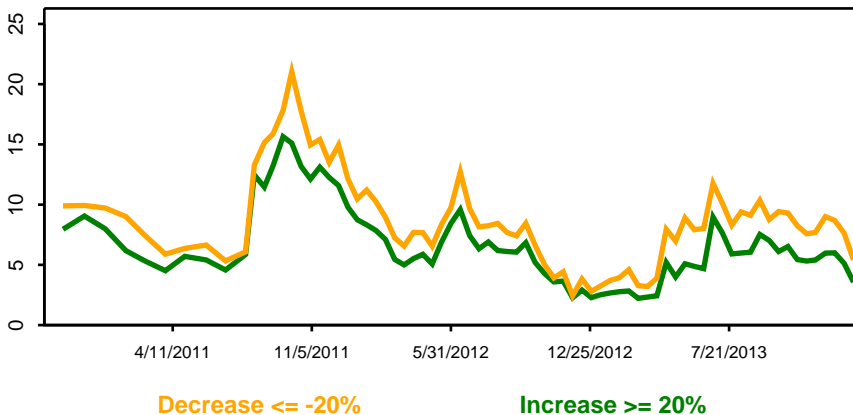
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

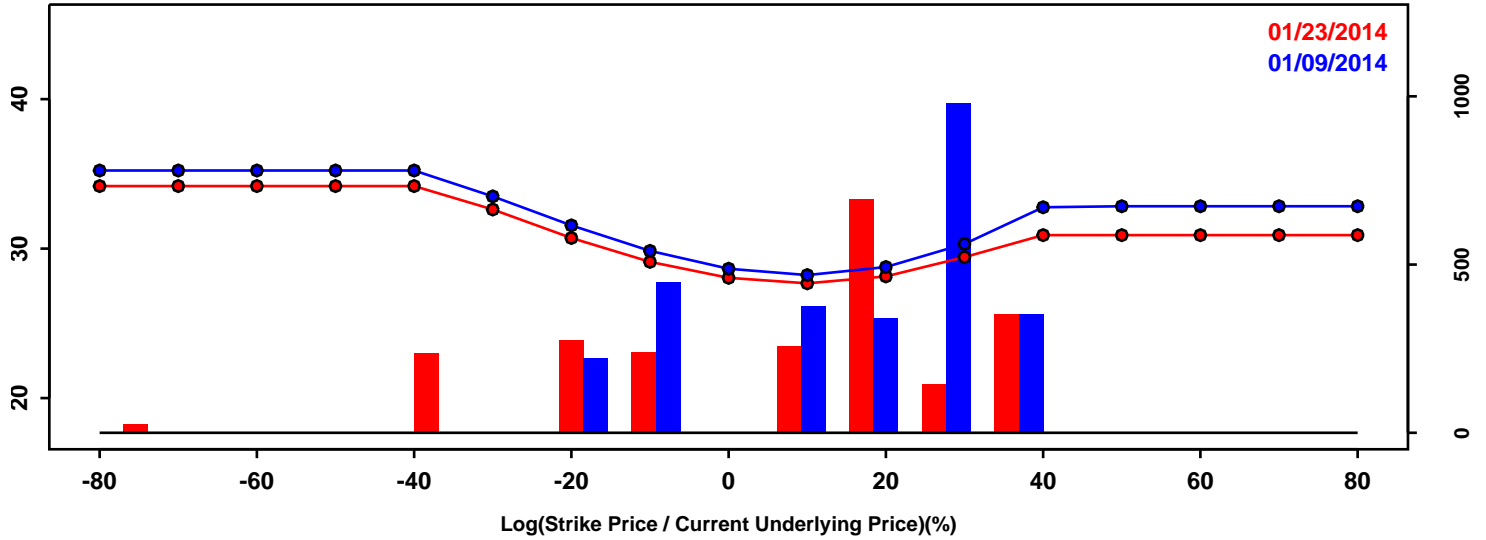


| | 01/09/2014 | 01/23/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -17.35% | -14.96% | 2.39% |
| 50th Pct | 0.71% | 0.59% | -0.12% |
| 90th Pct | 15.51% | 13.84% | -1.67% |
| Mean | -0.20% | -0.06% | 0.14% |
| Std Dev | 13.48% | 11.75% | -1.73% |
| Skew | -0.43 | -0.35 | 0.08 |
| Kurtosis | 0.95 | 0.84 | -0.11 |

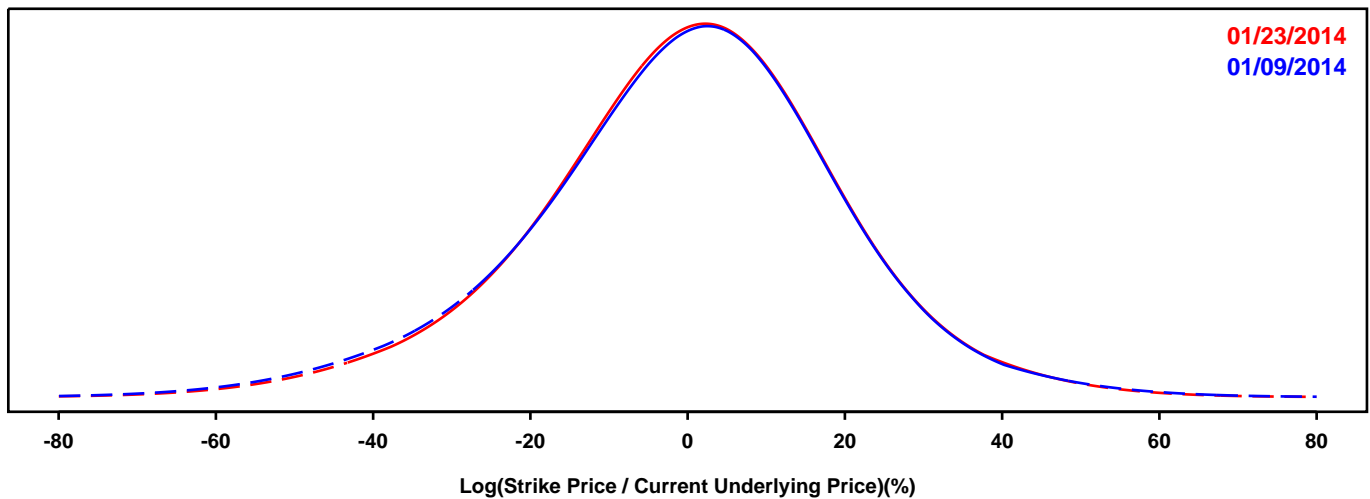
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SILVER FUTURES

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

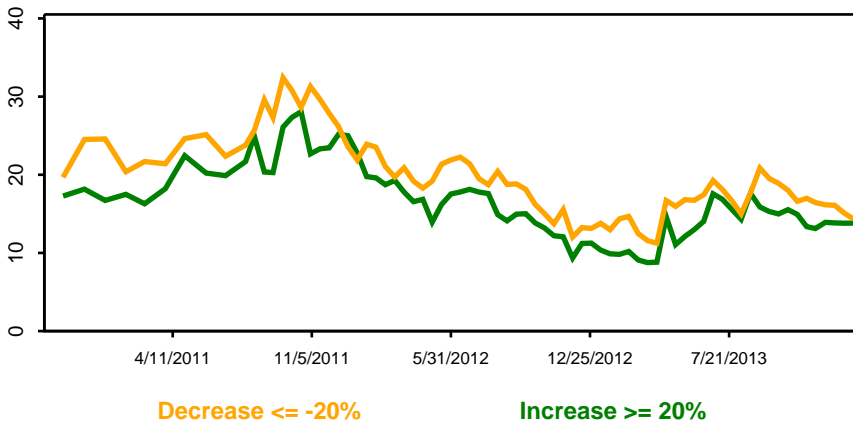
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

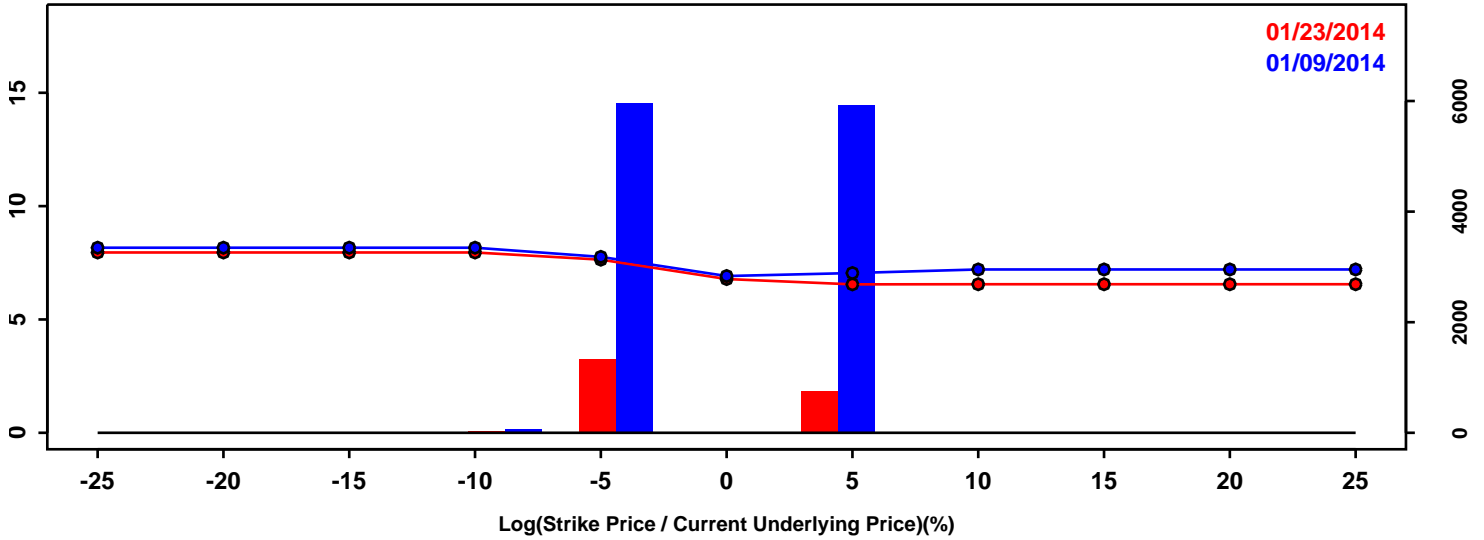


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -26.03% | -24.92% | 1.11% |
| 50th Pct | 0.70% | 0.82% | 0.11% |
| 90th Pct | 23.63% | 23.63% | 0.01% |
| Mean | -0.27% | 0.05% | 0.32% |
| Std Dev | 20.23% | 19.73% | -0.50% |
| Skew | -0.25 | -0.22 | 0.03 |
| Kurtosis | 0.75 | 0.67 | -0.08 |

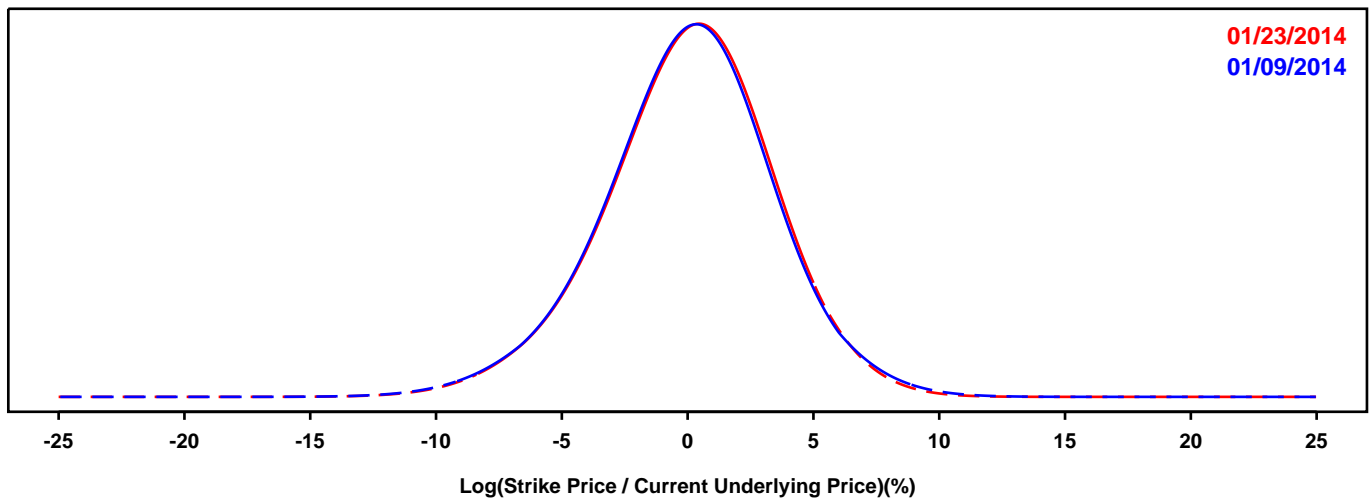
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-EURO EXCHANGE RATE FUTURES

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

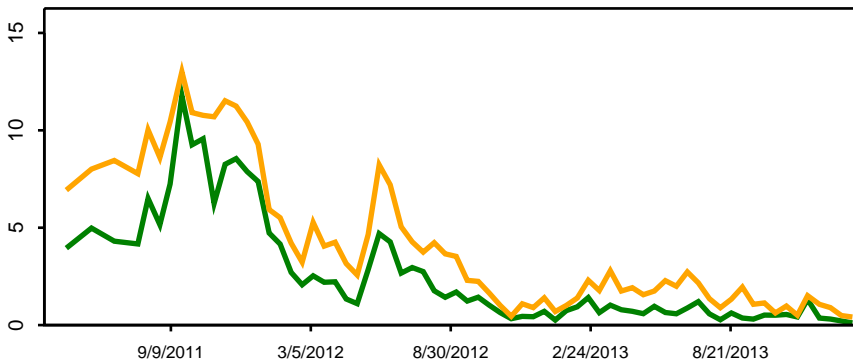
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



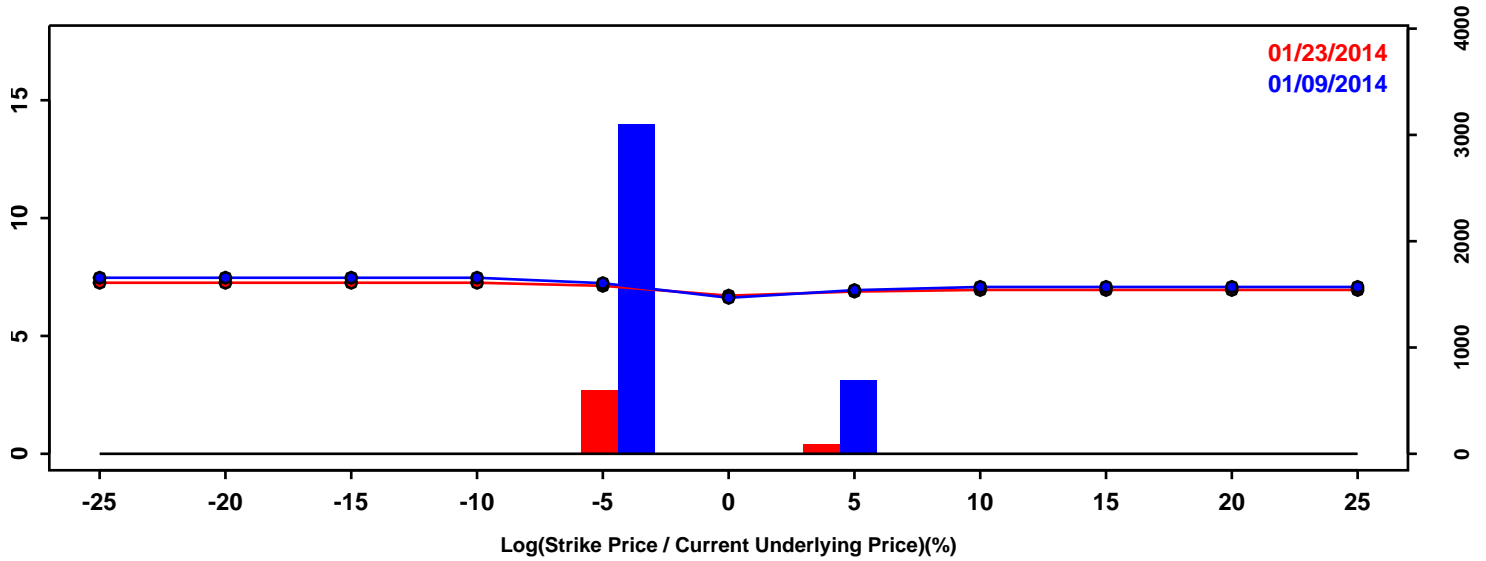
Decrease <= -10% [stronger \$] Increase >= 10% [weaker \$]

| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -4.37% | -4.35% | 0.01% |
| 50th Pct | 0.11% | 0.19% | 0.08% |
| 90th Pct | 4.22% | 4.23% | 0.01% |
| Mean | 0.04% | 0.08% | 0.04% |
| Std Dev | 3.45% | 3.39% | -0.06% |
| Skew | -0.19 | -0.25 | -0.06 |
| Kurtosis | 0.46 | 0.35 | -0.12 |

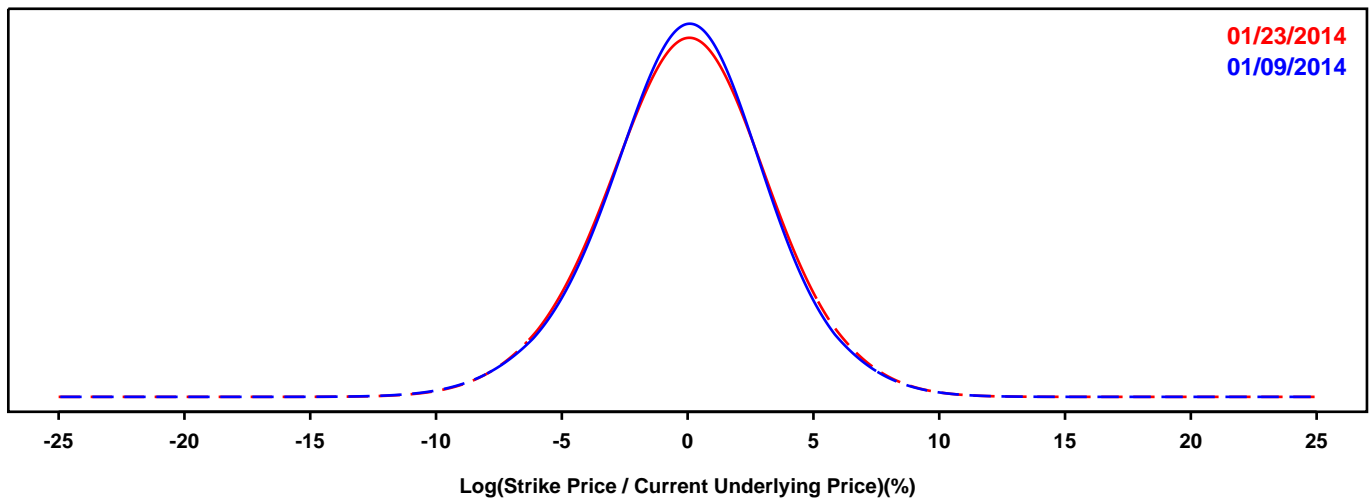
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-POUND EXCHANGE RATE FUTURES

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

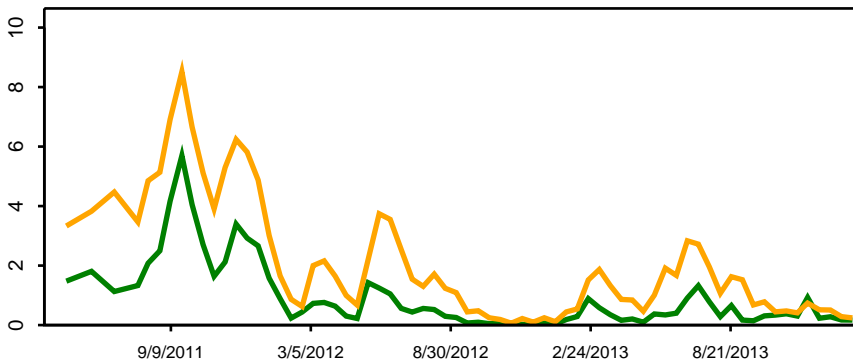
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



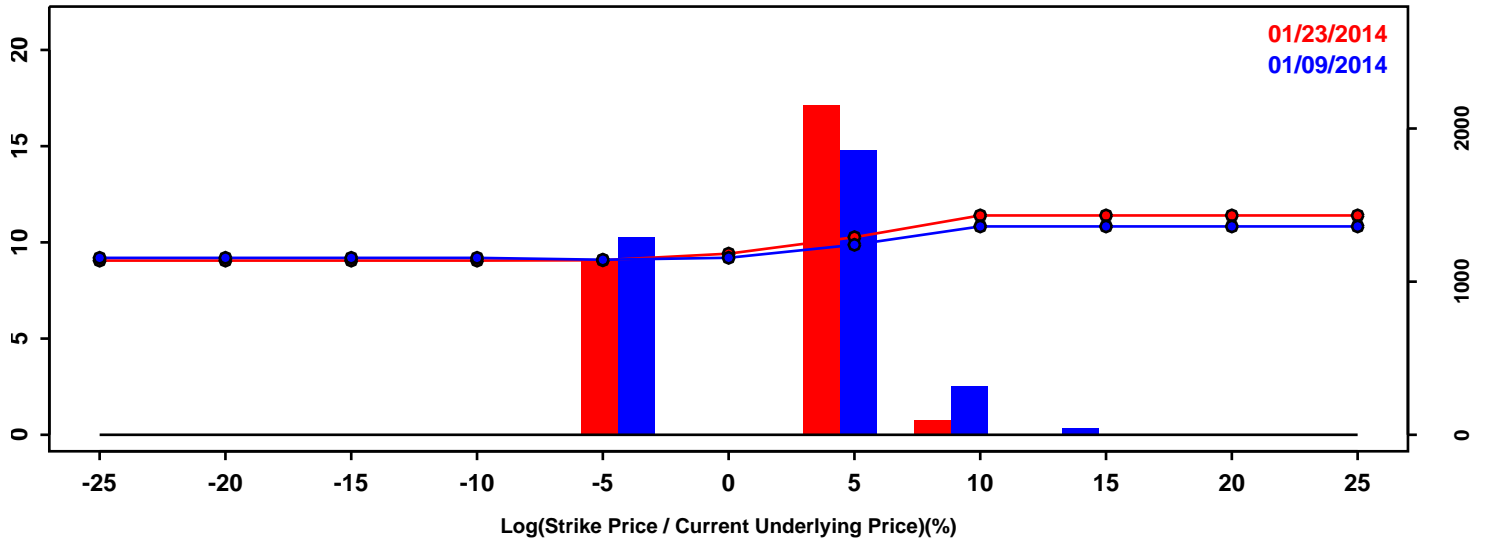
Decrease <= -10% [stronger \$] Increase >= 10% [weaker \$]

| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -4.19% | -4.28% | -0.09% |
| 50th Pct | 0.00% | 0.00% | 0.00% |
| 90th Pct | 4.06% | 4.16% | 0.10% |
| Mean | -0.01% | 0.01% | 0.03% |
| Std Dev | 3.30% | 3.35% | 0.05% |
| Skew | -0.08 | -0.06 | 0.02 |
| Kurtosis | 0.39 | 0.23 | -0.16 |

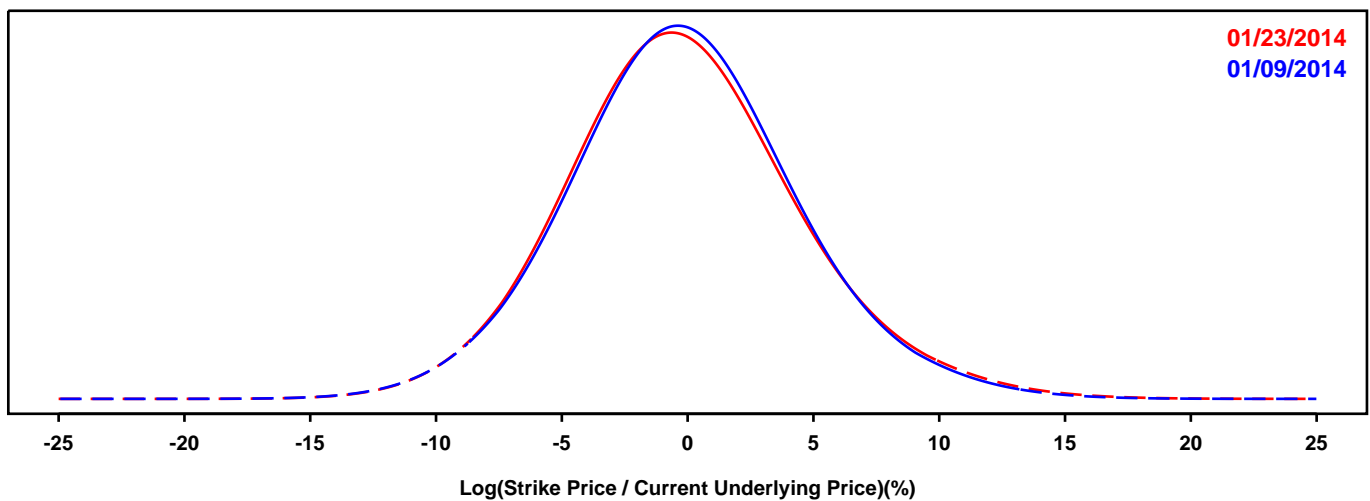
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-YEN EXCHANGE RATE FUTURES

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

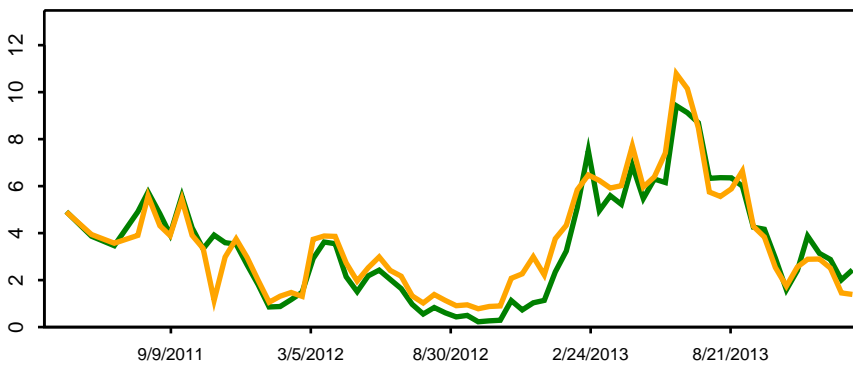
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



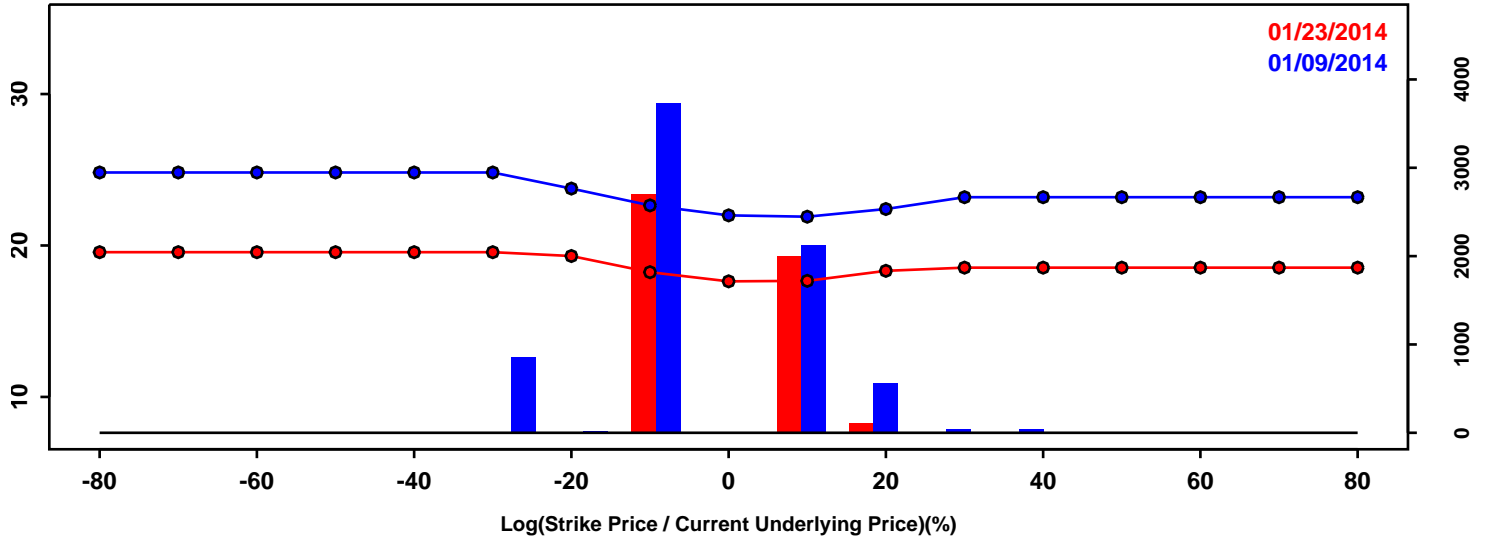
Decrease <= -10% [stronger \$] Increase >= 10% [weaker \$]

| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -5.82% | -5.88% | -0.06% |
| 50th Pct | -0.22% | -0.32% | -0.10% |
| 90th Pct | 5.72% | 5.89% | 0.17% |
| Mean | -0.08% | -0.08% | 0.00% |
| Std Dev | 4.59% | 4.70% | 0.11% |
| Skew | 0.17 | 0.27 | 0.10 |
| Kurtosis | 0.37 | 0.41 | 0.05 |

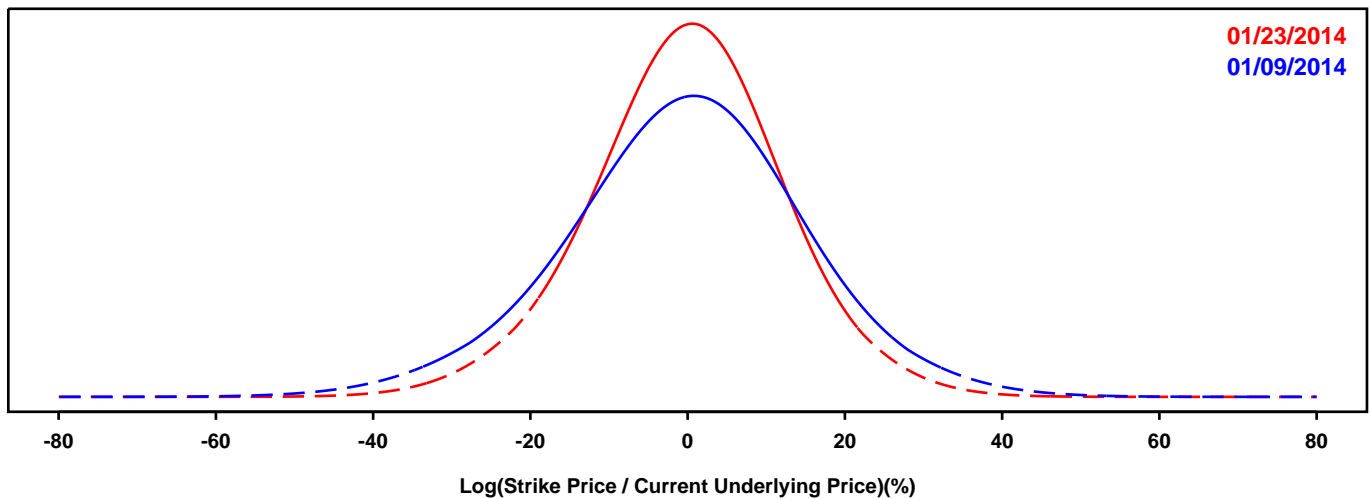
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CORN FUTURES

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

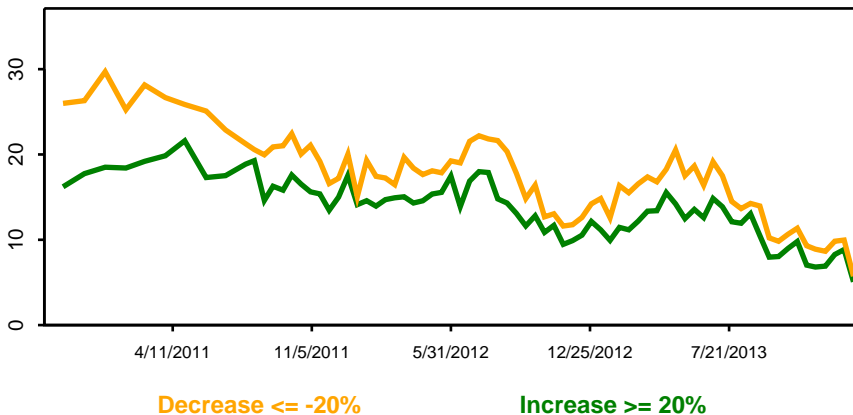
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

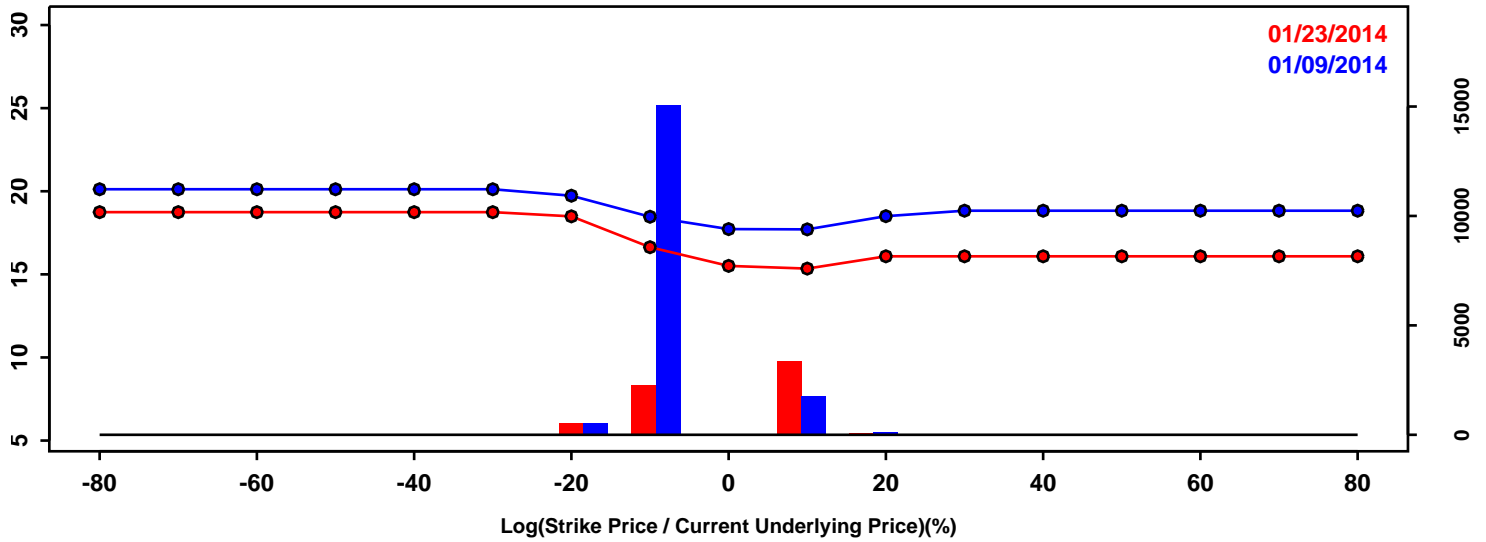


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -19.93% | -15.82% | 4.11% |
| 50th Pct | 0.12% | 0.19% | 0.07% |
| 90th Pct | 18.96% | 15.45% | -3.51% |
| Mean | -0.20% | -0.00% | 0.20% |
| Std Dev | 15.52% | 12.43% | -3.08% |
| Skew | -0.12 | -0.09 | 0.03 |
| Kurtosis | 0.37 | 0.32 | -0.05 |

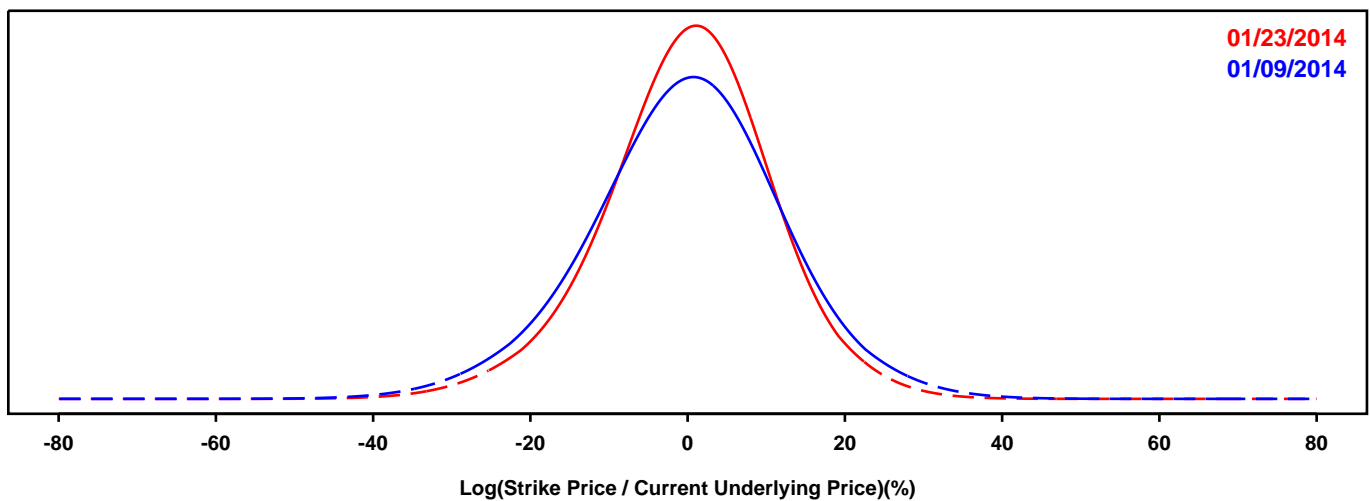
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SOYBEAN FUTURES

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

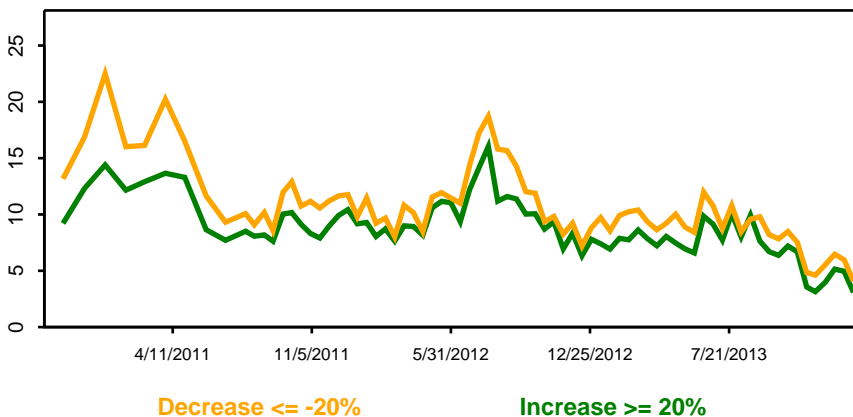
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

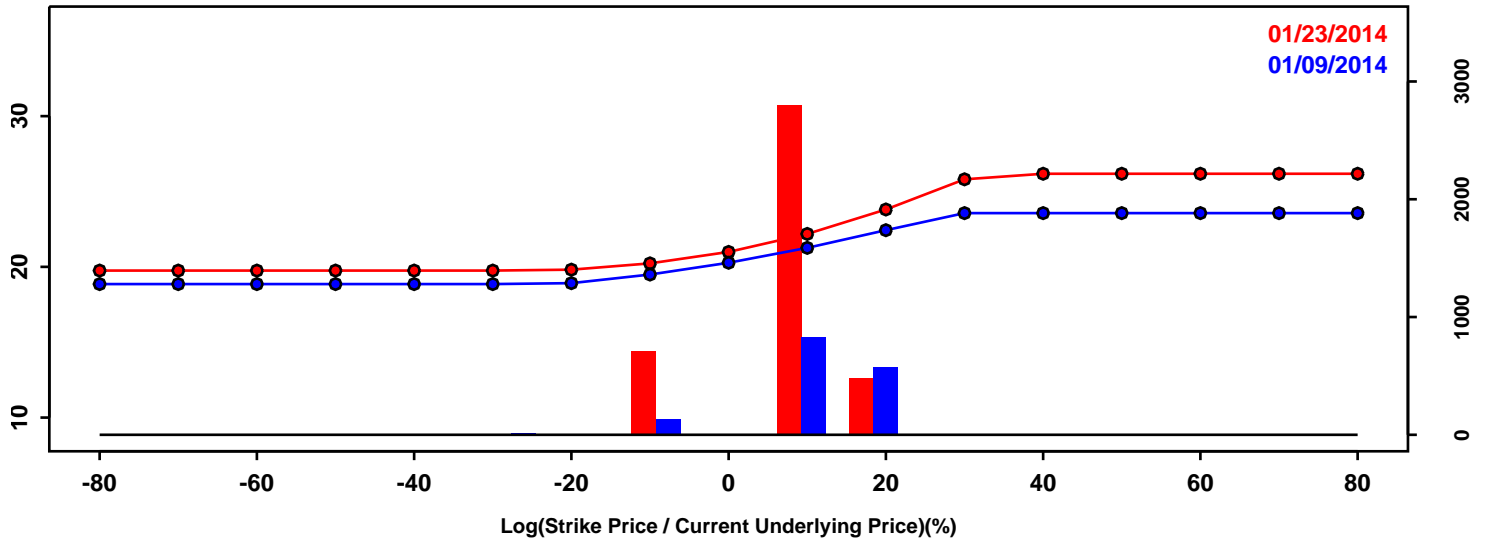


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -16.05% | -13.80% | 2.25% |
| 50th Pct | 0.18% | 0.44% | 0.26% |
| 90th Pct | 15.28% | 13.42% | -1.86% |
| Mean | -0.11% | 0.11% | 0.21% |
| Std Dev | 12.50% | 10.93% | -1.57% |
| Skew | -0.12 | -0.21 | -0.09 |
| Kurtosis | 0.39 | 0.52 | 0.13 |

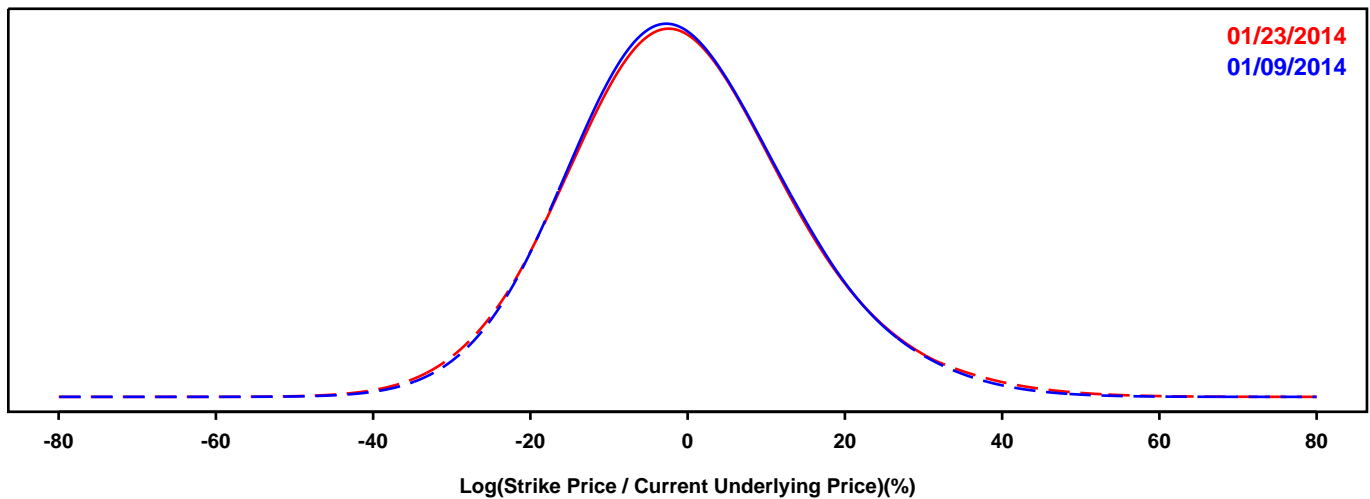
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- WHEAT FUTURES

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

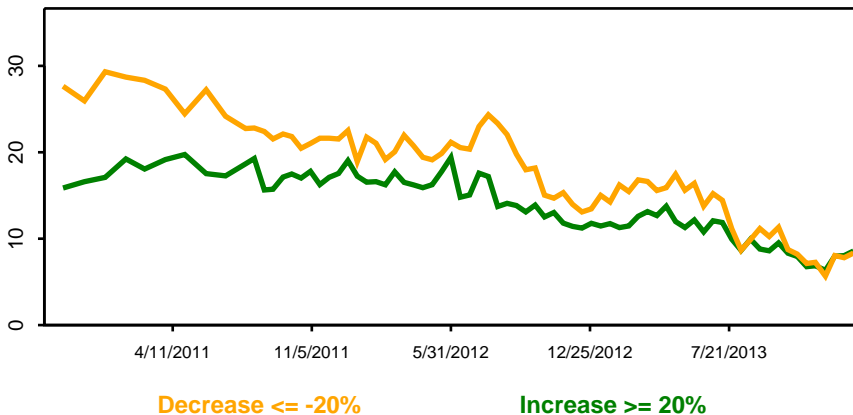
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

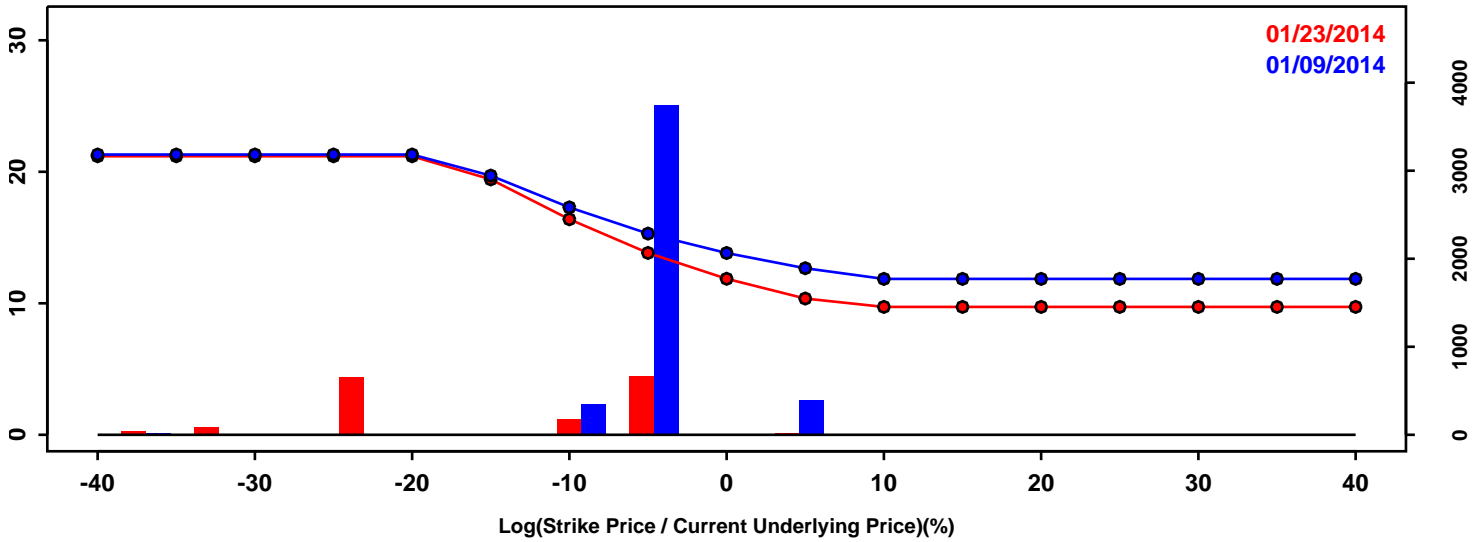


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -18.24% | -18.65% | -0.41% |
| 50th Pct | -1.29% | -1.26% | 0.03% |
| 90th Pct | 18.00% | 18.50% | 0.50% |
| Mean | -0.57% | -0.49% | 0.09% |
| Std Dev | 14.31% | 14.83% | 0.51% |
| Skew | 0.27 | 0.31 | 0.04 |
| Kurtosis | 0.25 | 0.45 | 0.20 |

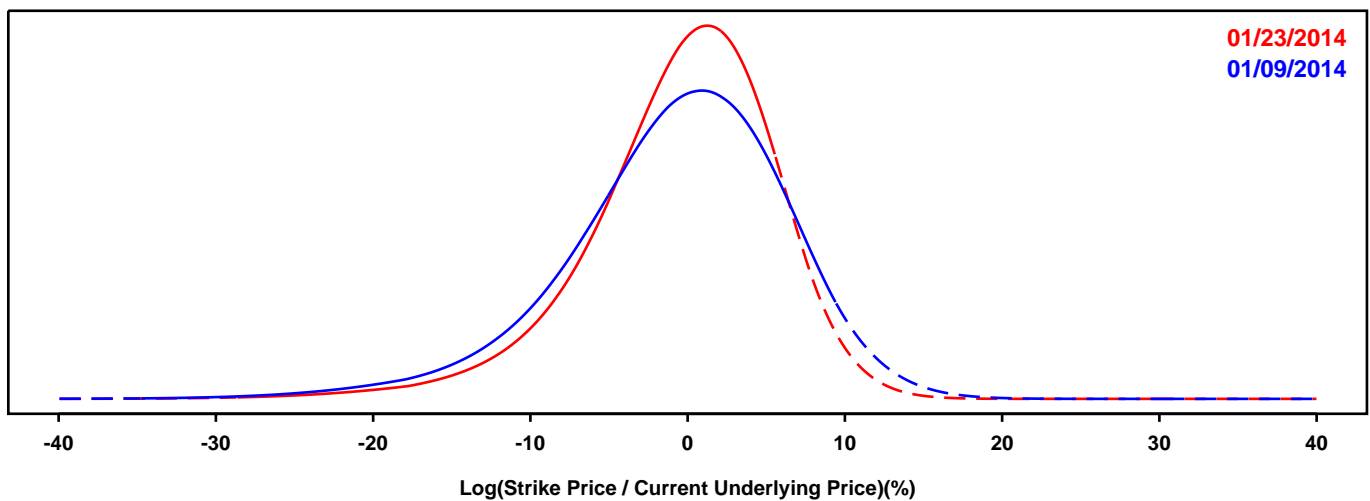
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- iSHARES DOW JONES US REAL ESTATE

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

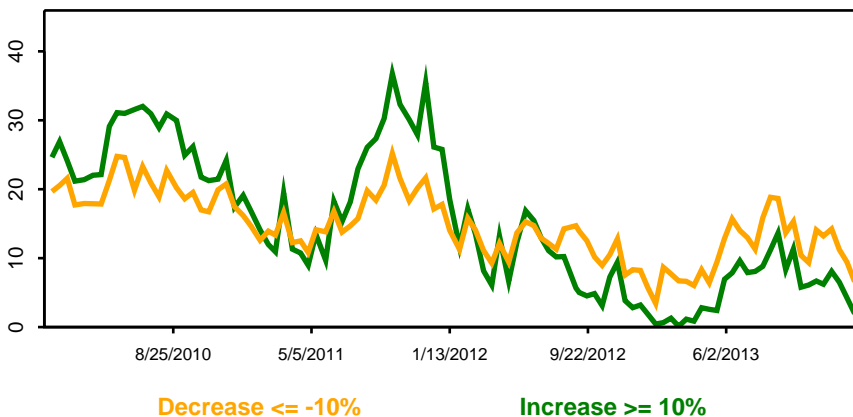
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

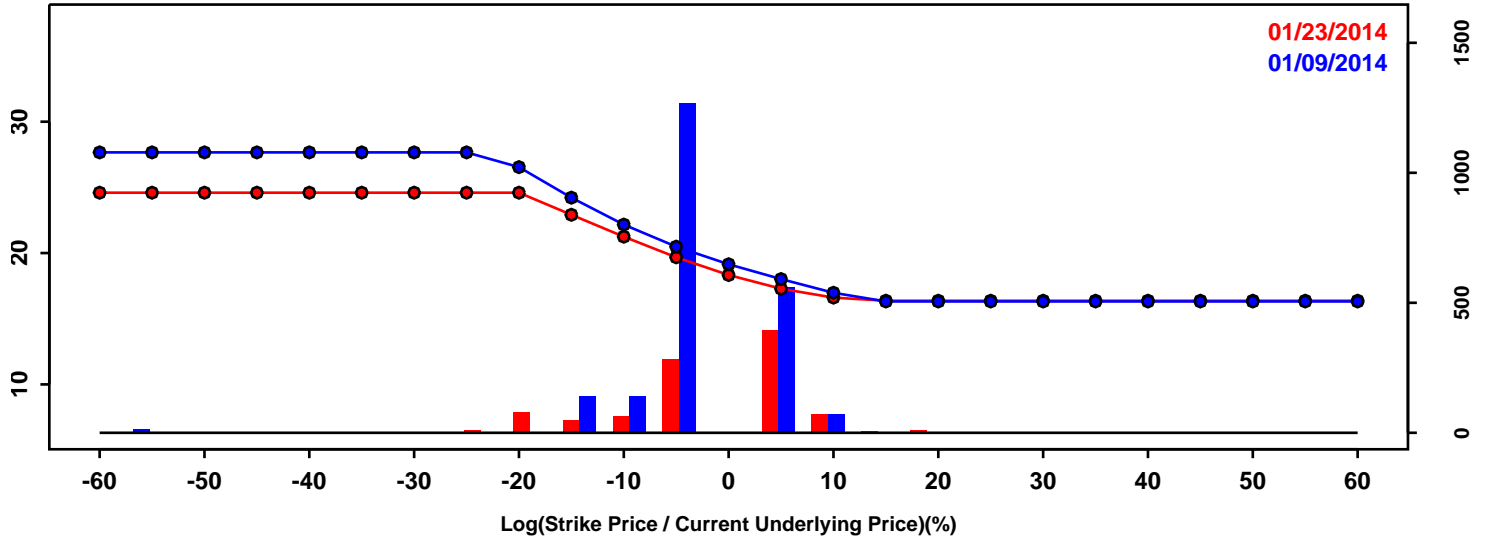


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -9.70% | -8.10% | 1.59% |
| 50th Pct | -0.05% | 0.22% | 0.27% |
| 90th Pct | 7.59% | 6.46% | -1.12% |
| Mean | -0.69% | -0.42% | 0.27% |
| Std Dev | 7.09% | 6.08% | -1.01% |
| Skew | -0.67 | -0.88 | -0.21 |
| Kurtosis | 1.16 | 1.89 | 0.73 |

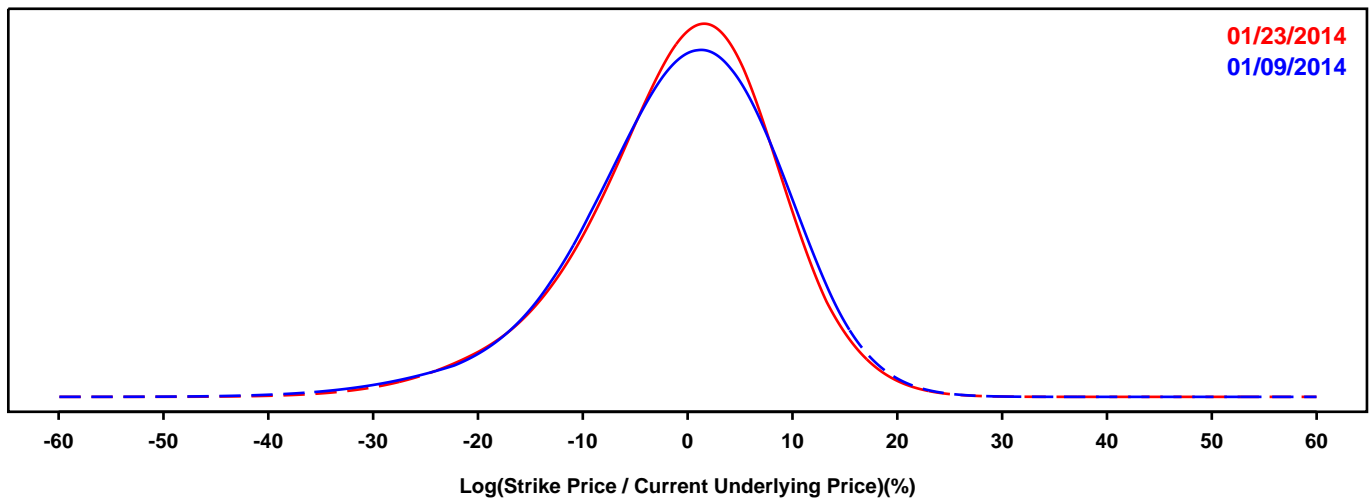
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AFLAC

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

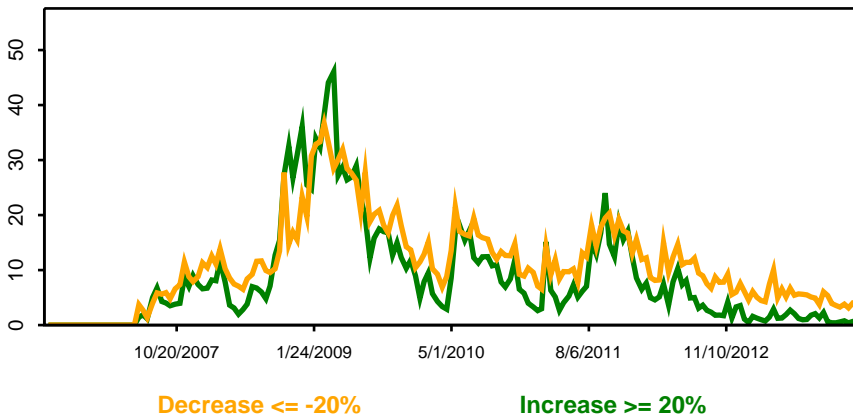
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

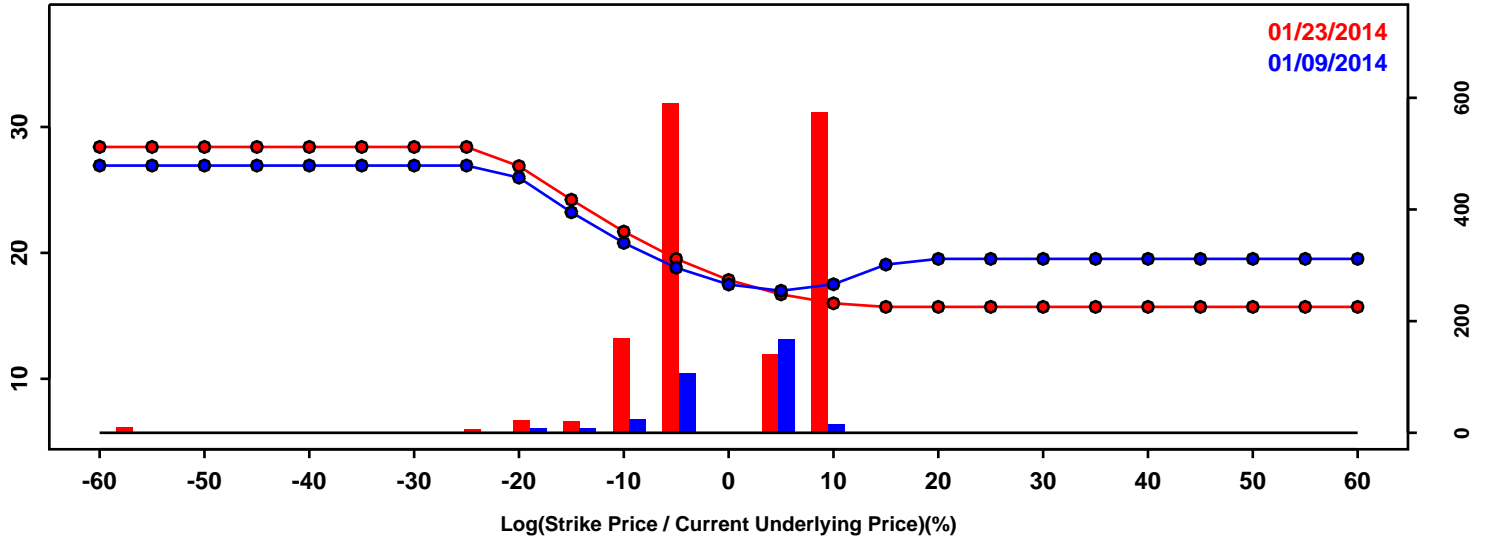


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -13.39% | -13.08% | 0.31% |
| 50th Pct | -0.04% | 0.08% | 0.12% |
| 90th Pct | 10.69% | 10.13% | -0.56% |
| Mean | -0.85% | -0.81% | 0.04% |
| Std Dev | 9.80% | 9.38% | -0.43% |
| Skew | -0.62 | -0.57 | 0.05 |
| Kurtosis | 0.94 | 0.75 | -0.19 |

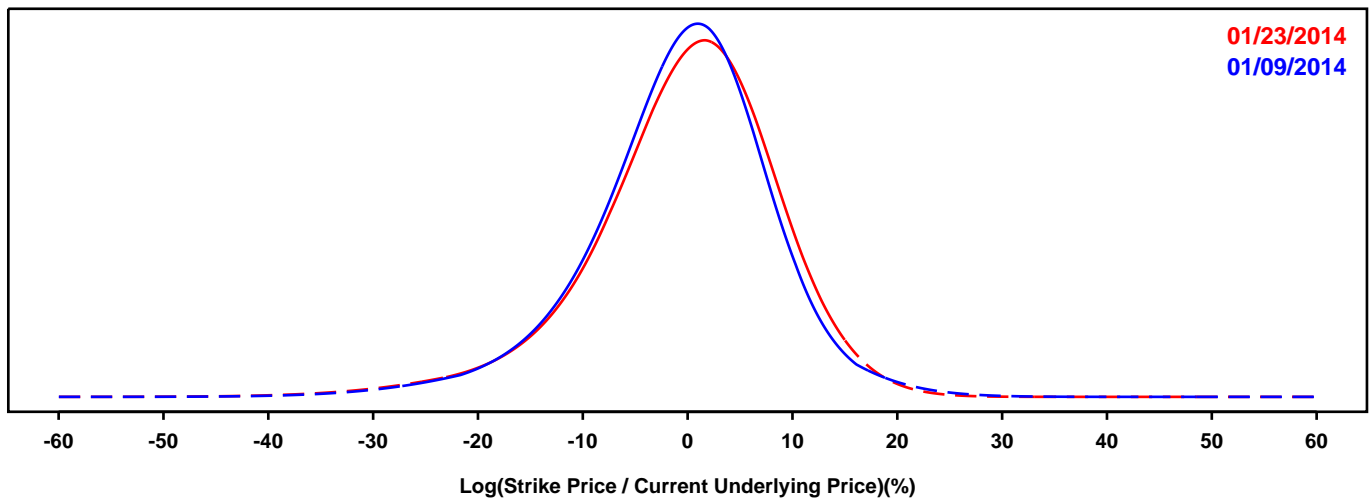
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- ALLSTATE

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

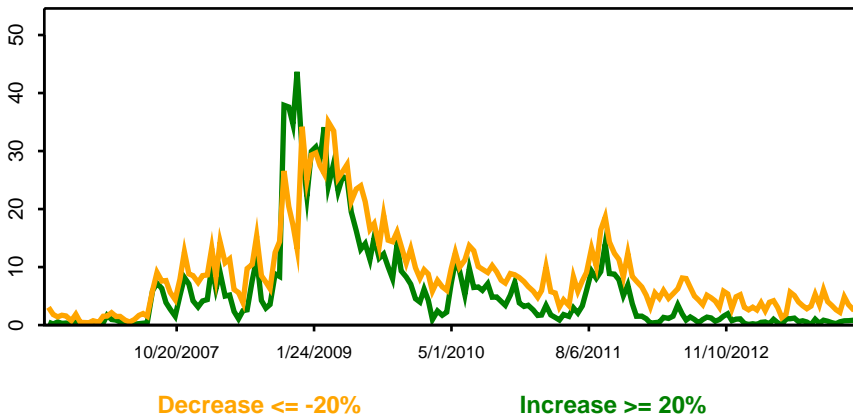
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

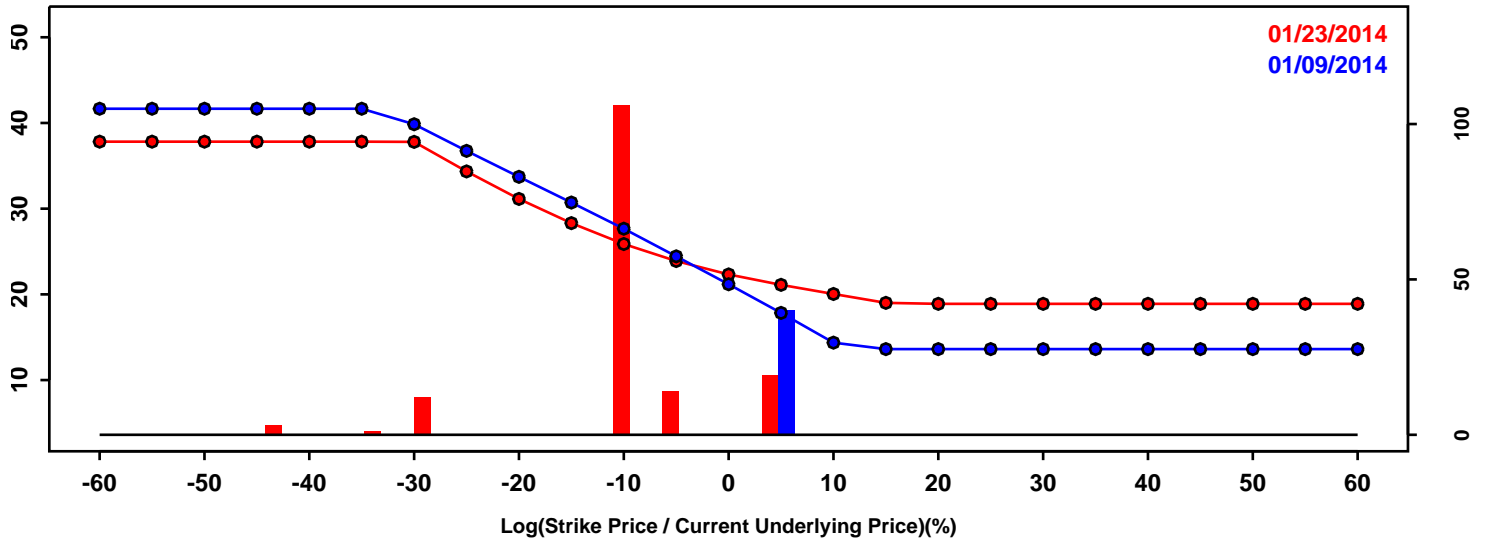


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -11.59% | -11.62% | -0.03% |
| 50th Pct | 0.00% | 0.50% | 0.50% |
| 90th Pct | 9.37% | 10.10% | 0.73% |
| Mean | -0.65% | -0.30% | 0.35% |
| Std Dev | 8.81% | 9.05% | 0.24% |
| Skew | -0.55 | -0.74 | -0.19 |
| Kurtosis | 1.50 | 1.55 | 0.05 |

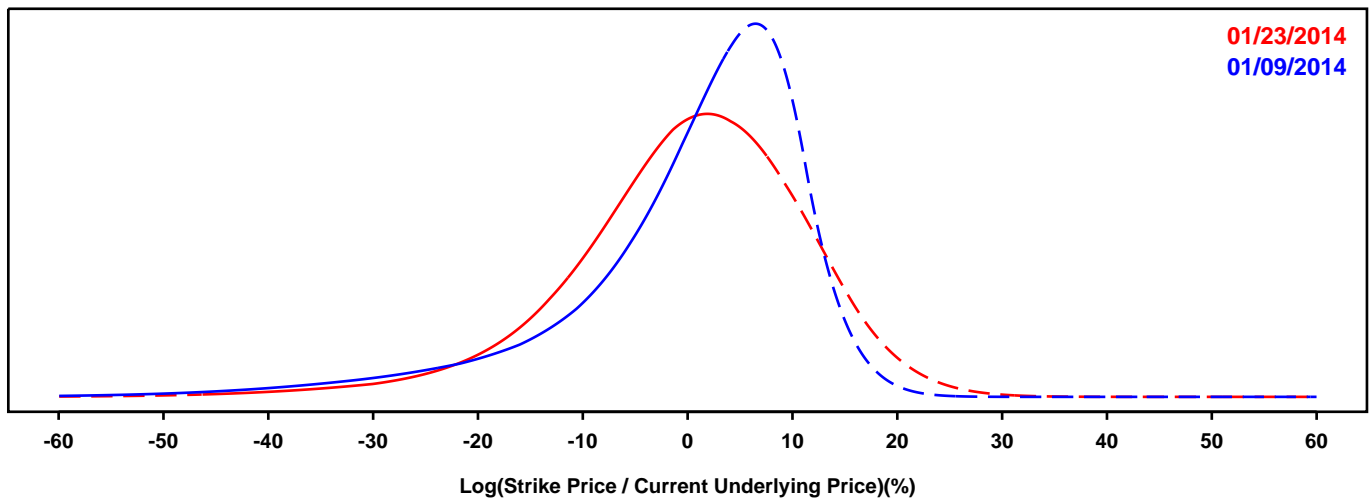
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AMERIPRISE

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

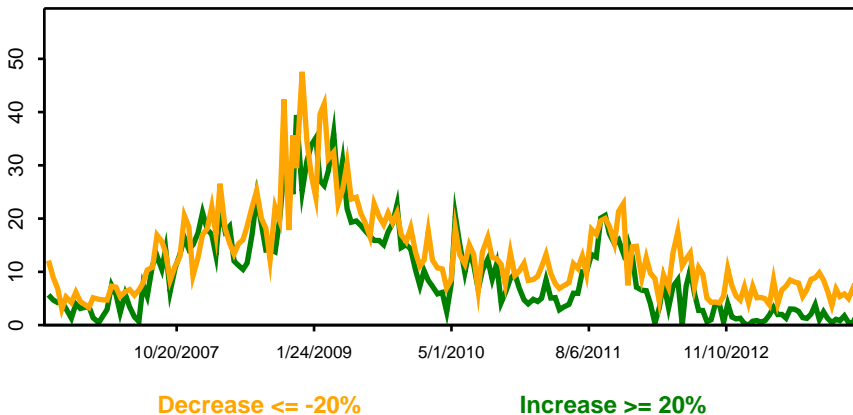
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

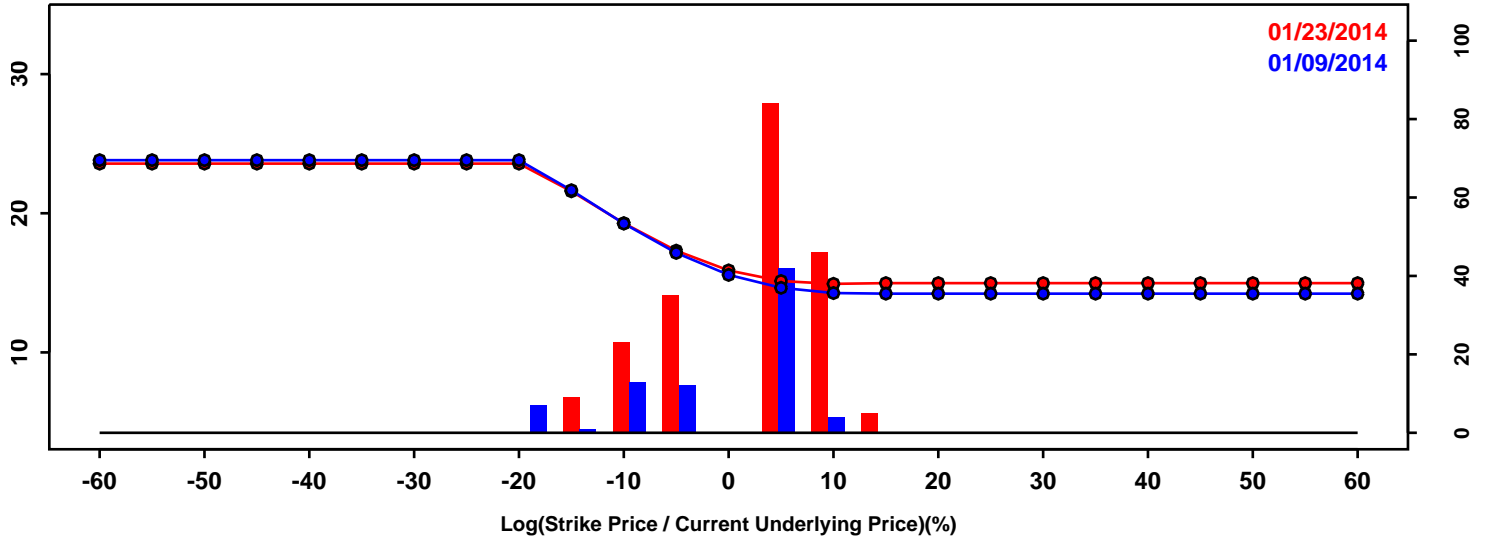


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -15.03% | -14.27% | 0.75% |
| 50th Pct | 2.80% | 0.94% | -1.86% |
| 90th Pct | 11.33% | 13.15% | 1.82% |
| Mean | 0.08% | -0.06% | -0.14% |
| Std Dev | 11.73% | 11.42% | -0.31% |
| Skew | -1.59 | -0.77 | 0.82 |
| Kurtosis | 3.60 | 1.63 | -1.97 |

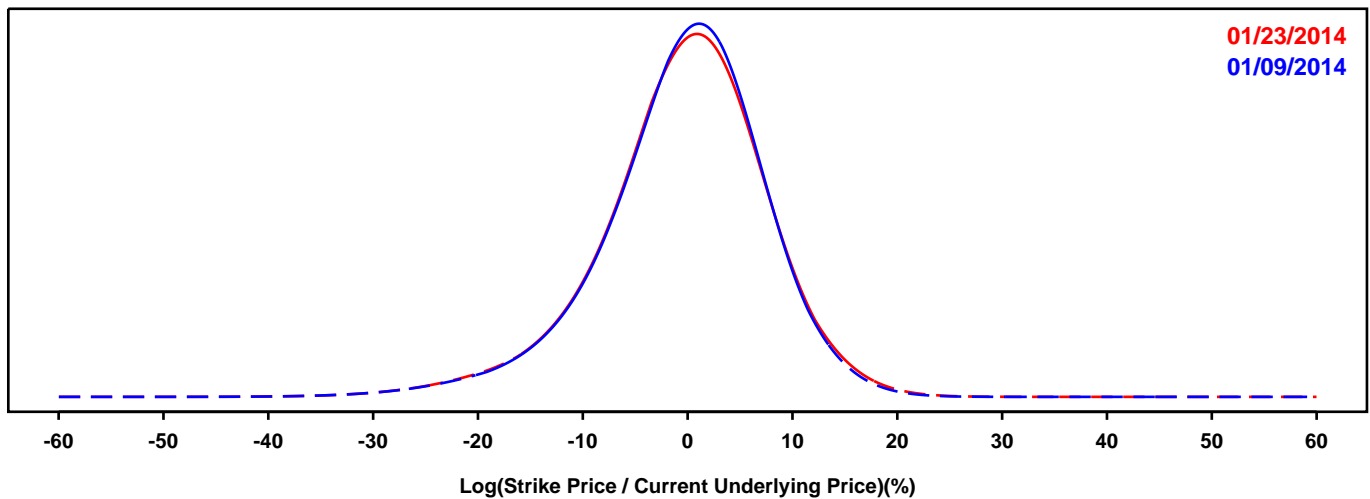
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CHUBB

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

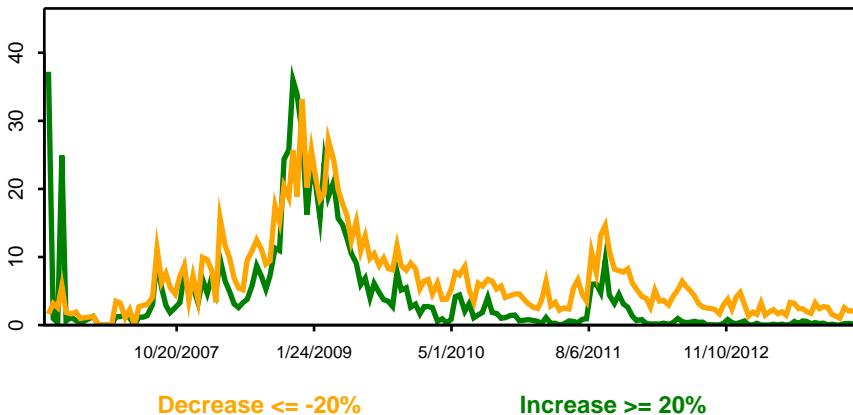
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

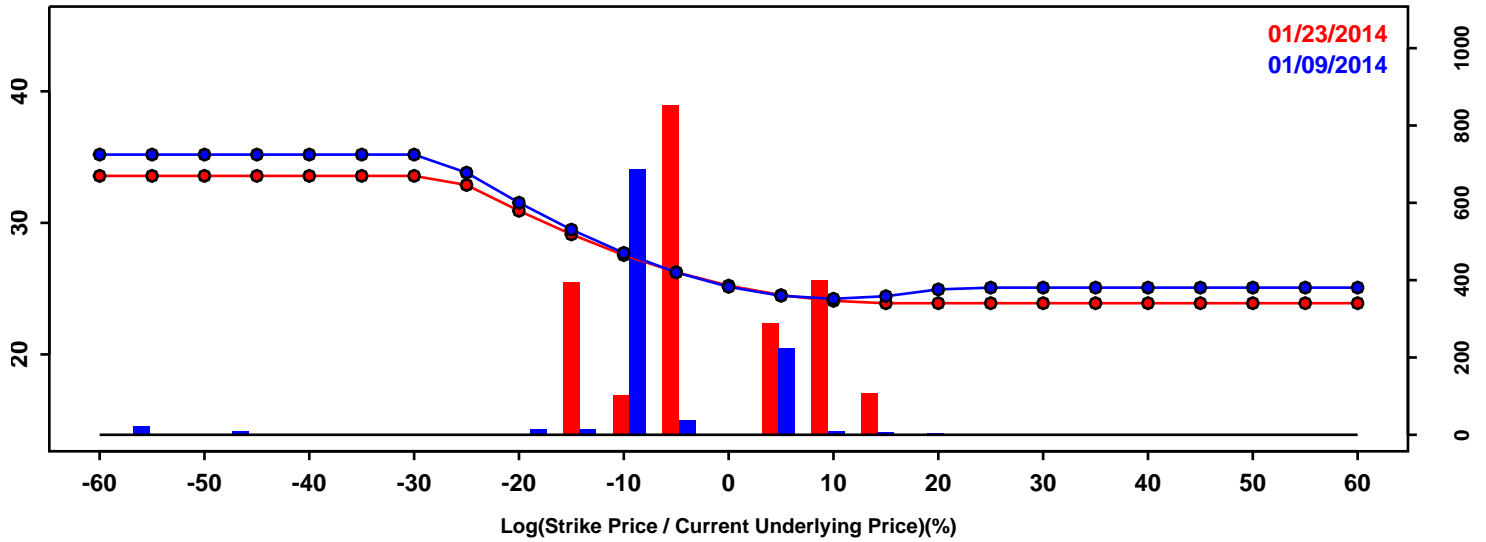


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -10.39% | -10.55% | -0.15% |
| 50th Pct | 0.21% | 0.18% | -0.03% |
| 90th Pct | 8.67% | 8.94% | 0.26% |
| Mean | -0.45% | -0.43% | 0.02% |
| Std Dev | 7.91% | 8.06% | 0.15% |
| Skew | -0.67 | -0.60 | 0.07 |
| Kurtosis | 1.35 | 1.22 | -0.13 |

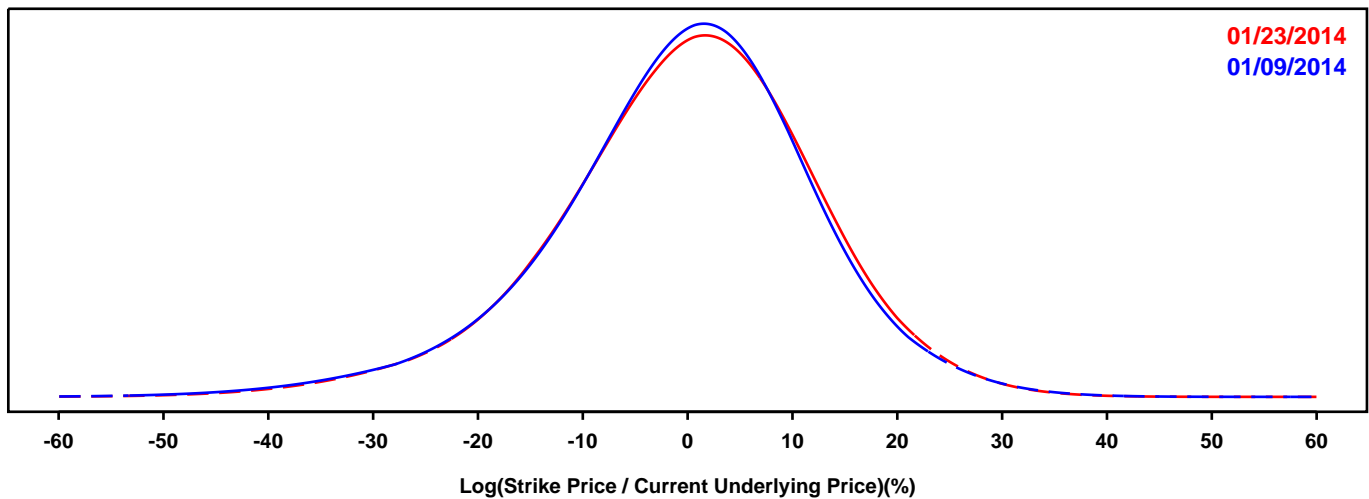
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- HARTFORD FINANCIAL

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

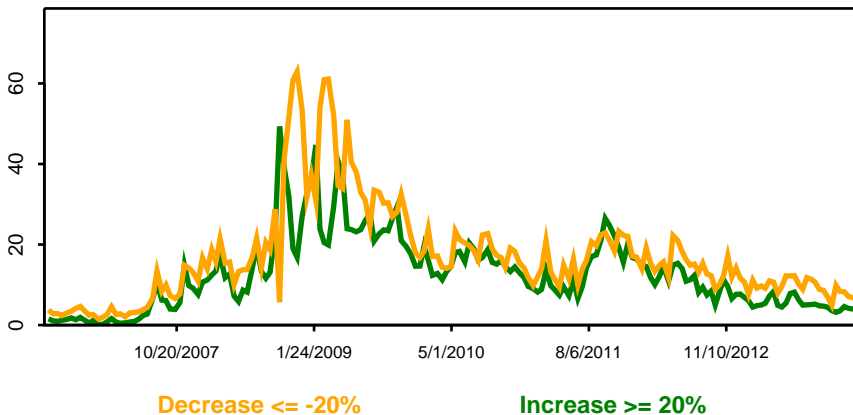
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

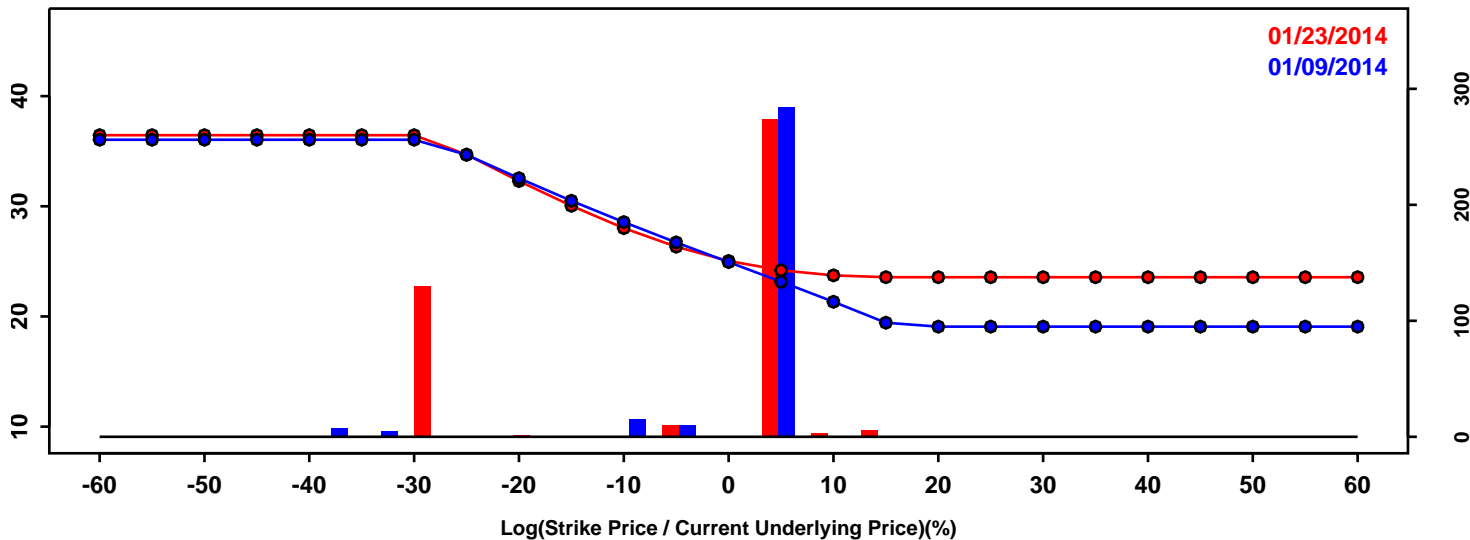


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -16.46% | -16.21% | 0.25% |
| 50th Pct | 0.30% | 0.55% | 0.25% |
| 90th Pct | 14.33% | 14.87% | 0.54% |
| Mean | -0.51% | -0.19% | 0.32% |
| Std Dev | 12.66% | 12.61% | -0.05% |
| Skew | -0.47 | -0.42 | 0.05 |
| Kurtosis | 0.99 | 0.74 | -0.25 |

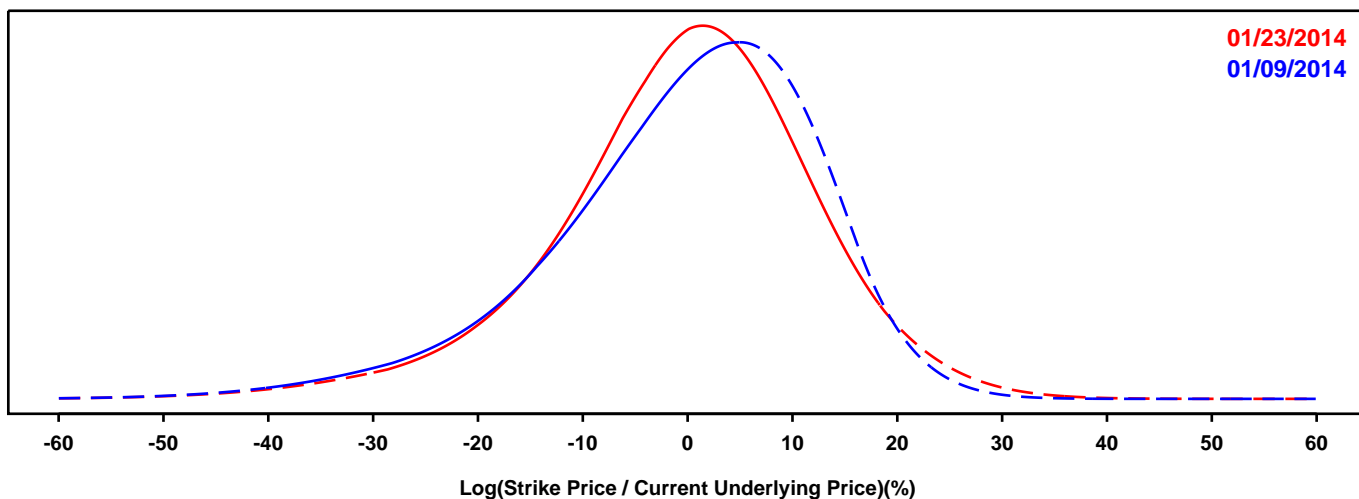
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- LINCOLN NATIONAL

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

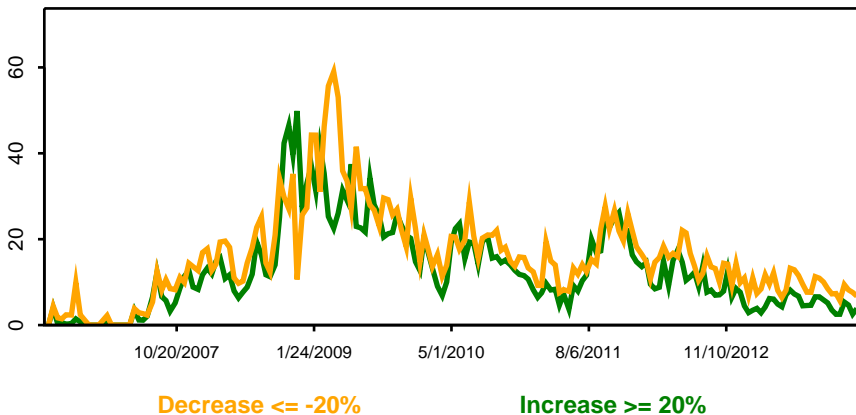
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



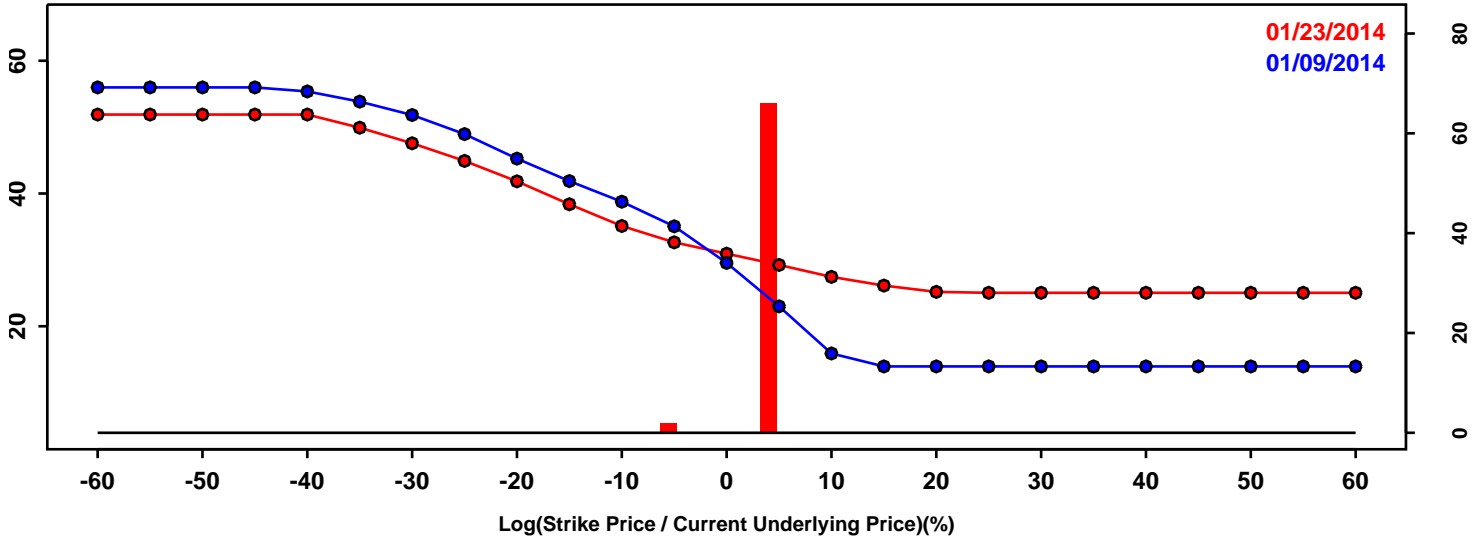
Statistics of the Log Return Distributions

| | 01/09/2014 | 01/23/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -17.27% | -16.34% | 0.93% |
| 50th Pct | 1.39% | 0.46% | -0.93% |
| 90th Pct | 14.24% | 14.41% | 0.17% |
| Mean | -0.30% | -0.43% | -0.13% |
| Std Dev | 12.83% | 12.64% | -0.19% |
| Skew | -0.79 | -0.56 | 0.23 |
| Kurtosis | 1.03 | 1.15 | 0.12 |

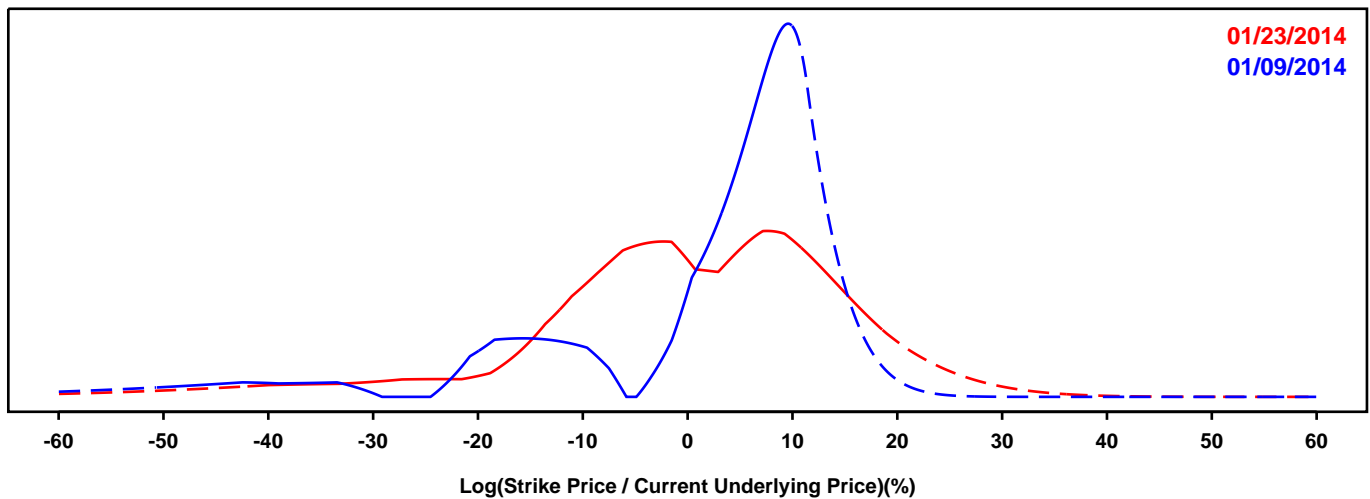
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PRINCIPAL FINANCIAL

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

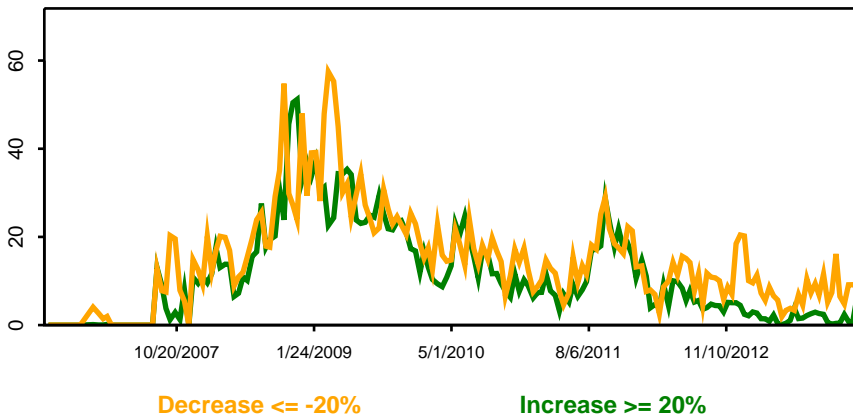
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

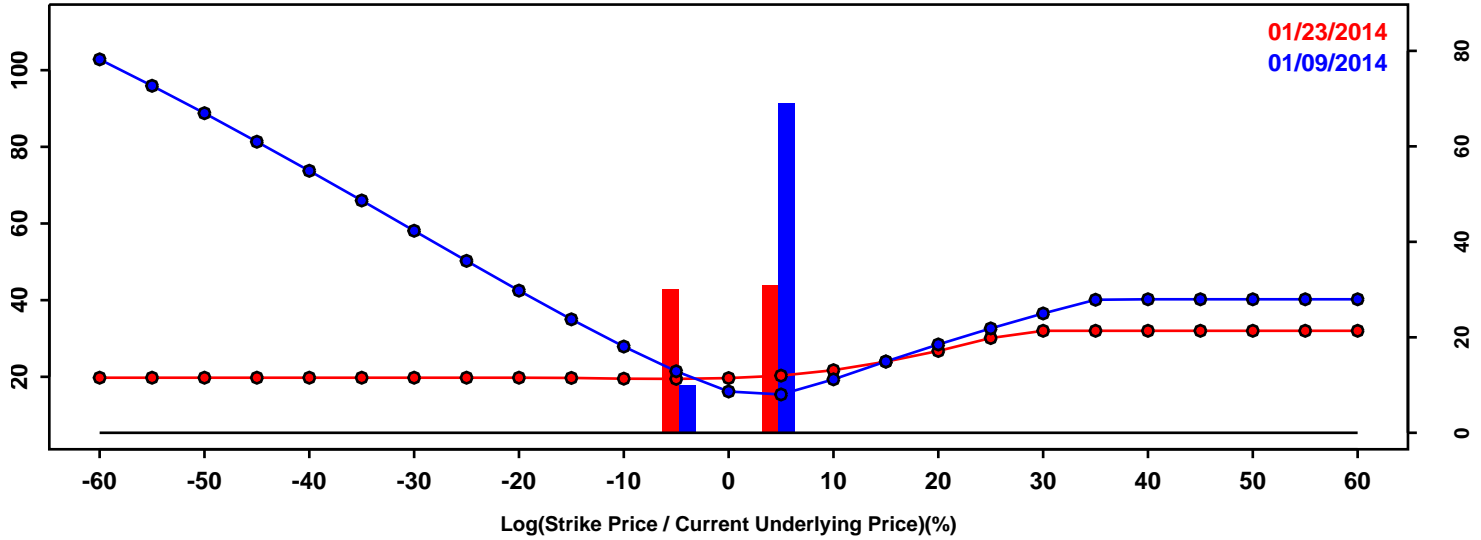


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -19.07% | -17.47% | 1.59% |
| 50th Pct | 6.64% | 1.37% | -5.27% |
| 90th Pct | 13.36% | 16.96% | 3.60% |
| Mean | 0.77% | -0.26% | -1.03% |
| Std Dev | 16.76% | 16.02% | -0.74% |
| Skew | -2.14 | -1.16 | 0.98 |
| Kurtosis | 5.01 | 2.73 | -2.28 |

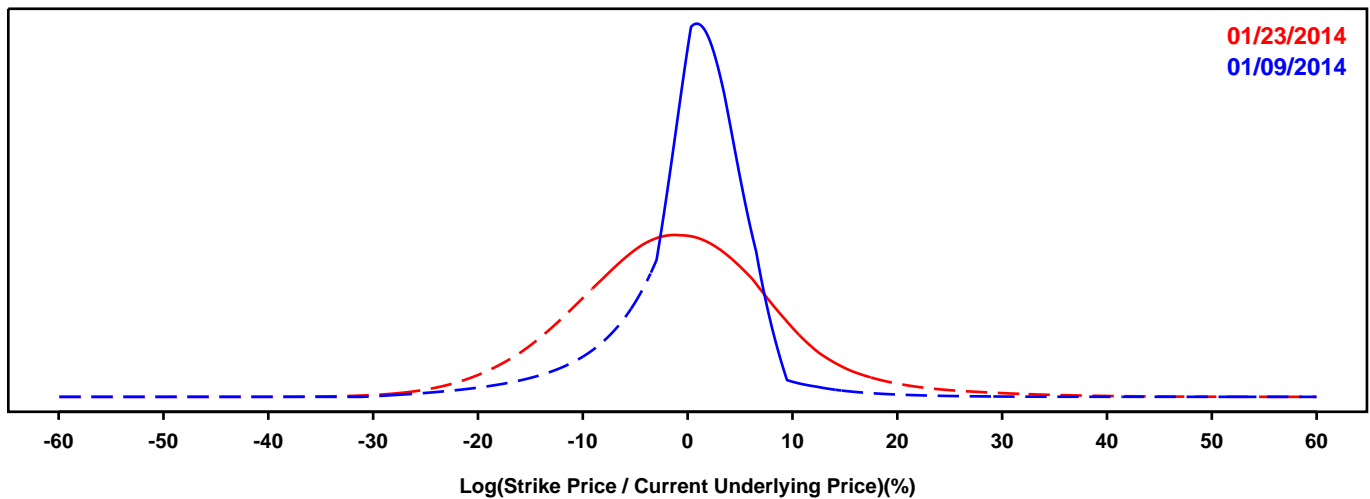
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PROGRESSIVE

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

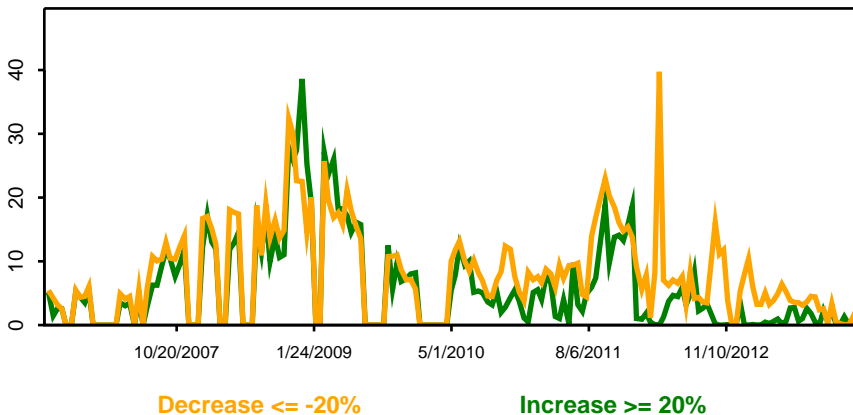
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

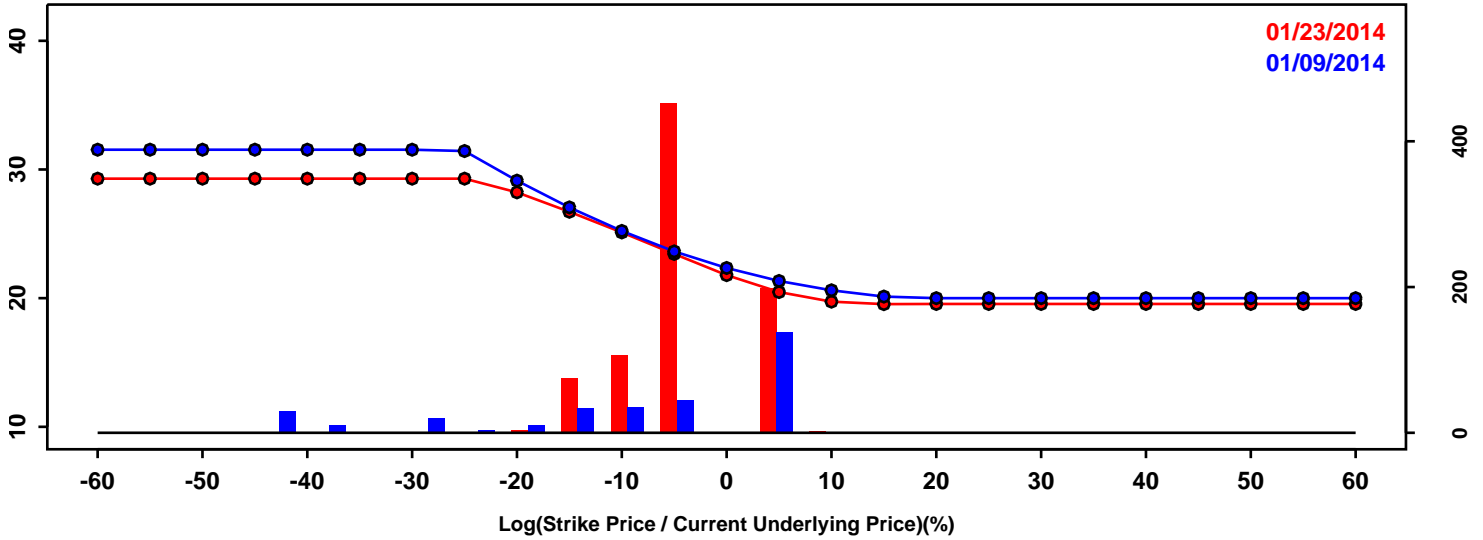


| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -7.53% | -13.26% | -5.73% |
| 50th Pct | 0.97% | -1.16% | -2.13% |
| 90th Pct | 6.11% | 10.84% | 4.73% |
| Mean | 0.12% | -0.97% | -1.09% |
| Std Dev | 6.20% | 10.00% | 3.80% |
| Skew | -0.80 | 0.36 | 1.16 |
| Kurtosis | 3.89 | 1.18 | -2.70 |

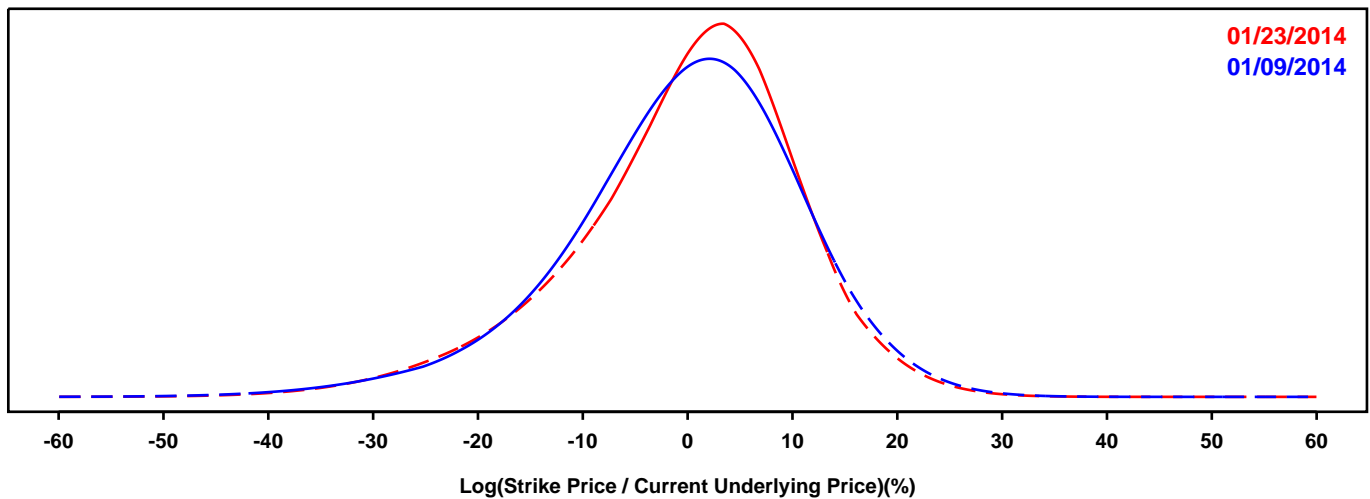
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PRUDENTIAL

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

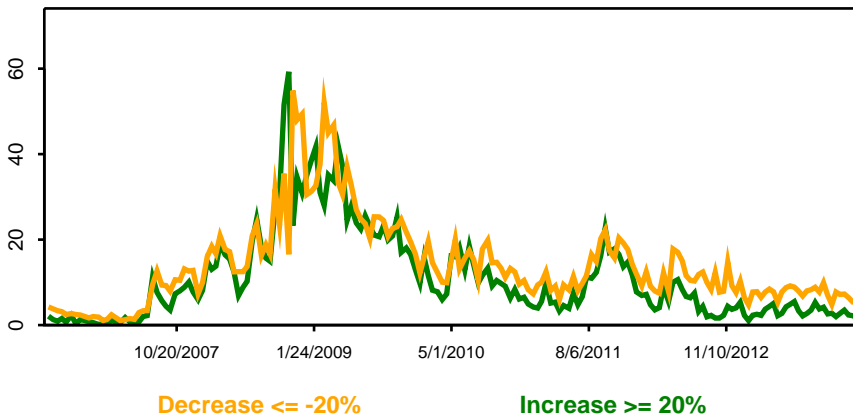
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



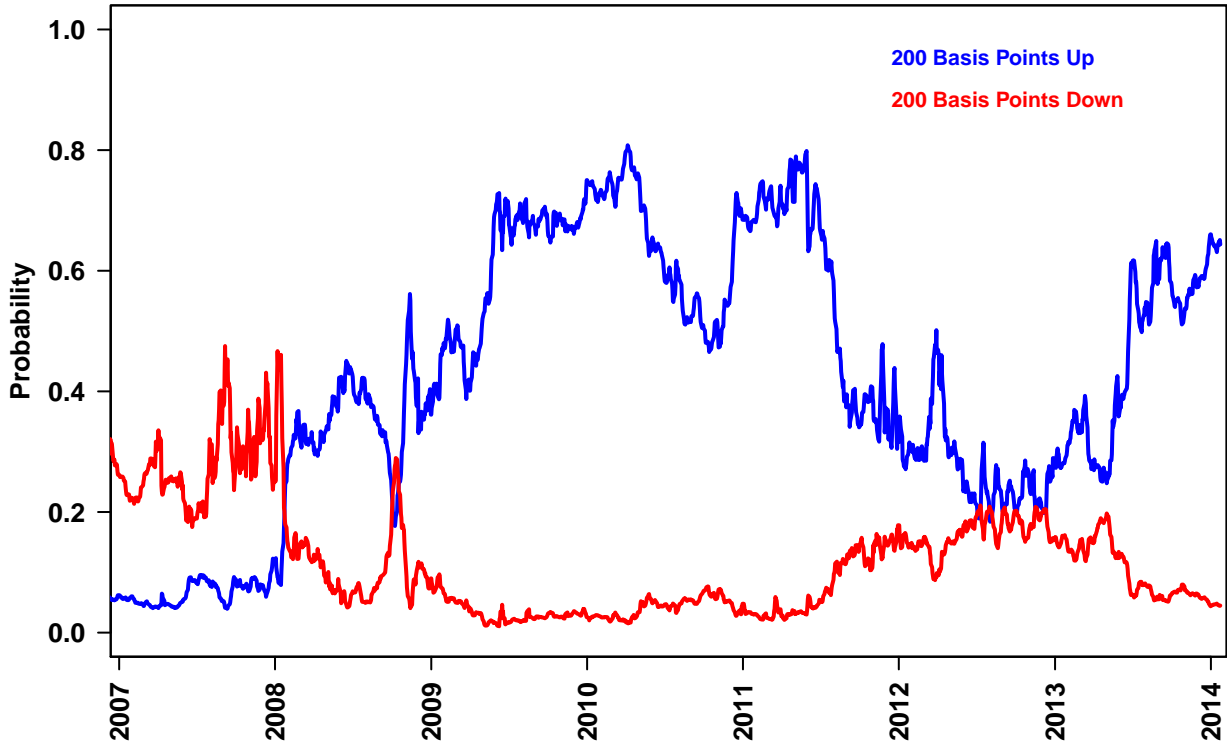
Probability of a Large Change



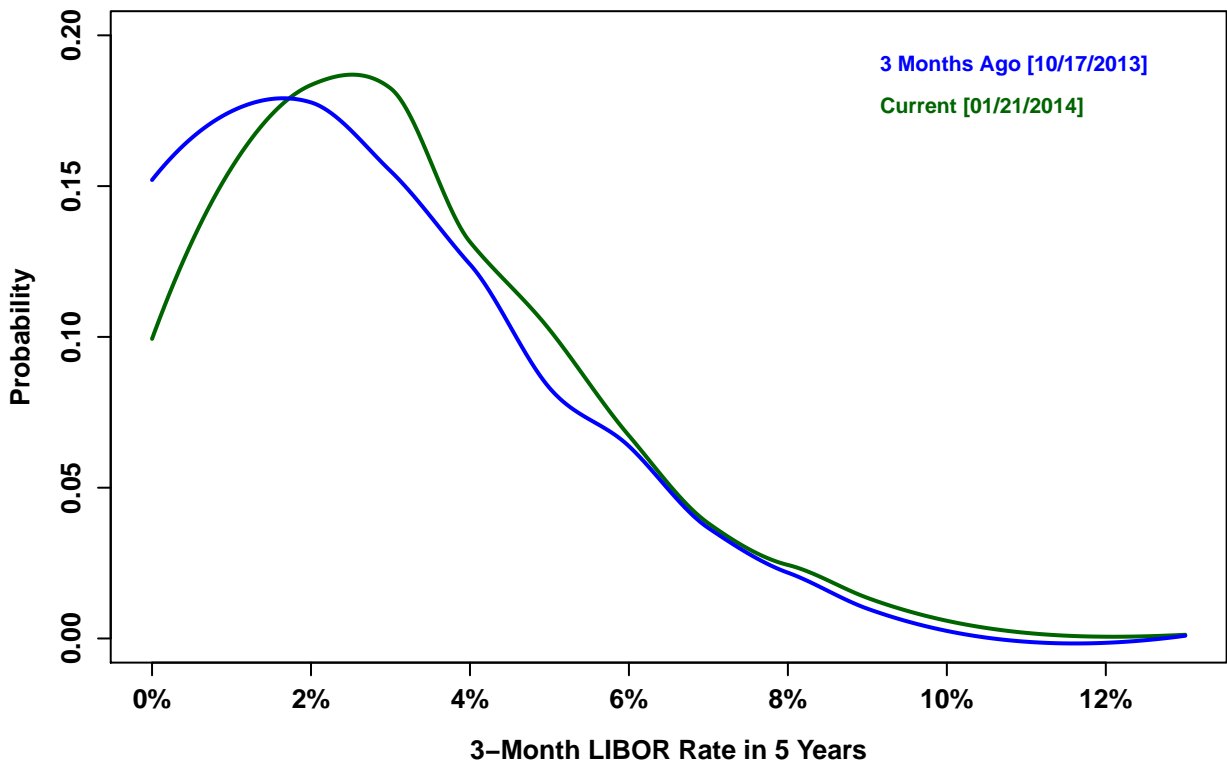
| Statistics of the Log Return Distributions | | | |
|--|------------|------------|--------|
| | 01/09/2014 | 01/23/2014 | Change |
| 10th Pct | -14.92% | -15.02% | -0.11% |
| 50th Pct | 0.55% | 1.05% | 0.50% |
| 90th Pct | 12.88% | 12.25% | -0.64% |
| Mean | -0.40% | -0.28% | 0.13% |
| Std Dev | 11.32% | 11.04% | -0.28% |
| Skew | -0.57 | -0.64 | -0.08 |
| Kurtosis | 0.91 | 0.87 | -0.04 |

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

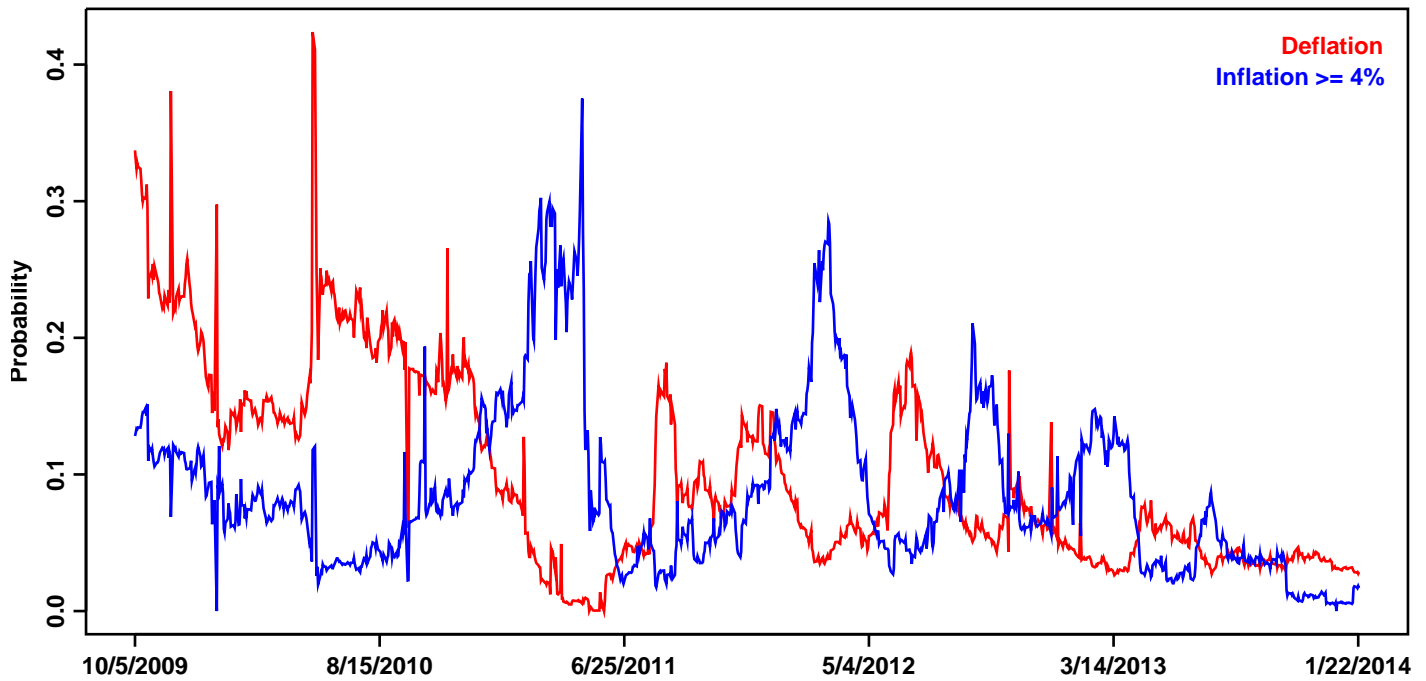


Risk Neutral Density Function for 3-Month LIBOR, 5 Years Out

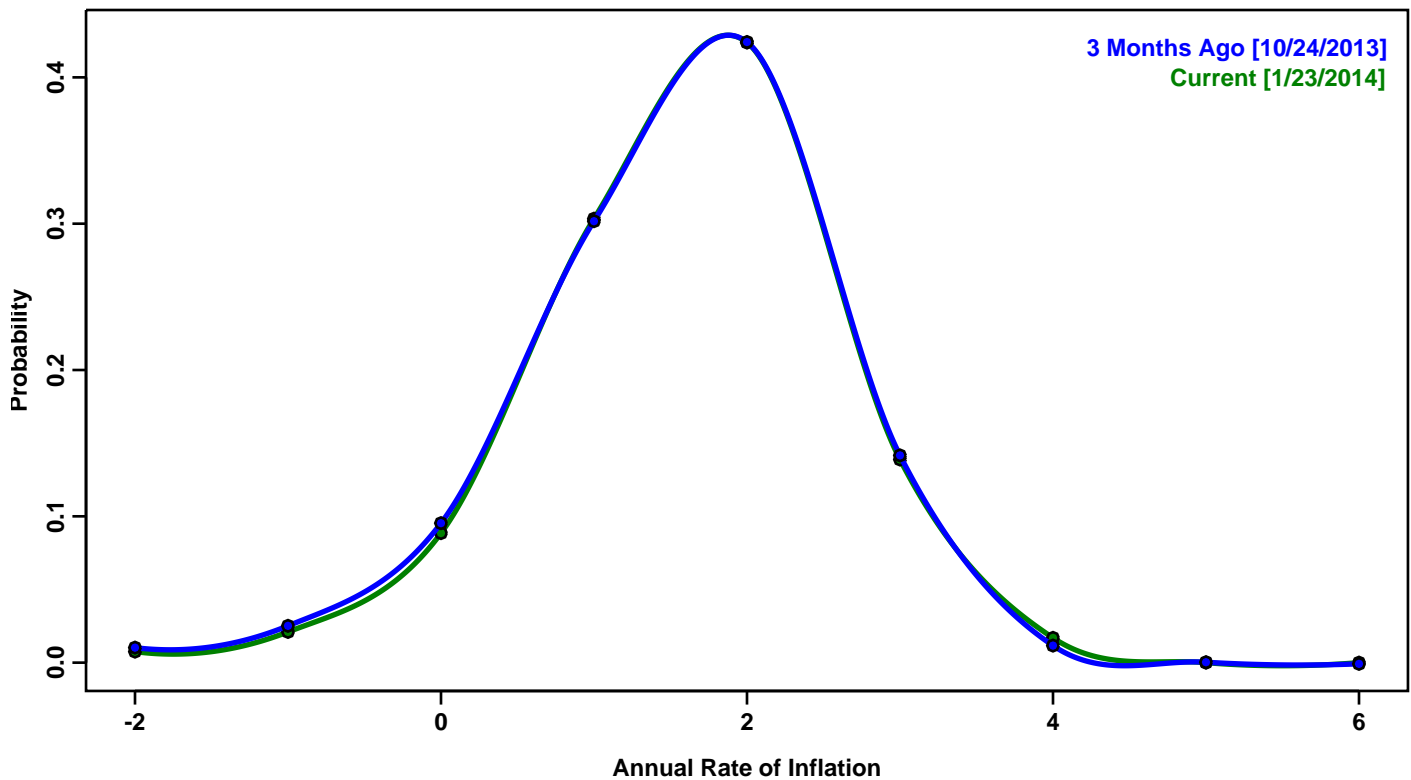


RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- Inflation Caps & Floors

Probability of Deflation and High Inflation over the next 12 Months



Risk Neutral Density Function for Inflation over the next 12 Months



RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- Inflation Caps & Floors

Probability of Deflation and High Inflation over the next 5 Years

