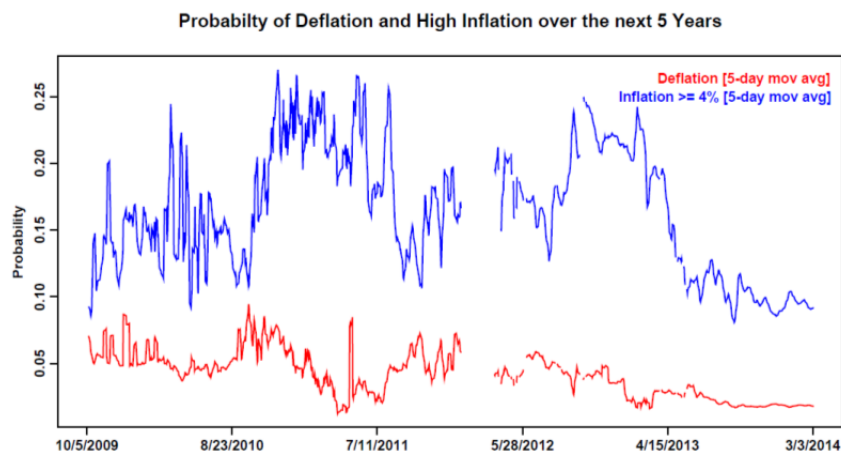


FEDERAL RESERVE BANK OF MINNEAPOLIS

BANKING AND POLICY STUDIES

Minneapolis Options Report – March 6th

Equities continued to rally over the past two weeks. The S&P 500 spot price rose 200 basis points. The average CCAR bank price rose 460 basis points and the average insurance company price rose 320 basis points. Equity market related RNPD standard deviations (tail risks) generally decreased as did skews. Expectations for 3-month LIBOR rate remain skewed to the upside and expectations for high inflation over the next five years remain low.



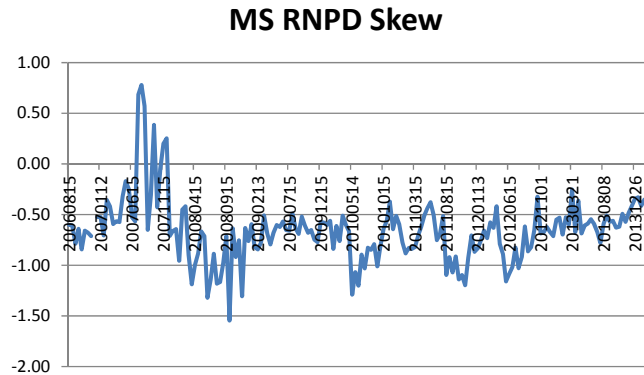
Banks & Insurance Companies

Options volumes were above average for banks. Volumes were stronger for insurance companies. Total options trading for the 11 insurance companies we follow ranked 3rd in the past 20 periods we have measured.

Banks with above average and increasing trading volume were BAC, GS, and STT. Insurance companies with above average and increasing trading volume were ALL, AMP, and PFG.

Additional Notes:

- Despite the volume, RNPDs were relatively unchanged for the six firms listed above. (*See detail reports*)
- MS RNPD skew ranks the highest of the past 20 periods. (*See MS report*)

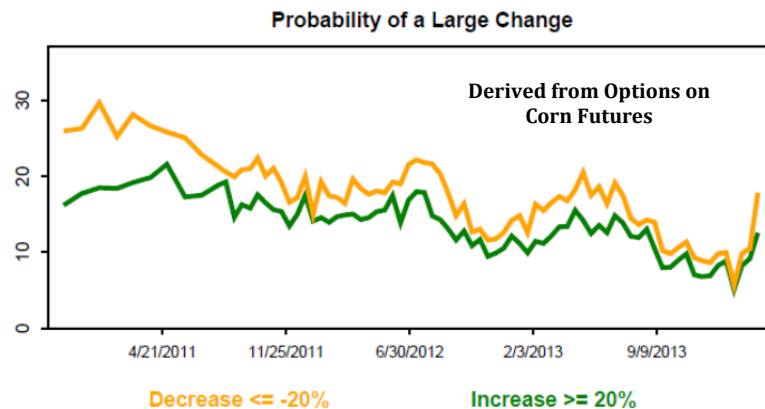


Other Commodity Markets

Trading across the other commodity markets we follow was light last week. Tail risks as measured by RNP standard deviation generally rose. RNPDs related to the grain markets showed the effects of uncertainty in the Ukraine.

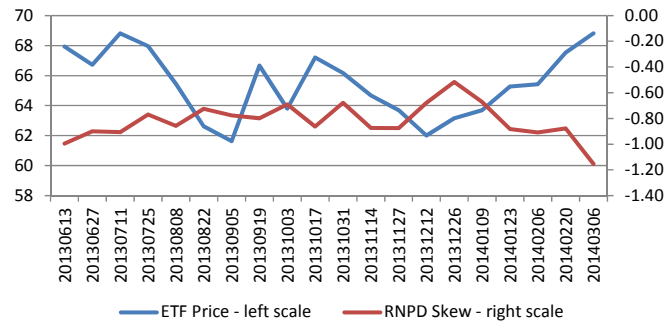
Additional notes:

- Corn and wheat spot prices spiked (5.1% and 6.4% respectively) over the past two weeks. RNP standard deviations for corn and wheat also spiked. The RNP skews for corn and soybean prices also rose. (*See Corn, Wheat, and Soybean reports*)



- Spot oil prices fell again. RNP standard deviations derived from options on crude oil futures again dropped in excess of 100 basis points. (*See oil reports*)
- RNP skew derived from options on the Dow Jones real estate ETF has reached the most negative level we have seen in the past 20 reports. As the ETF has rallied over the few months, the RNP has skewed much more negatively. (*See dollar-pound report*)

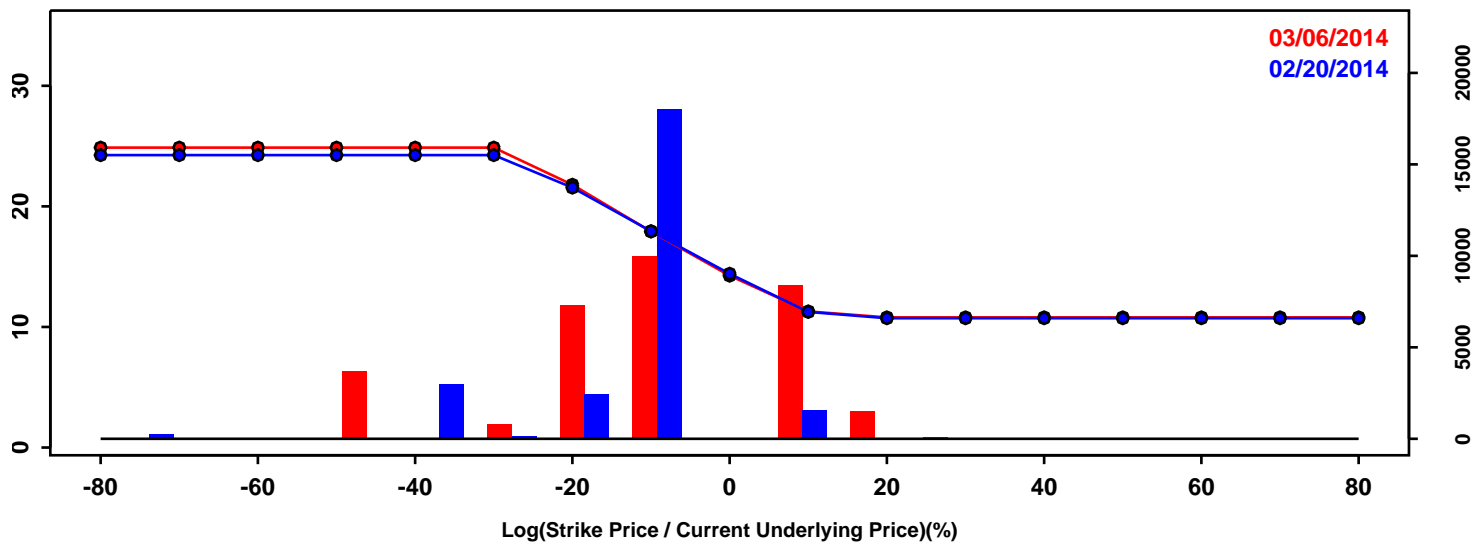
DJ Real Estate ETF Stats



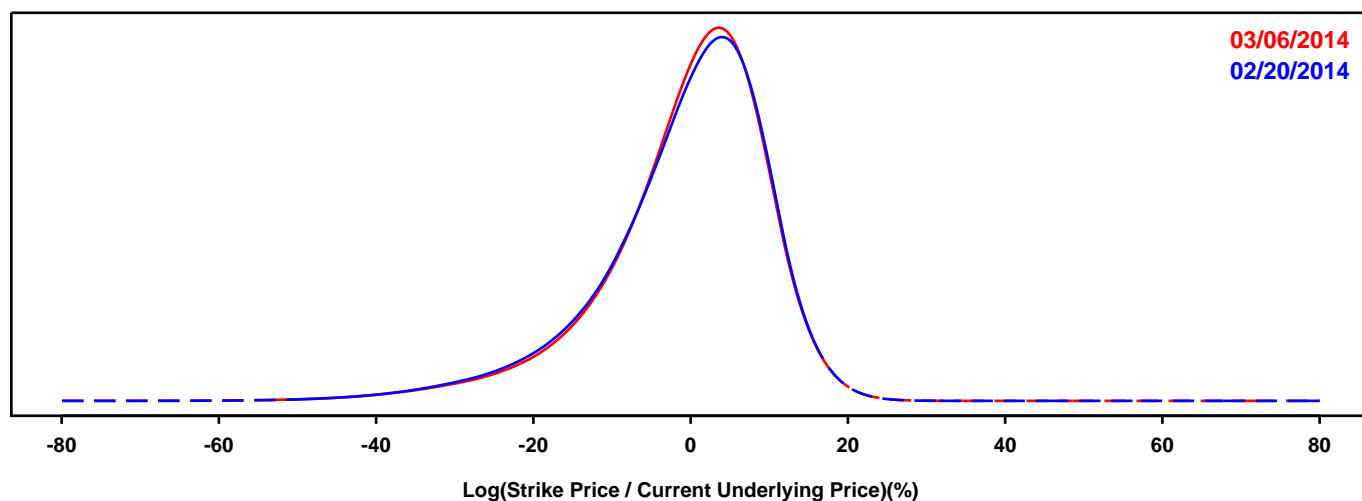
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- S&P 500

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

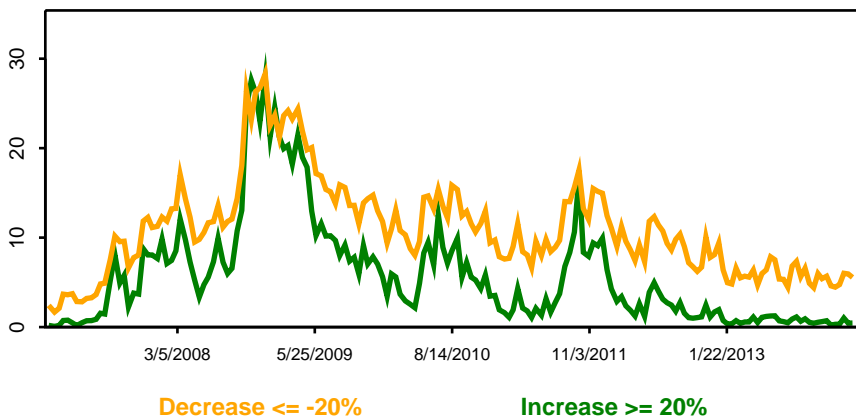
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



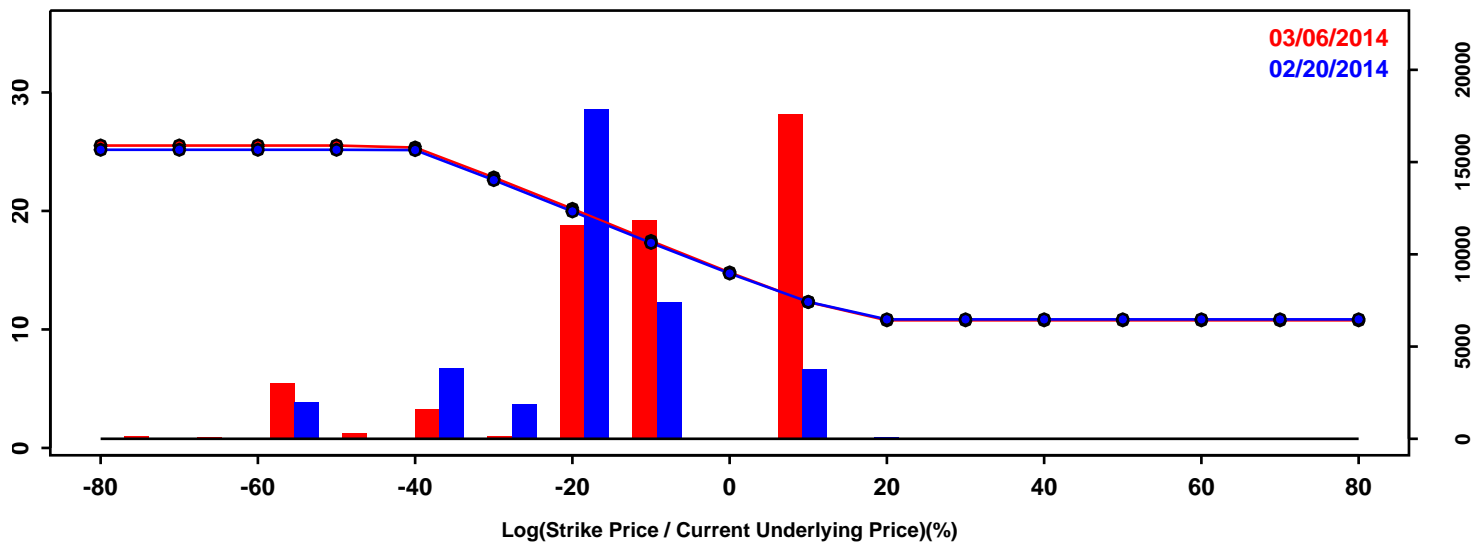
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -14.89% | -14.28% | 0.61% |
| 50th Pct | 1.07% | 1.12% | 0.04% |
| 90th Pct | 10.74% | 10.68% | -0.07% |
| Mean | -0.78% | -0.64% | 0.14% |
| Std Dev | 10.82% | 10.64% | -0.18% |
| Skew | -1.12 | -1.16 | -0.05 |
| Kurtosis | 2.03 | 2.35 | 0.32 |

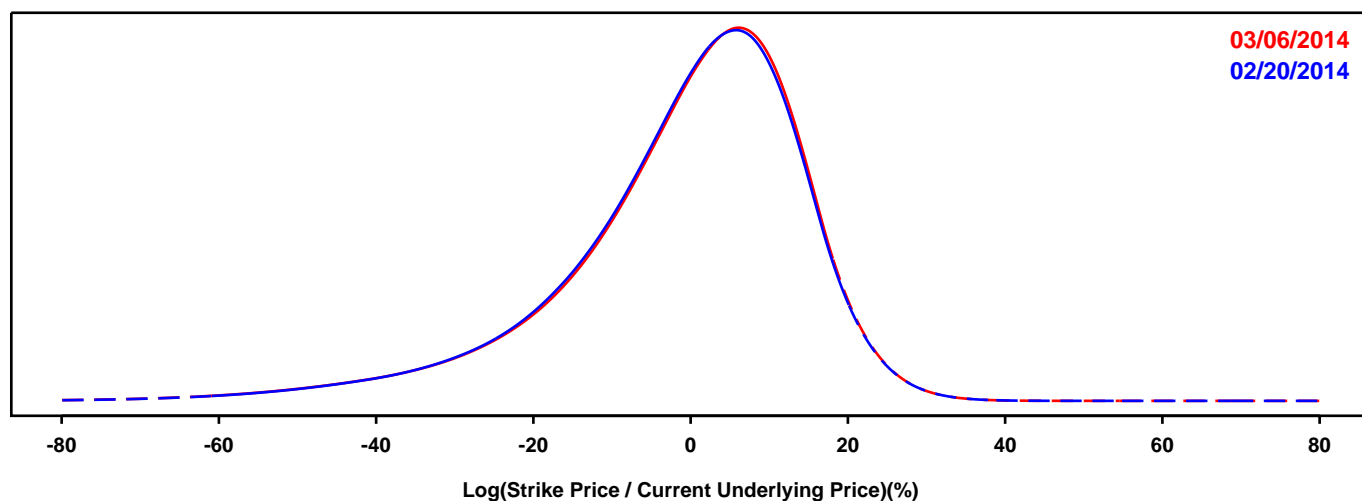
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- S&P 500

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

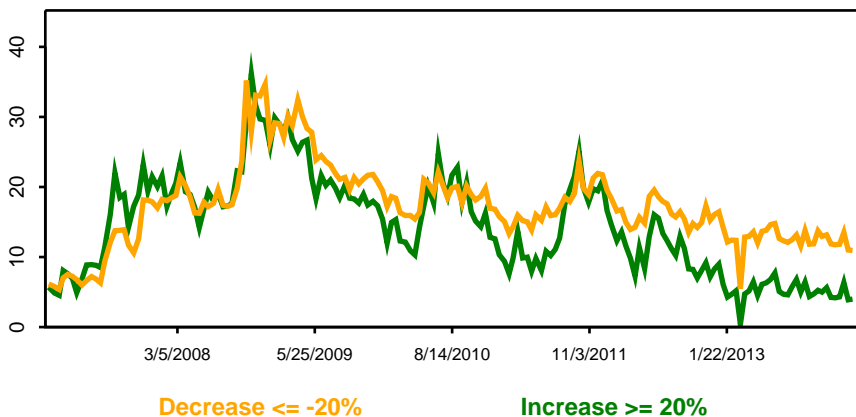
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



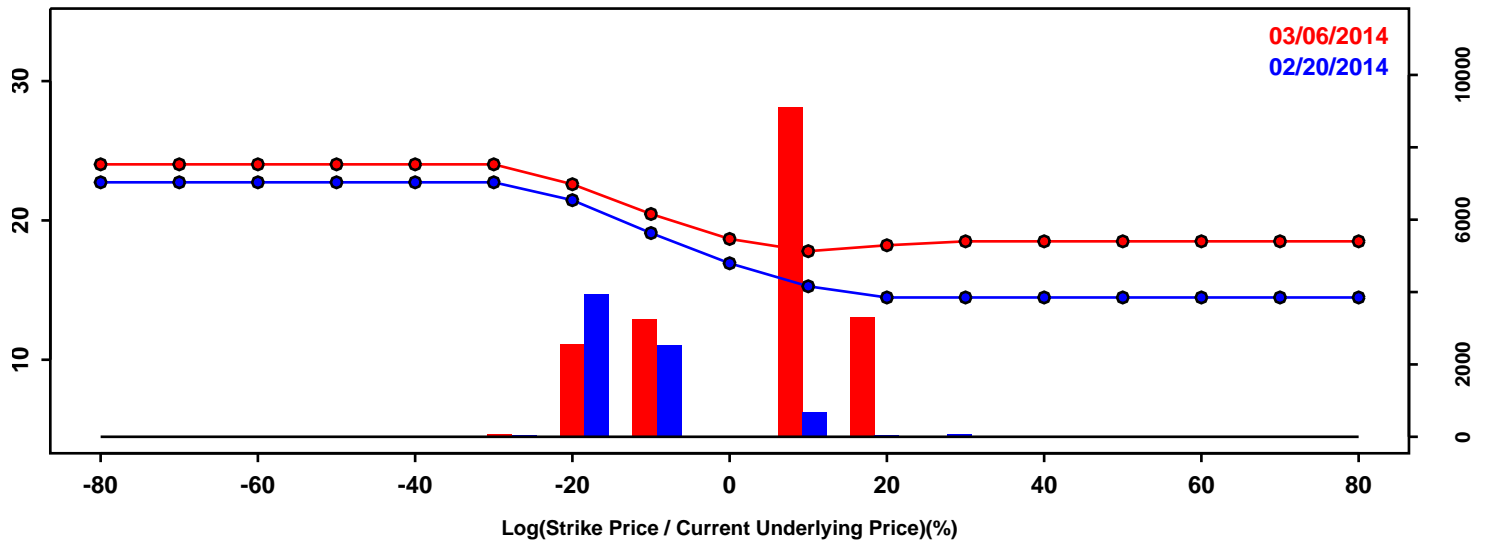
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -21.36% | -21.28% | 0.08% |
| 50th Pct | 1.66% | 1.90% | 0.24% |
| 90th Pct | 15.38% | 15.55% | 0.16% |
| Mean | -1.09% | -0.93% | 0.17% |
| Std Dev | 15.58% | 15.67% | 0.09% |
| Skew | -1.16 | -1.20 | -0.04 |
| Kurtosis | 2.20 | 2.30 | 0.10 |

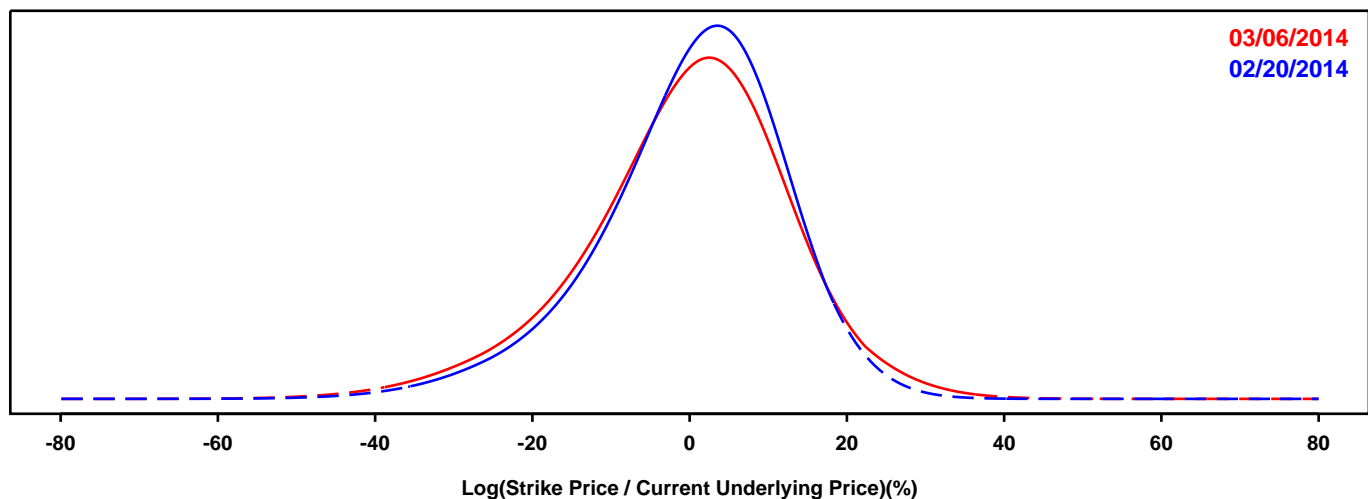
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CRUDE OIL FUTURES (WTI)

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

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



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



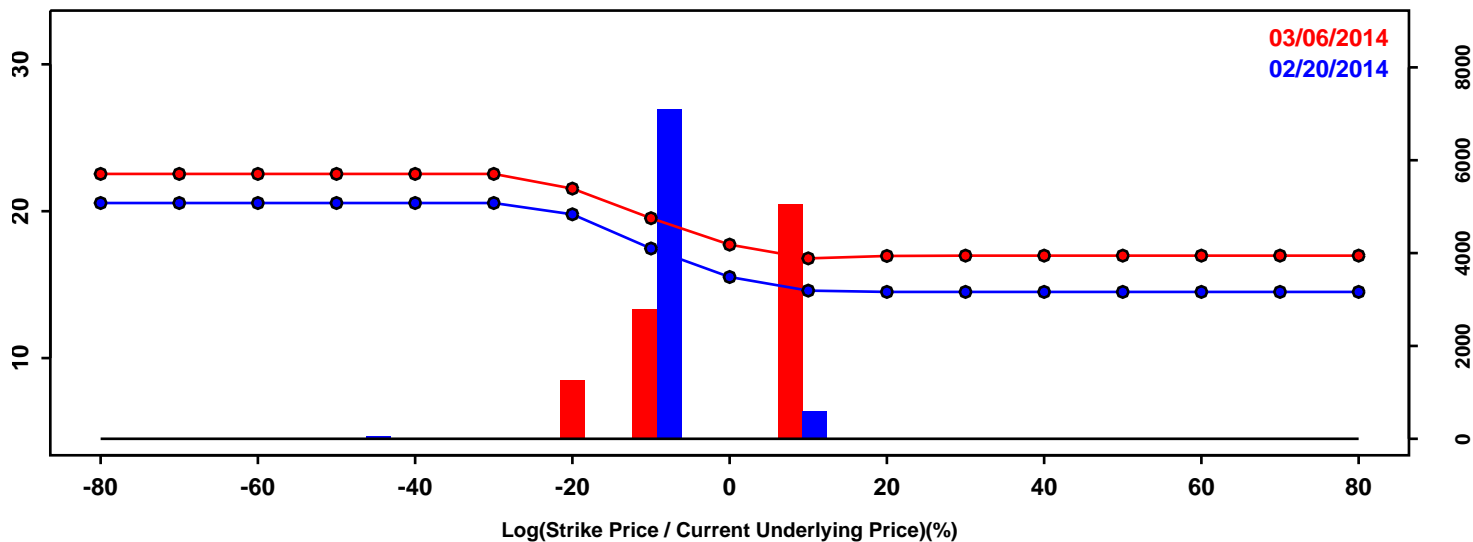
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -15.65% | -17.67% | -2.02% |
| 50th Pct | 1.49% | 0.71% | -0.78% |
| 90th Pct | 14.24% | 15.19% | 0.95% |
| Mean | 0.25% | -0.35% | -0.59% |
| Std Dev | 12.05% | 13.30% | 1.24% |
| Skew | -0.61 | -0.45 | 0.16 |
| Kurtosis | 0.79 | 0.73 | -0.06 |

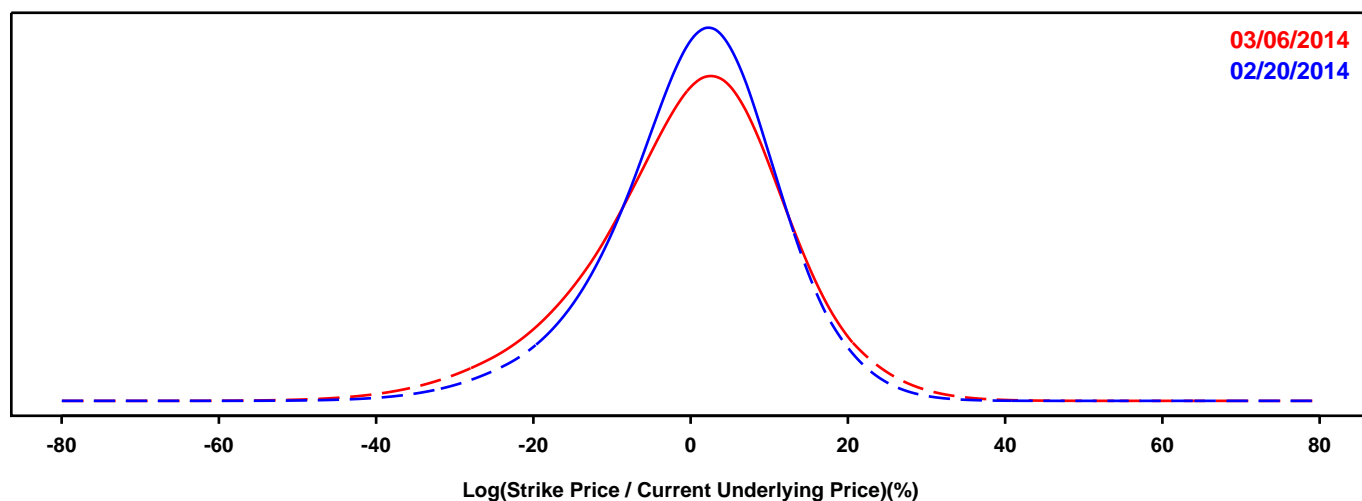
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CRUDE OIL FUTURES (Brent)

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

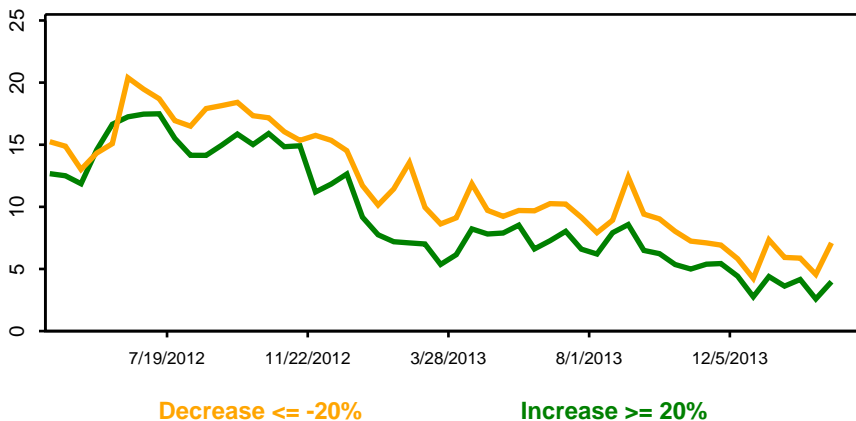
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



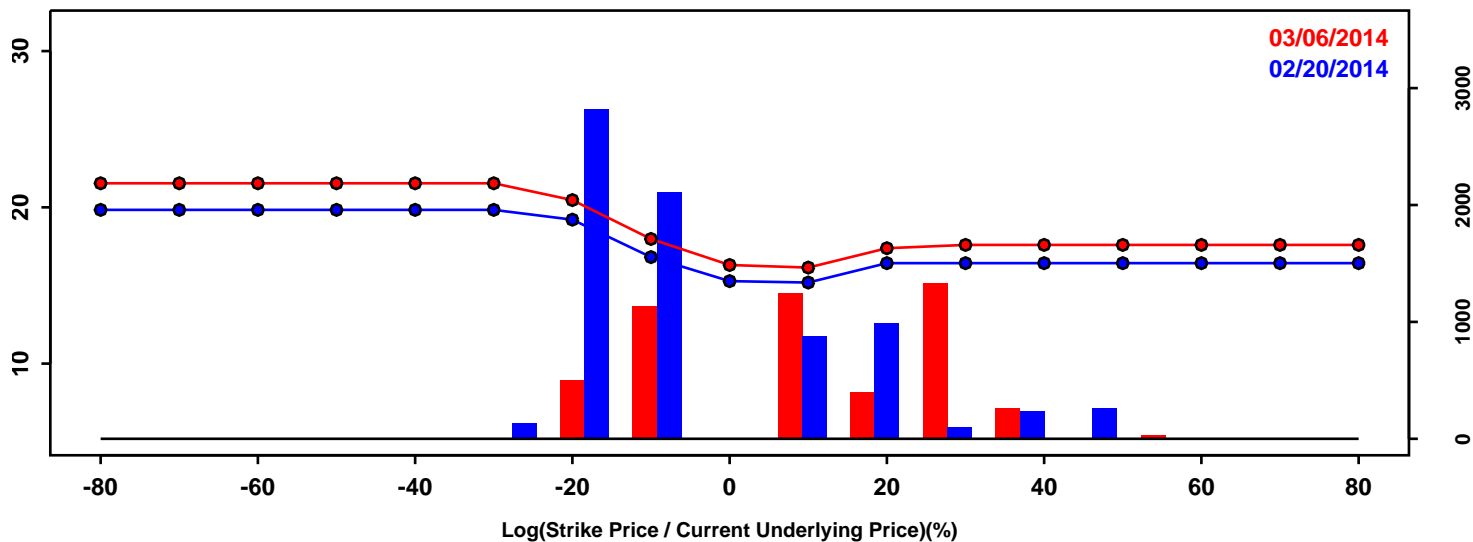
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -13.81% | -16.87% | -3.06% |
| 50th Pct | 1.12% | 0.77% | -0.35% |
| 90th Pct | 13.31% | 14.55% | 1.24% |
| Mean | 0.37% | -0.28% | -0.65% |
| Std Dev | 10.97% | 12.64% | 1.67% |
| Skew | -0.48 | -0.46 | 0.02 |
| Kurtosis | 0.78 | 0.66 | -0.13 |

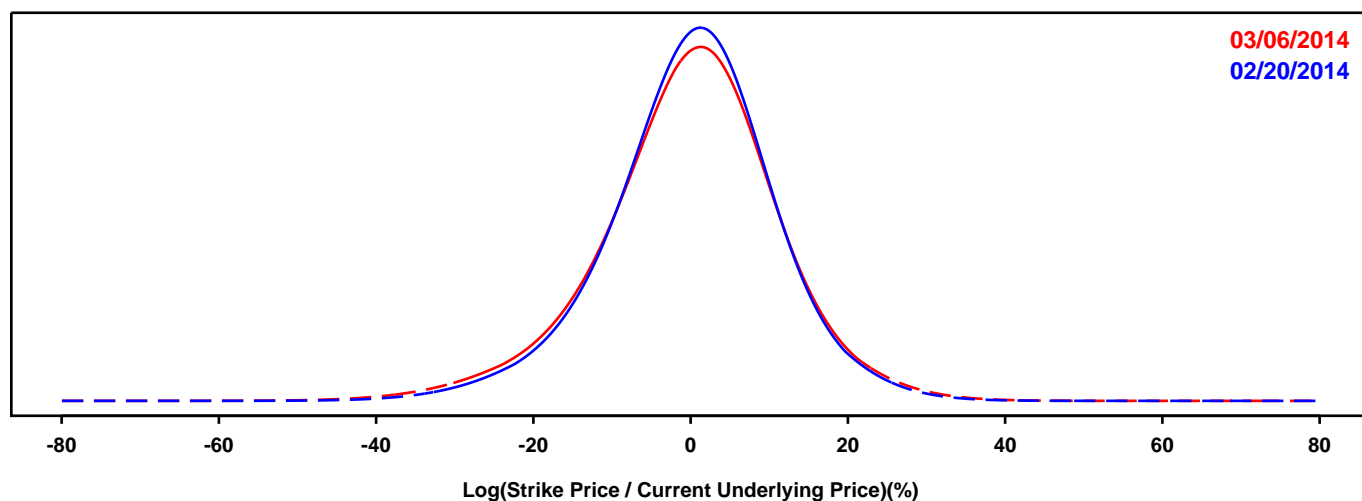
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- GOLD FUTURES

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

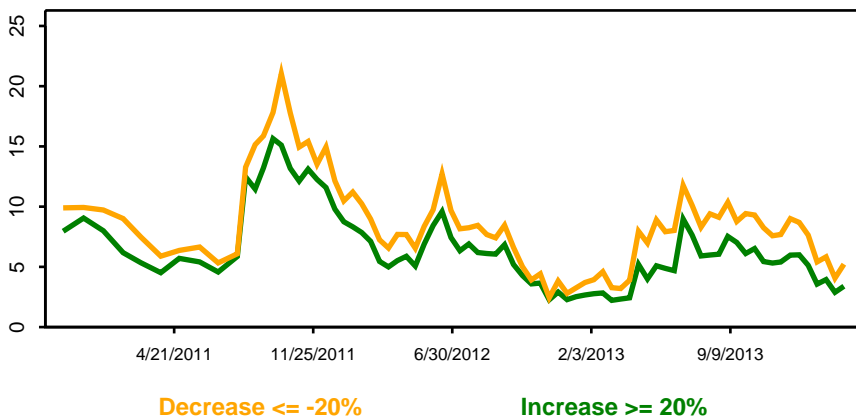
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



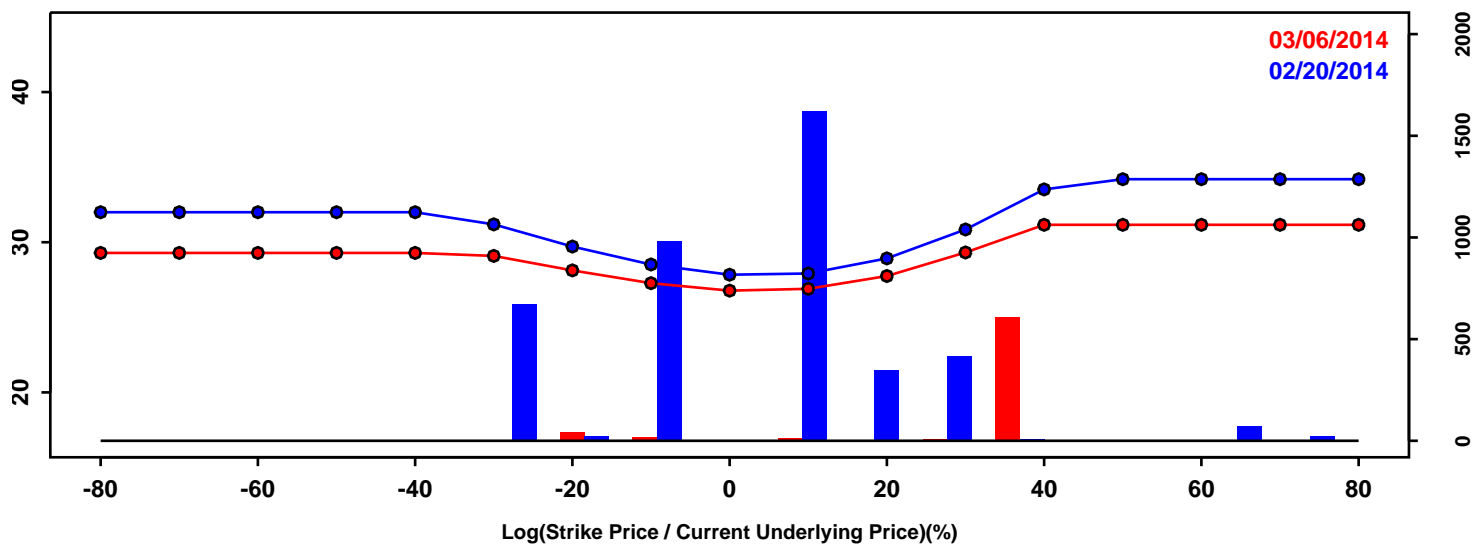
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -13.37% | -14.66% | -1.29% |
| 50th Pct | 0.55% | 0.40% | -0.15% |
| 90th Pct | 12.90% | 13.42% | 0.52% |
| Mean | 0.11% | -0.18% | -0.29% |
| Std Dev | 10.77% | 11.54% | 0.78% |
| Skew | -0.29 | -0.34 | -0.05 |
| Kurtosis | 0.83 | 0.92 | 0.09 |

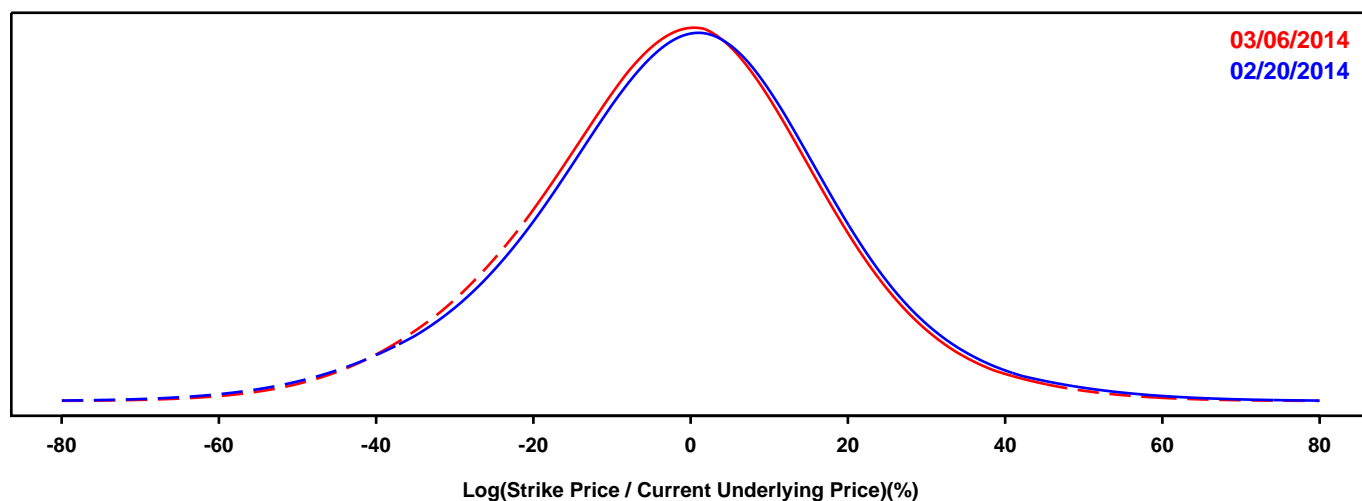
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SILVER FUTURES

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

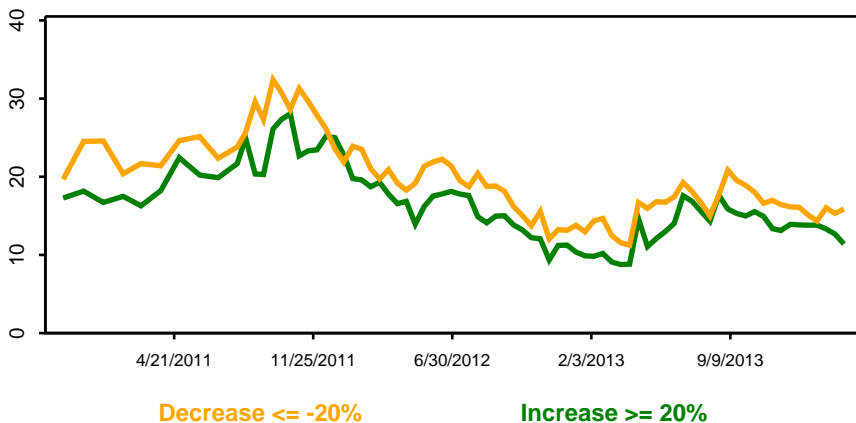
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



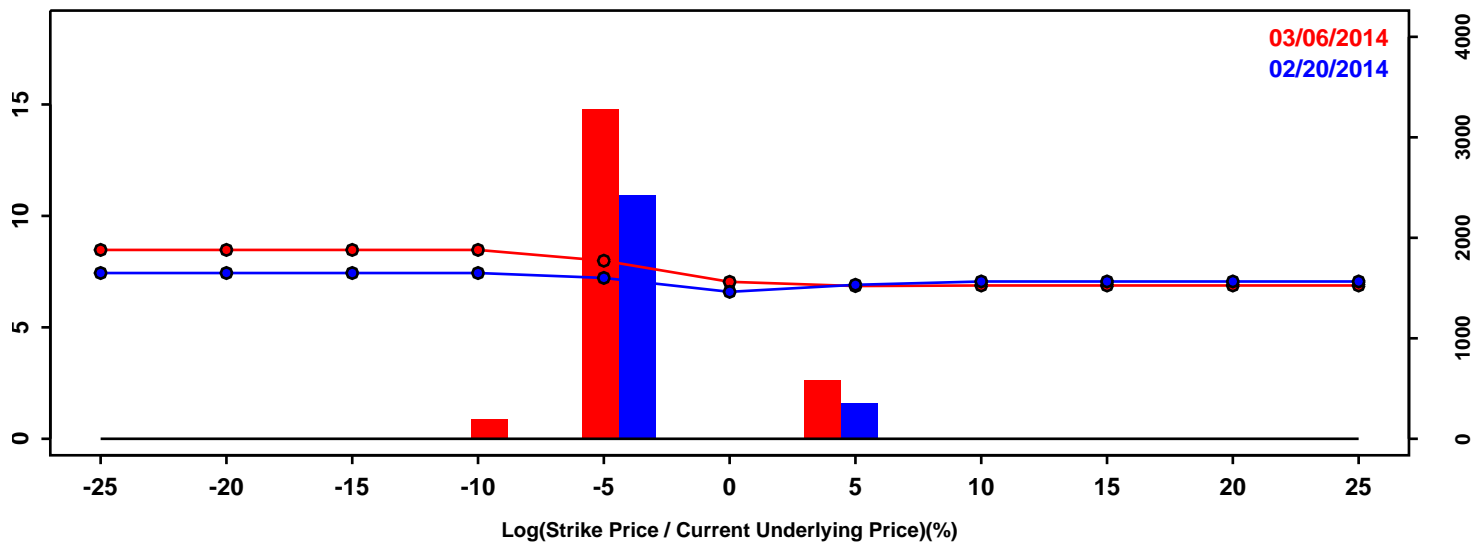
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -25.70% | -25.93% | -0.23% |
| 50th Pct | -0.32% | -1.16% | -0.84% |
| 90th Pct | 22.68% | 21.45% | -1.23% |
| Mean | -0.86% | -1.63% | -0.77% |
| Std Dev | 19.64% | 18.93% | -0.71% |
| Skew | -0.08 | -0.07 | 0.02 |
| Kurtosis | 0.67 | 0.44 | -0.23 |

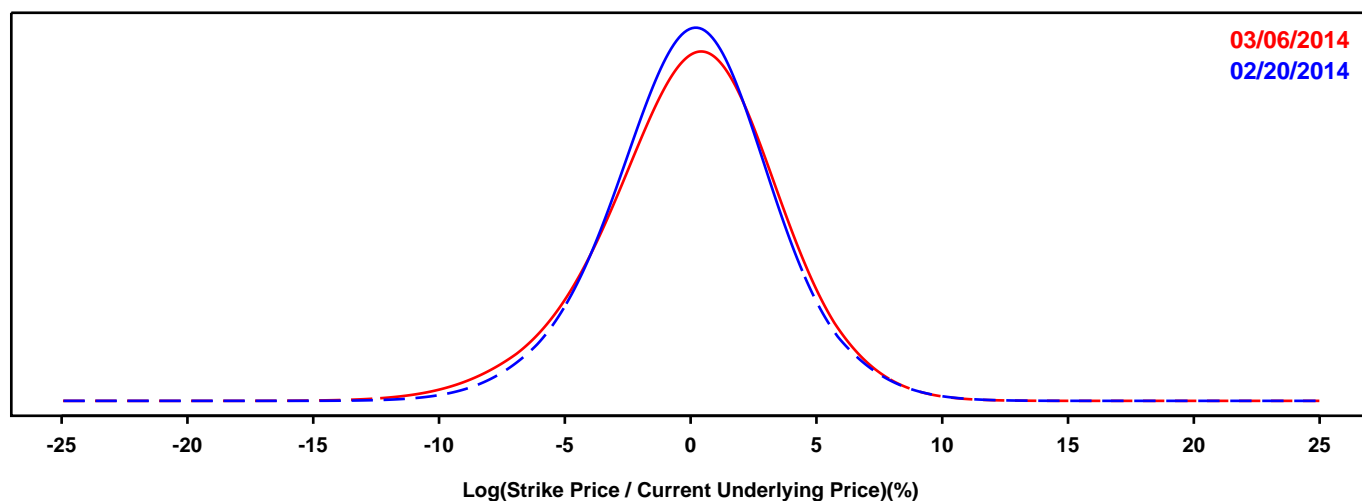
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-EURO EXCHANGE RATE FUTURES

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

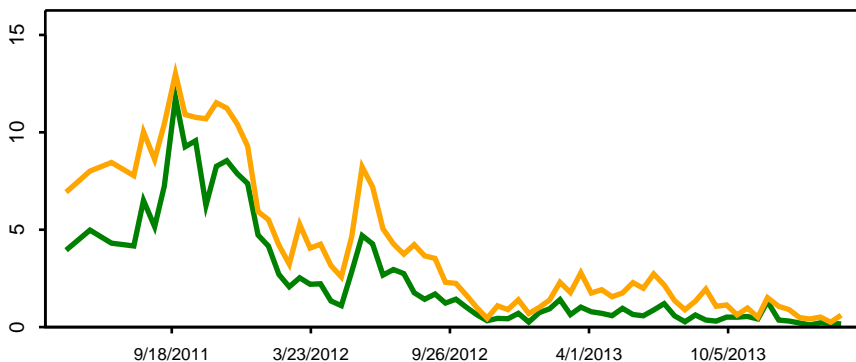
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease $\leq -10\%$ [stronger \$] Increase $\geq 10\%$ [weaker \$]

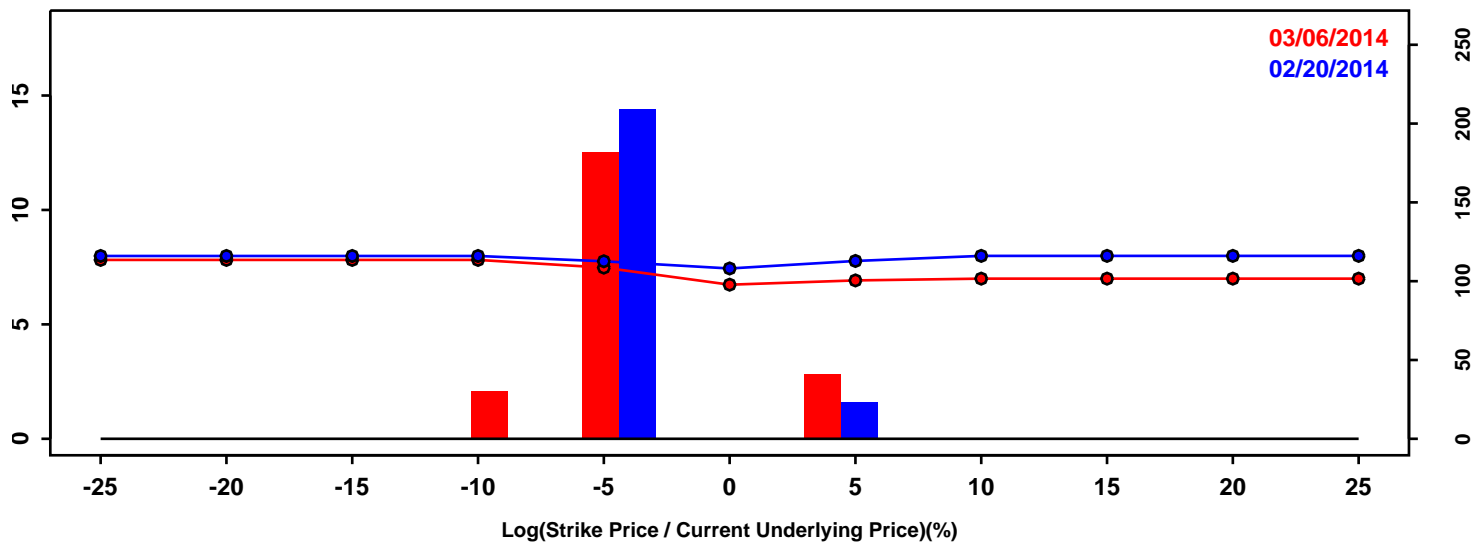
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -4.15% | -4.53% | -0.38% |
| 50th Pct | 0.11% | 0.14% | 0.03% |
| 90th Pct | 4.08% | 4.29% | 0.21% |
| Mean | 0.10% | 0.02% | -0.08% |
| Std Dev | 3.29% | 3.52% | 0.24% |
| Skew | -0.08 | -0.27 | -0.19 |
| Kurtosis | 0.39 | 0.43 | 0.04 |

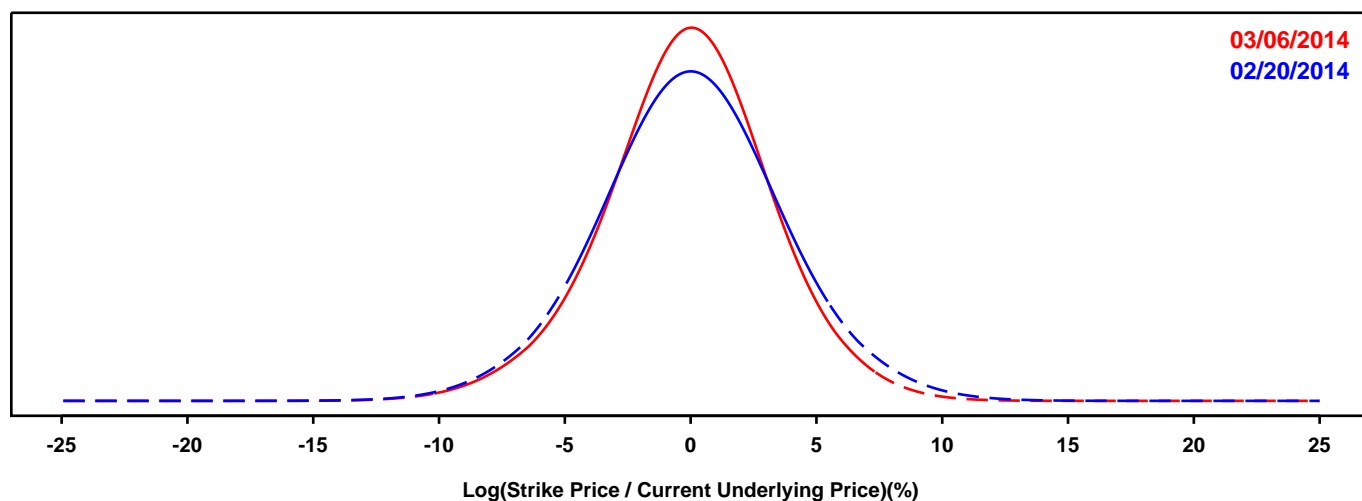
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-POUND EXCHANGE RATE FUTURES

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

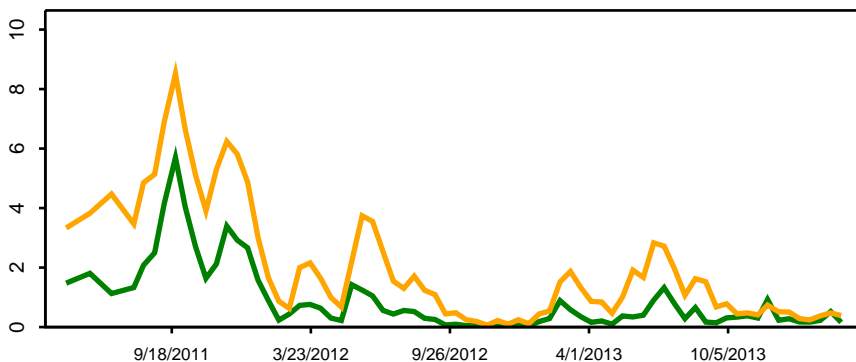
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease $\leq -10\%$ [stronger \$] Increase $\geq 10\%$ [weaker \$]

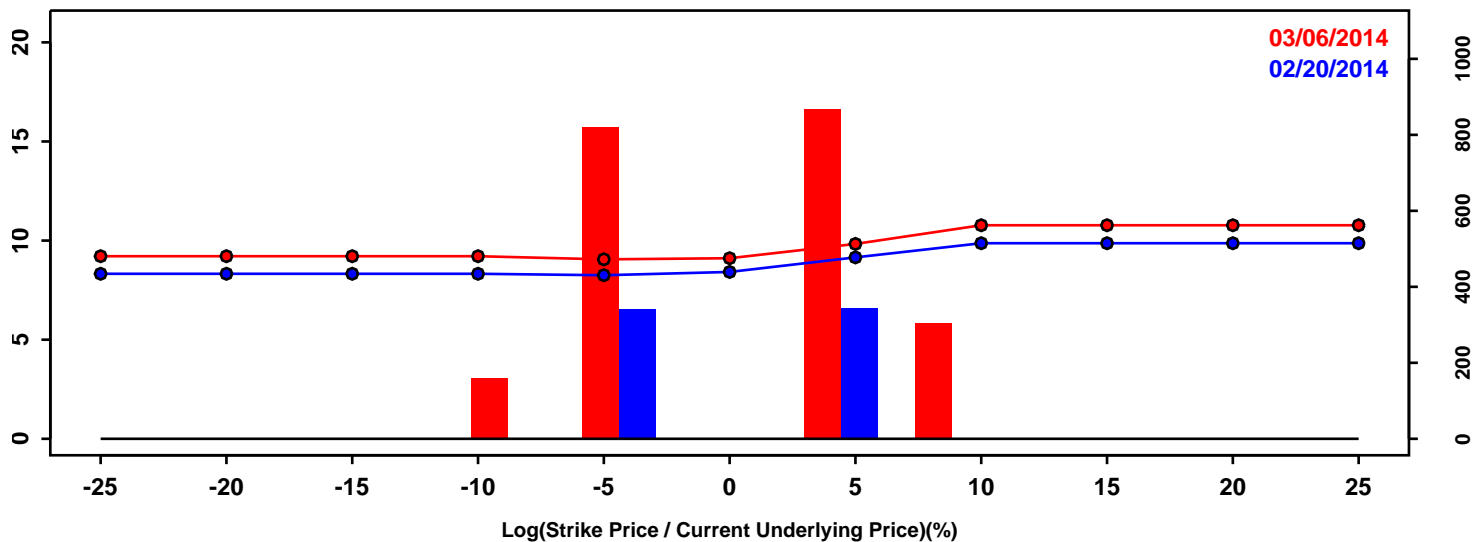
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -4.57% | -4.34% | 0.23% |
| 50th Pct | 0.00% | -0.04% | -0.05% |
| 90th Pct | 4.69% | 4.08% | -0.61% |
| Mean | 0.09% | -0.08% | -0.17% |
| Std Dev | 3.71% | 3.36% | -0.35% |
| Skew | 0.01 | -0.14 | -0.15 |
| Kurtosis | 0.28 | 0.42 | 0.14 |

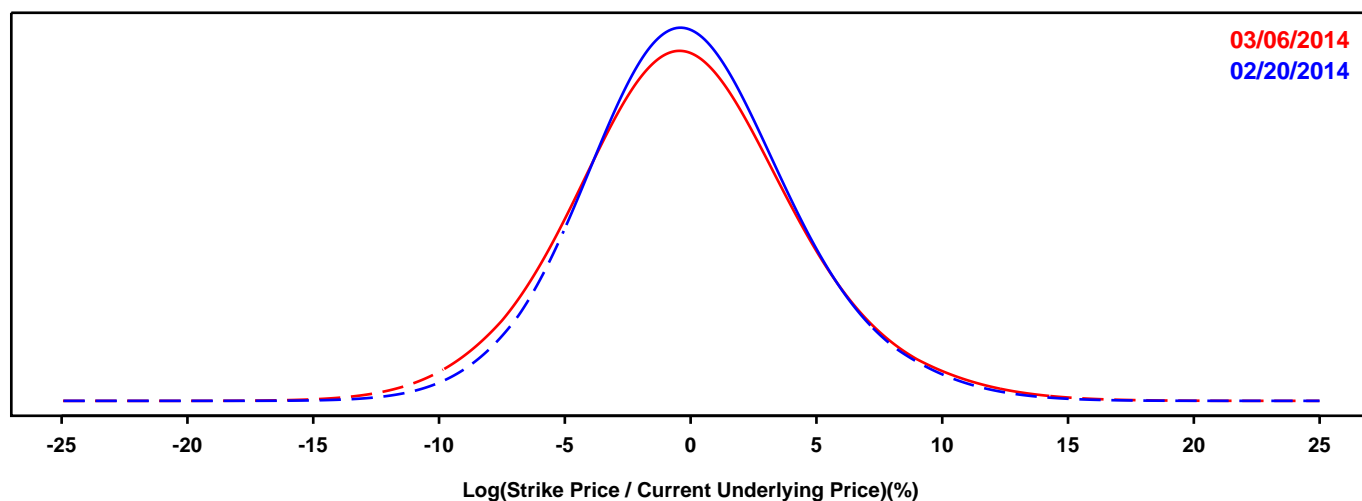
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- DOLLAR-YEN EXCHANGE RATE FUTURES

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

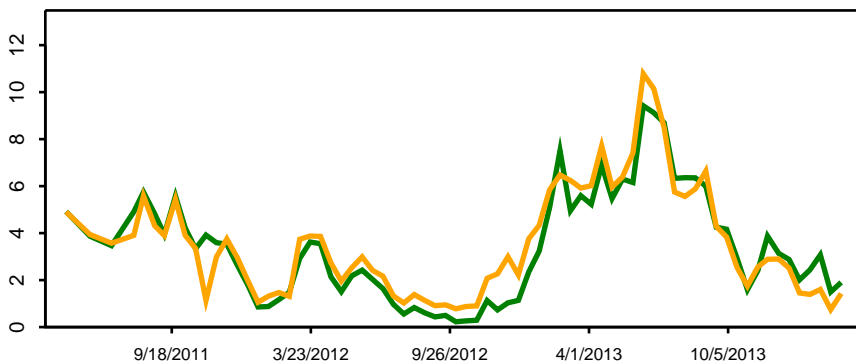
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



Decrease $\leq -10\%$ [stronger \$] Increase $\geq 10\%$ [weaker \$]

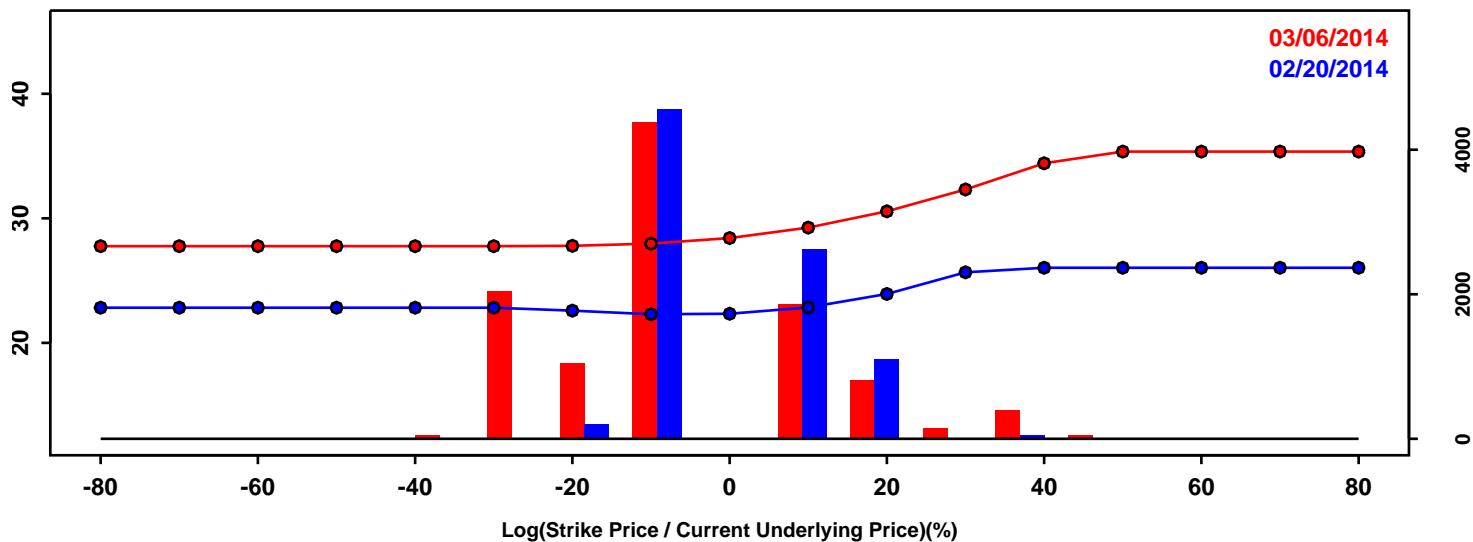
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -5.20% | -5.80% | -0.60% |
| 50th Pct | -0.10% | -0.27% | -0.17% |
| 90th Pct | 5.39% | 5.57% | 0.17% |
| Mean | 0.05% | -0.15% | -0.20% |
| Std Dev | 4.21% | 4.54% | 0.33% |
| Skew | 0.21 | 0.17 | -0.04 |
| Kurtosis | 0.35 | 0.41 | 0.06 |

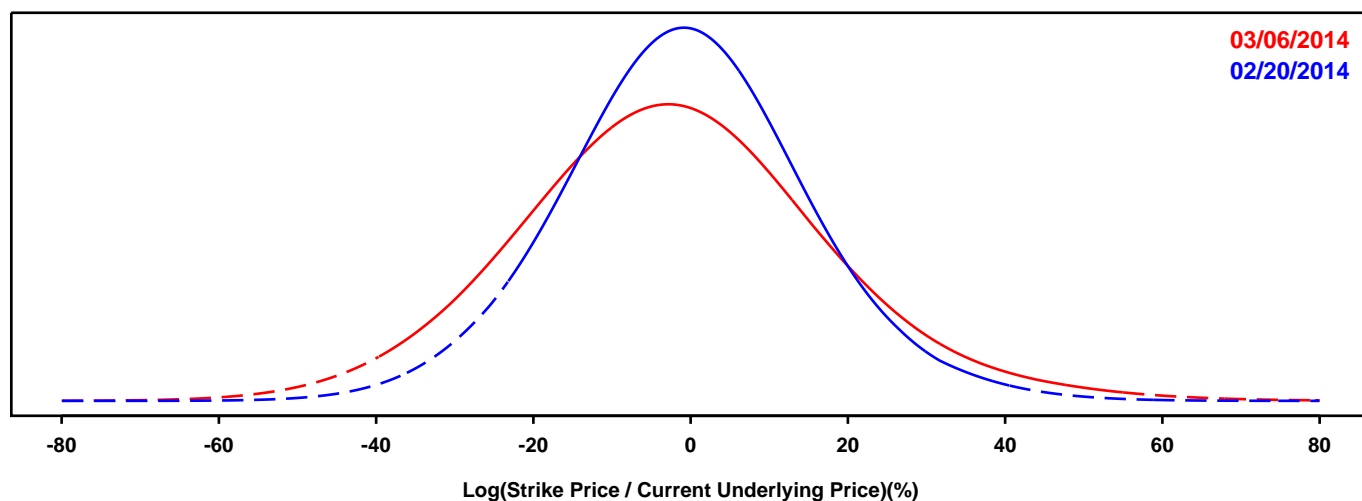
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CORN FUTURES

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

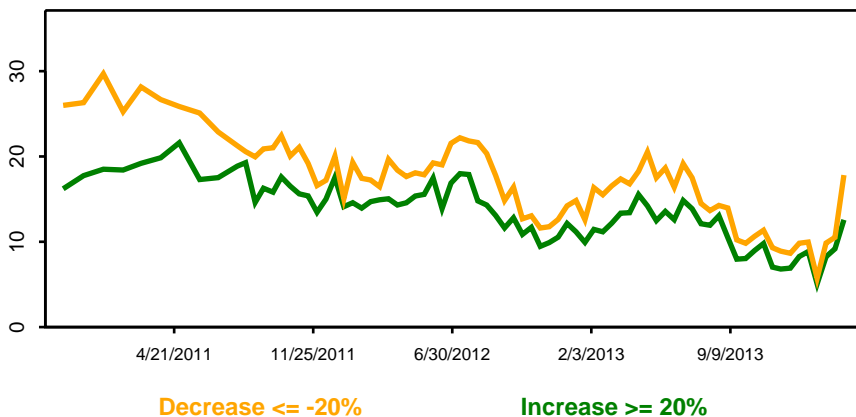
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



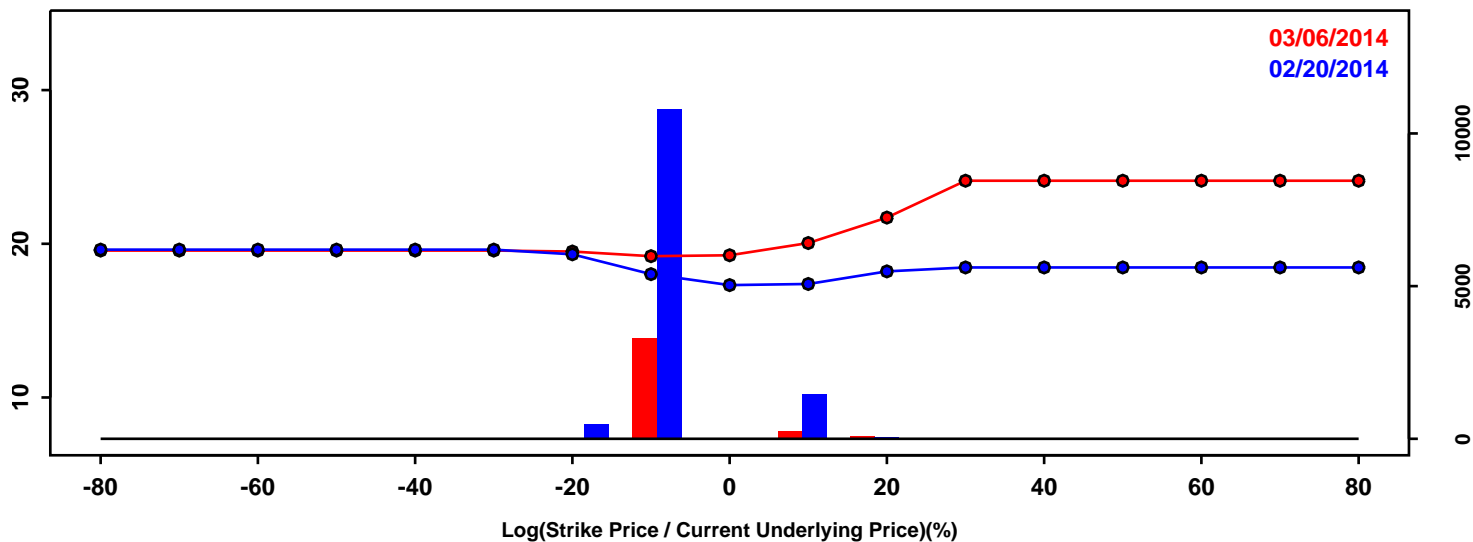
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -20.47% | -26.97% | -6.50% |
| 50th Pct | -0.82% | -2.59% | -1.77% |
| 90th Pct | 19.14% | 22.91% | 3.77% |
| Mean | -0.63% | -2.12% | -1.49% |
| Std Dev | 15.77% | 19.92% | 4.15% |
| Skew | 0.09 | 0.20 | 0.11 |
| Kurtosis | 0.34 | 0.42 | 0.09 |

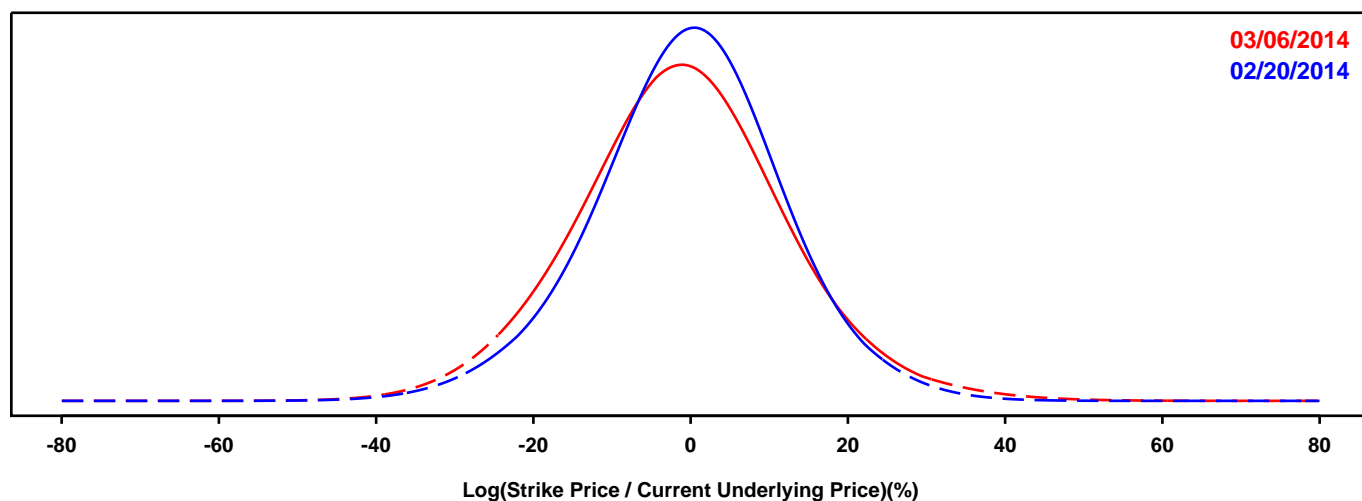
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SOYBEAN FUTURES

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

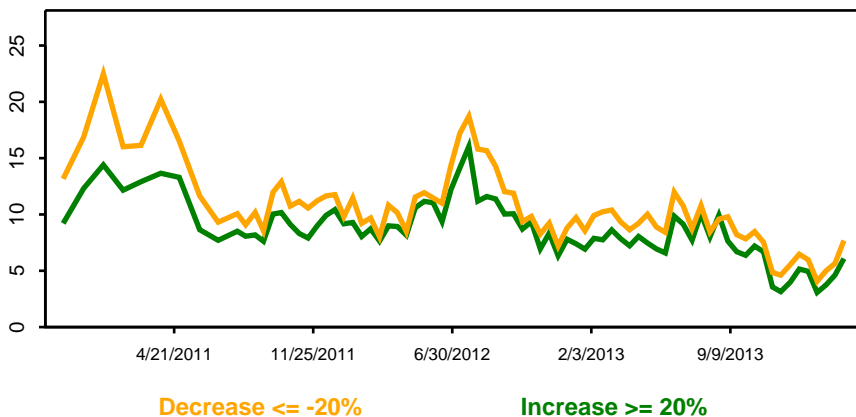
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



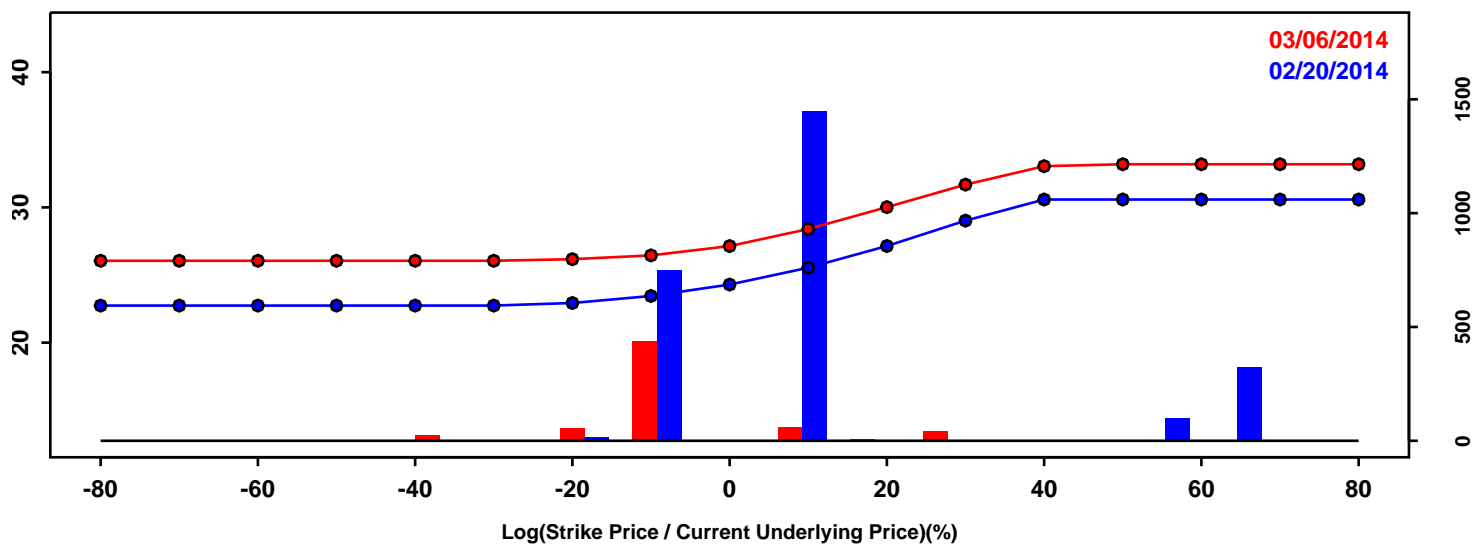
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -15.70% | -18.01% | -2.31% |
| 50th Pct | 0.00% | -1.12% | -1.12% |
| 90th Pct | 14.84% | 15.95% | 1.11% |
| Mean | -0.22% | -0.95% | -0.73% |
| Std Dev | 12.21% | 13.56% | 1.35% |
| Skew | -0.11 | 0.13 | 0.24 |
| Kurtosis | 0.40 | 0.47 | 0.07 |

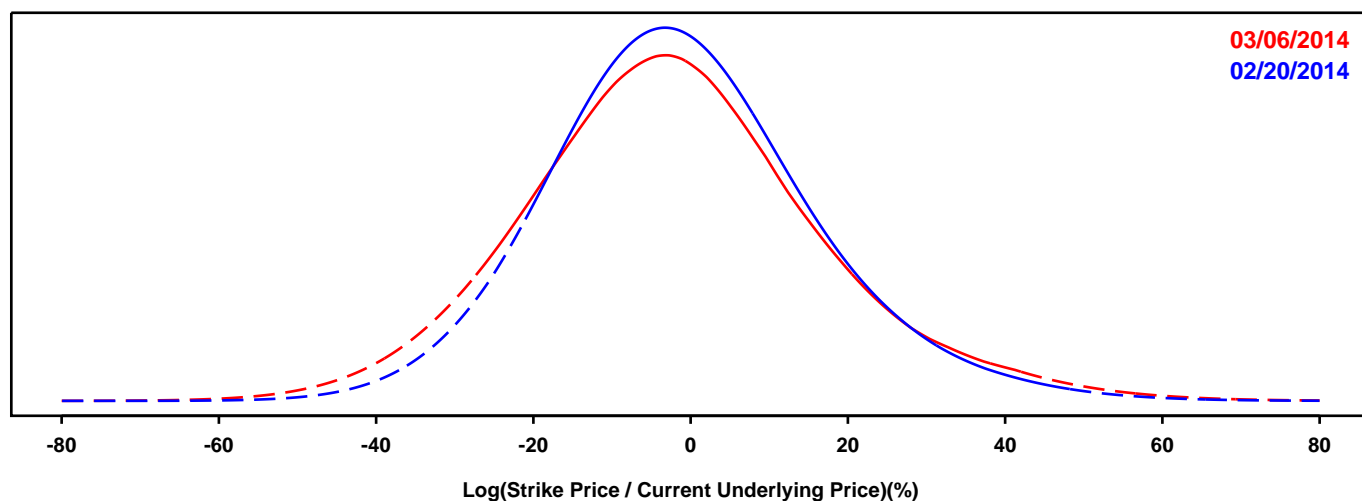
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- WHEAT FUTURES

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

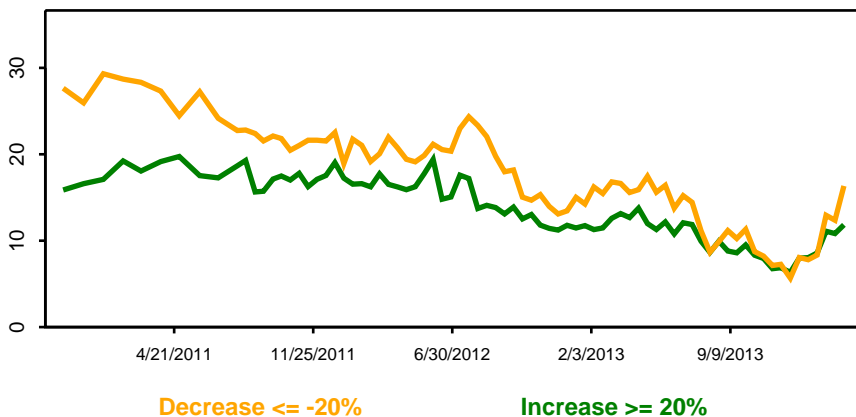
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



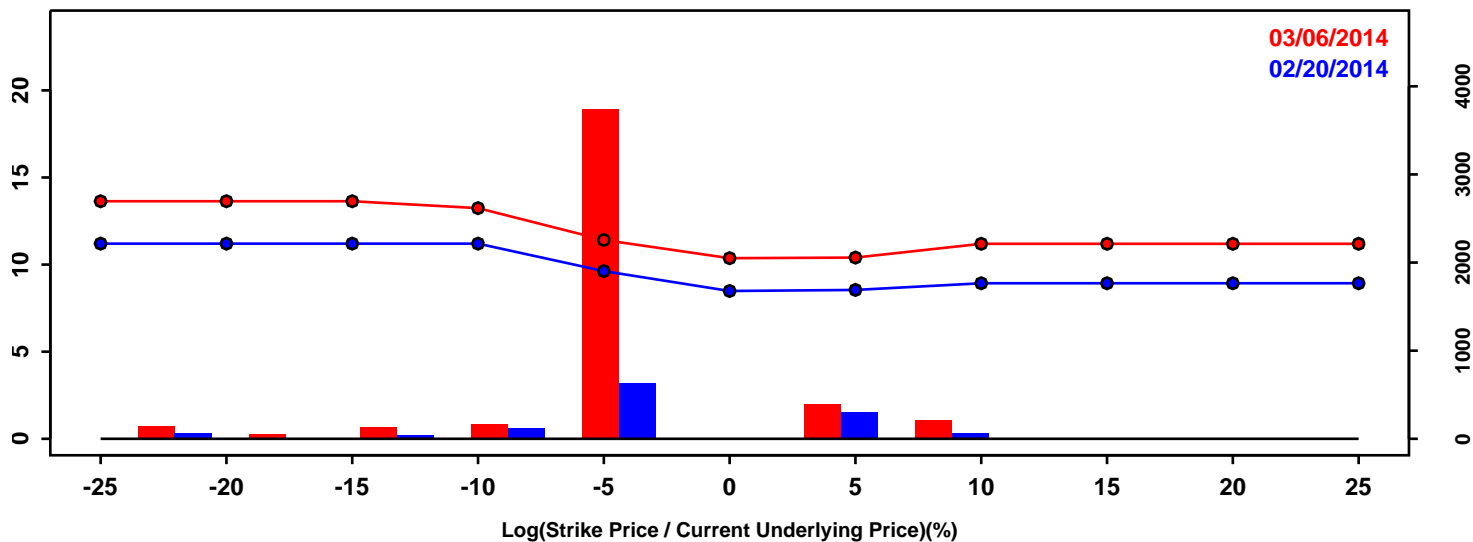
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -21.96% | -25.47% | -3.50% |
| 50th Pct | -1.93% | -2.83% | -0.90% |
| 90th Pct | 20.91% | 22.23% | 1.33% |
| Mean | -1.05% | -2.02% | -0.97% |
| Std Dev | 17.13% | 19.11% | 1.98% |
| Skew | 0.34 | 0.30 | -0.03 |
| Kurtosis | 0.49 | 0.52 | 0.03 |

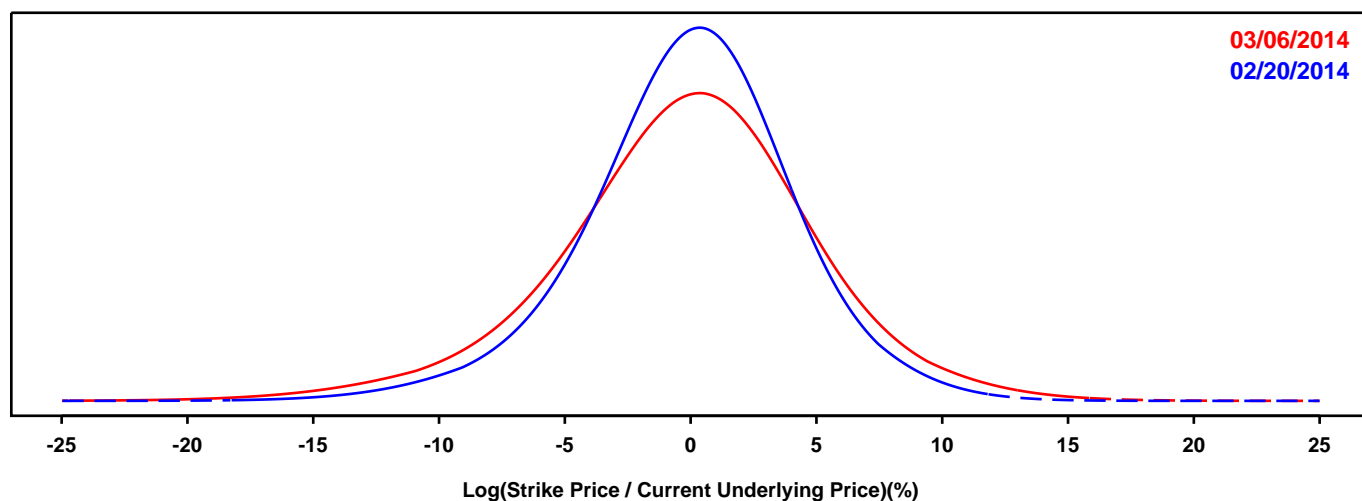
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CATTLE FUTURES

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

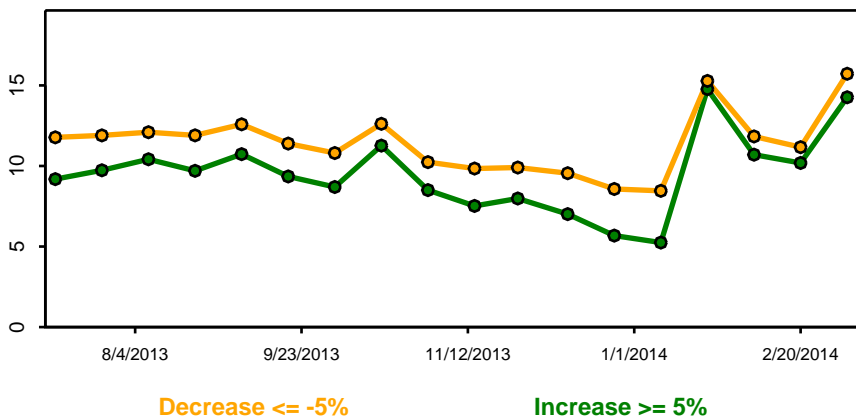
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



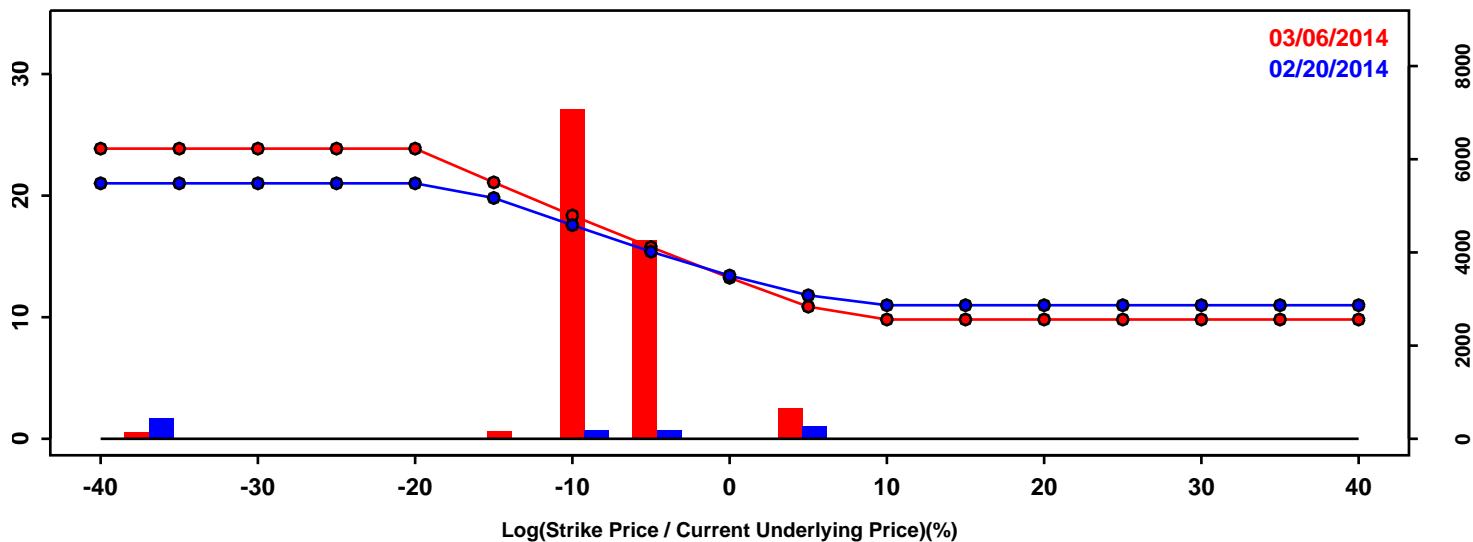
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -5.30% | -6.61% | -1.31% |
| 50th Pct | 0.12% | 0.04% | -0.09% |
| 90th Pct | 5.05% | 6.04% | 0.98% |
| Mean | -0.01% | -0.14% | -0.13% |
| Std Dev | 4.24% | 5.19% | 0.95% |
| Skew | -0.29 | -0.29 | 0.00 |
| Kurtosis | 0.81 | 0.85 | 0.04 |

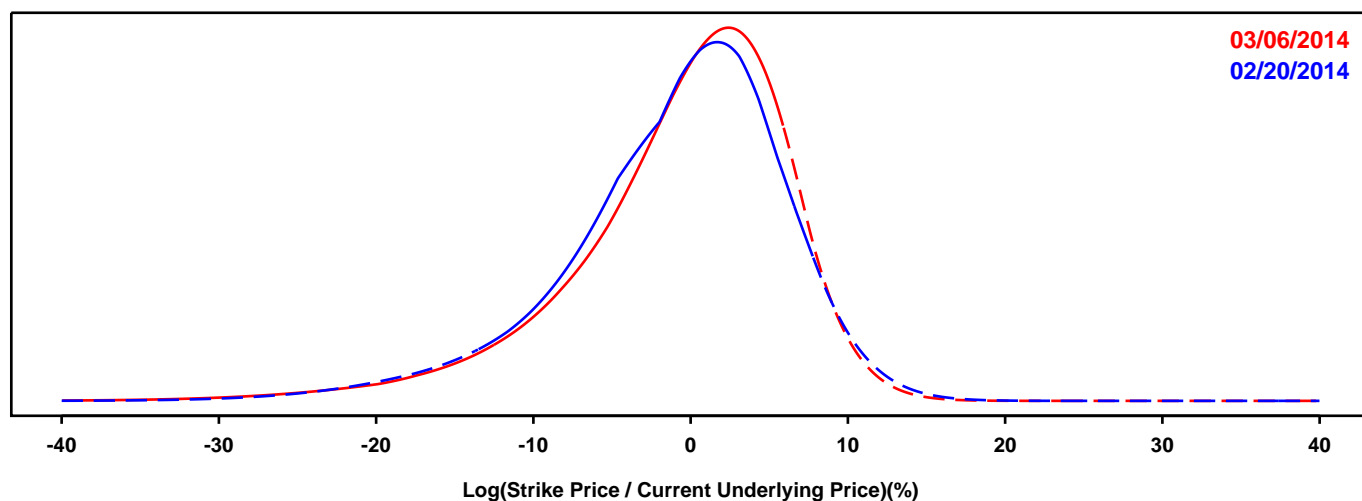
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- iSHARES DOW JONES US REAL ESTATE

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



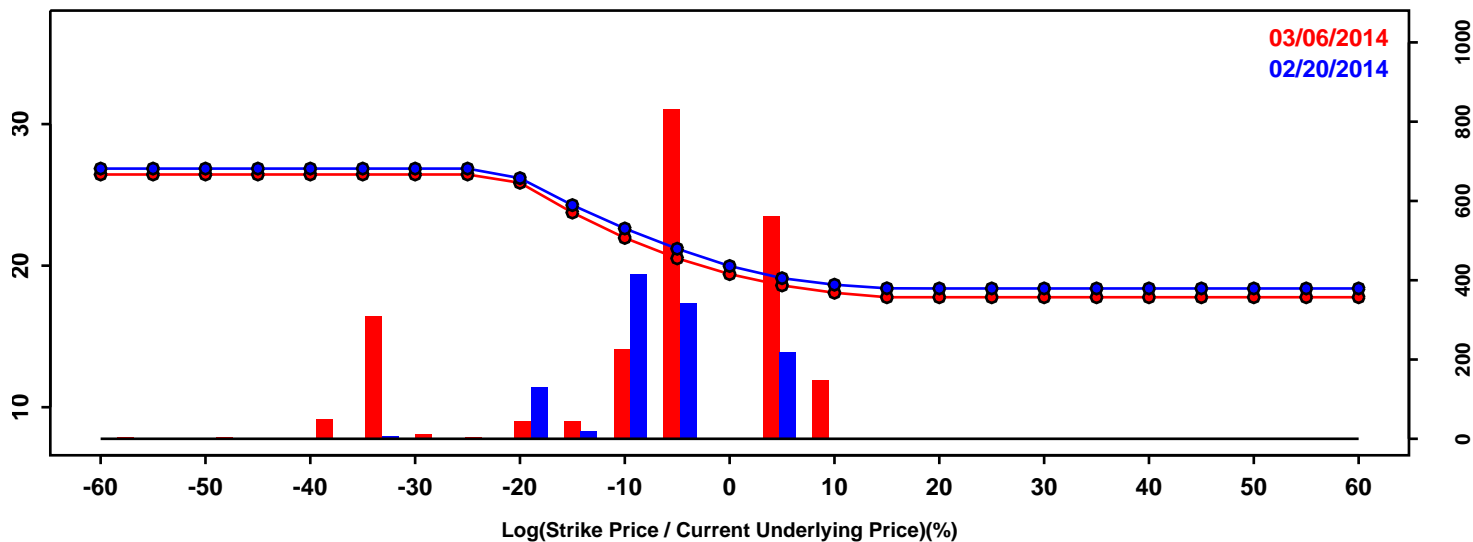
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -10.23% | -9.87% | 0.36% |
| 50th Pct | 0.00% | 0.54% | 0.54% |
| 90th Pct | 6.89% | 6.83% | -0.07% |
| Mean | -0.99% | -0.68% | 0.31% |
| Std Dev | 7.08% | 7.07% | -0.01% |
| Skew | -0.88 | -1.15 | -0.28 |
| Kurtosis | 1.43 | 2.27 | 0.84 |

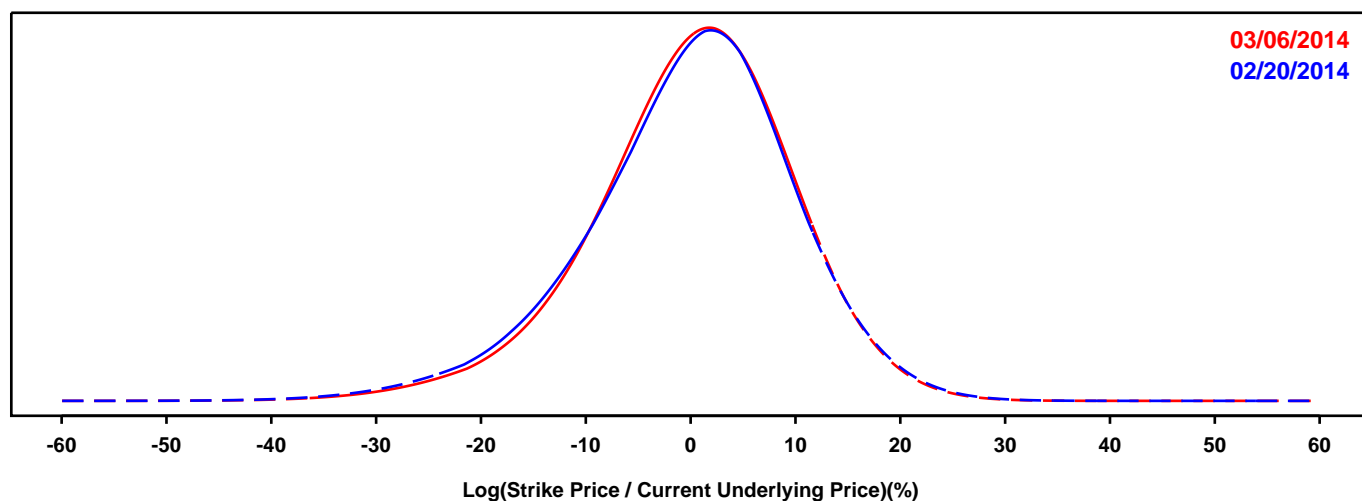
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AMERICAN EXPRESS

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

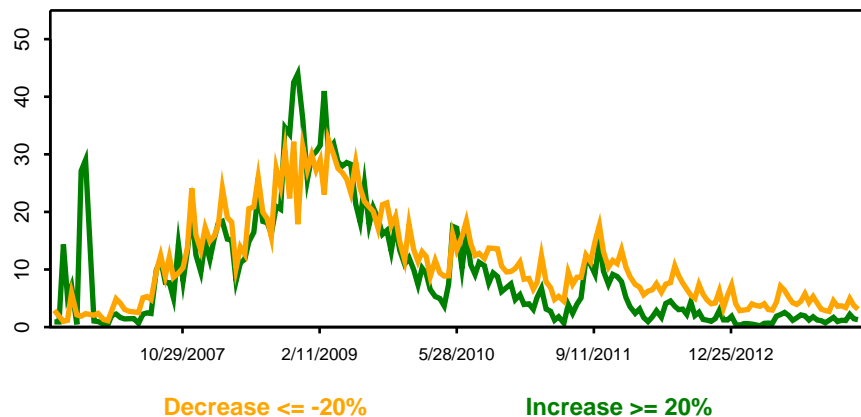
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



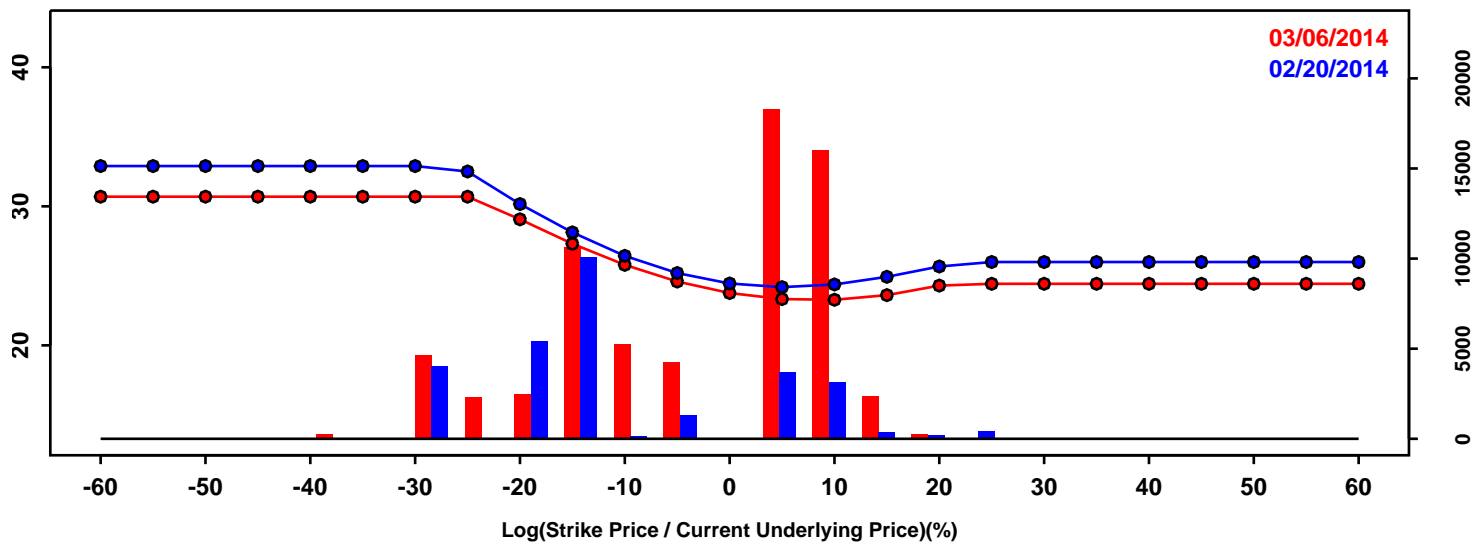
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -13.16% | -12.29% | 0.88% |
| 50th Pct | 0.66% | 0.78% | 0.11% |
| 90th Pct | 11.85% | 11.74% | -0.10% |
| Mean | -0.10% | 0.15% | 0.26% |
| Std Dev | 10.08% | 9.71% | -0.37% |
| Skew | -0.48 | -0.46 | 0.02 |
| Kurtosis | 0.73 | 0.75 | 0.02 |

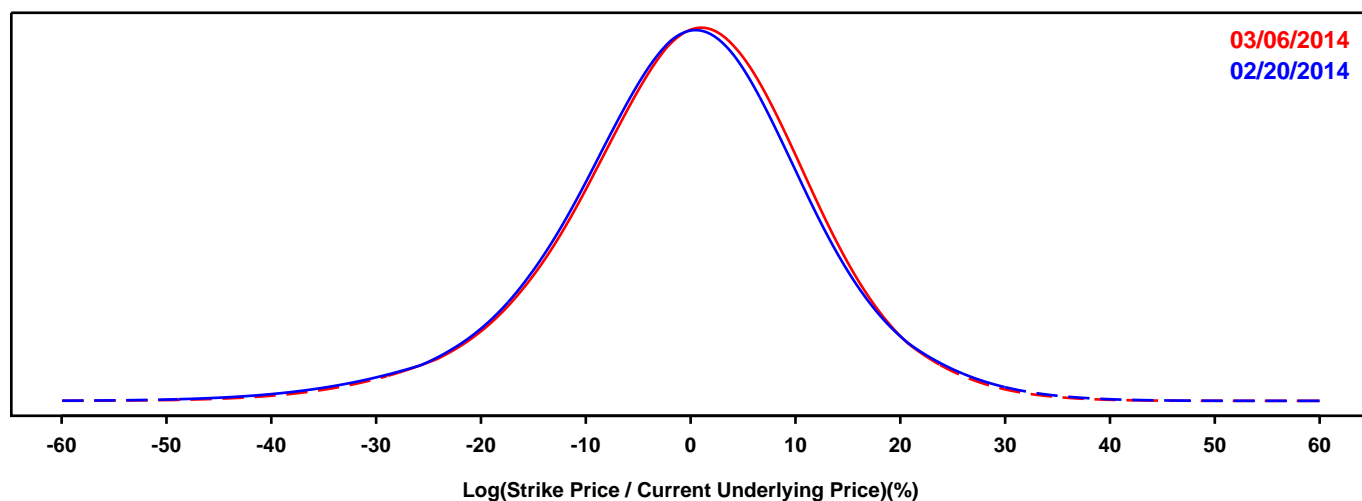
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BANK OF AMERICA

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

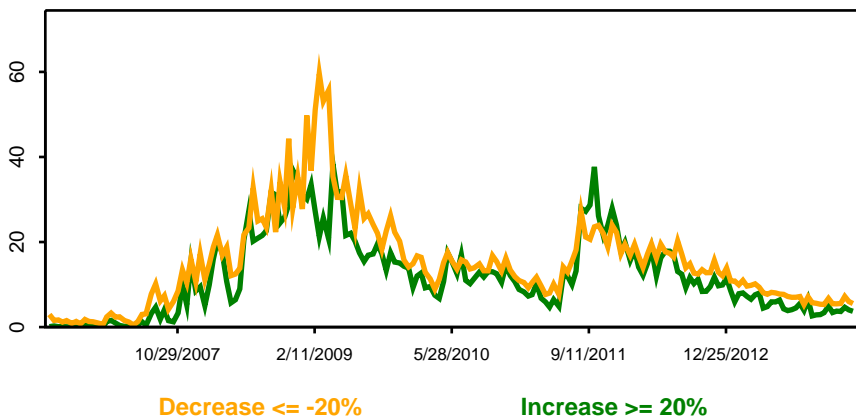
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



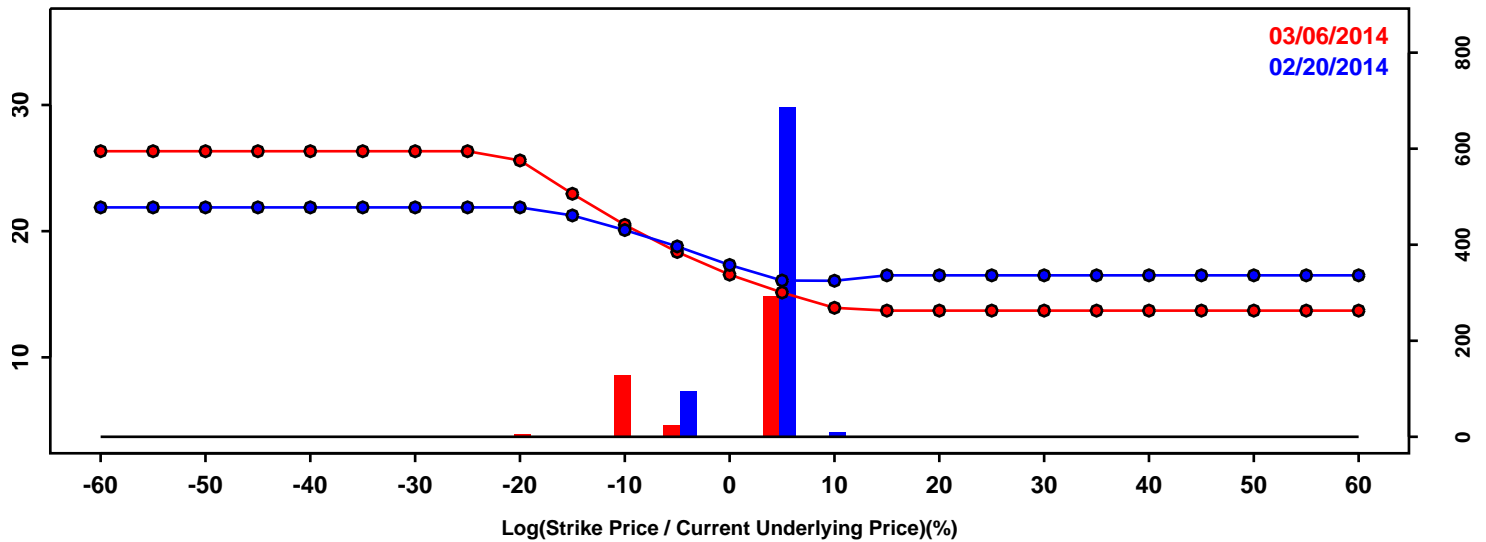
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -15.77% | -15.24% | 0.53% |
| 50th Pct | -0.09% | 0.30% | 0.39% |
| 90th Pct | 14.09% | 14.05% | -0.04% |
| Mean | -0.56% | -0.22% | 0.34% |
| Std Dev | 12.25% | 11.89% | -0.35% |
| Skew | -0.31 | -0.32 | -0.01 |
| Kurtosis | 0.91 | 0.72 | -0.18 |

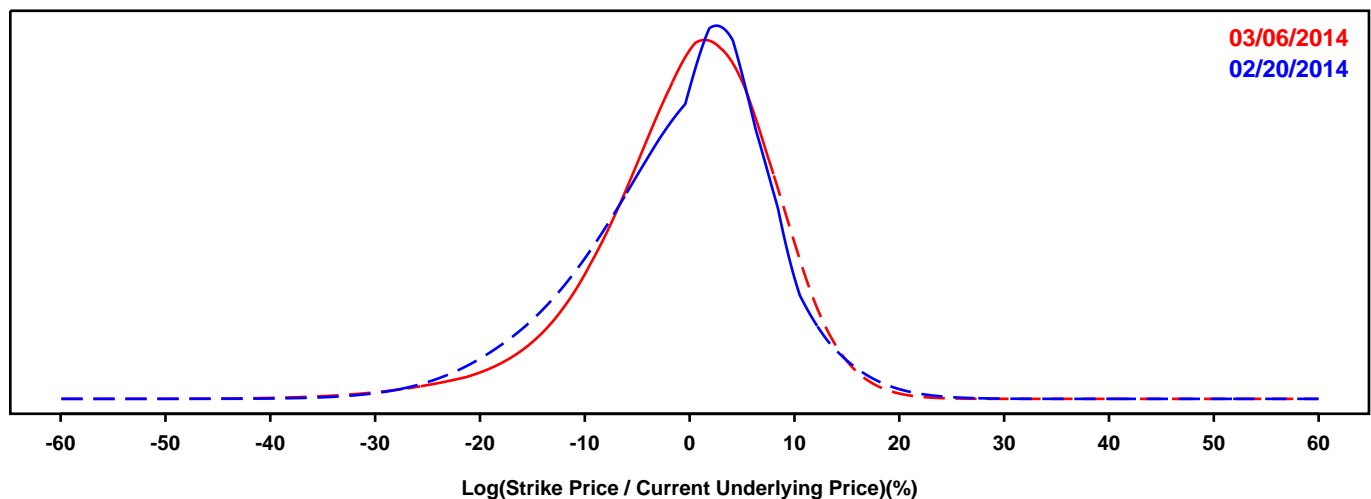
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BB&T

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

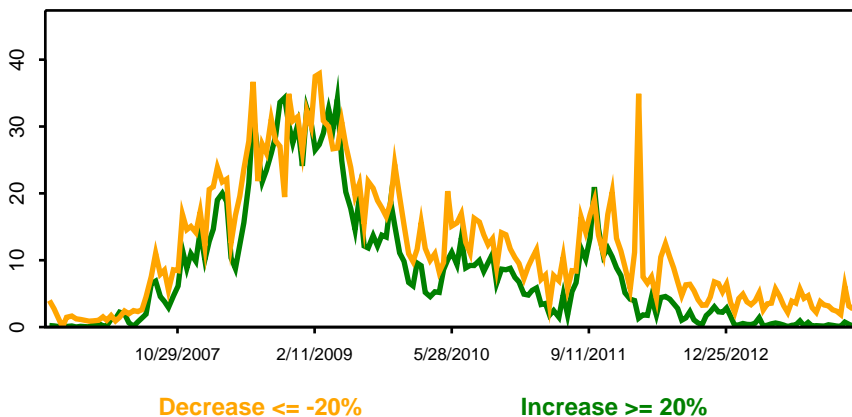
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



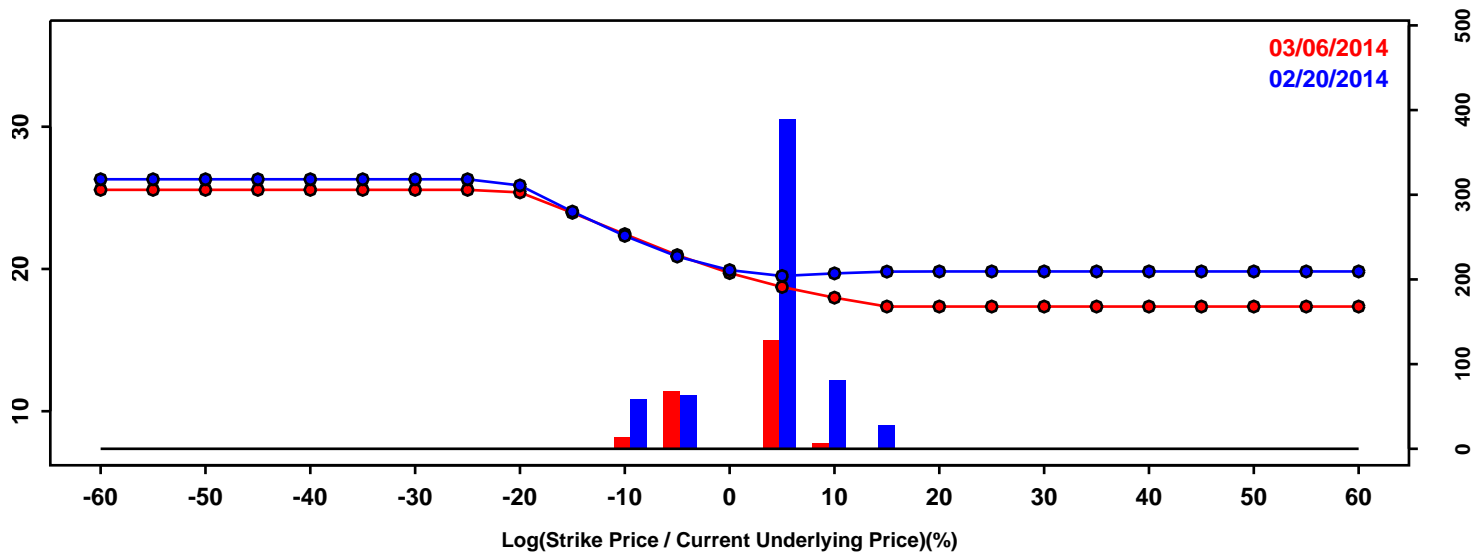
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -13.14% | -11.31% | 1.84% |
| 50th Pct | 0.19% | 0.41% | 0.22% |
| 90th Pct | 8.80% | 9.22% | 0.42% |
| Mean | -1.09% | -0.49% | 0.60% |
| Std Dev | 8.86% | 8.49% | -0.37% |
| Skew | -0.56 | -0.80 | -0.24 |
| Kurtosis | 0.59 | 1.46 | 0.87 |

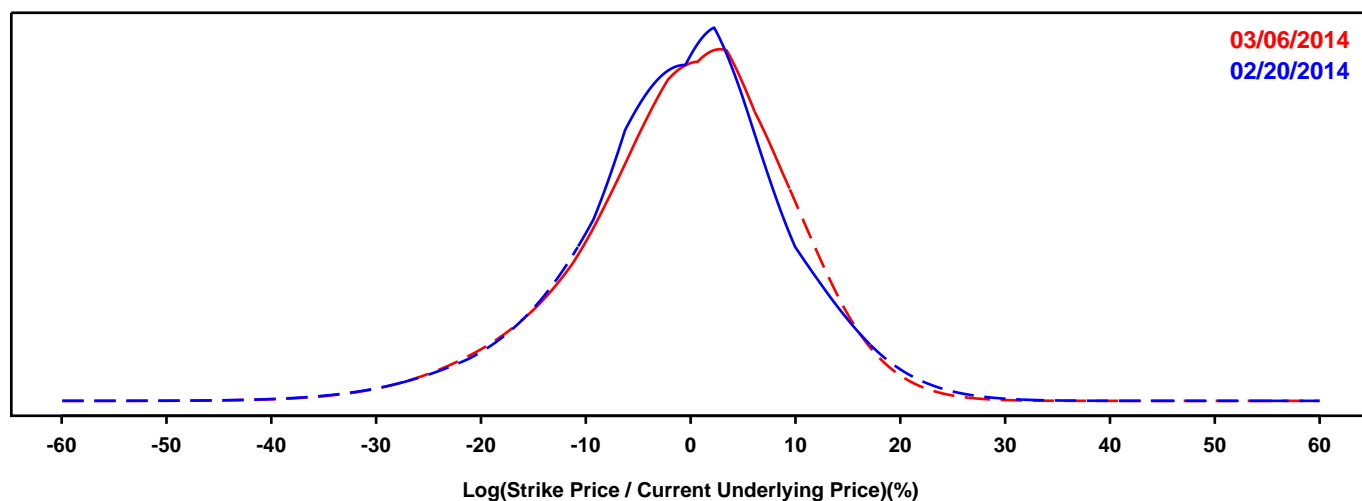
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BANK OF NEW YORK MELLON

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

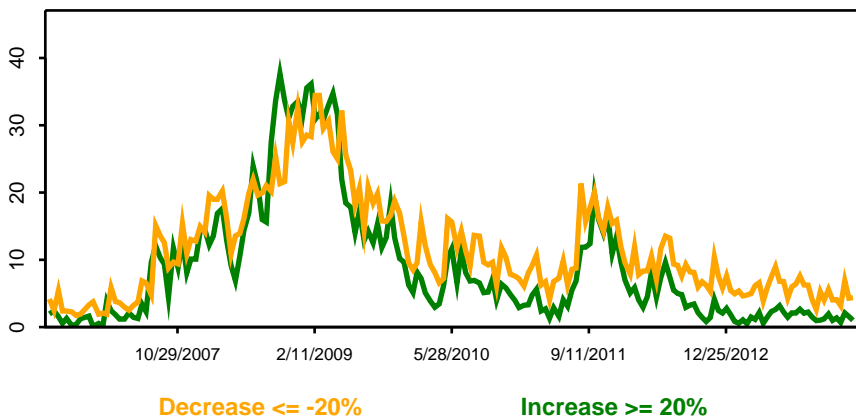
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



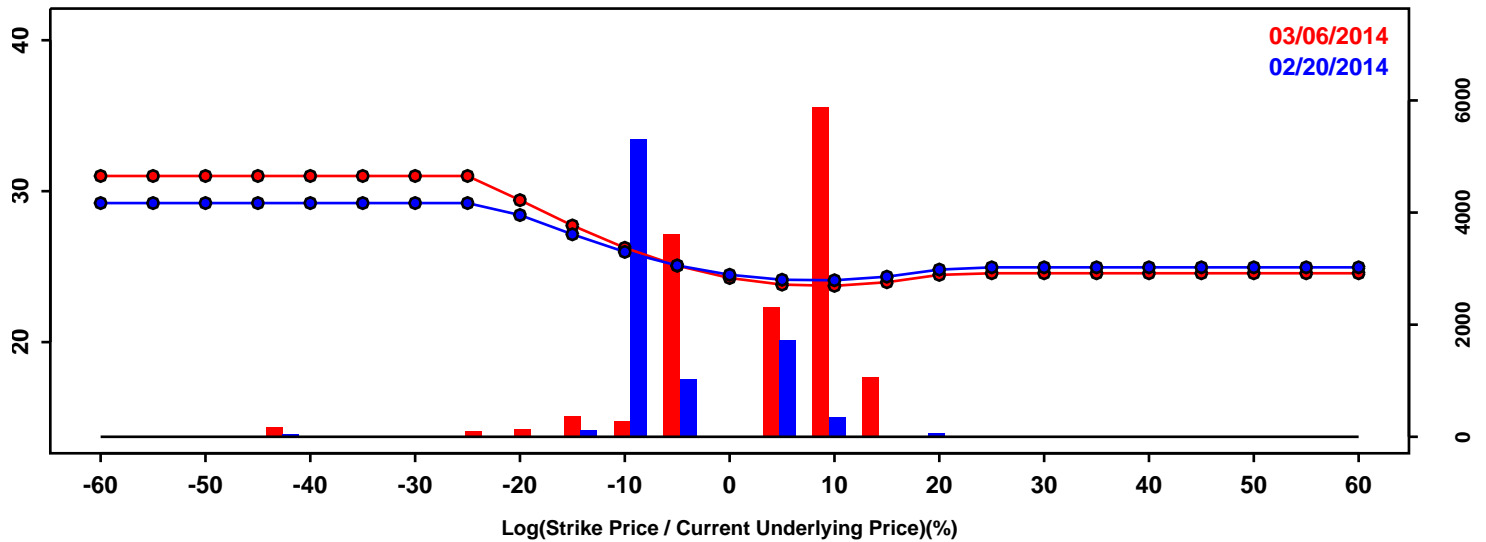
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -13.87% | -13.97% | -0.10% |
| 50th Pct | -0.35% | 0.21% | 0.55% |
| 90th Pct | 11.24% | 11.33% | 0.10% |
| Mean | -0.98% | -0.66% | 0.32% |
| Std Dev | 10.16% | 10.09% | -0.07% |
| Skew | -0.38 | -0.52 | -0.14 |
| Kurtosis | 0.80 | 0.62 | -0.18 |

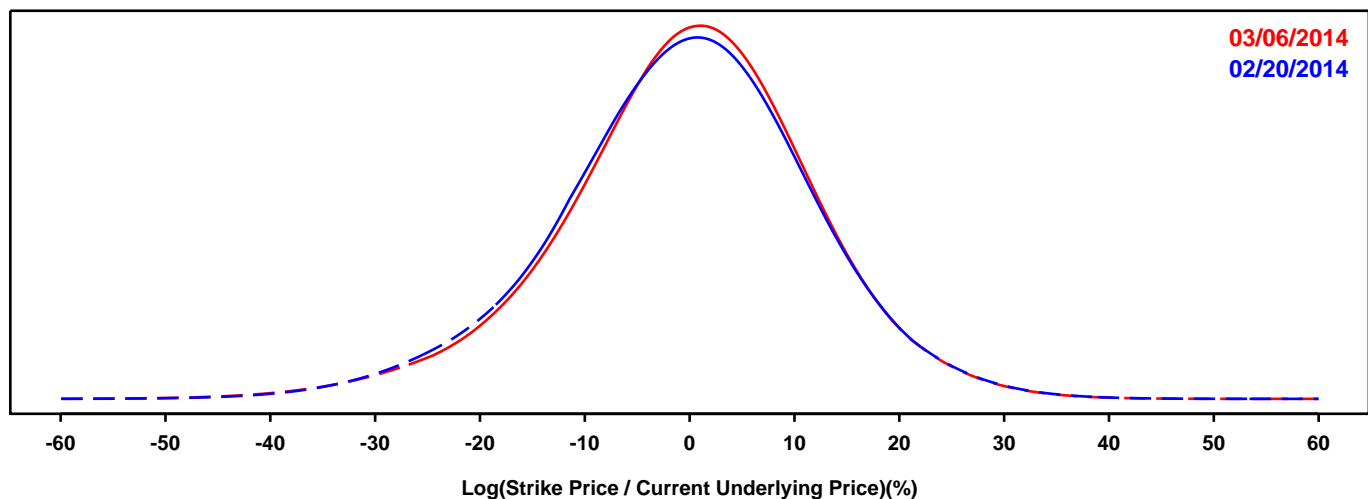
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CITIGROUP

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

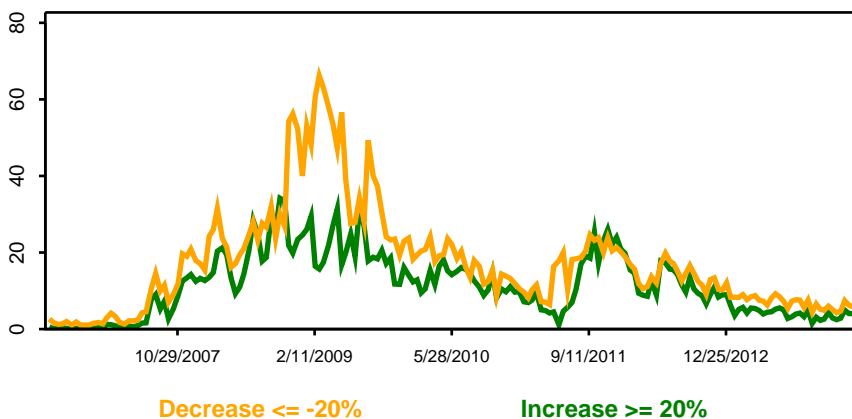
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



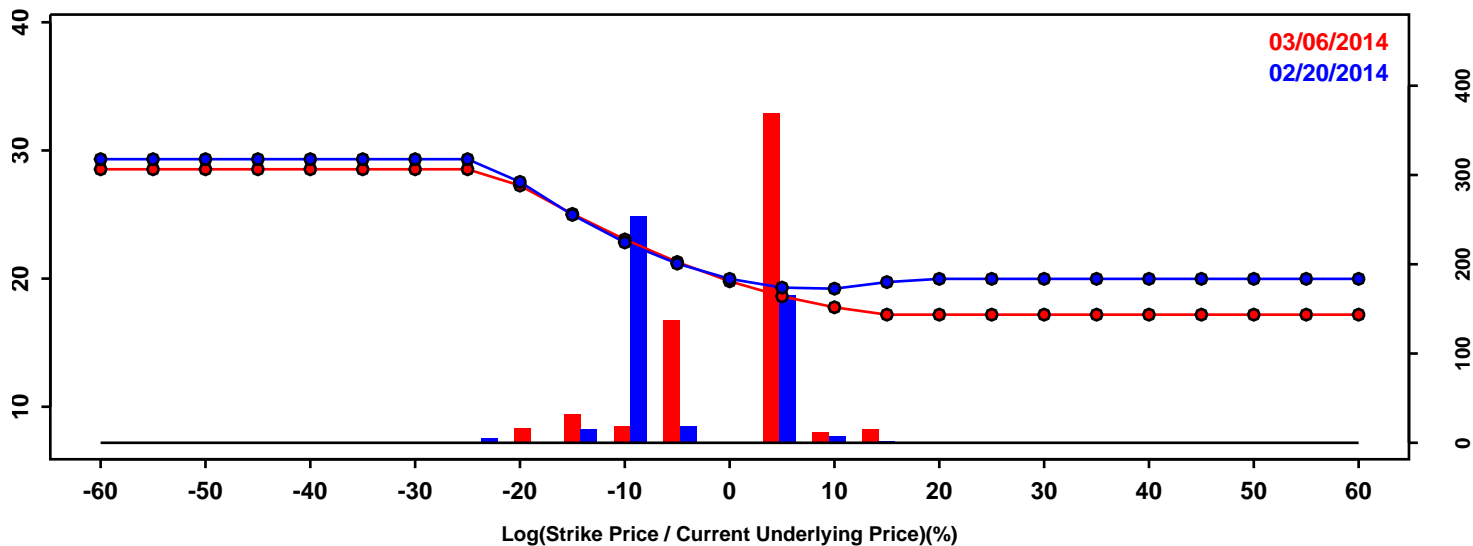
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -16.09% | -15.53% | 0.56% |
| 50th Pct | -0.04% | 0.30% | 0.35% |
| 90th Pct | 14.40% | 14.36% | -0.04% |
| Mean | -0.49% | -0.20% | 0.29% |
| Std Dev | 12.25% | 12.12% | -0.12% |
| Skew | -0.24 | -0.32 | -0.08 |
| Kurtosis | 0.48 | 0.69 | 0.20 |

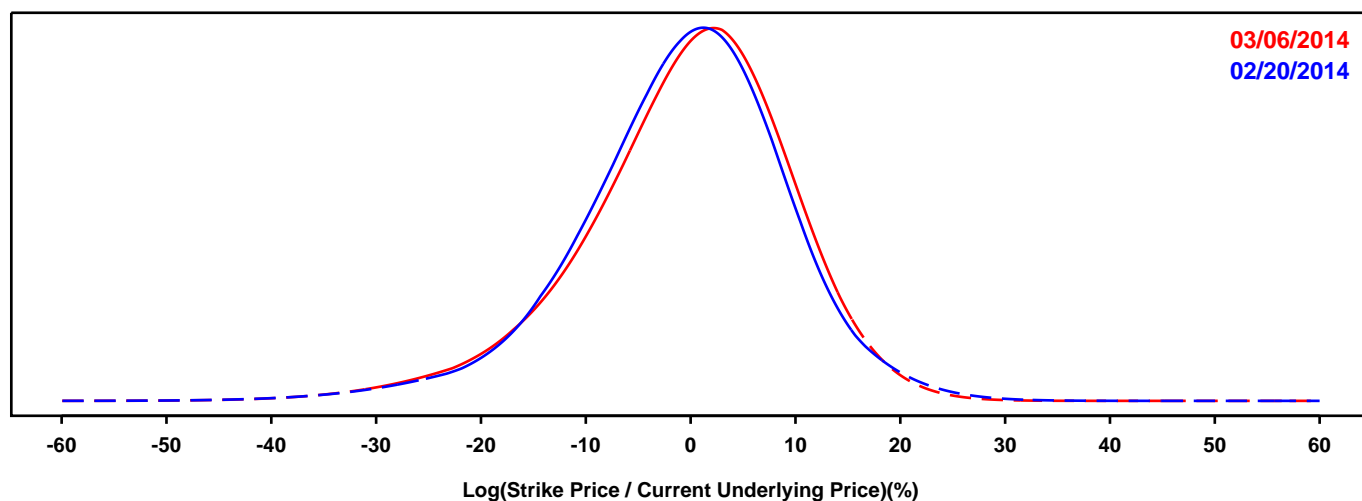
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CAPITAL ONE

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

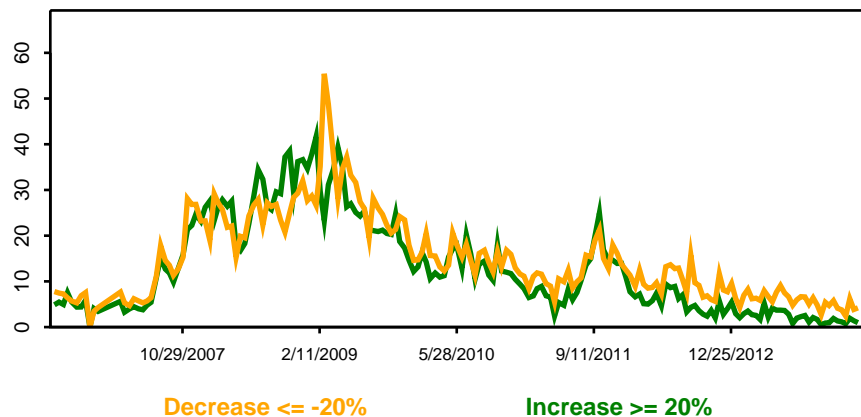
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



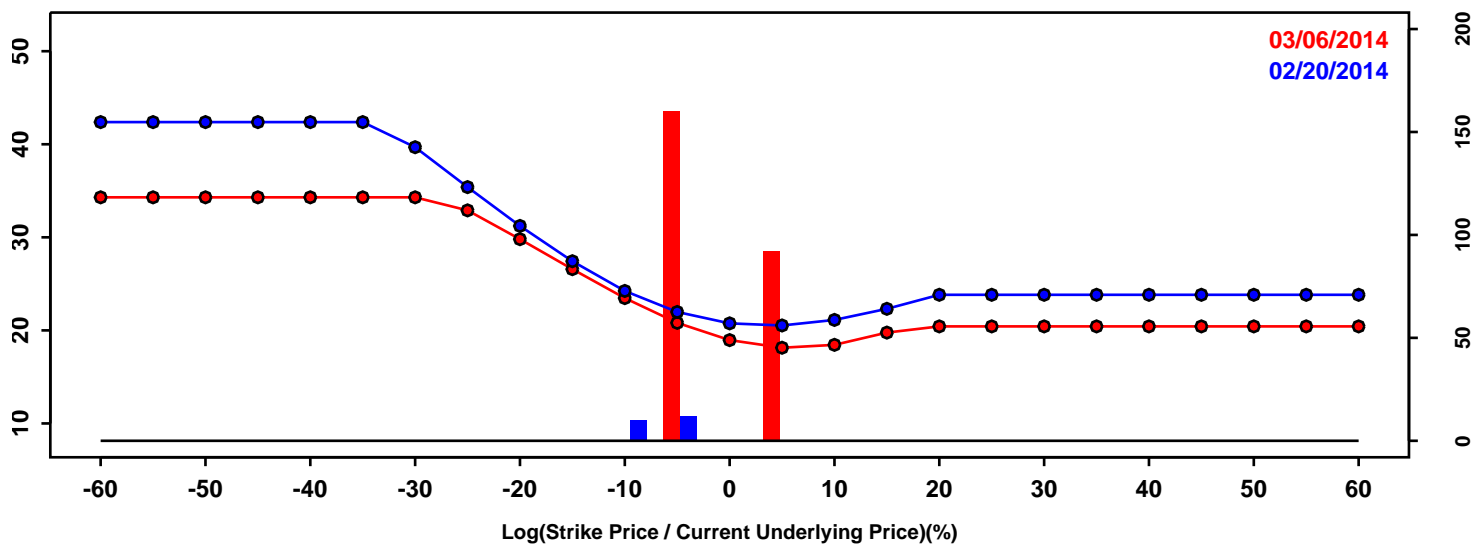
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -13.28% | -13.53% | -0.25% |
| 50th Pct | -0.04% | 0.50% | 0.53% |
| 90th Pct | 10.93% | 11.26% | 0.33% |
| Mean | -0.75% | -0.46% | 0.29% |
| Std Dev | 10.04% | 10.10% | 0.06% |
| Skew | -0.51 | -0.64 | -0.13 |
| Kurtosis | 1.16 | 1.01 | -0.15 |

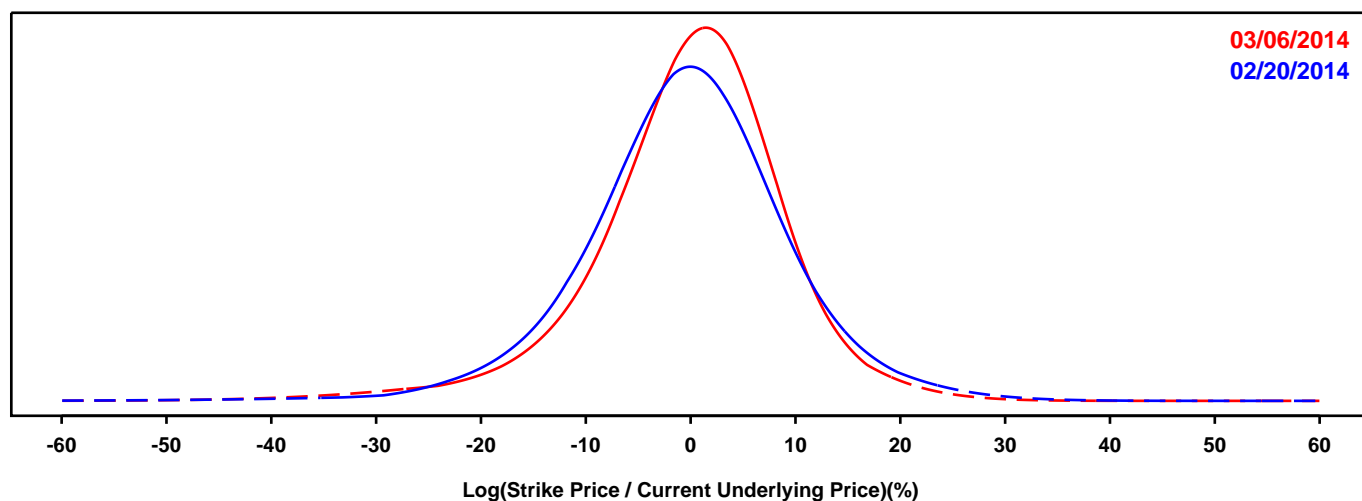
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- FIFTH THIRD

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

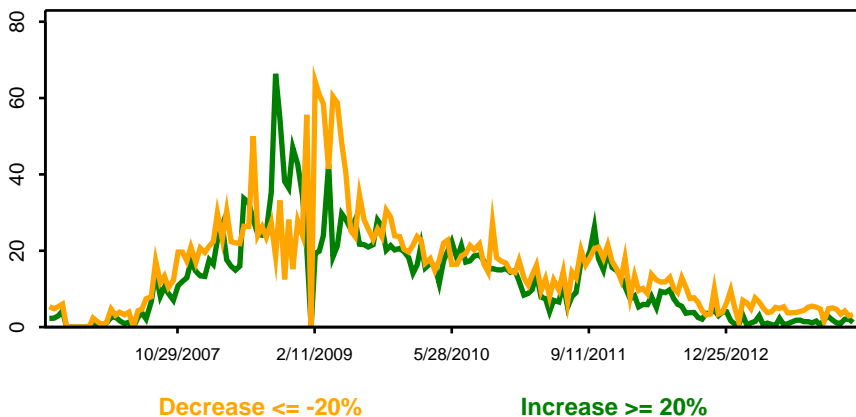
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



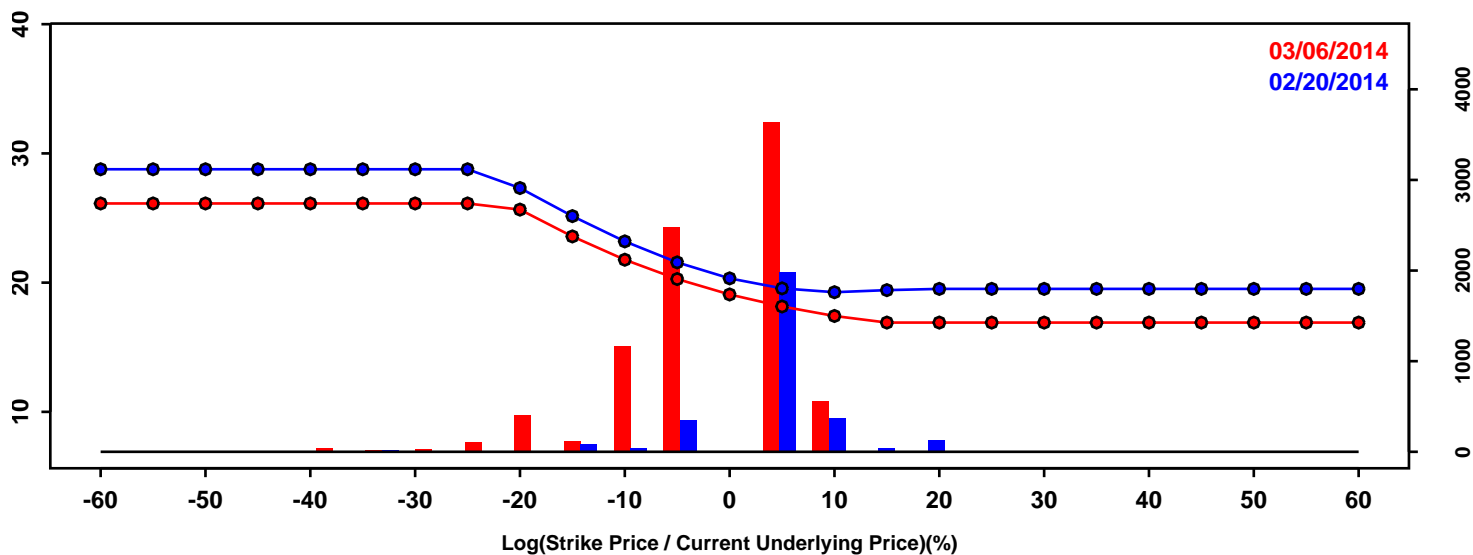
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -12.27% | -11.27% | 0.99% |
| 50th Pct | -0.18% | 0.55% | 0.74% |
| 90th Pct | 11.32% | 10.25% | -1.07% |
| Mean | -0.39% | -0.16% | 0.23% |
| Std Dev | 9.98% | 9.45% | -0.54% |
| Skew | -0.40 | -0.81 | -0.42 |
| Kurtosis | 2.25 | 2.68 | 0.43 |

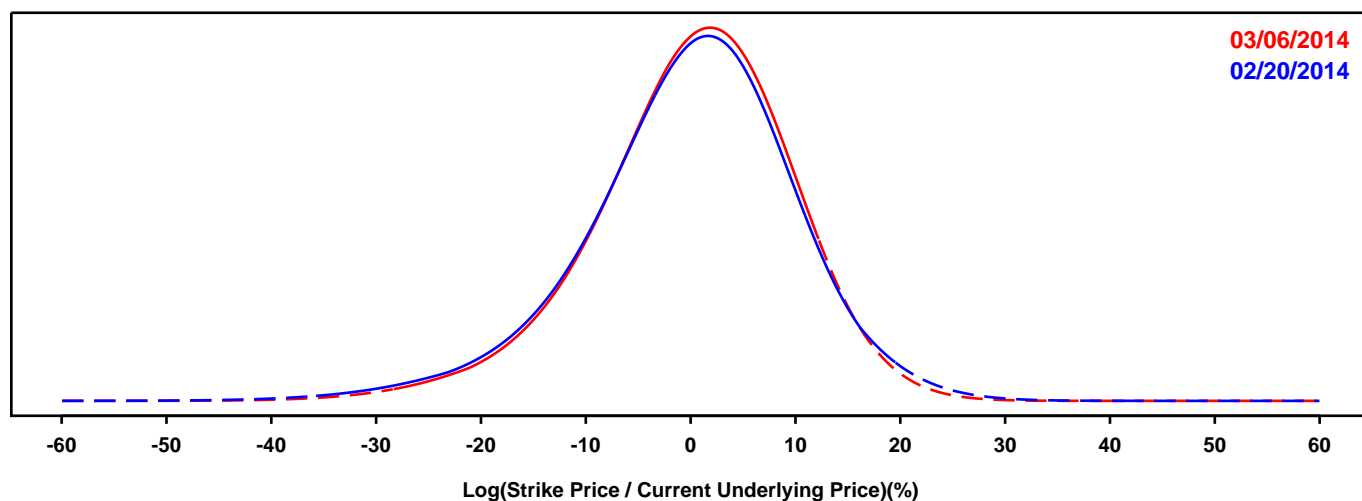
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- GOLDMAN SACHS

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

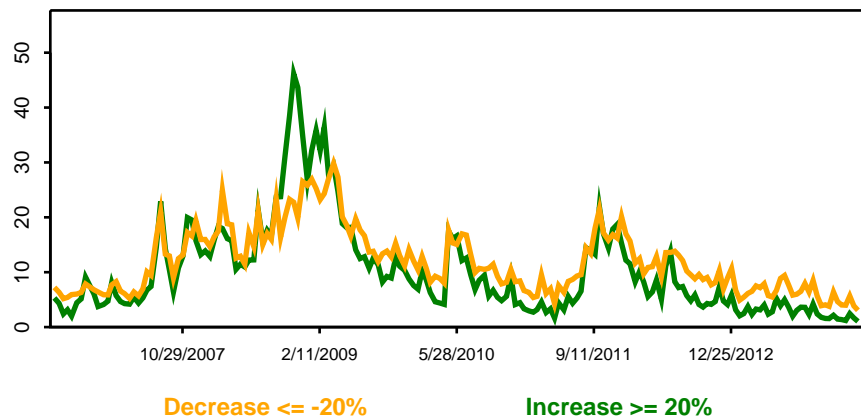
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



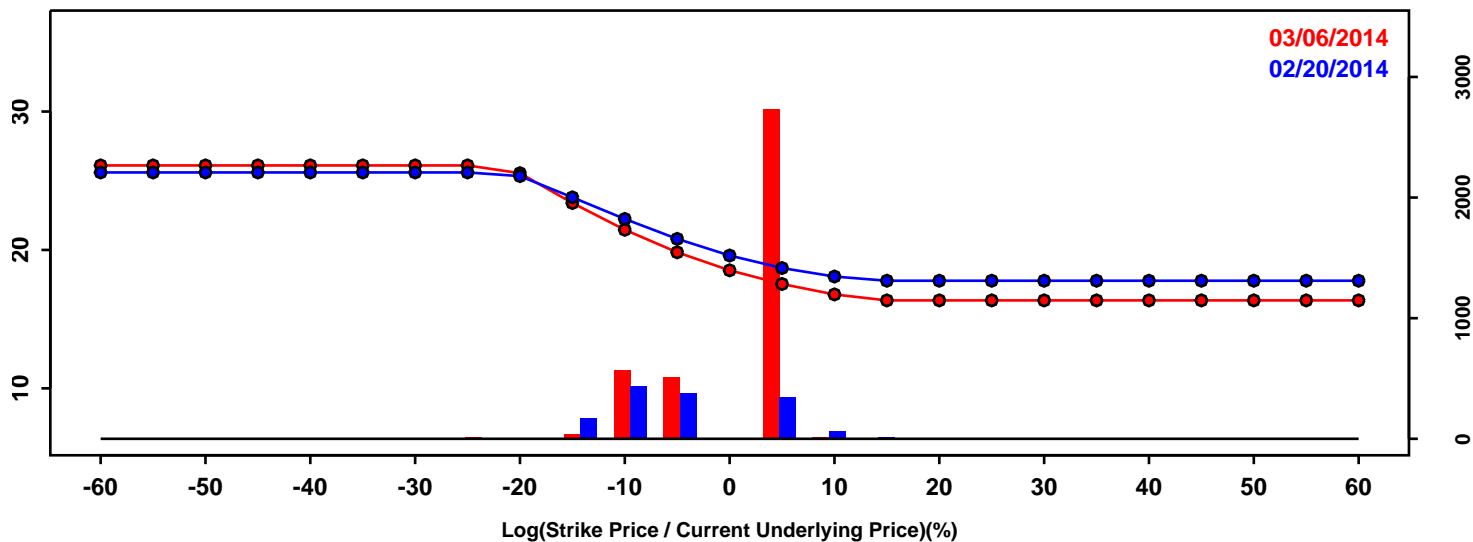
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -13.04% | -12.14% | 0.90% |
| 50th Pct | 0.61% | 0.84% | 0.23% |
| 90th Pct | 11.85% | 11.57% | -0.28% |
| Mean | -0.11% | 0.16% | 0.26% |
| Std Dev | 10.20% | 9.57% | -0.63% |
| Skew | -0.50 | -0.50 | -0.00 |
| Kurtosis | 0.99 | 0.75 | -0.24 |

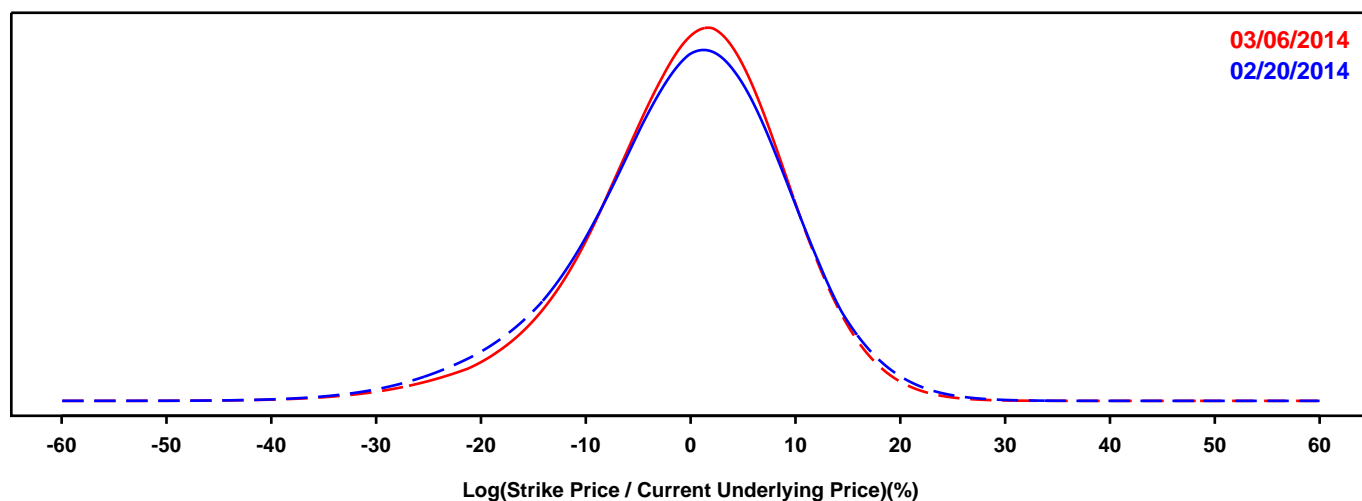
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- JP MORGAN

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

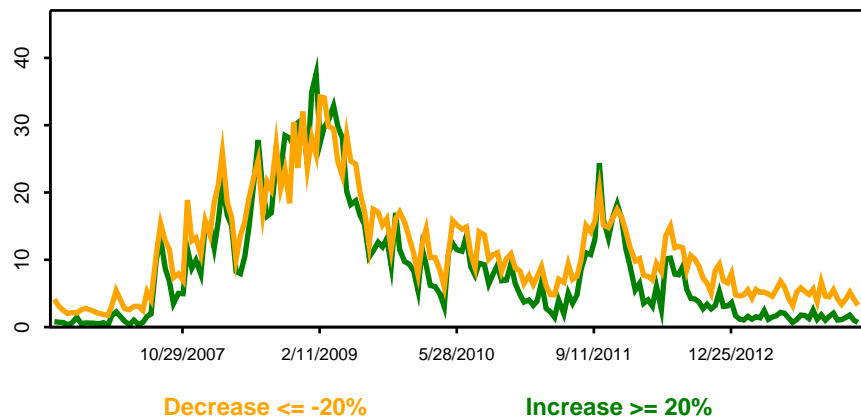
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



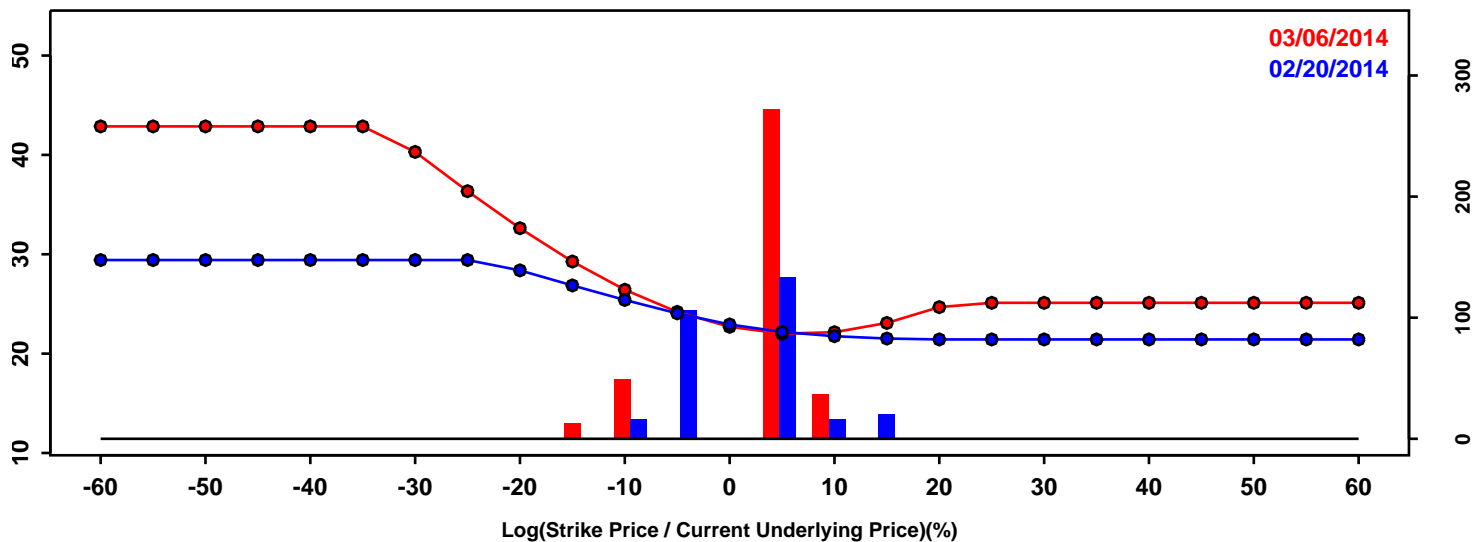
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -13.72% | -12.45% | 1.27% |
| 50th Pct | 0.09% | 0.35% | 0.26% |
| 90th Pct | 11.07% | 10.71% | -0.36% |
| Mean | -0.70% | -0.39% | 0.30% |
| Std Dev | 9.97% | 9.38% | -0.58% |
| Skew | -0.51 | -0.56 | -0.05 |
| Kurtosis | 0.66 | 0.87 | 0.21 |

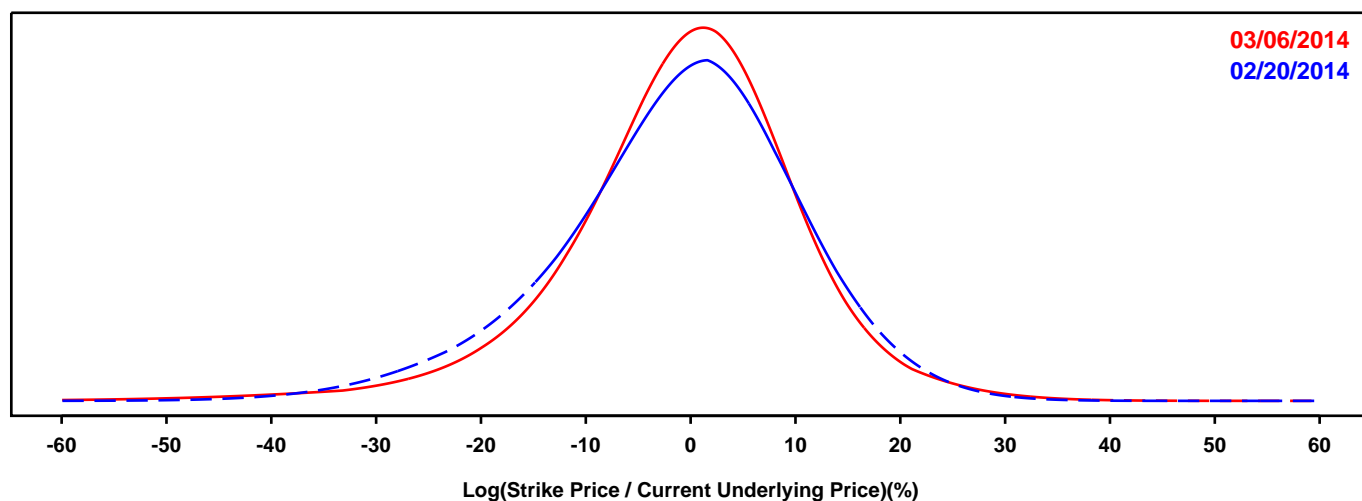
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- KEYCORP

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

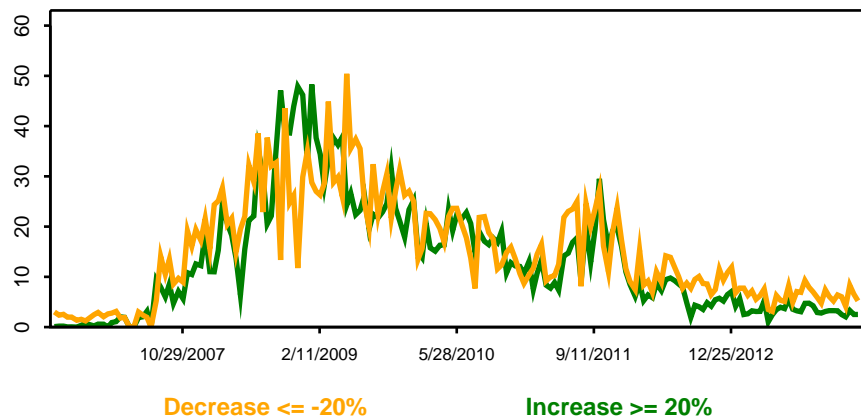
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



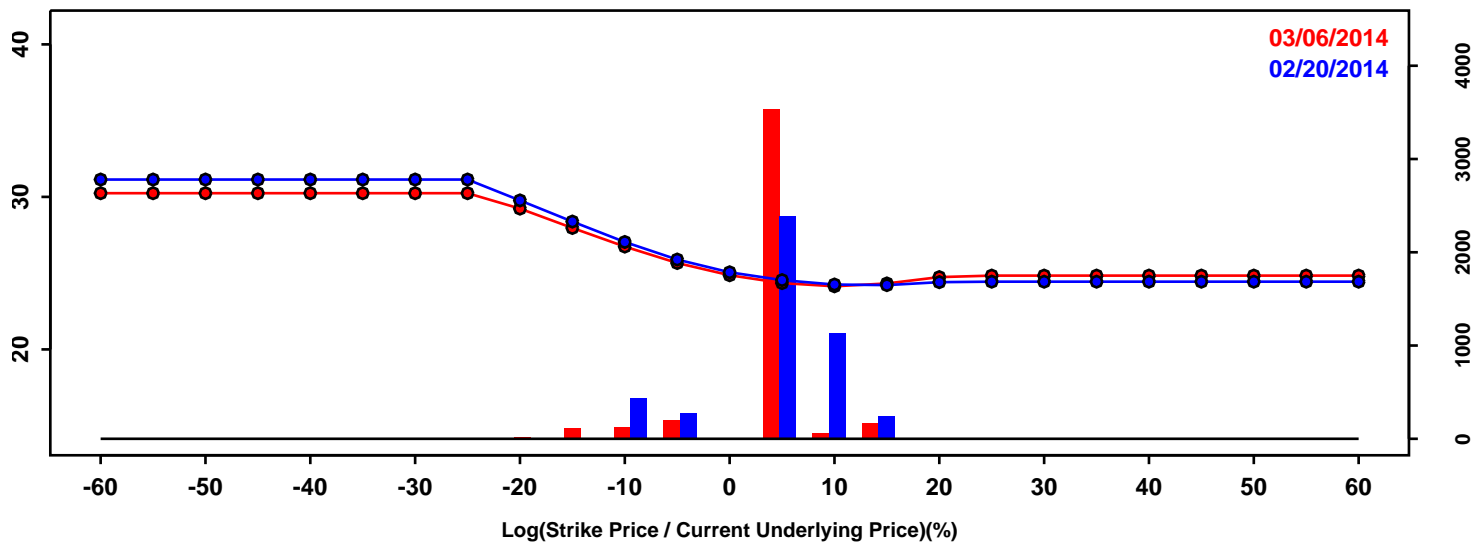
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -16.44% | -14.45% | 1.99% |
| 50th Pct | -0.19% | 0.13% | 0.32% |
| 90th Pct | 12.88% | 12.21% | -0.67% |
| Mean | -1.08% | -0.72% | 0.36% |
| Std Dev | 11.74% | 11.52% | -0.22% |
| Skew | -0.45 | -0.73 | -0.28 |
| Kurtosis | 0.61 | 2.50 | 1.89 |

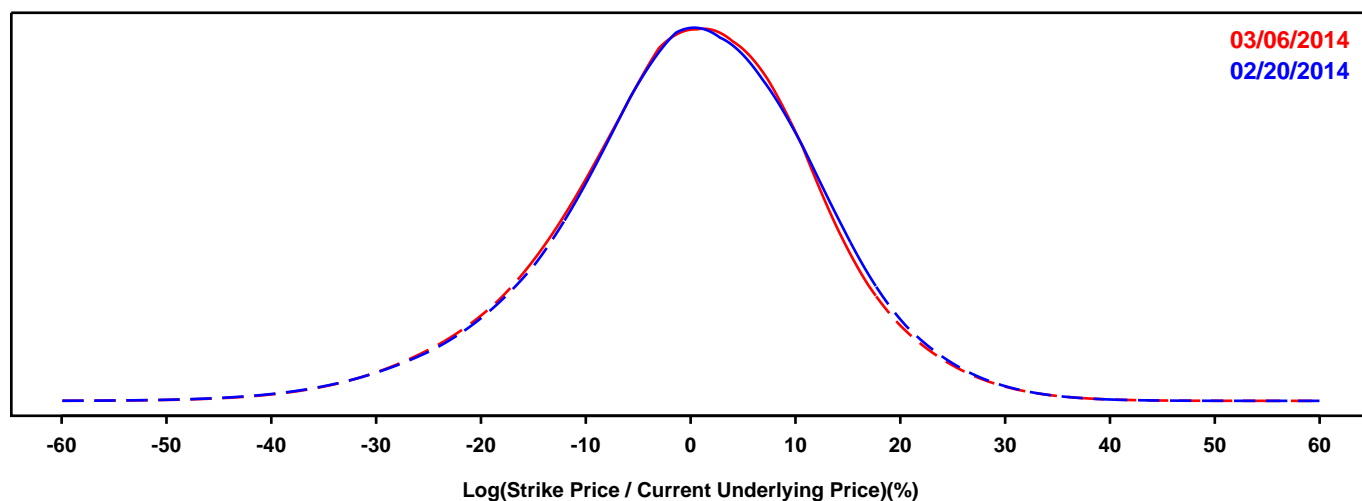
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- MORGAN STANLEY

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

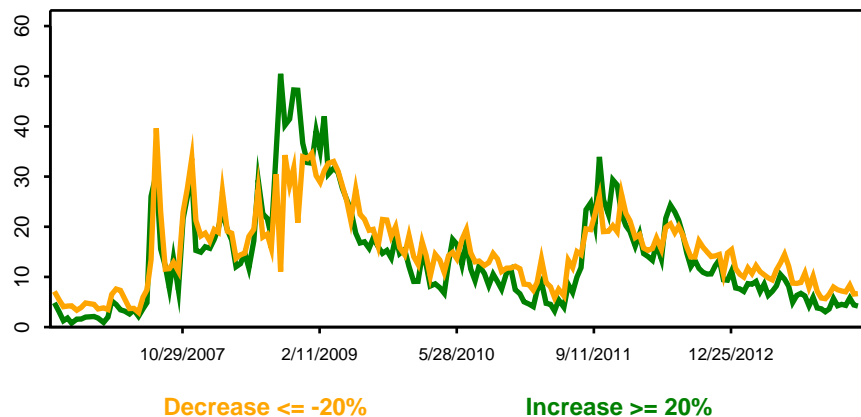
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



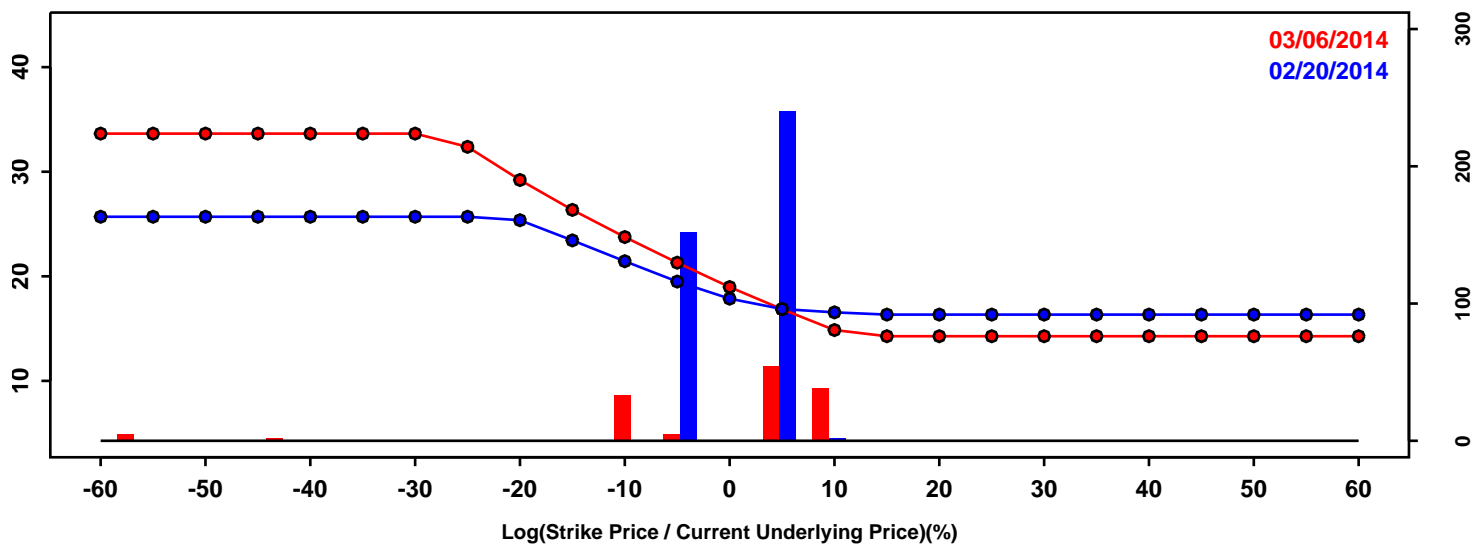
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -16.34% | -16.52% | -0.18% |
| 50th Pct | 0.39% | 0.25% | -0.13% |
| 90th Pct | 14.97% | 14.49% | -0.48% |
| Mean | -0.16% | -0.40% | -0.24% |
| Std Dev | 12.57% | 12.47% | -0.10% |
| Skew | -0.34 | -0.31 | 0.02 |
| Kurtosis | 0.56 | 0.53 | -0.03 |

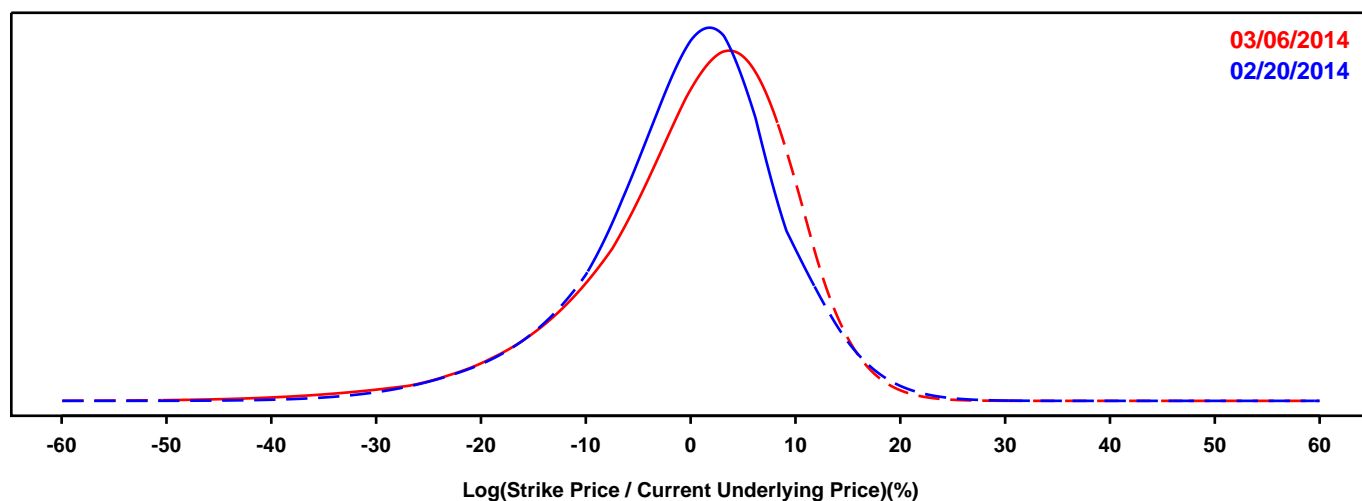
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PNC FINANCIAL

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

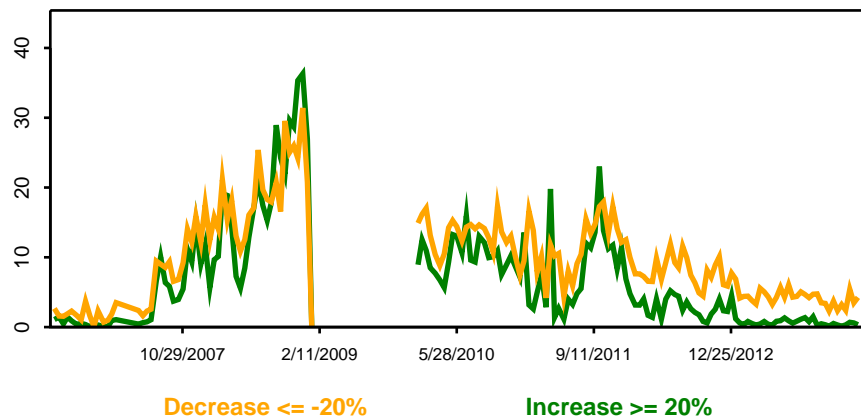
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



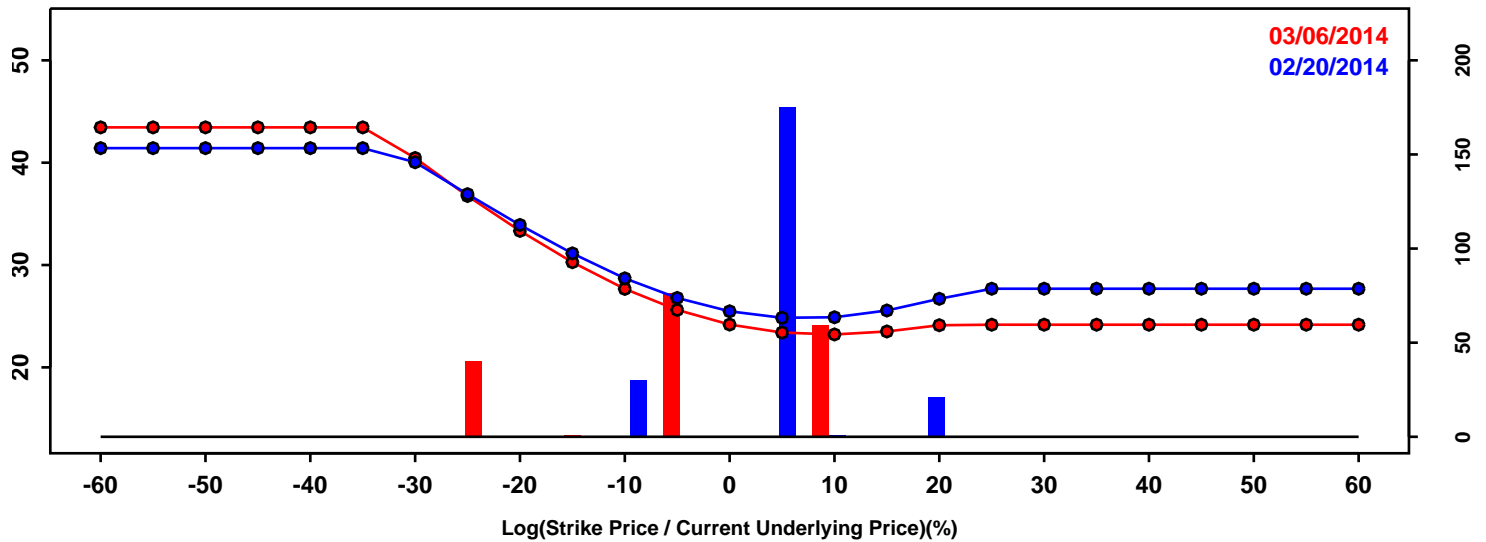
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -12.42% | -13.01% | -0.59% |
| 50th Pct | 0.41% | 1.45% | 1.04% |
| 90th Pct | 10.09% | 10.62% | 0.53% |
| Mean | -0.52% | -0.10% | 0.41% |
| Std Dev | 9.19% | 9.90% | 0.71% |
| Skew | -0.65 | -1.07 | -0.42 |
| Kurtosis | 1.15 | 2.10 | 0.95 |

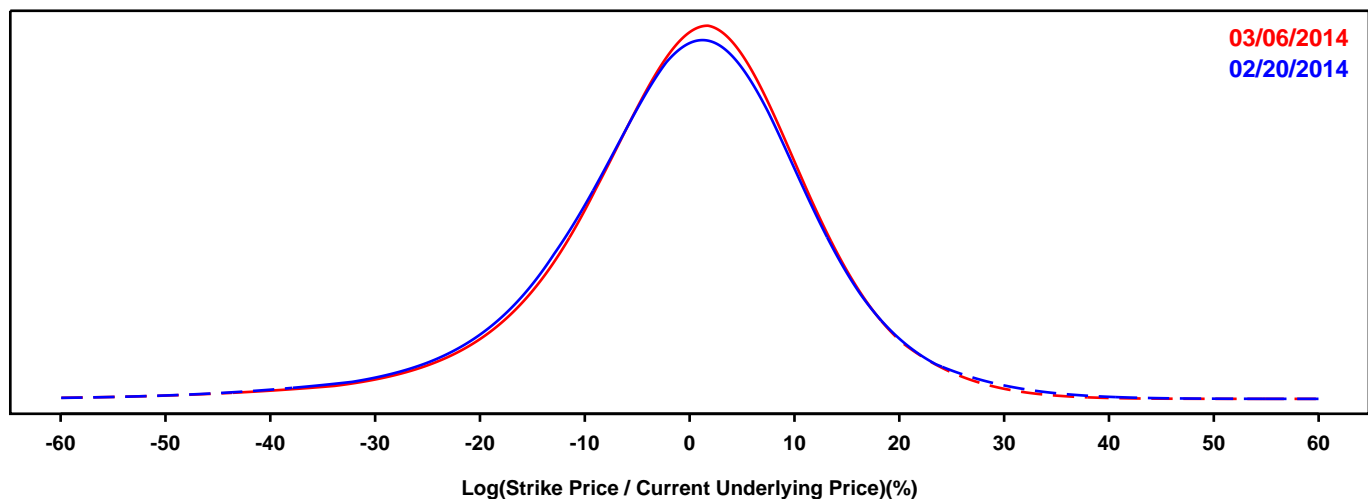
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- REGIONS FINANCIAL

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

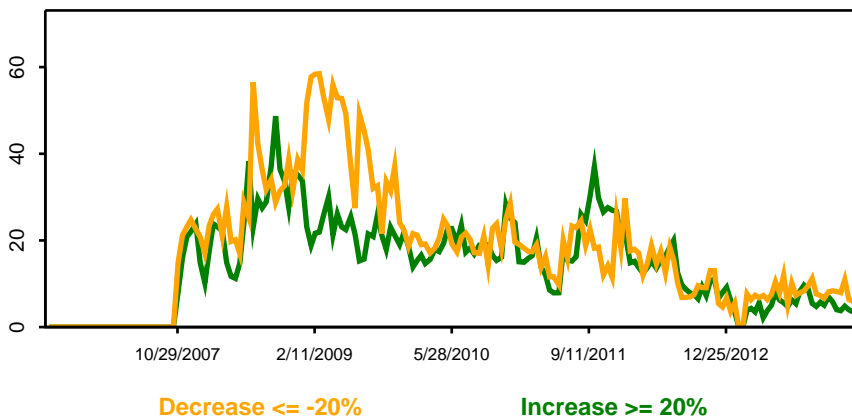
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



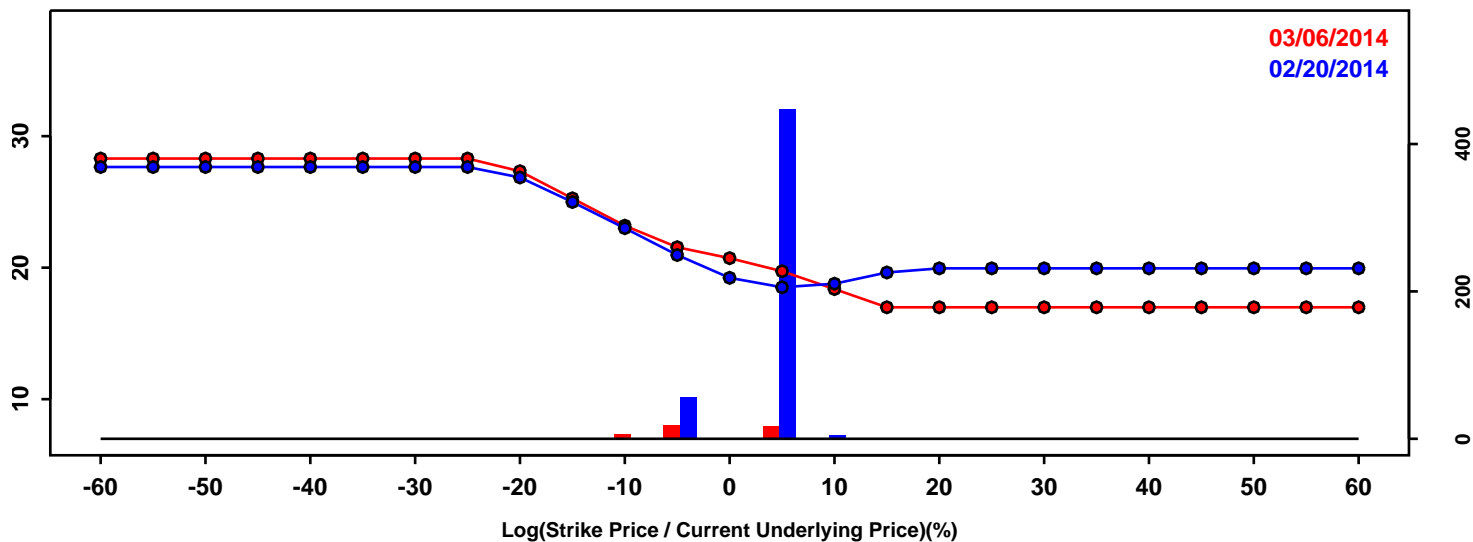
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -15.82% | -15.12% | 0.70% |
| 50th Pct | 0.32% | 0.55% | 0.23% |
| 90th Pct | 14.09% | 13.78% | -0.31% |
| Mean | -0.48% | -0.31% | 0.17% |
| Std Dev | 12.74% | 12.33% | -0.41% |
| Skew | -0.58 | -0.72 | -0.14 |
| Kurtosis | 1.82 | 2.12 | 0.30 |

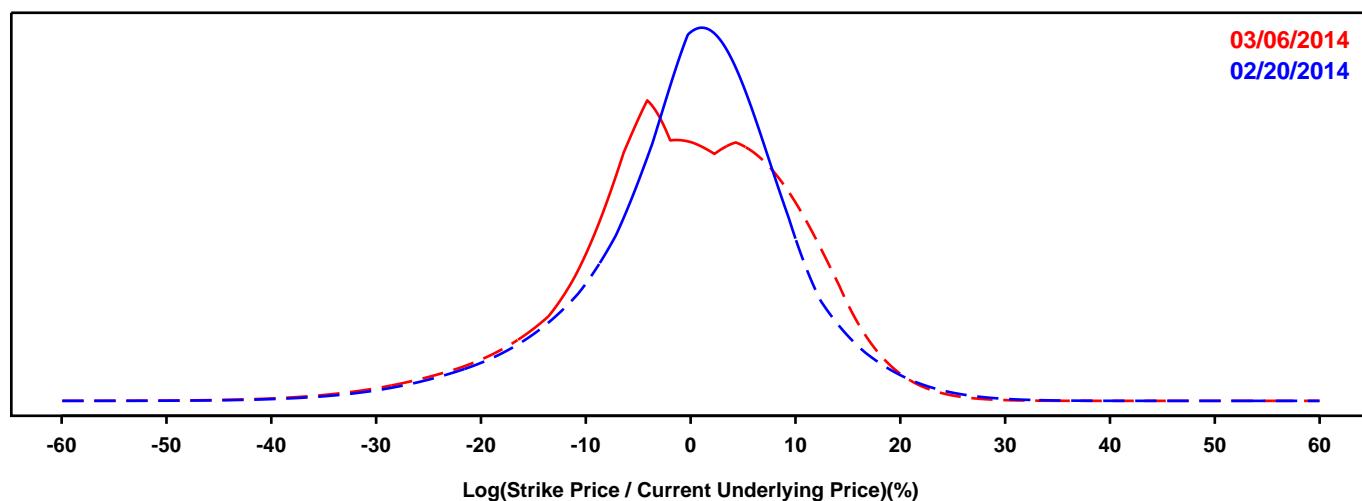
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SUNTRUST

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

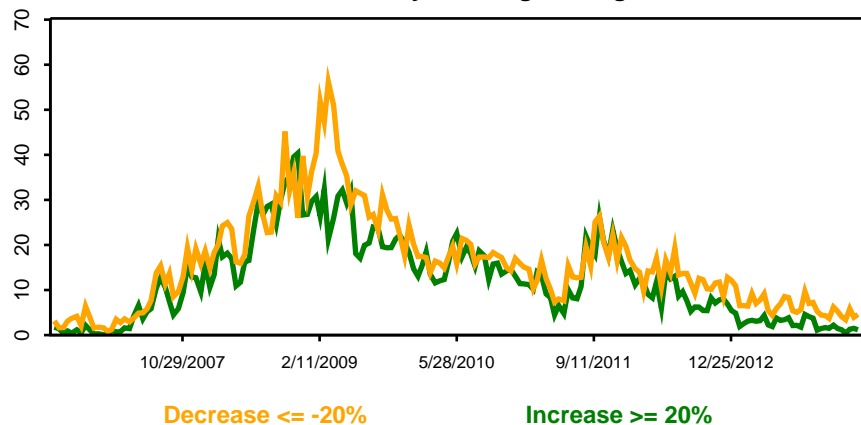
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



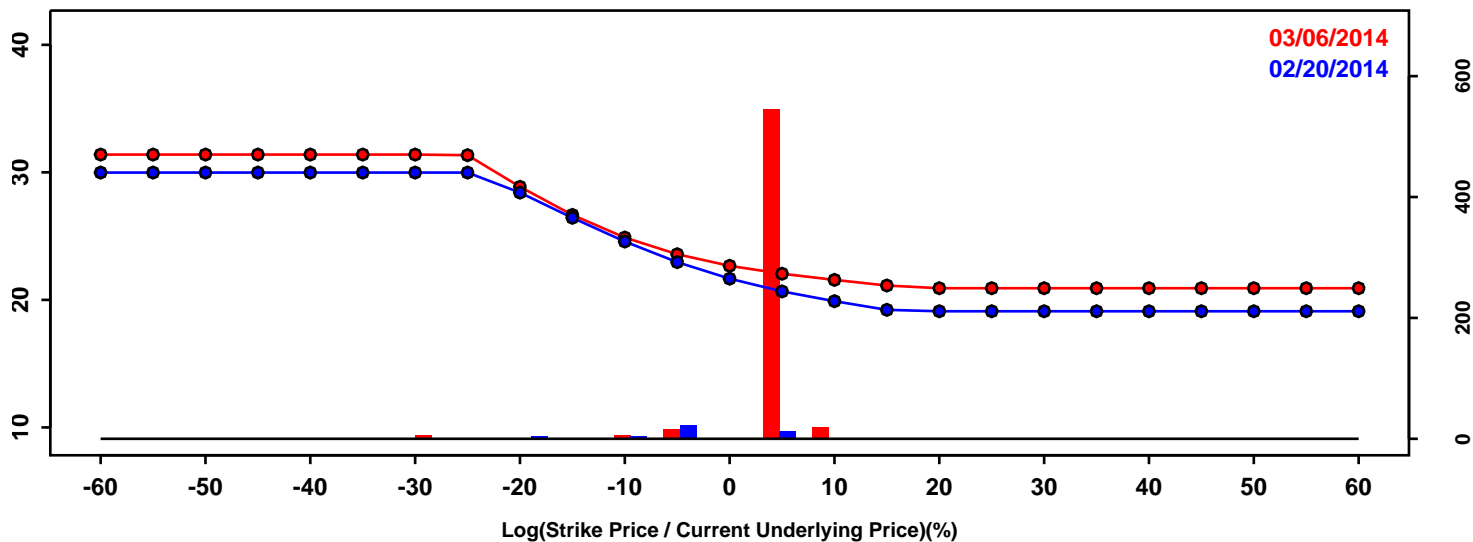
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -12.67% | -13.57% | -0.90% |
| 50th Pct | 0.77% | -0.04% | -0.81% |
| 90th Pct | 10.89% | 12.25% | 1.36% |
| Mean | -0.10% | -0.46% | -0.36% |
| Std Dev | 9.80% | 10.51% | 0.71% |
| Skew | -0.60 | -0.55 | 0.05 |
| Kurtosis | 1.36 | 0.75 | -0.61 |

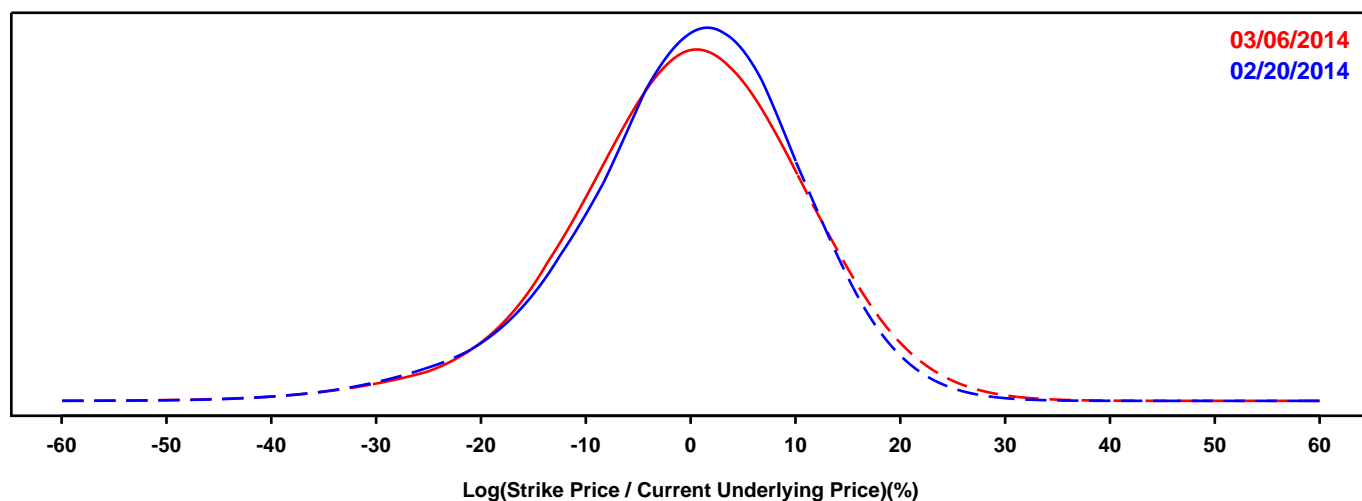
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- STATE STREET

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

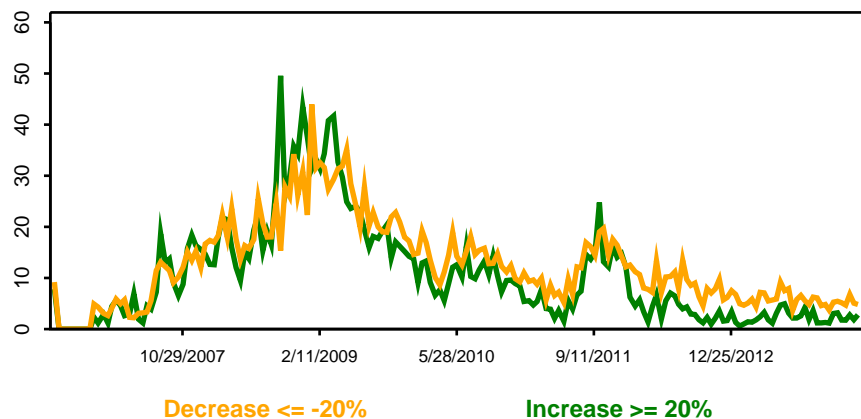
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



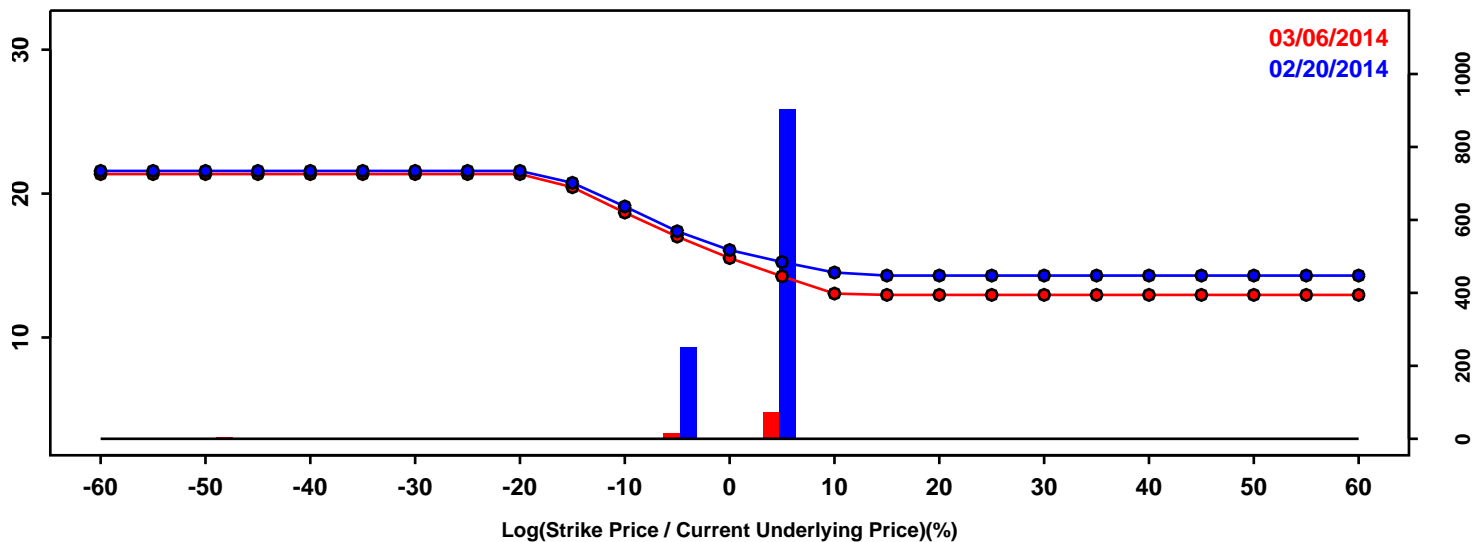
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -14.45% | -14.49% | -0.05% |
| 50th Pct | 0.46% | 0.20% | -0.25% |
| 90th Pct | 12.61% | 13.56% | 0.95% |
| Mean | -0.39% | -0.29% | 0.10% |
| Std Dev | 10.99% | 11.36% | 0.37% |
| Skew | -0.56 | -0.40 | 0.16 |
| Kurtosis | 0.87 | 0.76 | -0.11 |

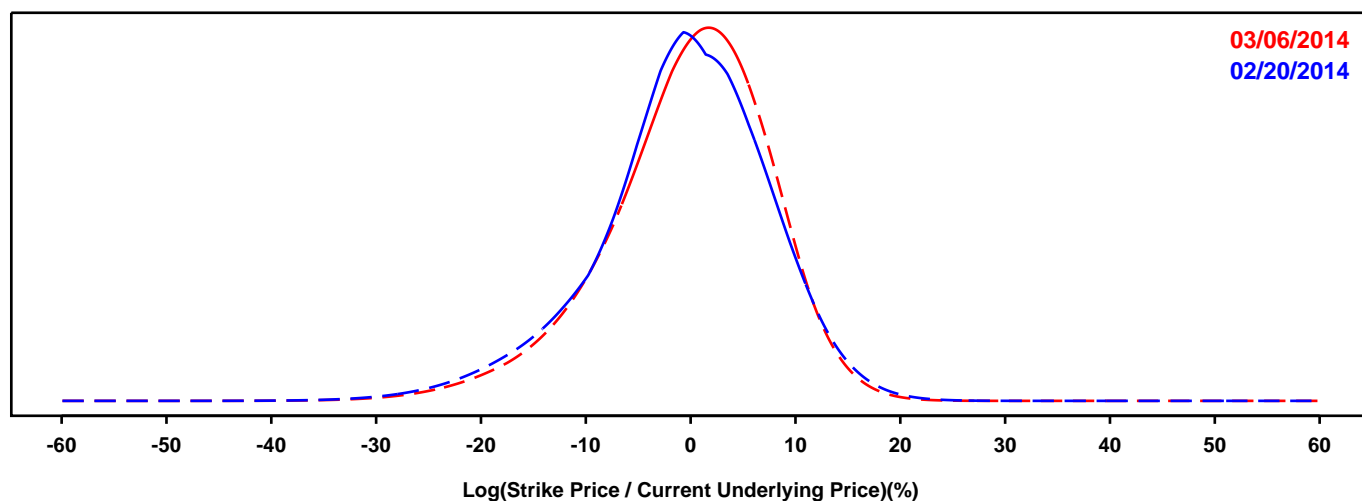
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- US BANCORP

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

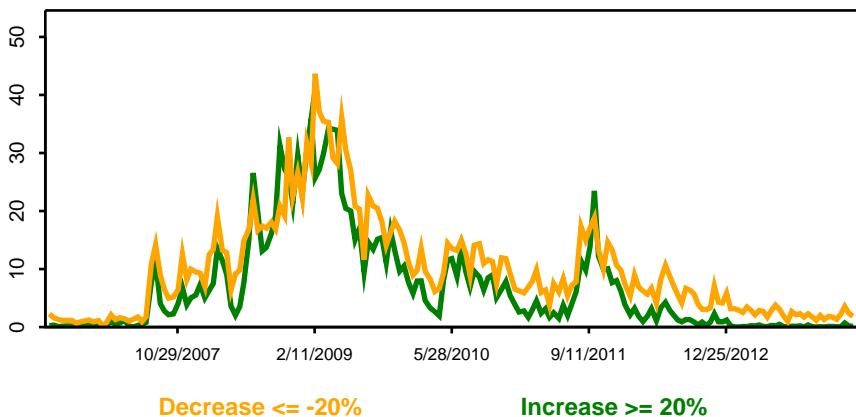
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



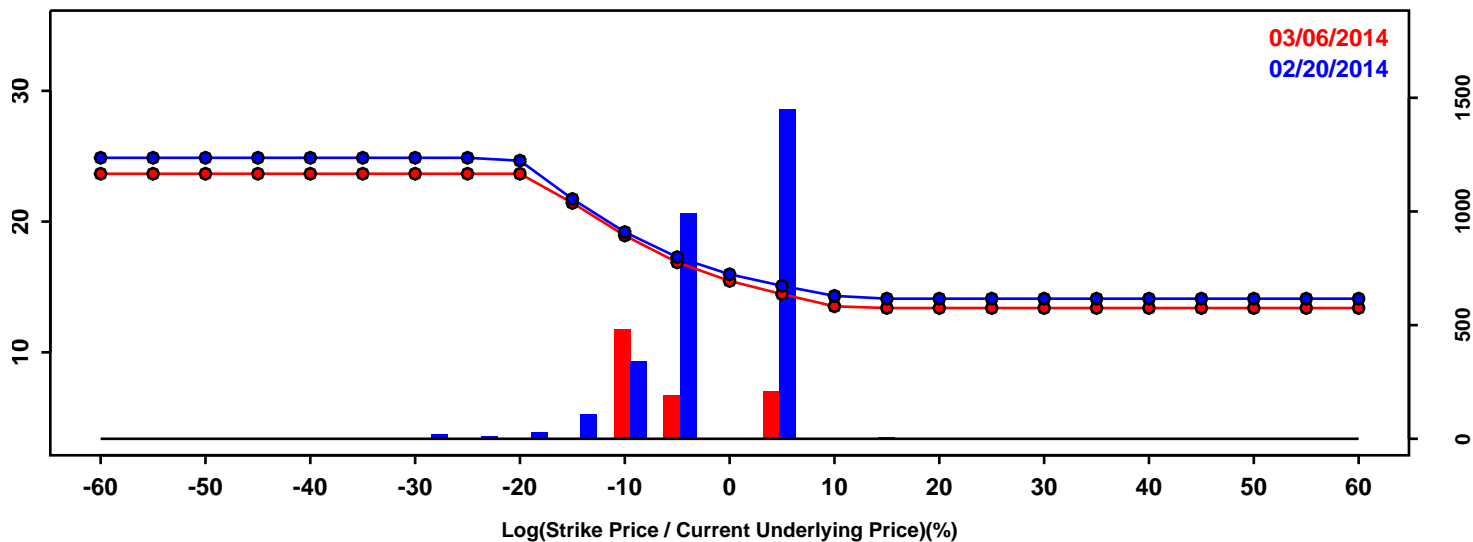
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -11.59% | -10.66% | 0.92% |
| 50th Pct | -0.15% | 0.50% | 0.66% |
| 90th Pct | 9.08% | 8.95% | -0.12% |
| Mean | -0.74% | -0.25% | 0.49% |
| Std Dev | 8.28% | 7.91% | -0.37% |
| Skew | -0.55 | -0.63 | -0.08 |
| Kurtosis | 0.77 | 0.80 | 0.02 |

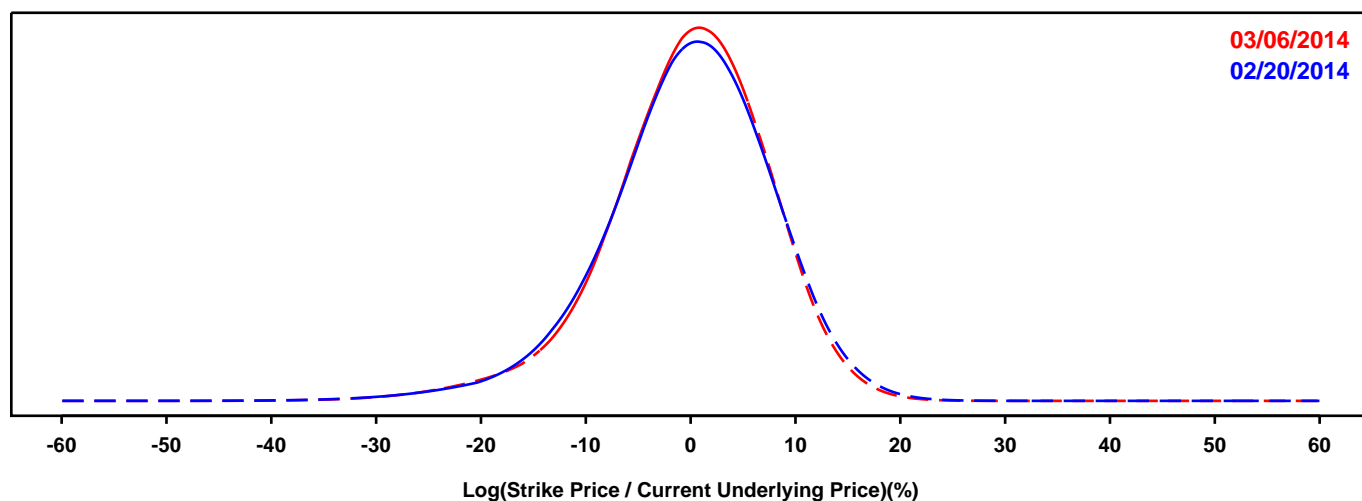
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- WELLS FARGO

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

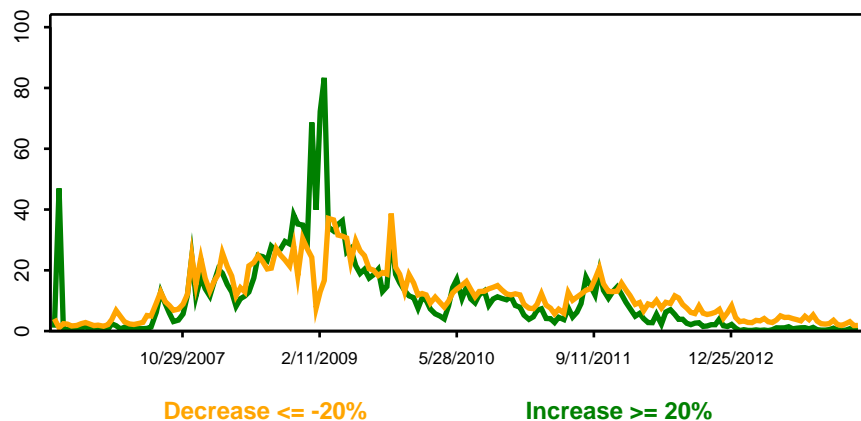
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



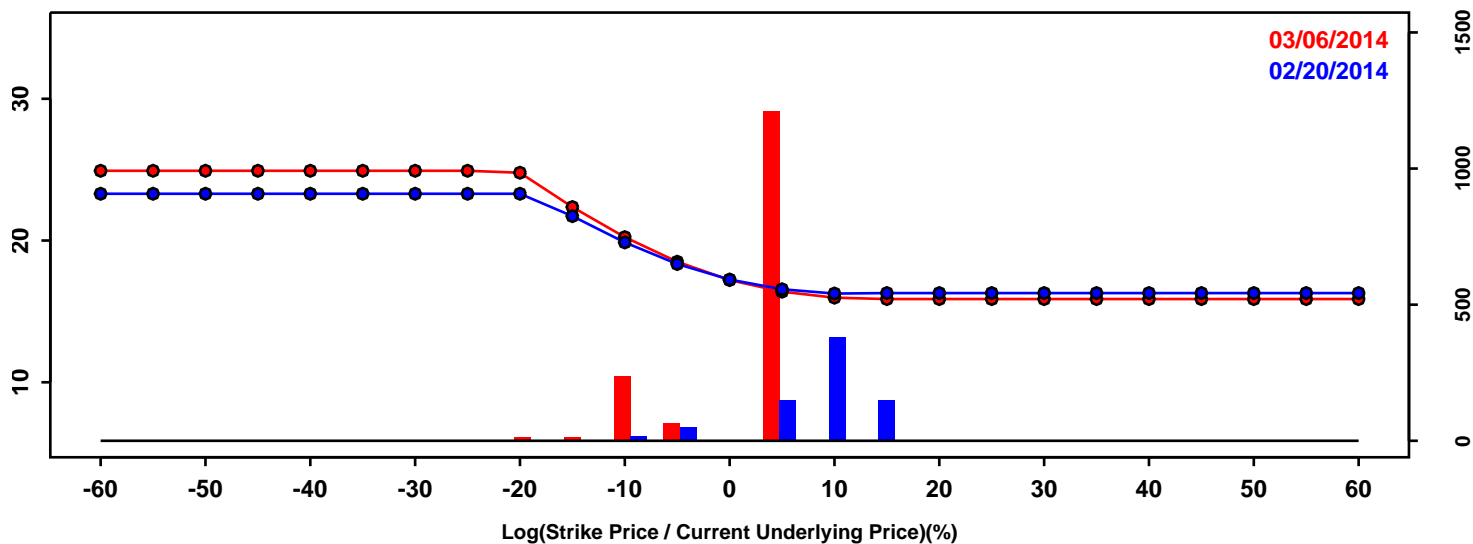
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -10.31% | -9.95% | 0.36% |
| 50th Pct | 0.28% | 0.30% | 0.03% |
| 90th Pct | 9.36% | 8.95% | -0.41% |
| Mean | -0.21% | -0.25% | -0.04% |
| Std Dev | 8.03% | 7.80% | -0.23% |
| Skew | -0.57 | -0.64 | -0.07 |
| Kurtosis | 1.13 | 1.24 | 0.10 |

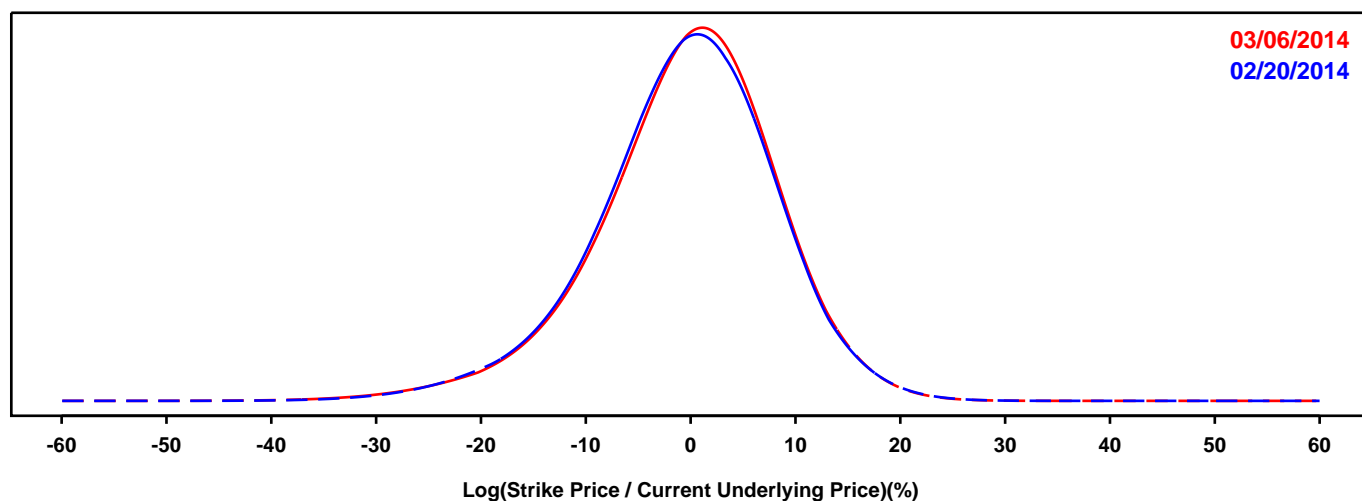
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AFLAC

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

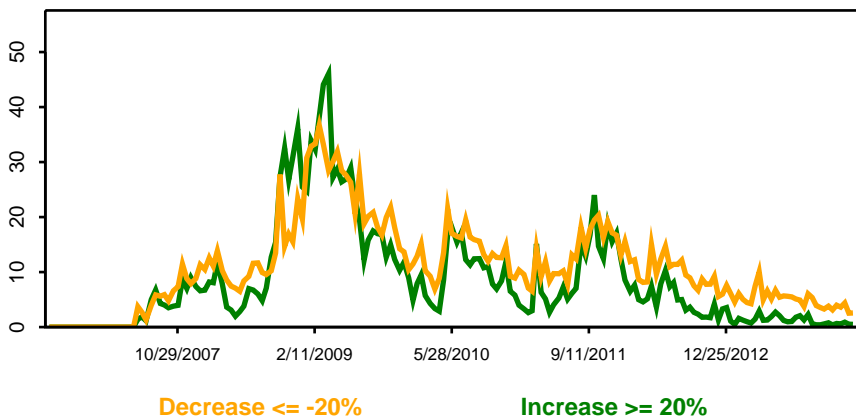
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



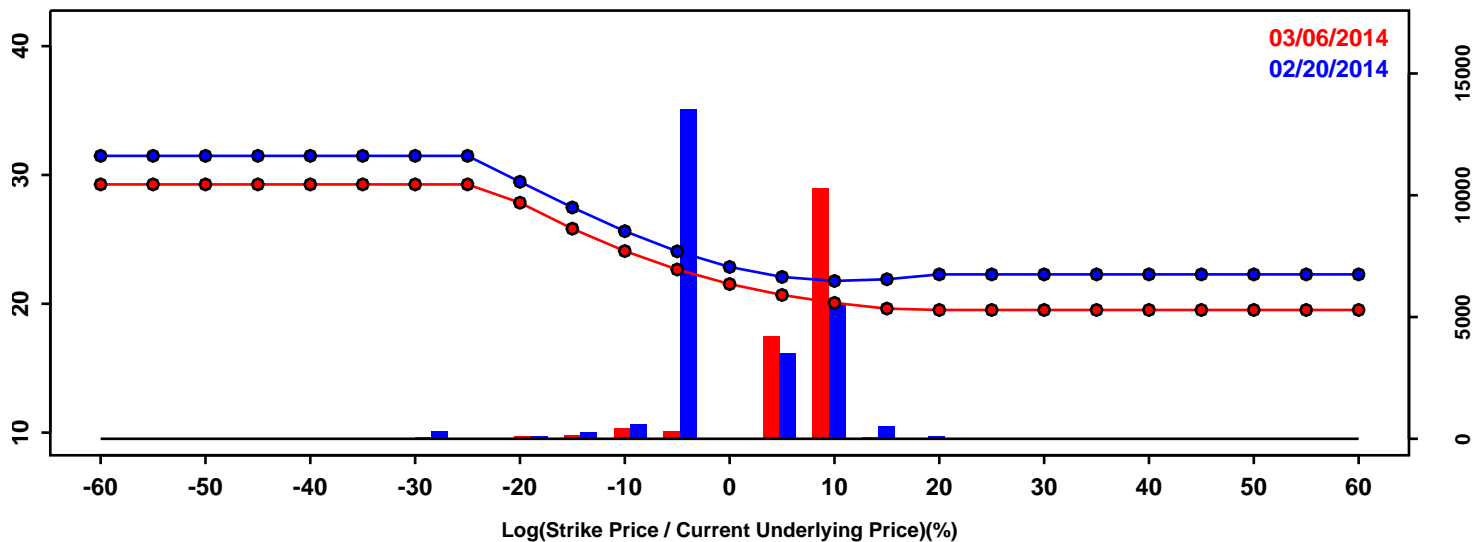
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -11.65% | -11.44% | 0.21% |
| 50th Pct | -0.04% | 0.25% | 0.30% |
| 90th Pct | 9.76% | 9.88% | 0.12% |
| Mean | -0.56% | -0.39% | 0.18% |
| Std Dev | 8.70% | 8.72% | 0.02% |
| Skew | -0.46 | -0.55 | -0.09 |
| Kurtosis | 0.78 | 1.01 | 0.22 |

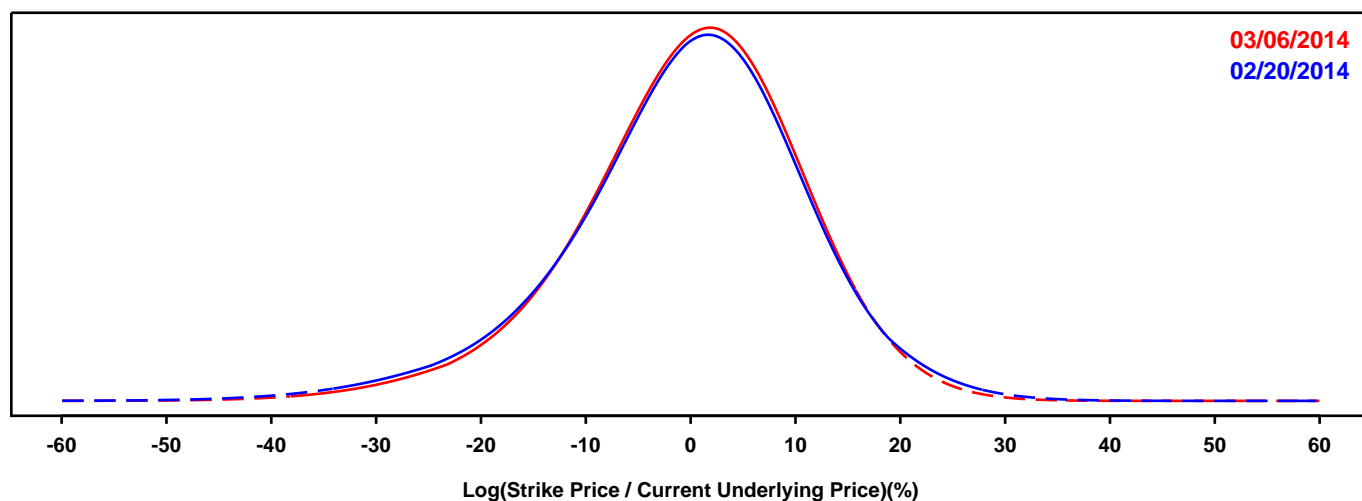
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AIG

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

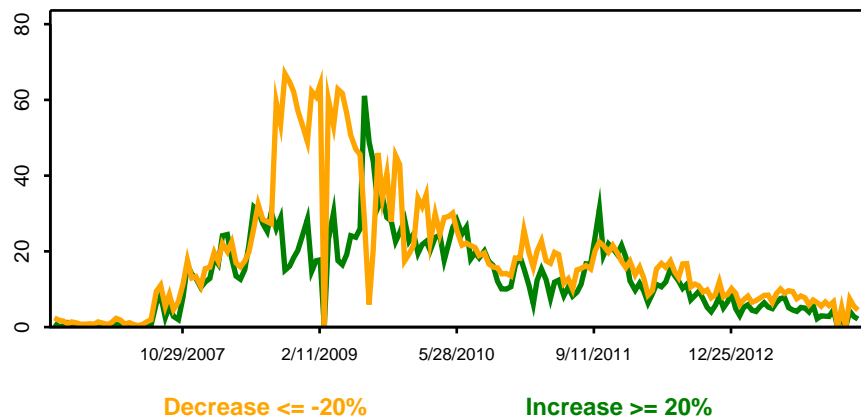
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



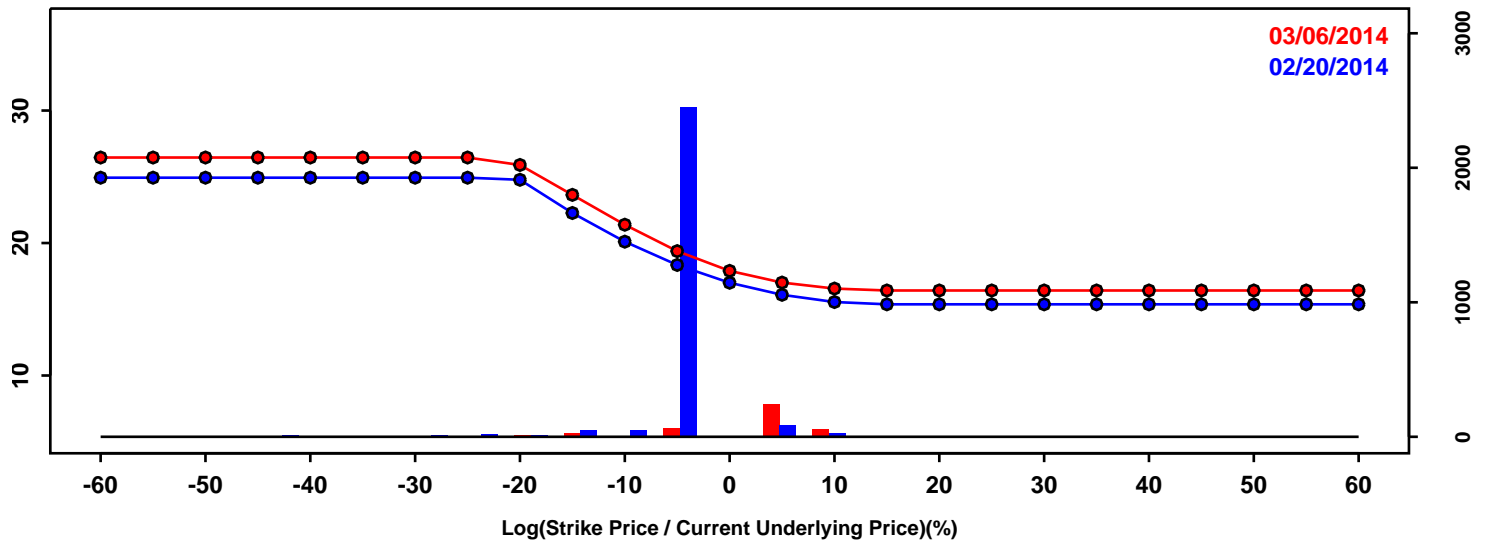
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -14.97% | -13.98% | 0.99% |
| 50th Pct | 0.50% | 0.65% | 0.15% |
| 90th Pct | 13.17% | 12.89% | -0.29% |
| Mean | -0.31% | -0.07% | 0.24% |
| Std Dev | 11.52% | 10.85% | -0.68% |
| Skew | -0.50 | -0.48 | 0.02 |
| Kurtosis | 0.94 | 0.75 | -0.20 |

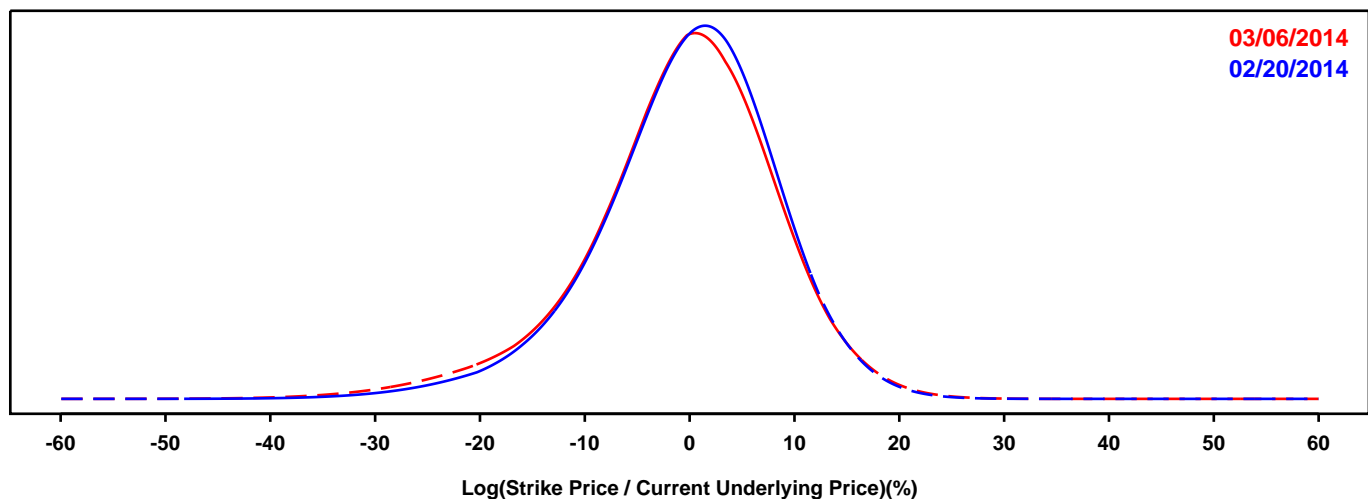
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- ALLSTATE

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

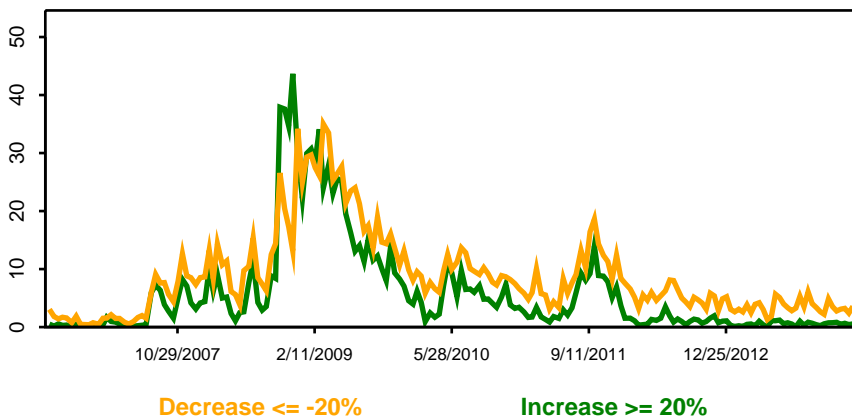
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



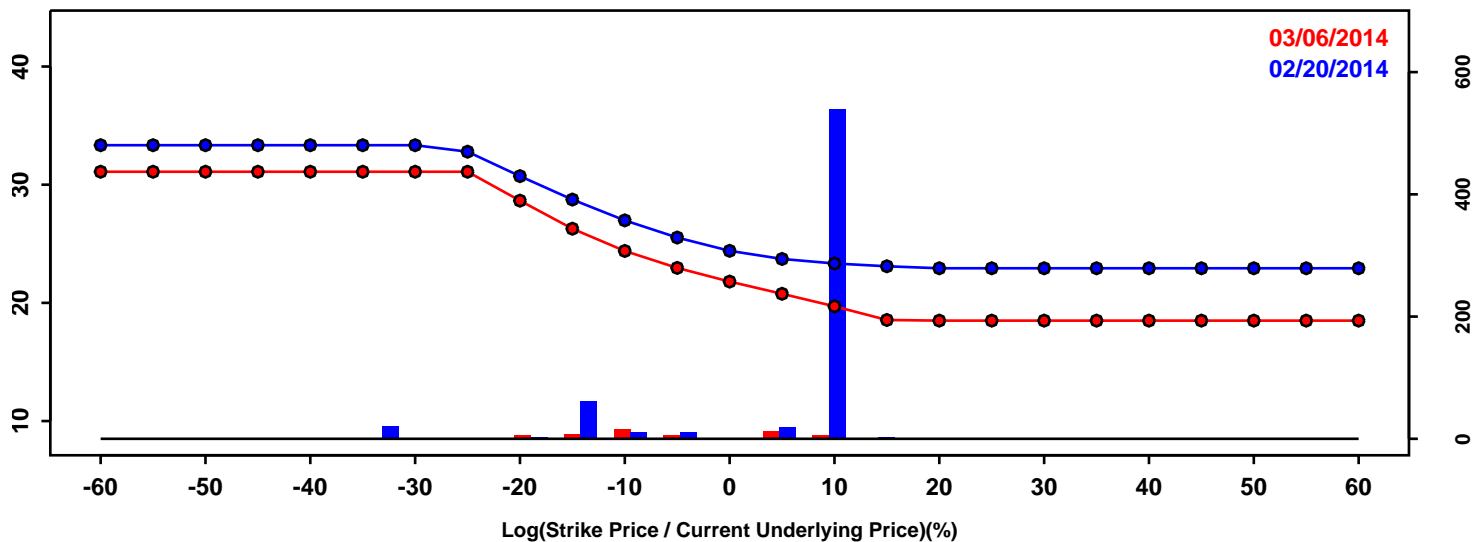
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -11.15% | -12.37% | -1.21% |
| 50th Pct | 0.44% | 0.00% | -0.44% |
| 90th Pct | 9.92% | 9.87% | -0.05% |
| Mean | -0.20% | -0.77% | -0.57% |
| Std Dev | 8.61% | 9.20% | 0.59% |
| Skew | -0.57 | -0.66 | -0.09 |
| Kurtosis | 1.02 | 1.25 | 0.23 |

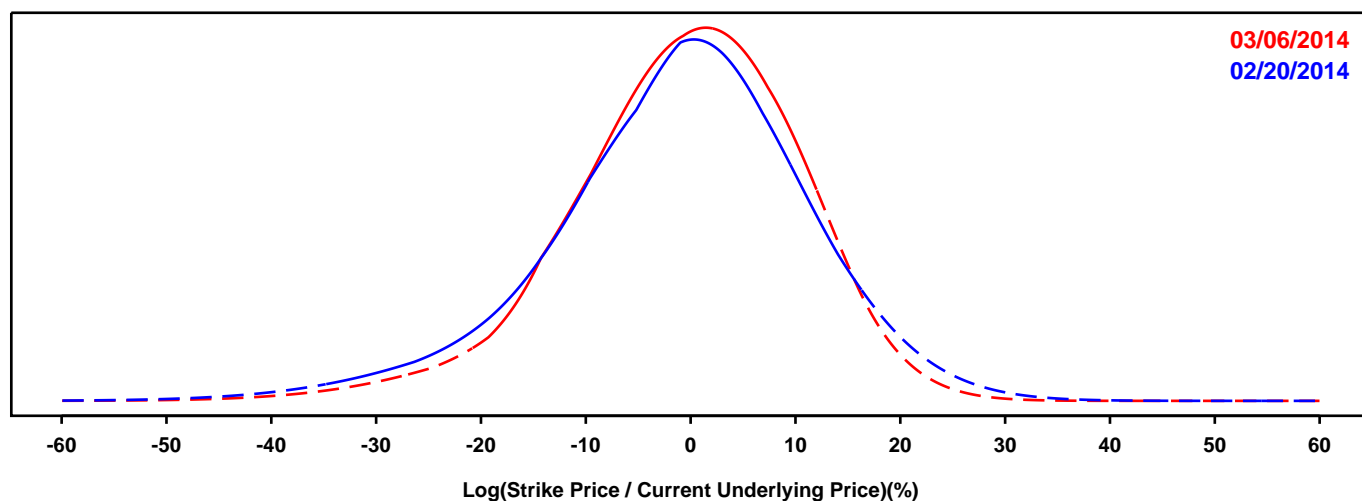
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AMERIPRISE

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

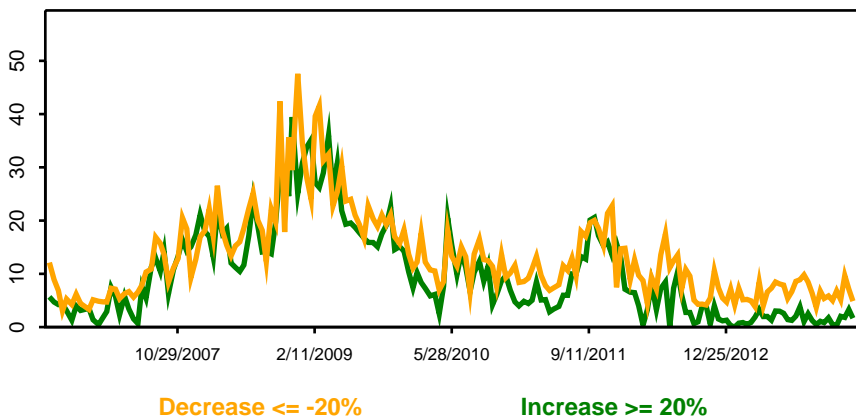
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



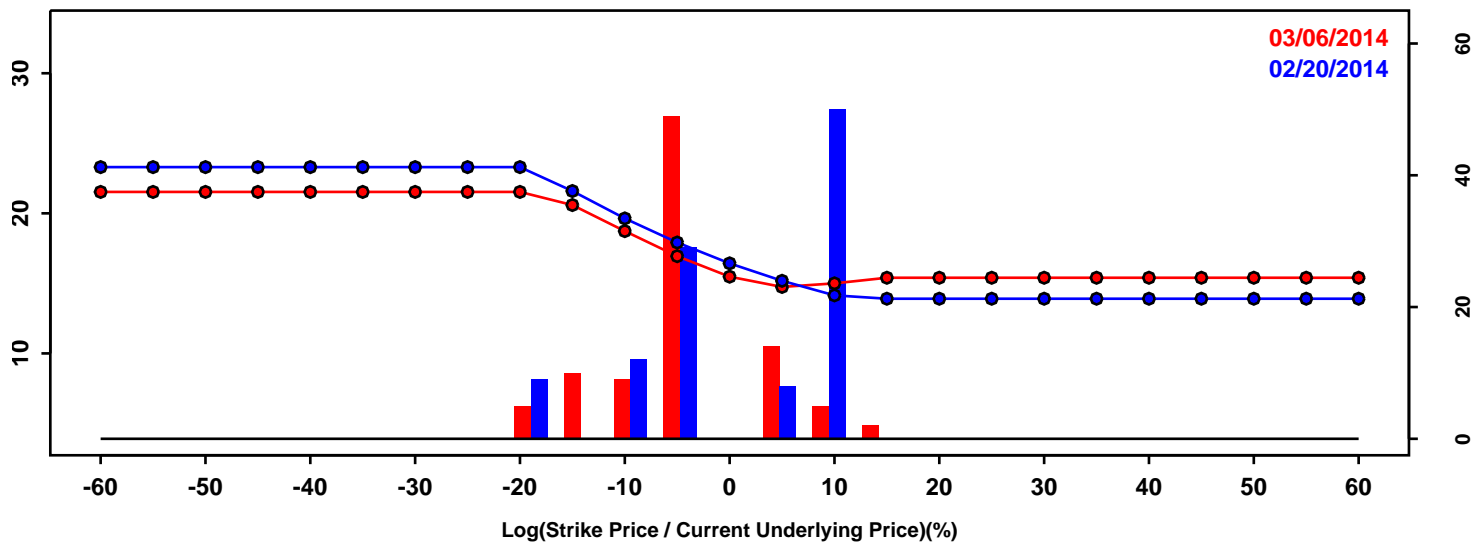
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -16.86% | -14.50% | 2.37% |
| 50th Pct | -0.31% | 0.17% | 0.47% |
| 90th Pct | 13.71% | 12.64% | -1.07% |
| Mean | -1.12% | -0.60% | 0.52% |
| Std Dev | 12.44% | 11.03% | -1.41% |
| Skew | -0.48 | -0.55 | -0.06 |
| Kurtosis | 0.86 | 0.83 | -0.03 |

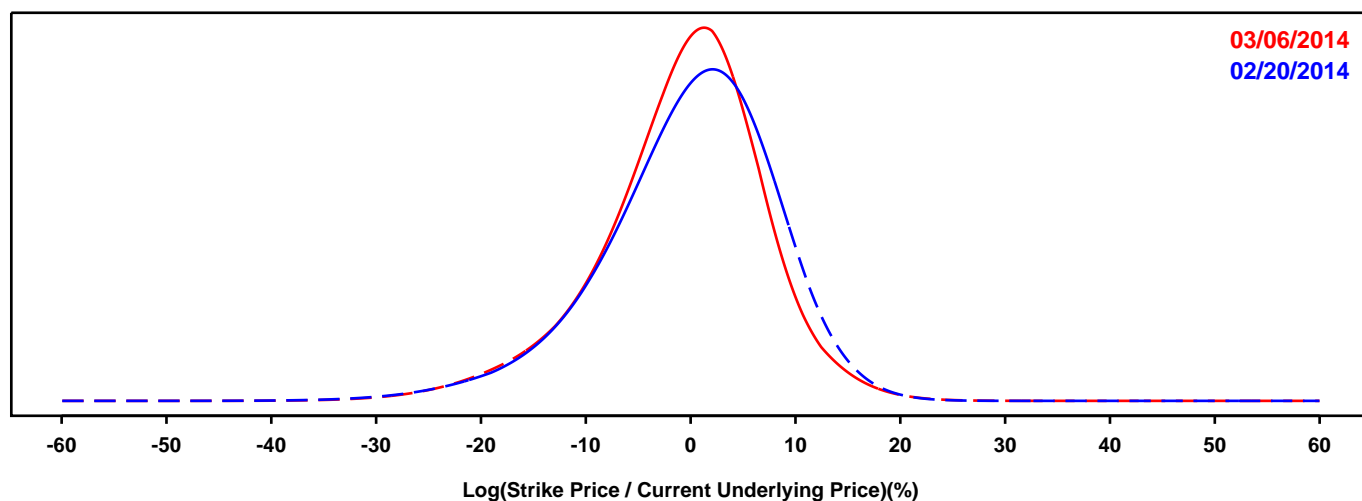
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CHUBB

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

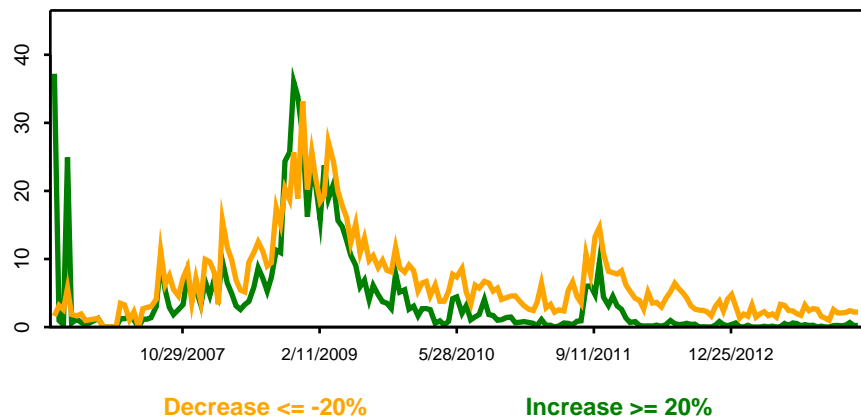
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



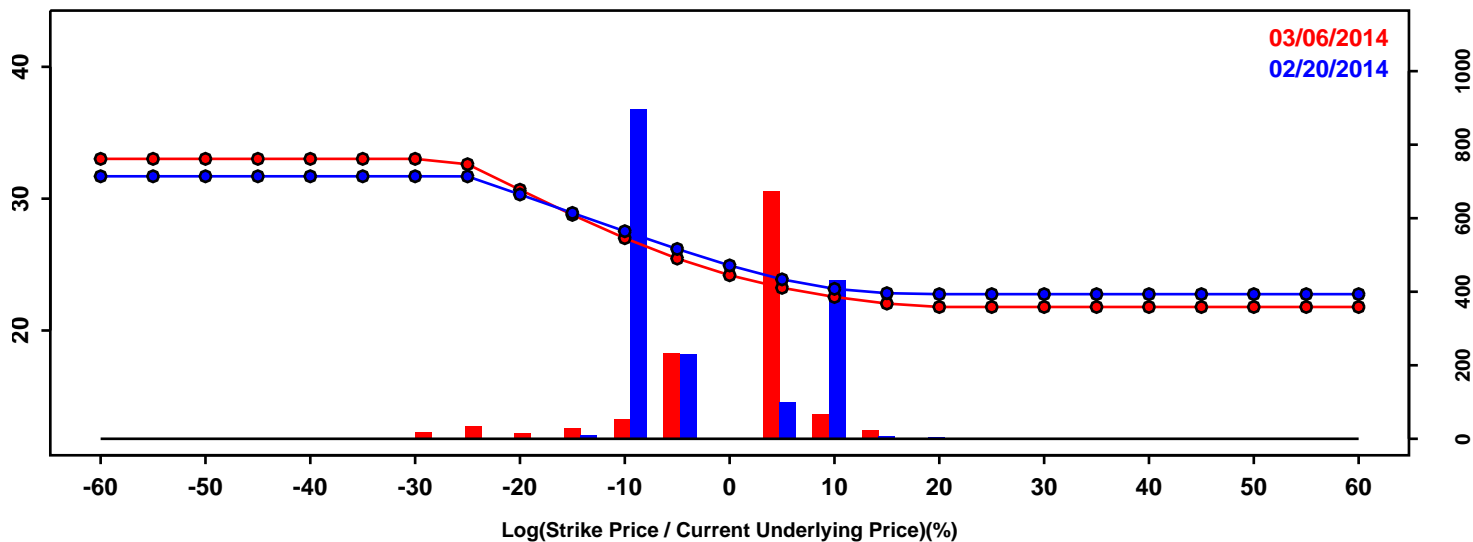
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -10.97% | -11.13% | -0.16% |
| 50th Pct | 0.66% | -0.07% | -0.74% |
| 90th Pct | 9.57% | 8.16% | -1.41% |
| Mean | -0.14% | -0.85% | -0.72% |
| Std Dev | 8.32% | 7.92% | -0.40% |
| Skew | -0.64 | -0.59 | 0.05 |
| Kurtosis | 0.91 | 1.05 | 0.14 |

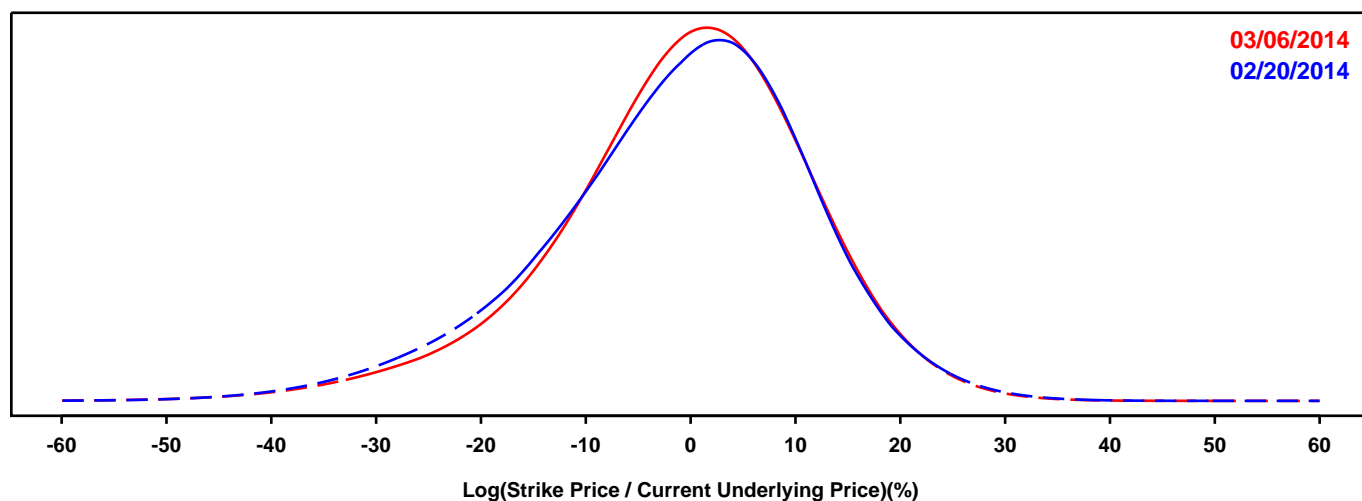
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- HARTFORD FINANCIAL

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

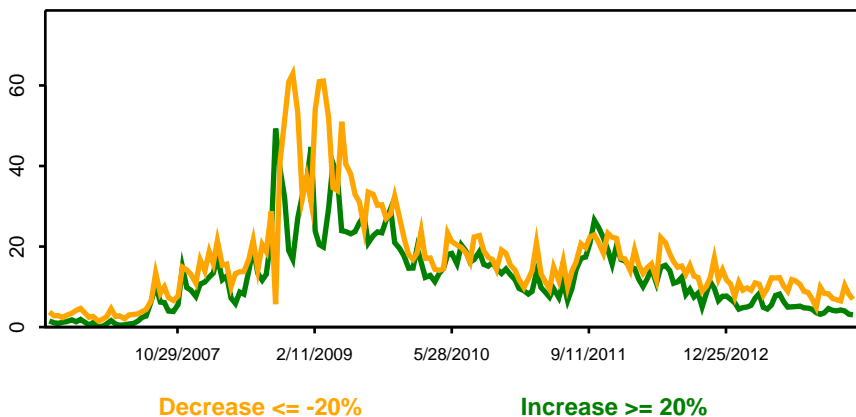
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



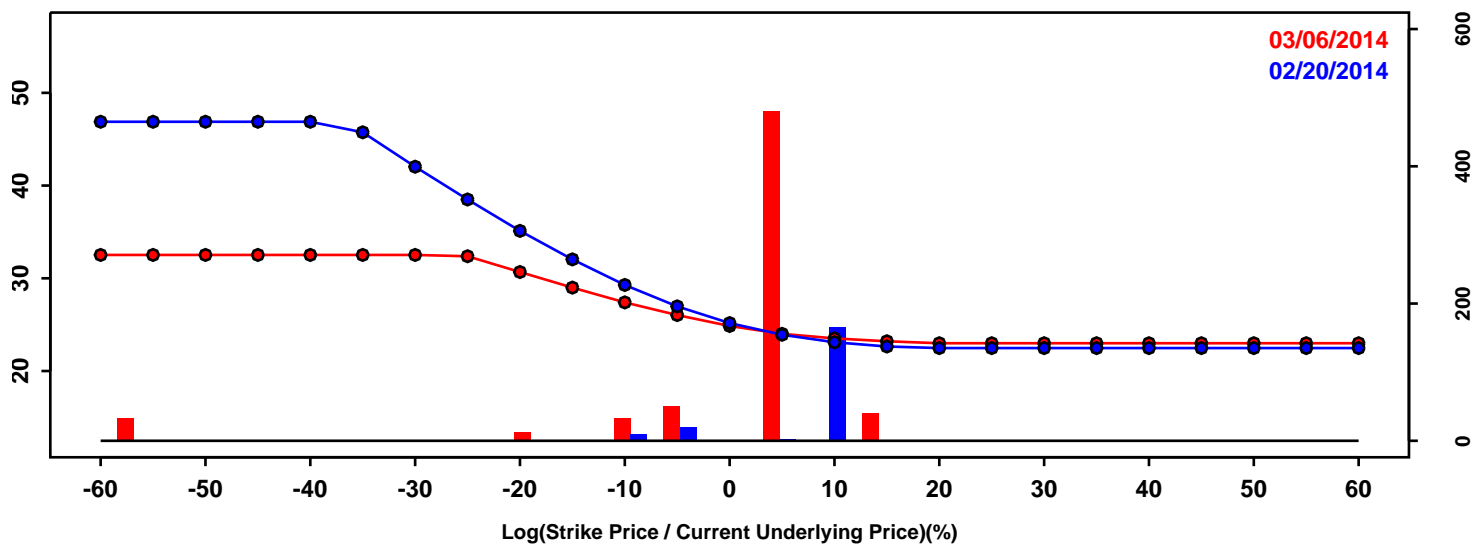
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -18.14% | -16.55% | 1.59% |
| 50th Pct | 0.08% | 0.25% | 0.17% |
| 90th Pct | 13.71% | 13.79% | 0.08% |
| Mean | -1.17% | -0.73% | 0.44% |
| Std Dev | 12.75% | 12.31% | -0.44% |
| Skew | -0.51 | -0.55 | -0.04 |
| Kurtosis | 0.57 | 0.85 | 0.28 |

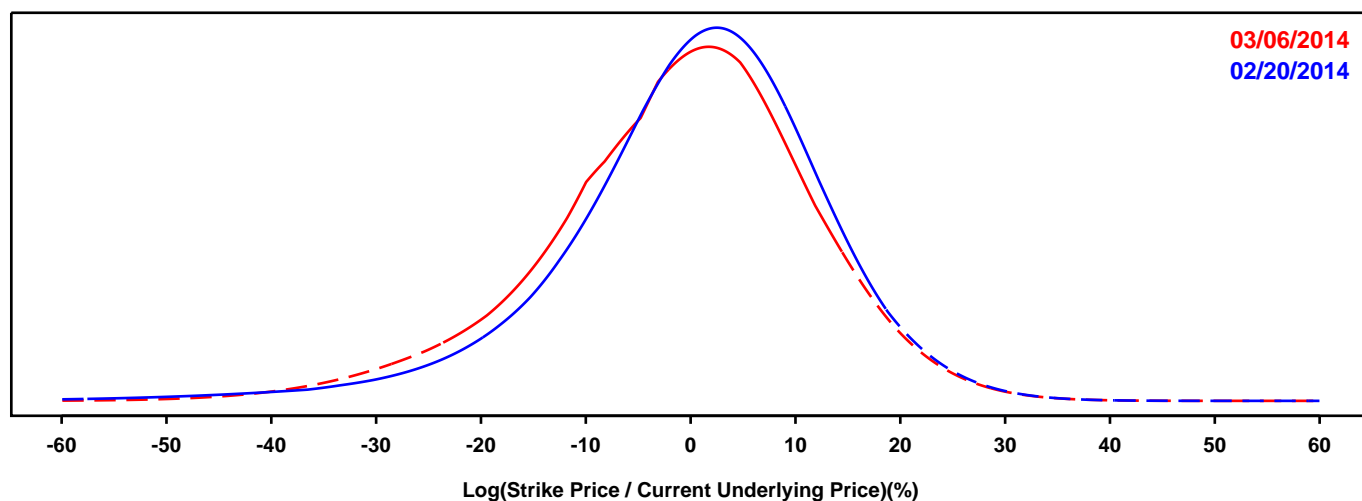
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- LINCOLN NATIONAL

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

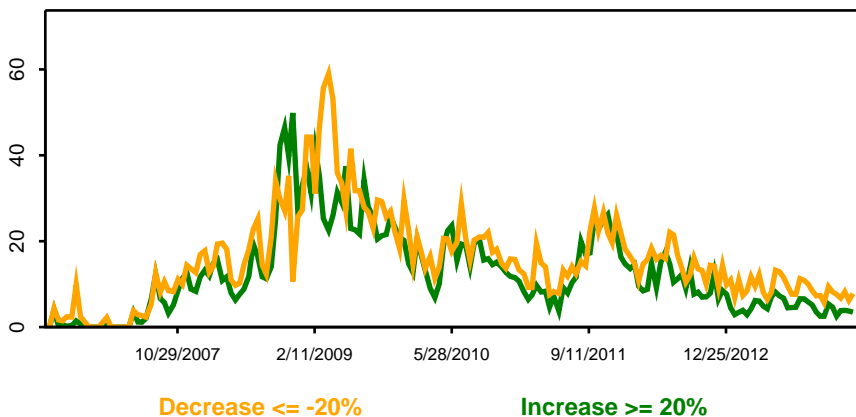
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



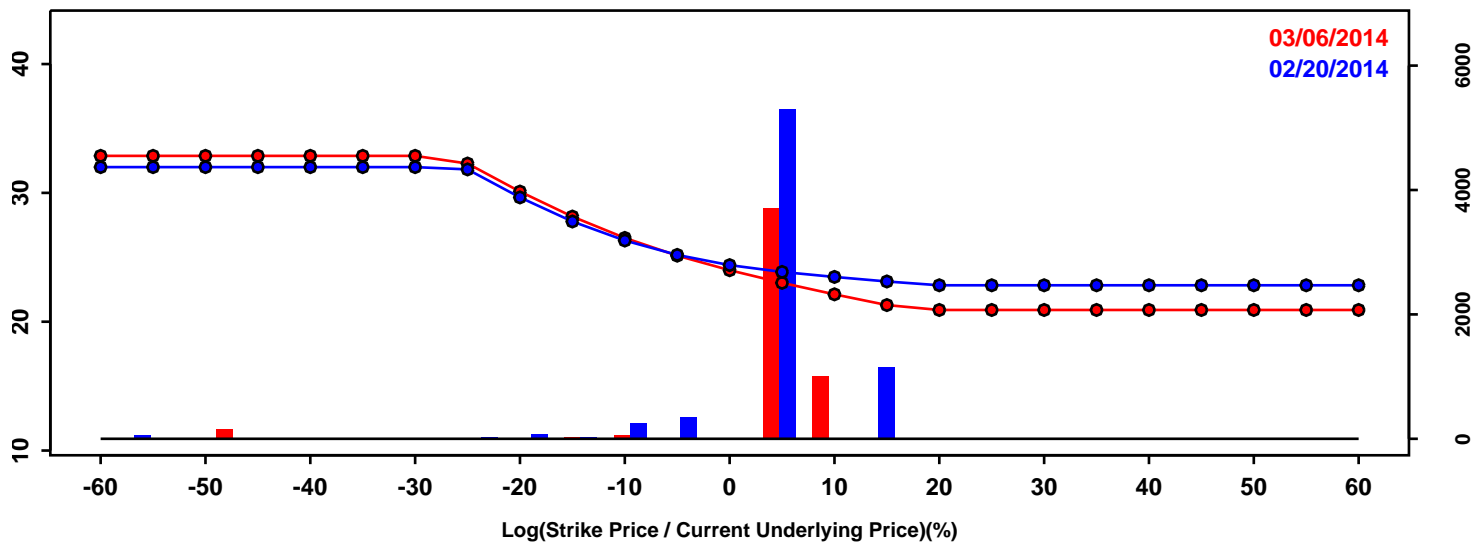
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -15.33% | -17.57% | -2.24% |
| 50th Pct | 1.27% | -0.07% | -1.34% |
| 90th Pct | 14.63% | 14.01% | -0.62% |
| Mean | 0.16% | -1.10% | -1.26% |
| Std Dev | 12.74% | 12.72% | -0.02% |
| Skew | -0.87 | -0.49 | 0.39 |
| Kurtosis | 2.34 | 0.70 | -1.65 |

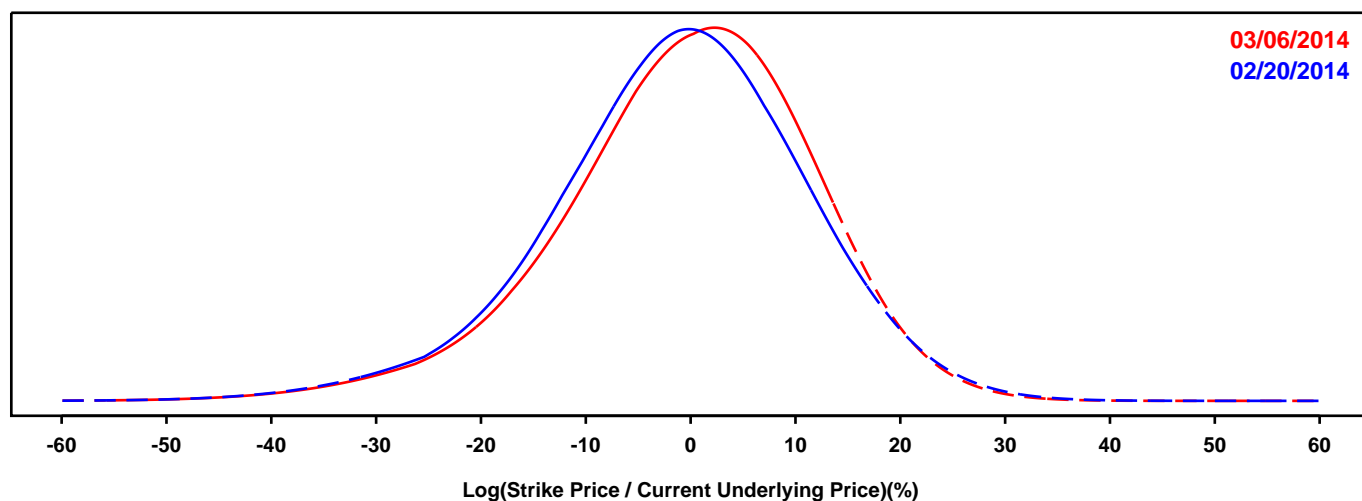
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- METLIFE

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

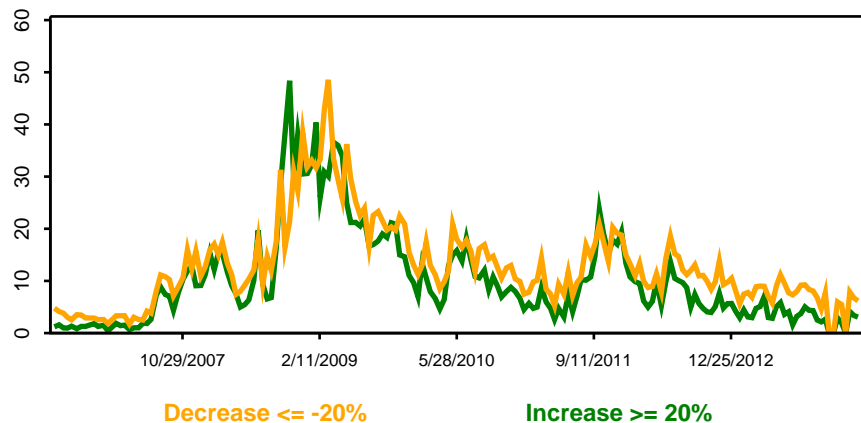
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



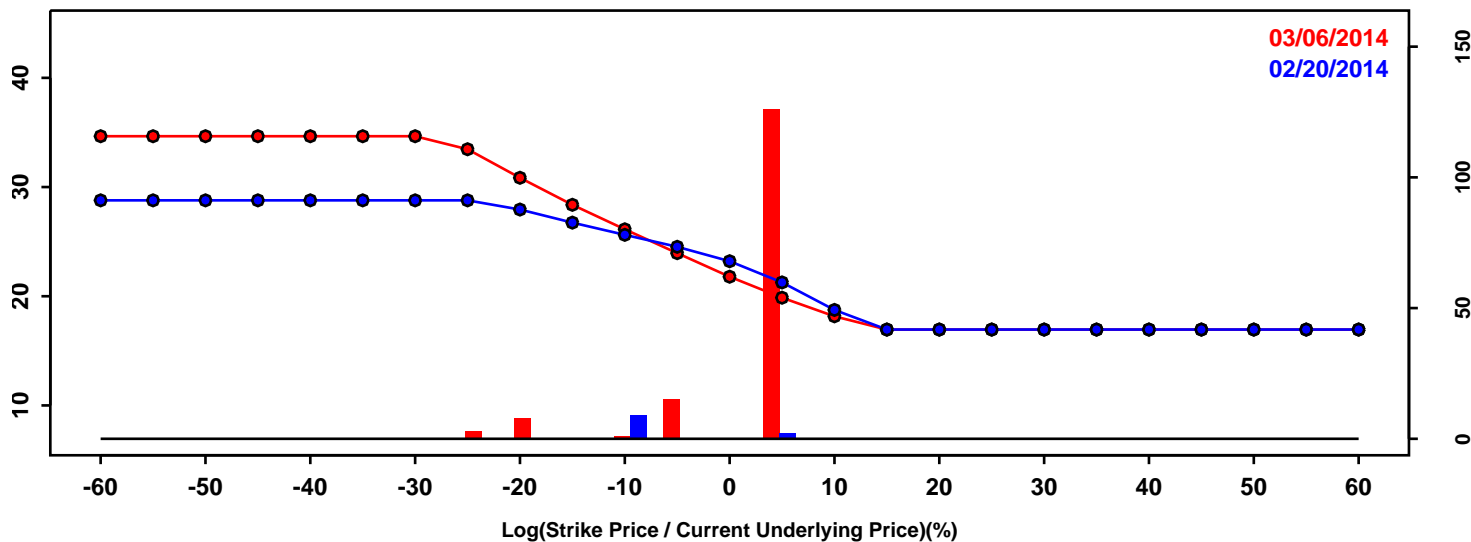
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -16.82% | -15.93% | 0.88% |
| 50th Pct | -0.70% | 0.50% | 1.20% |
| 90th Pct | 13.87% | 14.09% | 0.22% |
| Mean | -1.22% | -0.37% | 0.85% |
| Std Dev | 12.34% | 12.12% | -0.22% |
| Skew | -0.36 | -0.51 | -0.15 |
| Kurtosis | 0.61 | 0.72 | 0.11 |

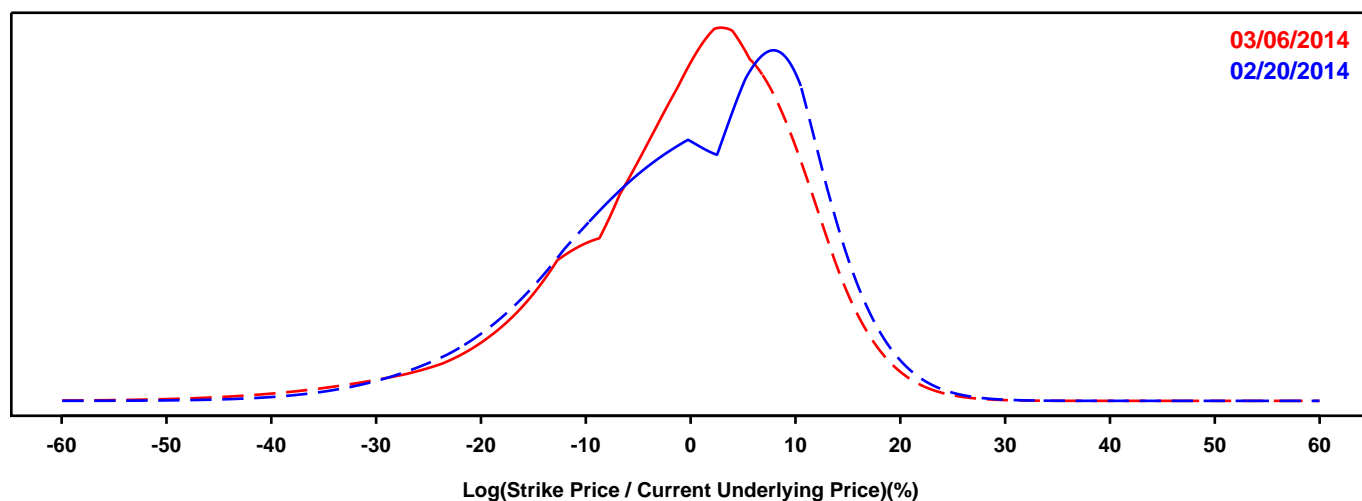
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PRINCIPAL FINANCIAL

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

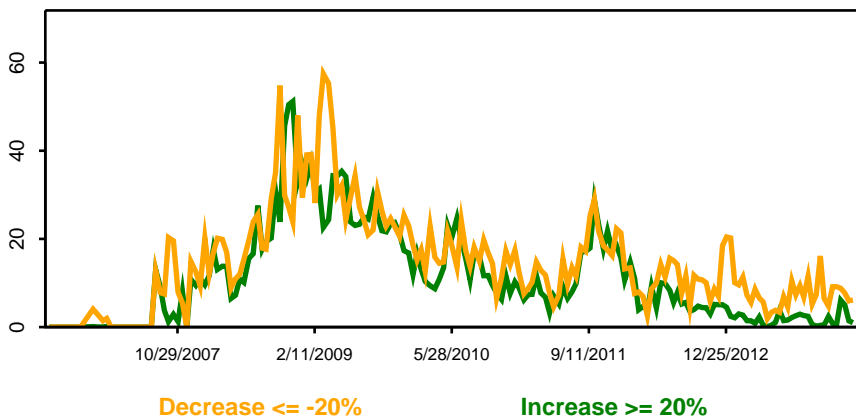
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



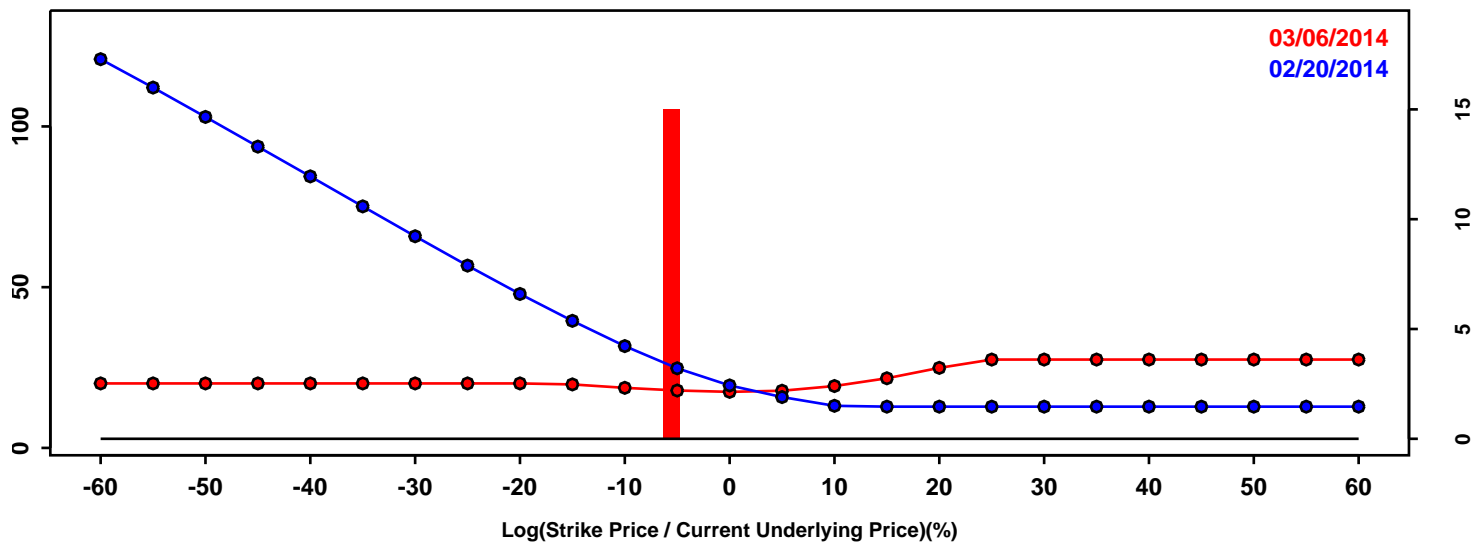
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -15.84% | -15.64% | 0.20% |
| 50th Pct | 1.65% | 0.92% | -0.73% |
| 90th Pct | 13.15% | 11.87% | -1.27% |
| Mean | -0.02% | -0.79% | -0.77% |
| Std Dev | 11.61% | 11.40% | -0.21% |
| Skew | -0.64 | -0.92 | -0.28 |
| Kurtosis | 0.31 | 1.53 | 1.22 |

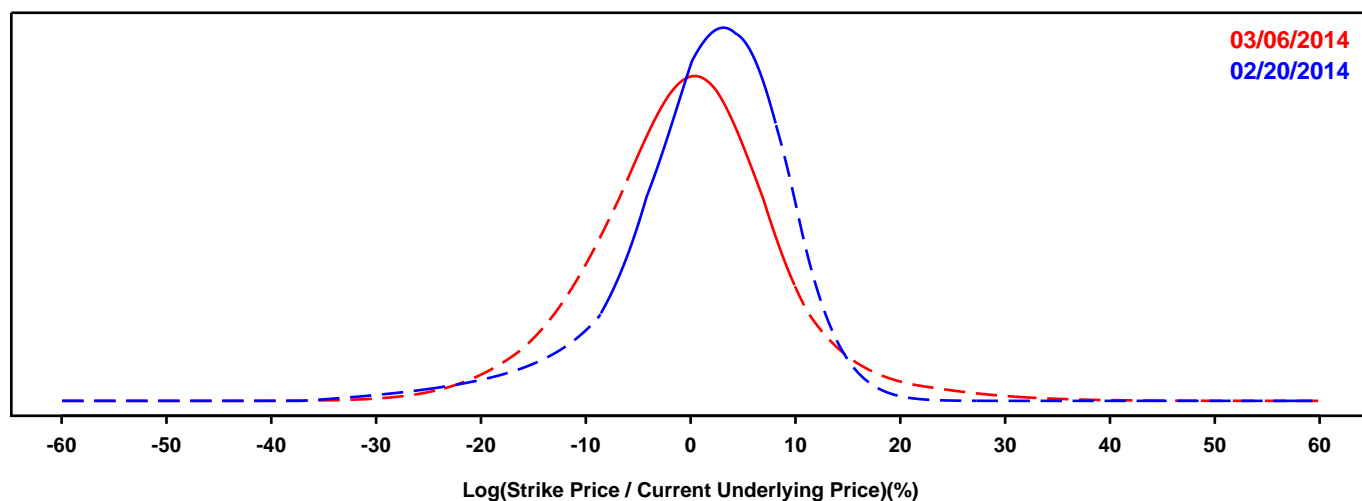
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PROGRESSIVE

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

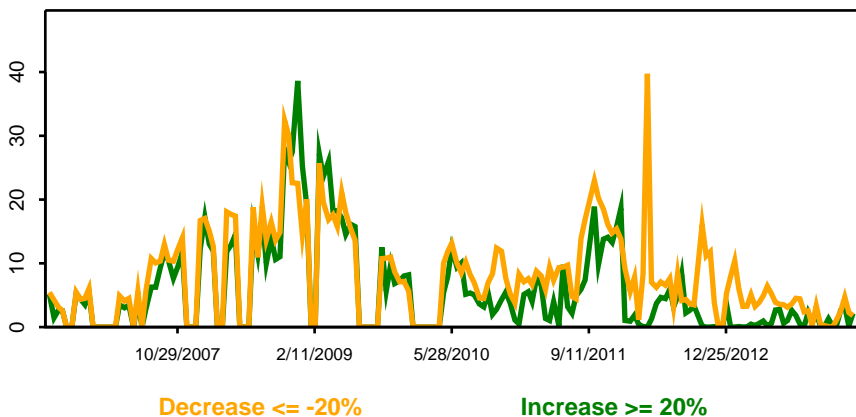
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change



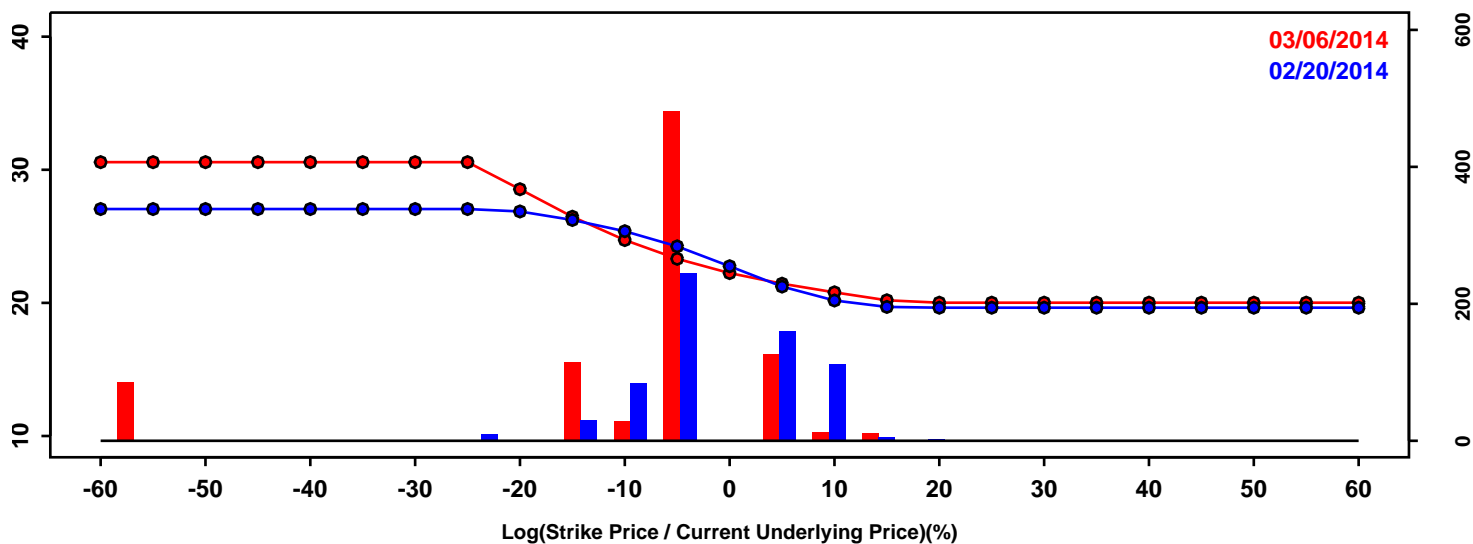
Statistics of the Log Return Distributions

| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -8.88% | -11.38% | -2.50% |
| 50th Pct | 2.12% | -0.20% | -2.32% |
| 90th Pct | 9.96% | 10.16% | 0.19% |
| Mean | 1.14% | -0.27% | -1.41% |
| Std Dev | 8.01% | 9.05% | 1.04% |
| Skew | -0.99 | 0.20 | 1.19 |
| Kurtosis | 1.78 | 1.30 | -0.48 |

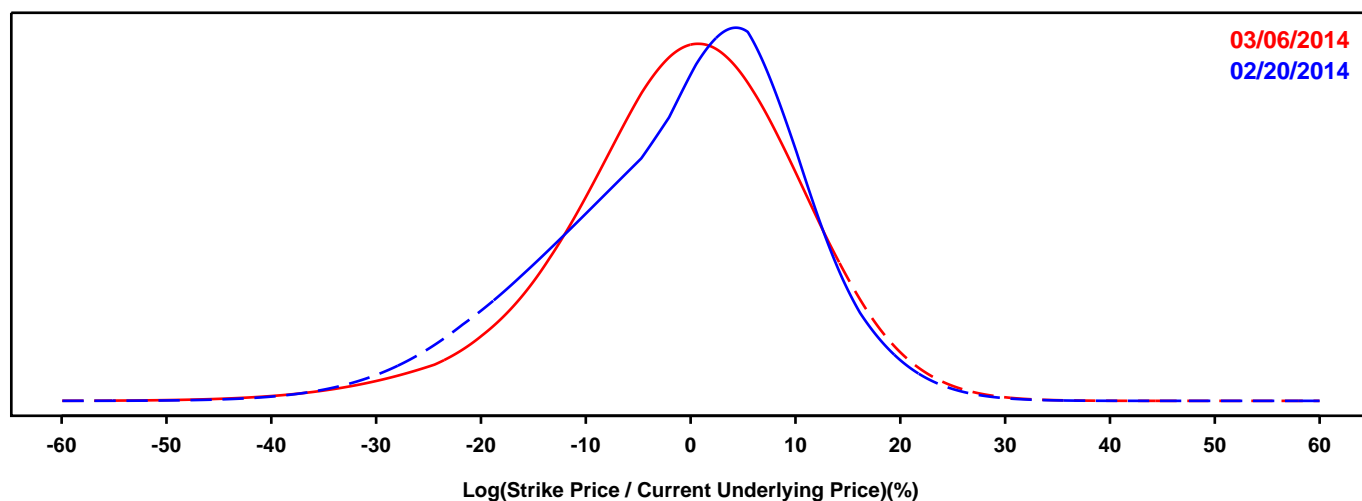
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PRUDENTIAL

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

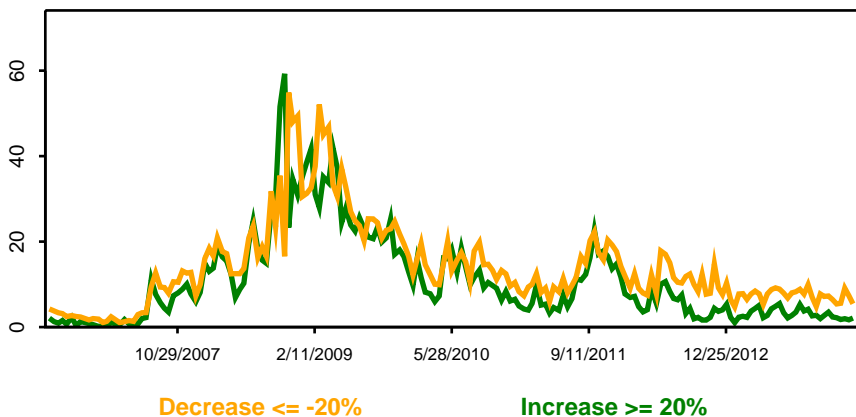
Implied Volatilities (lines--left axis) and Volume (bars--right axis)



Risk Neutral PDF of the Log Return Distribution



Probability of a Large Change

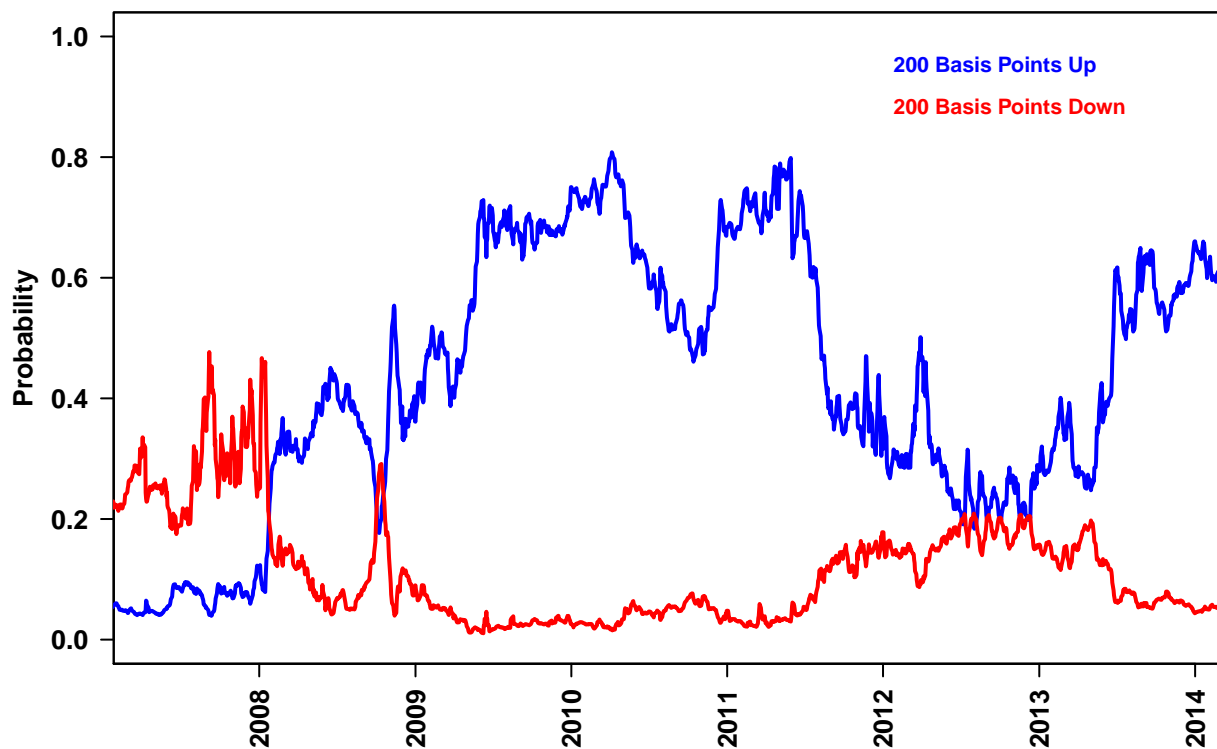


Statistics of the Log Return Distributions

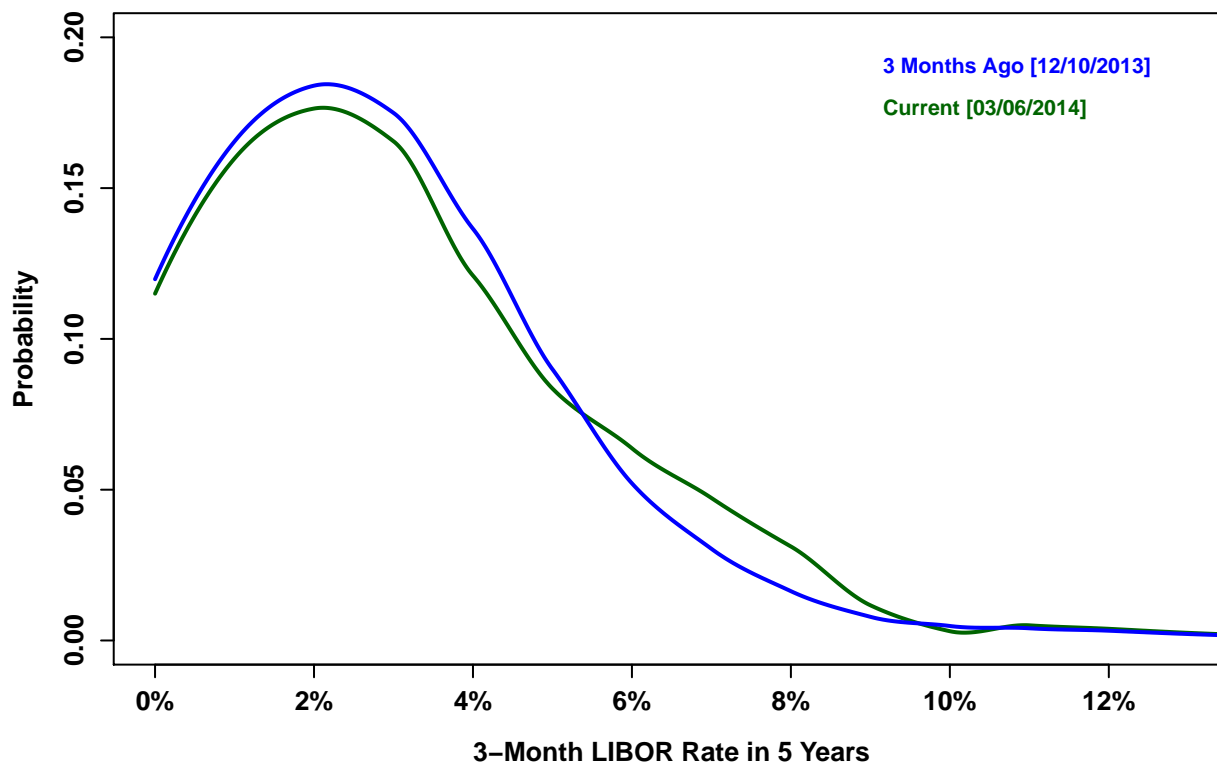
| | 02/20/2014 | 03/06/2014 | Change |
|----------|------------|------------|--------|
| 10th Pct | -17.57% | -15.18% | 2.39% |
| 50th Pct | 0.42% | -0.12% | -0.55% |
| 90th Pct | 12.11% | 12.75% | 0.64% |
| Mean | -1.28% | -0.82% | 0.46% |
| Std Dev | 11.70% | 11.29% | -0.41% |
| Skew | -0.53 | -0.48 | 0.05 |
| Kurtosis | 0.25 | 0.76 | 0.51 |

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**

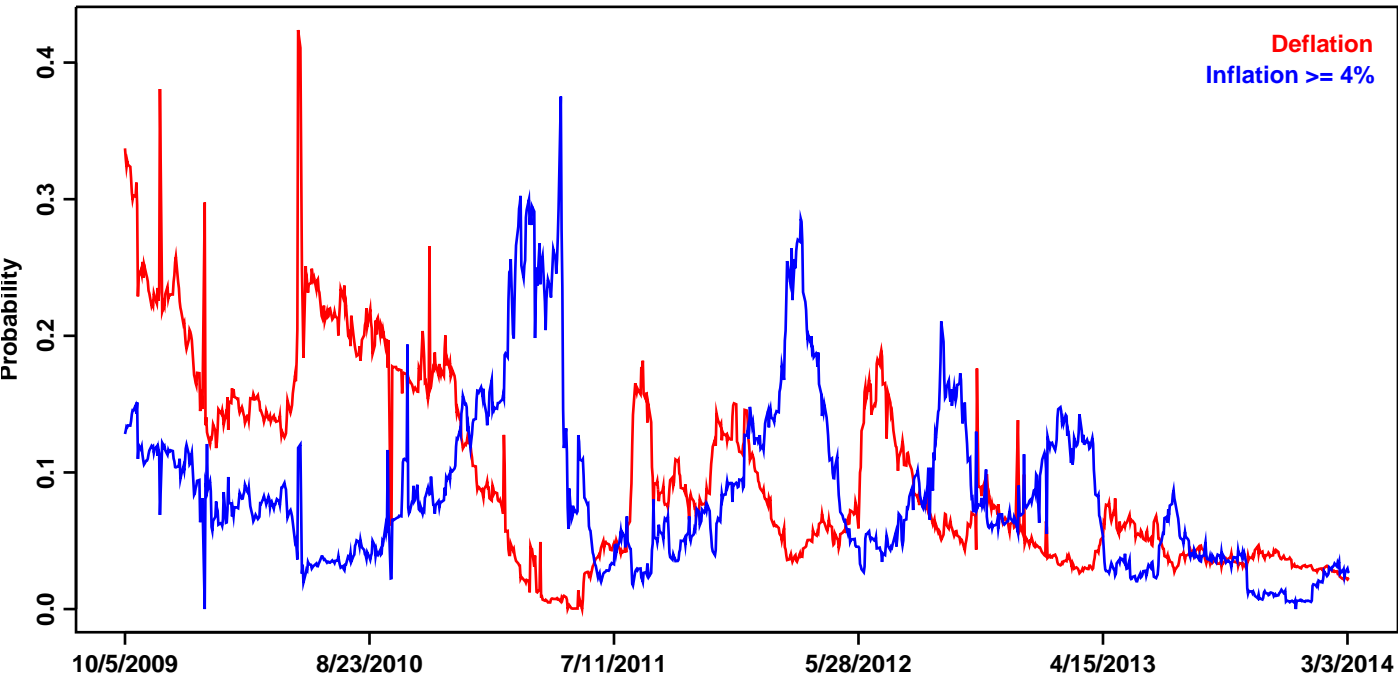


Risk Neutral Density Function for 3-Month LIBOR, 5 Years Out

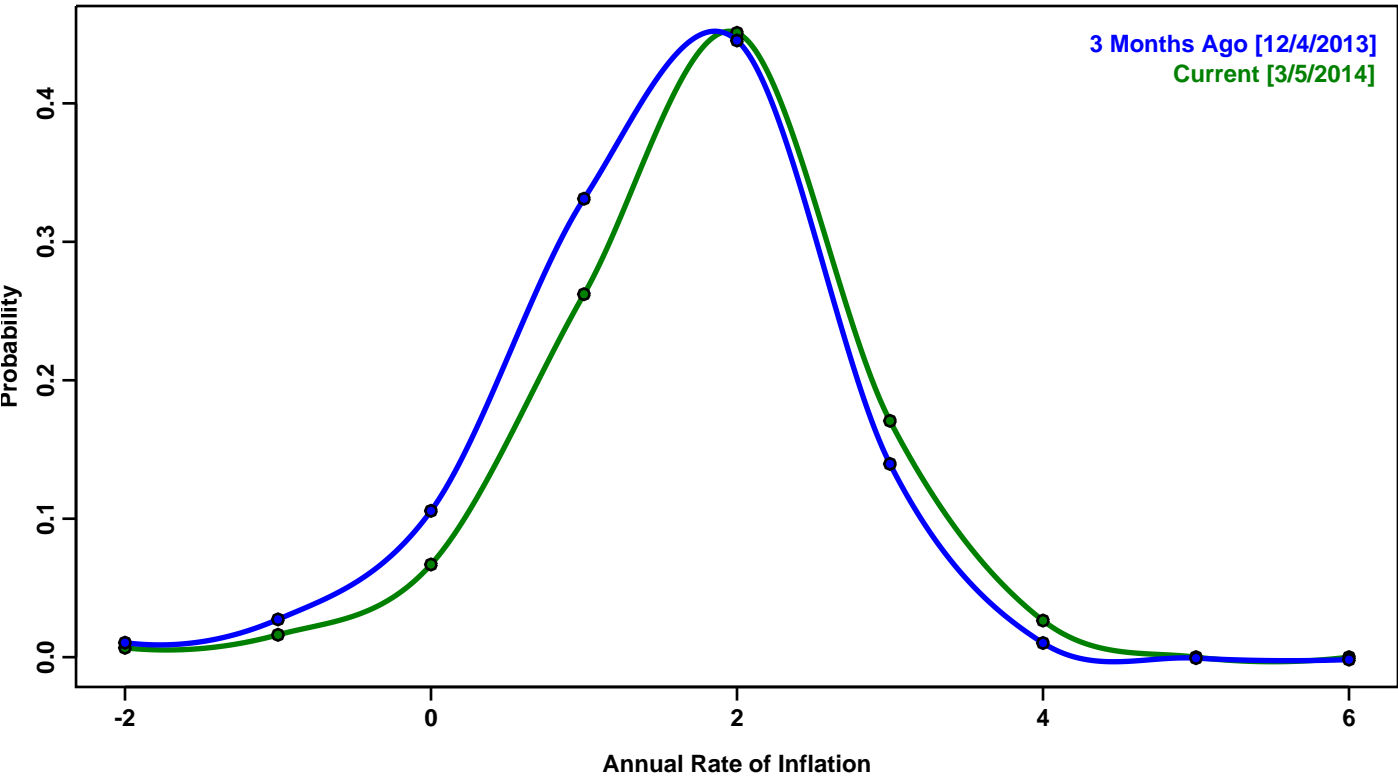


RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- Inflation Caps & Floors

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

Probabilty of Deflation and High Inflation over the next 5 Years

