## Minneapolis Options Report – November 14th

Banks & Insurance Companies
Banks and insurance company stock performance was strong over the past two weeks, generally outperforming the S&P 500. The average CCAR bank rose nearly 3%. The average price of the five insurance companies we follow rose 5.8% despite a -4.5% decline for AIG.

Trading in options on bank and insurance company equities continued to be light. The exception was WFC which registered a large spike in activity. RNPD standard deviations remain at three year lows for the financial companies we follow.

Additional notes:

- Despite a significant spike in trading in options on WFC stock, the RNPD derived from the options was largely unchanged. We noted very little movement in the volatility smile for WFC. (*See WFC report*)

Wells Fargo

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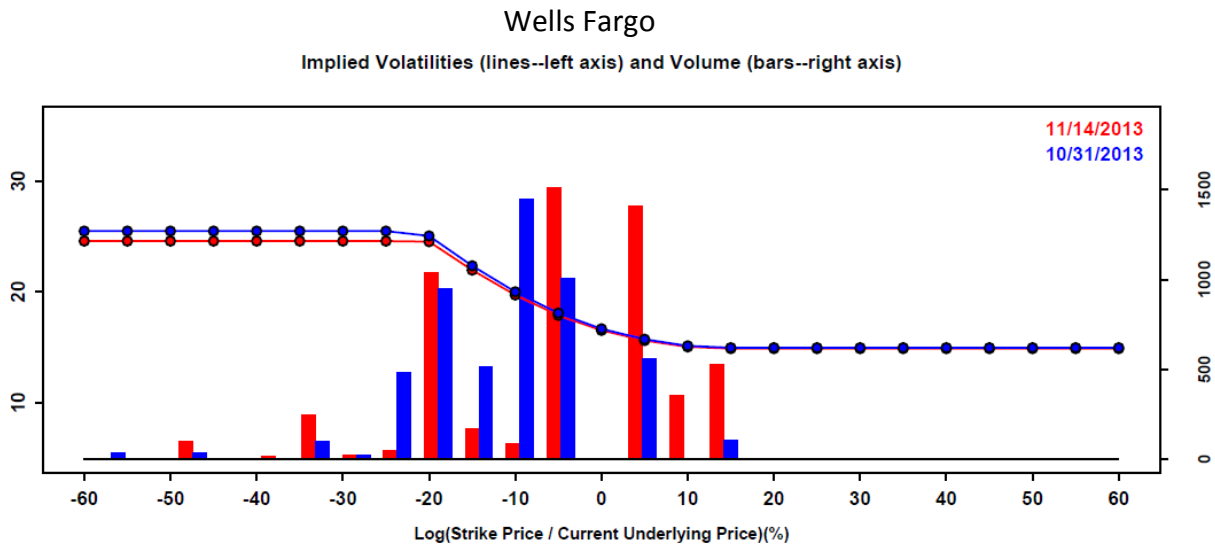

- We measured a jump in the RNPD standard deviation based on options on Met Life stock last week. Out of the money trading picked up for options struck at prices below the current spot. MET stock is up 8.6% over the past two weeks. (*See MET Report*)
- Put trading was also active in options on LNC and HIG. We note that the LNC share price is up over 10% and HIG is up 5.4% over the past two weeks.

Other Commodity Markets

Trading levels in options on the S&P 500 index were about average last week. Market tail risks rose based on changes in the standard deviations of the RNPDs derived from options on the S&P 500. We registered strong activity in options on exchange rate futures.

Additional notes:

- Out of the money trading was skewed toward strike prices below the current spot price for options on the S&P 500 index with one year to expiration. (*See S&P 500 reports*)

S&P 500
**Implied Volatilities (lines--left axis) and Volume (bars--right axis)**
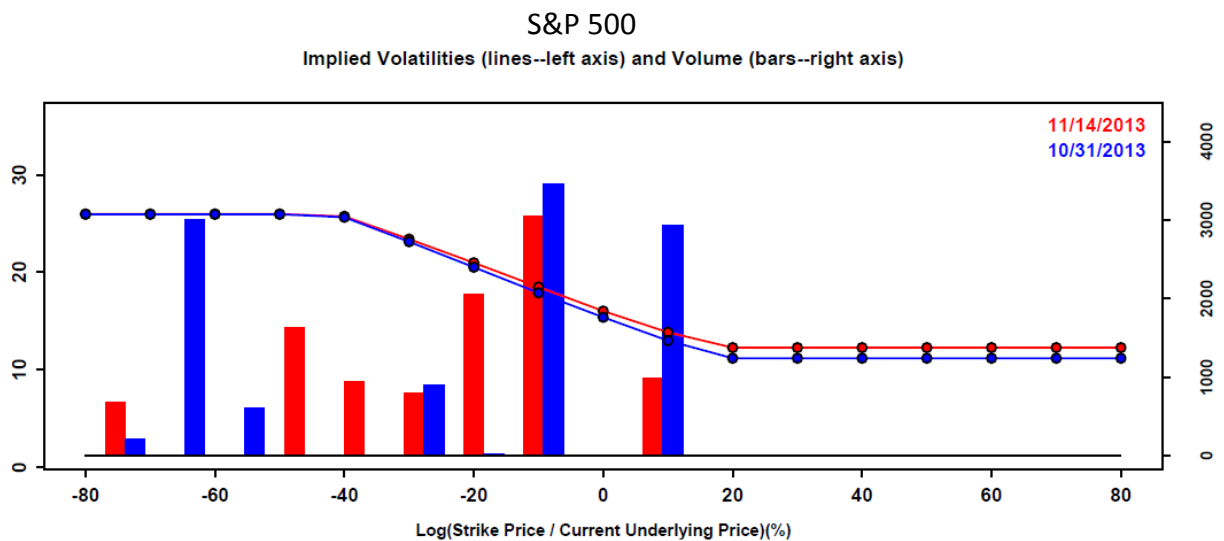
- Trading in options on Dollar-Pound futures was the highest we have recorded. We continued to measure robust trading on options on Dollar-Euro and Yen-Dollar futures. Despite the strong trading, RNPD profiles remained largely unchanged with low tail risk and very little skew. (*See Exchange Rate Reports*)

- Trading in options on grain futures receded last week. Spot prices rose 1.3% for corn, 2.4% for soybeans, and fell another -2.9% for wheat. Volatility smiles displayed parallel shifts lower and RNPD standard deviations fell smartly for all three commodities. (*See individual reports for corn, soybeans, and wheat*)

**Standard Deviations of RNPDs
Derived from Options on Grain Futures**
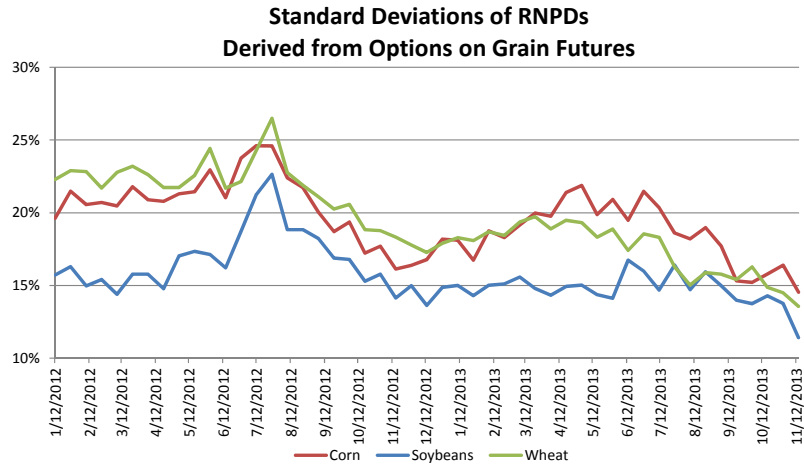
- Trading in options on Gold and Silver futures was light. Their spot prices fell -2.8% and -5.1% respectively over the past two weeks. Unusually, the standard deviations of both RNPDs fell. (*See Gold and Silver Reports*)
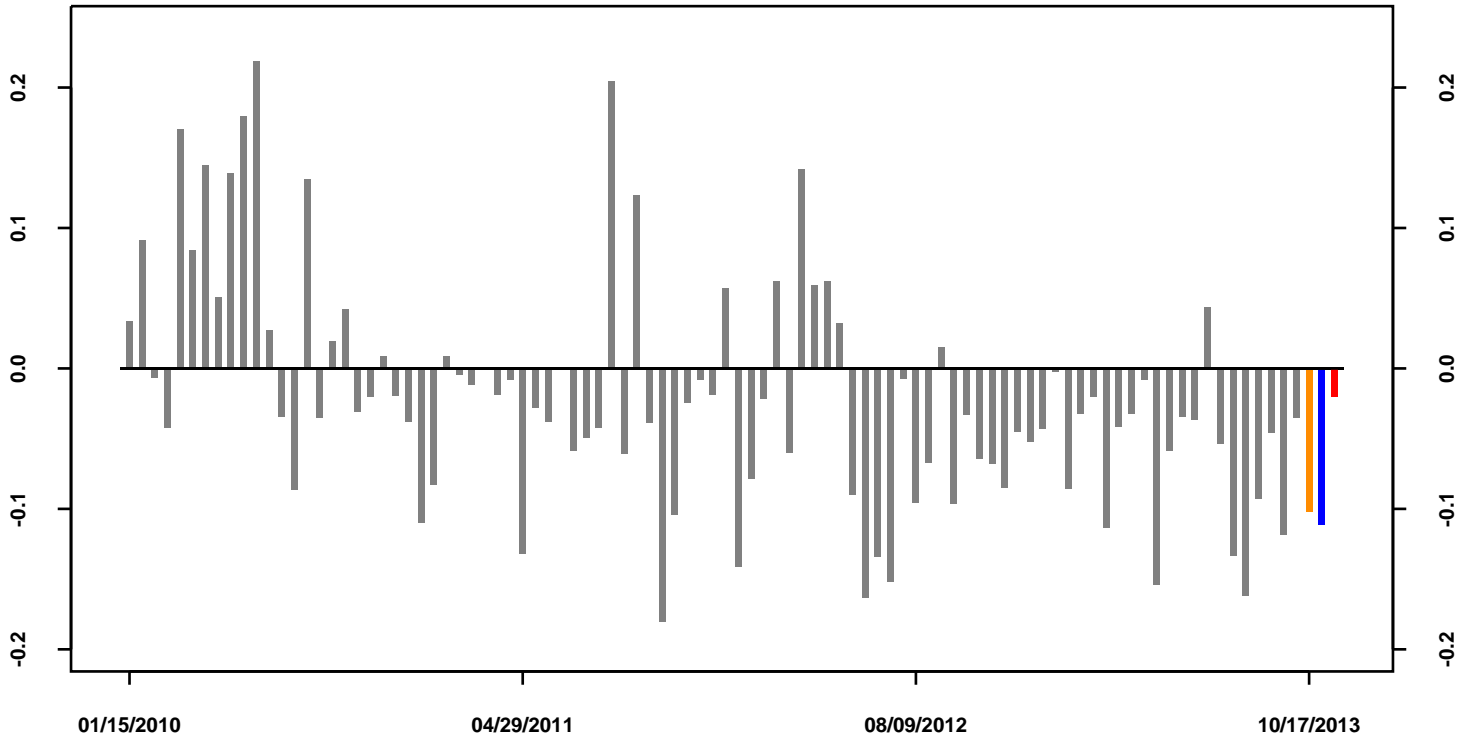
Aggregate Volumes for Options on CCAR Banks

% of Volume < 0   **% of Volume < -20%**

Volumes for Options on CCAR Banks
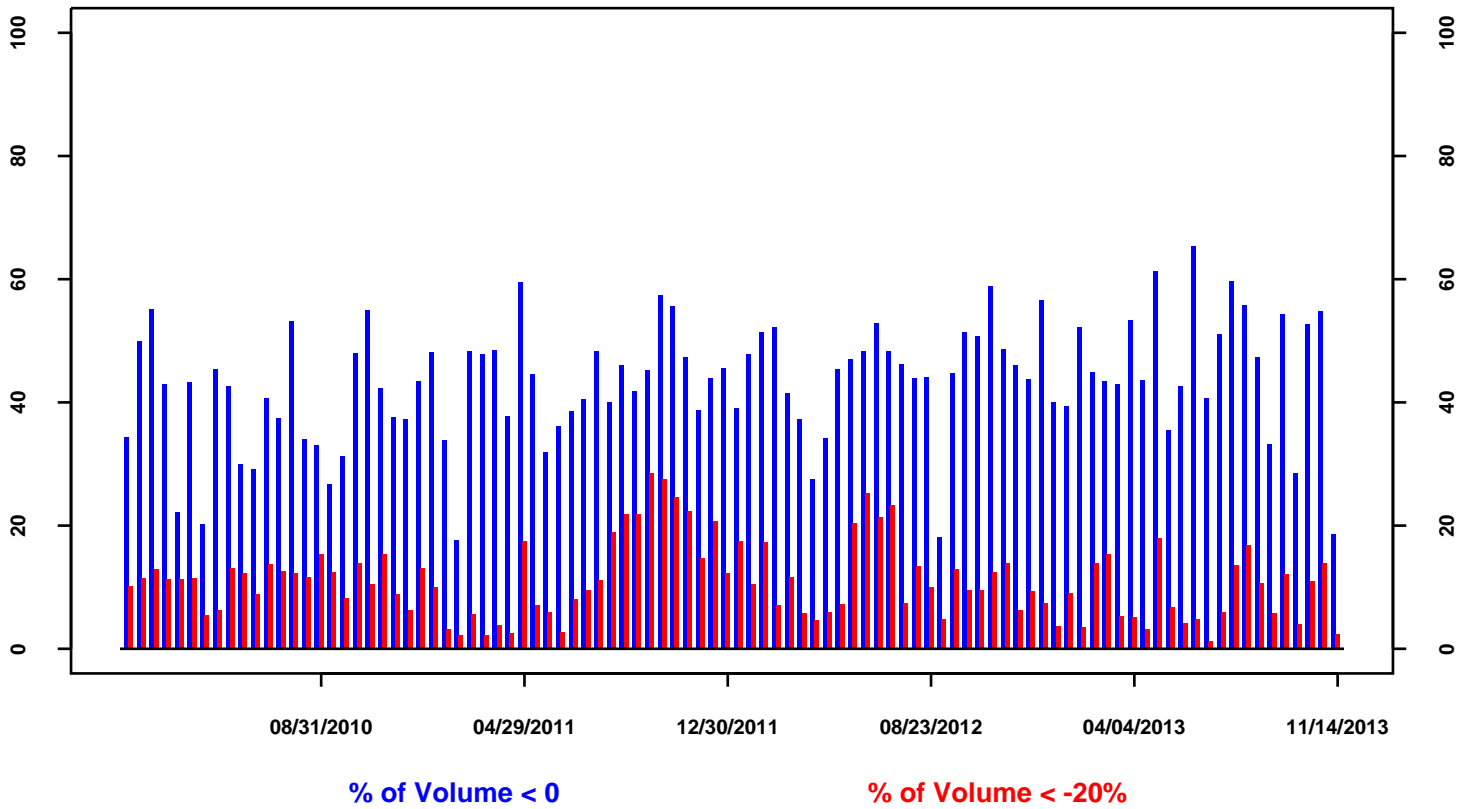
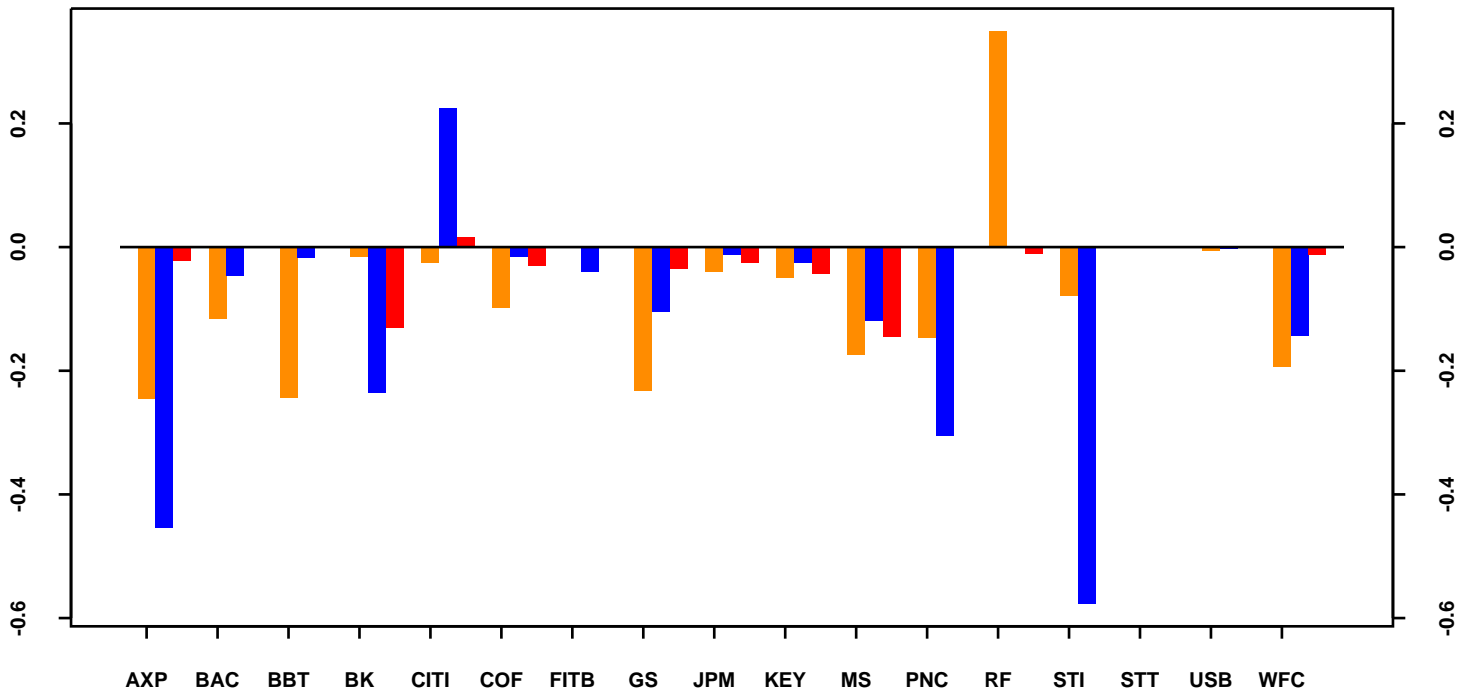**% of Volume < 0**   **% of Volume < -20%**
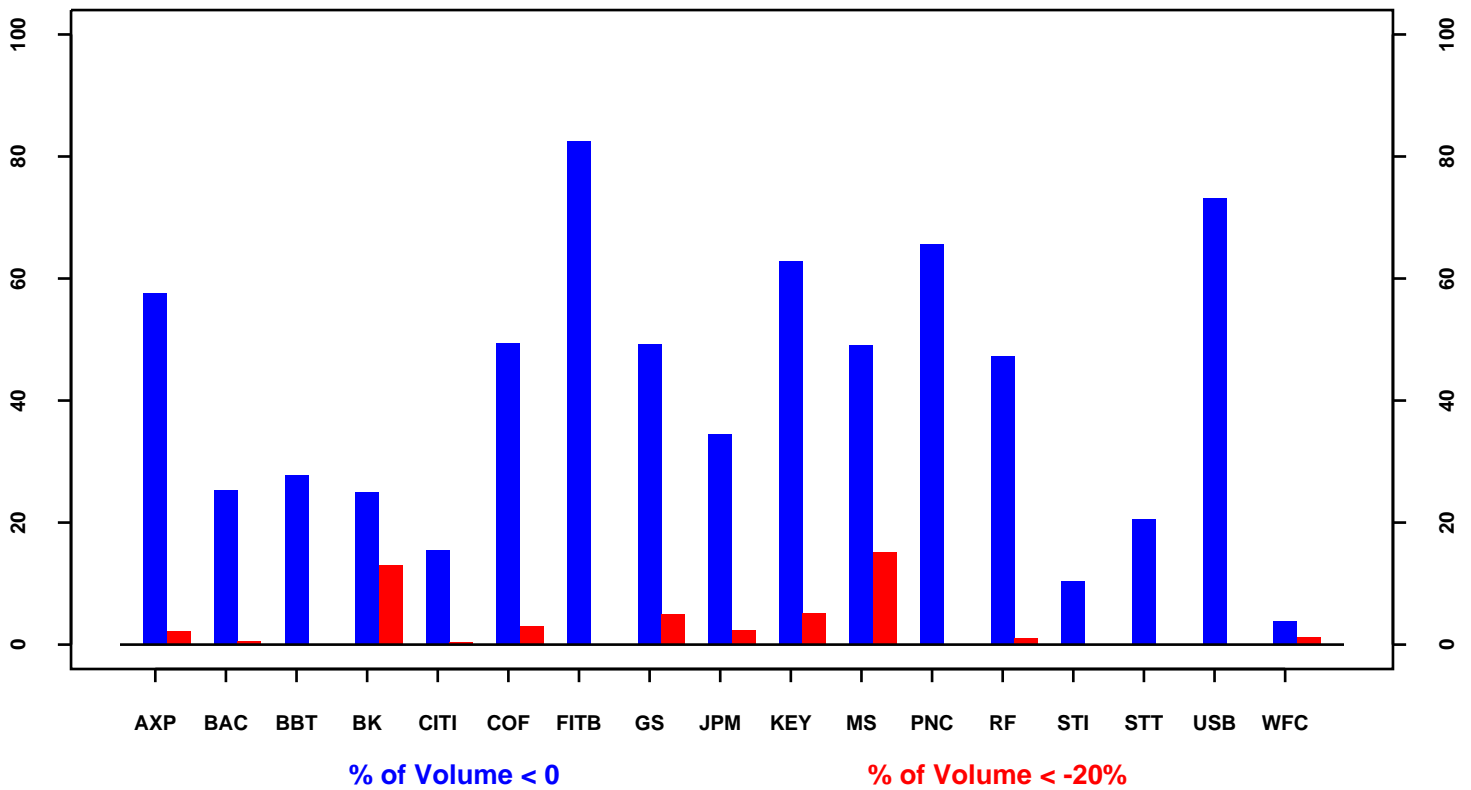
Aggregate Volume Skew--CCAR Banks

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

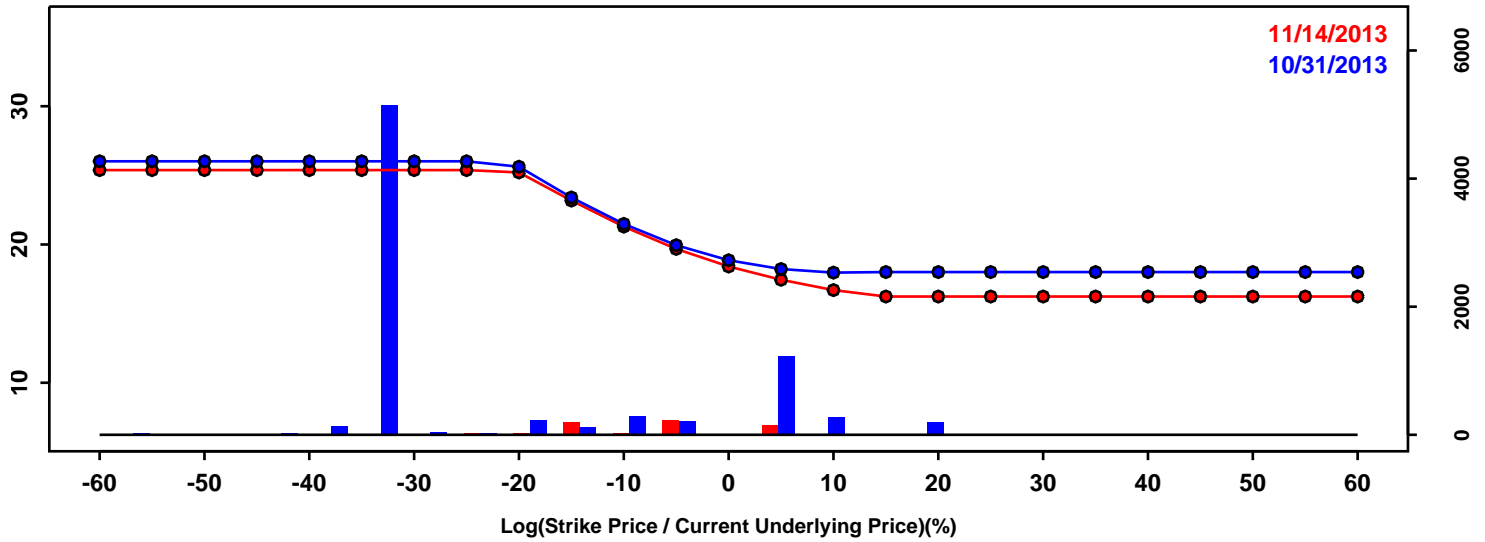# CCAR Bank Volume Skew -- Last Three Periods

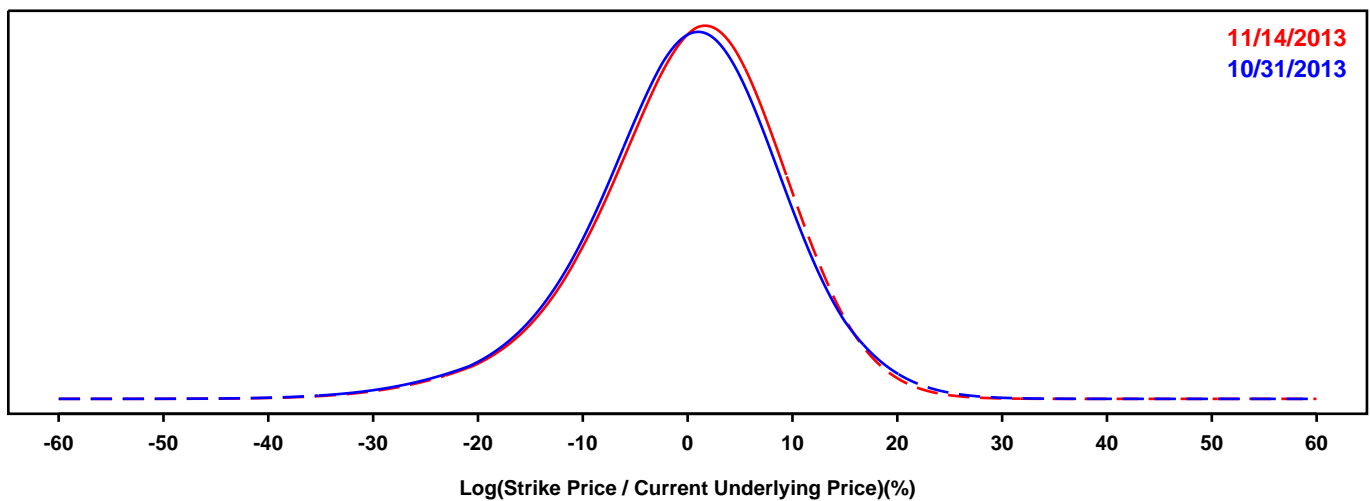**10/17/2013**   **10/31/2013**   **11/14/2013**

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AMERICAN EXPRESS

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

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

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**

Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-12.25%	-11.82%	0.44%
50th Pct	0.29%	0.69%	0.40%
90th Pct	11.04%	10.99%	-0.05%
Mean	-0.27%	0.01%	0.28%
Std Dev	9.49%	9.24%	-0.24%
Skew	-0.45%	-0.53%	-0.08%
Kurtosis	0.85	0.81	-0.04

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BANK OF AMERICA

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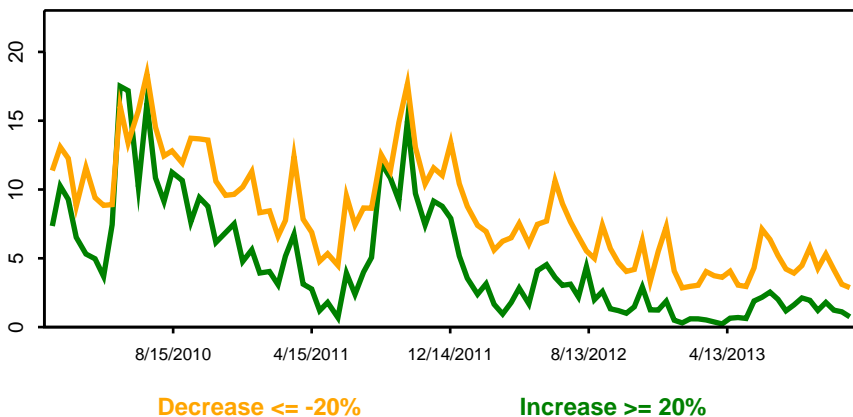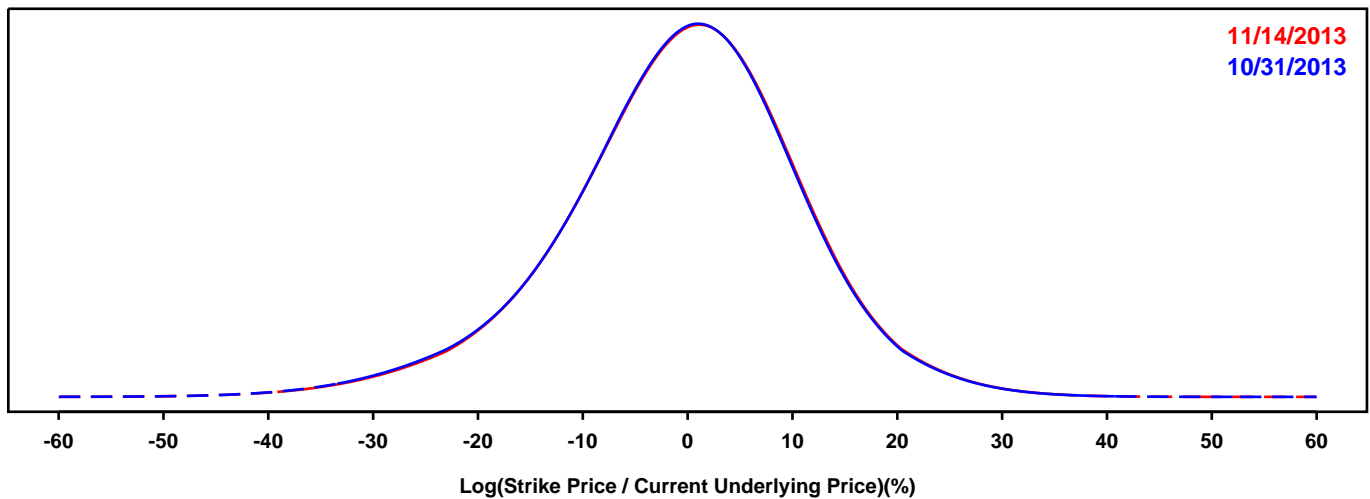derived from options that expire in approximately 3 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
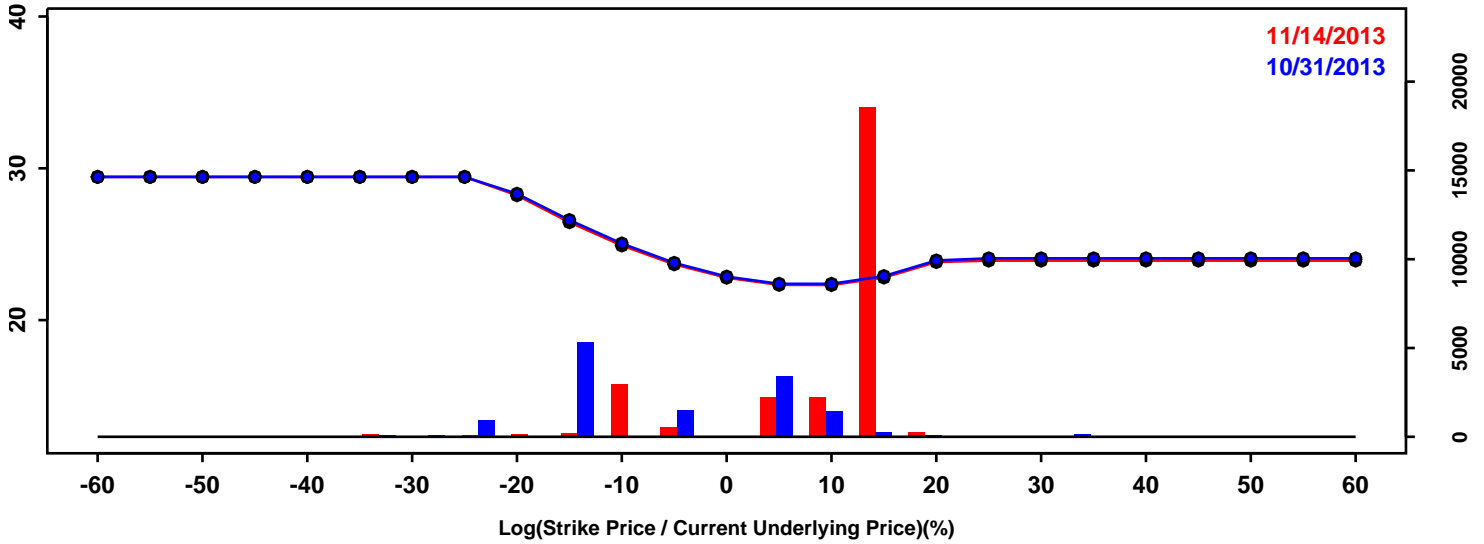
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-15.31%	-15.11%	0.21%
50th Pct	0.00%	0.09%	0.09%
90th Pct	12.97%	13.09%	0.11%
Mean	-0.66%	-0.52%	0.13%
Std Dev	11.51%	11.47%	-0.04%
Skew	-0.36	-0.34	0.01
Kurtosis	0.76	0.74	-0.02

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- BB&T

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.
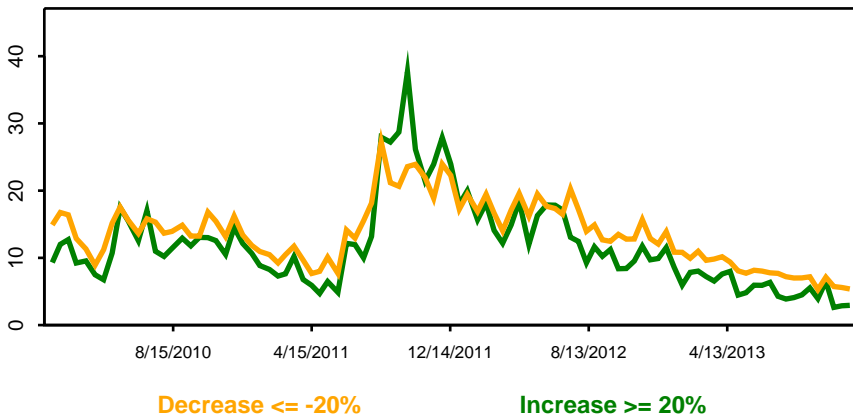
Implied Volatilities (lines--left axis) and Volume (bars--right axis)

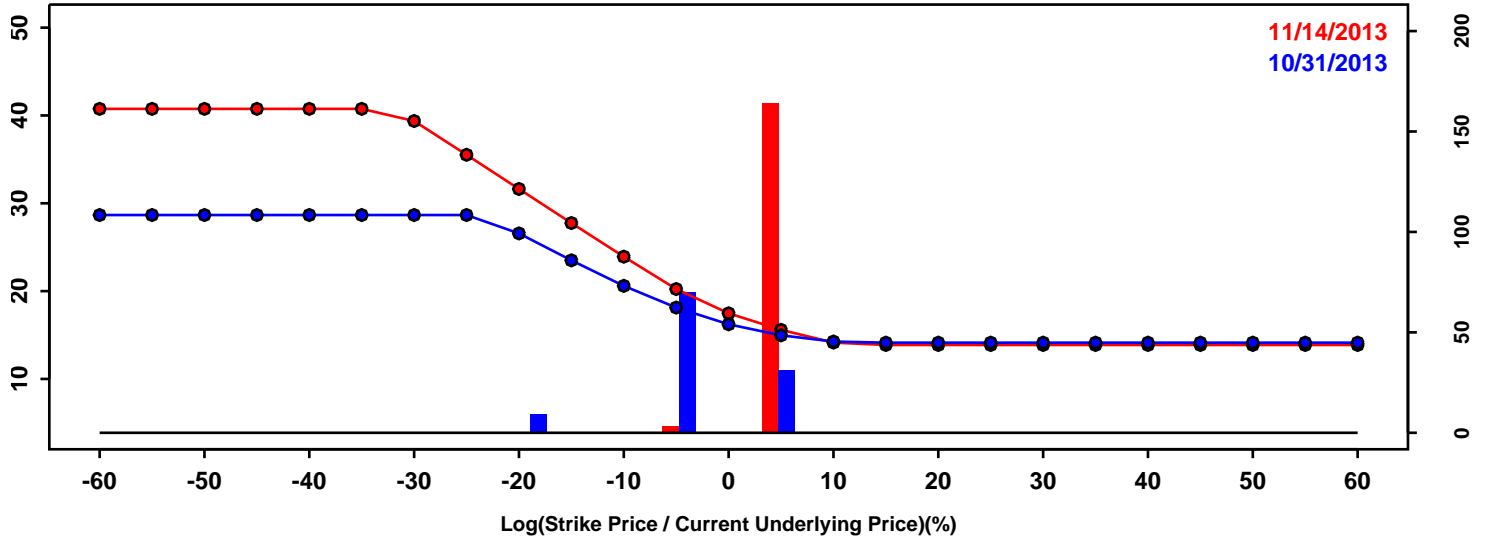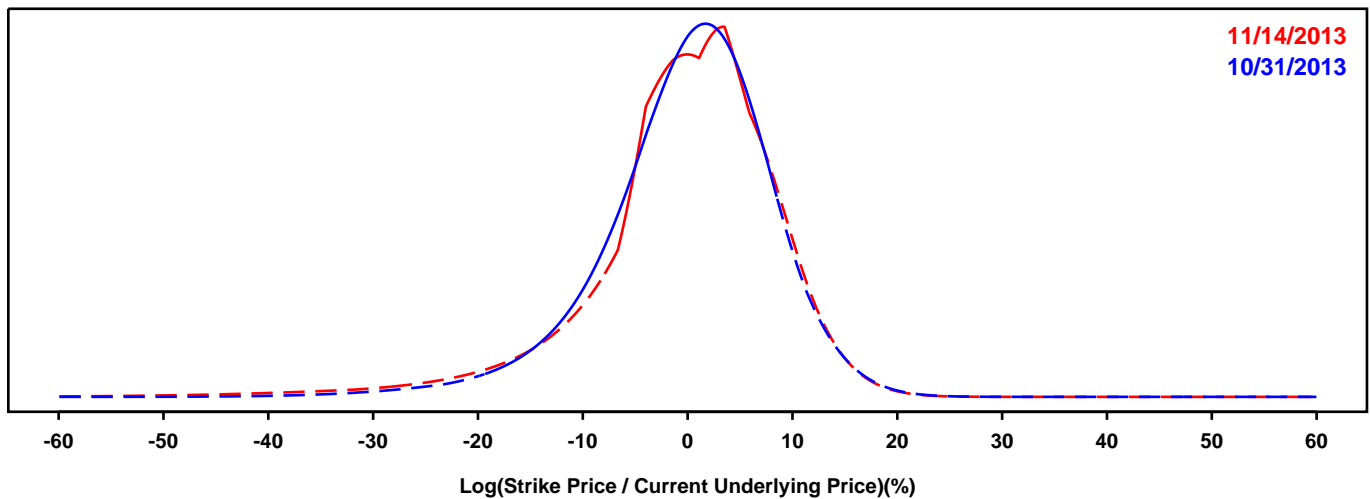**Risk Neutral PDF of the Log Return Distribution**

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**

Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-10.12%	-11.18%	-1.06%
50th Pct	0.71%	0.71%	-0.00%
90th Pct	9.19%	9.36%	0.18%
Mean	-0.04%	-0.46%	-0.41%
Std Dev	8.15%	9.35%	1.20%
Skew	-0.84	-1.54	-0.70
Kurtosis	2.02	5.09	3.06

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

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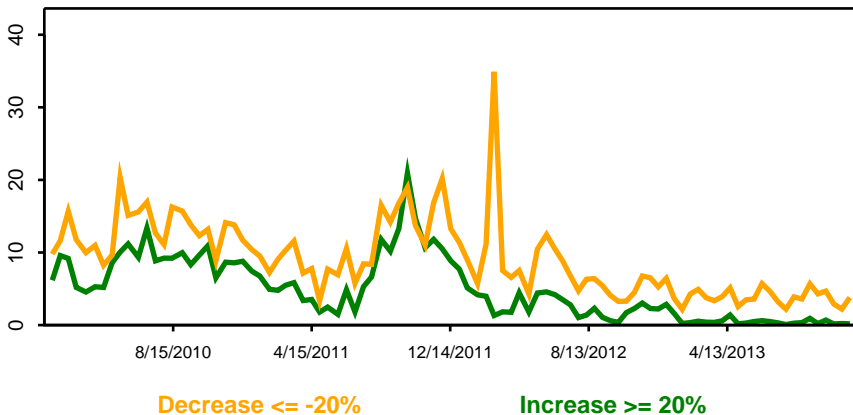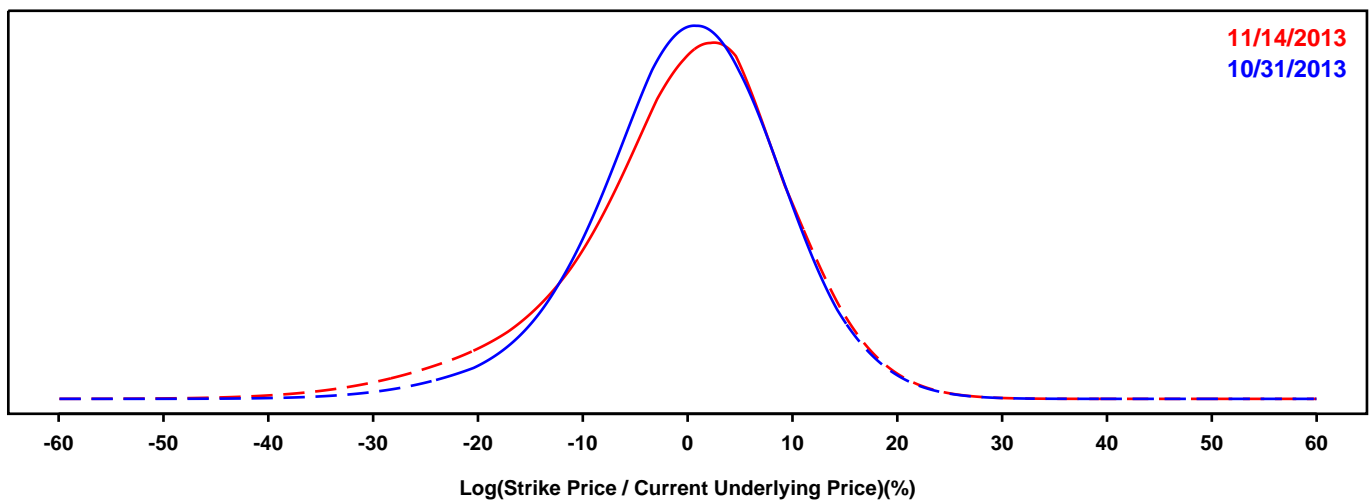*derived from options that expire in approximately 3 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   Increase >= 20%
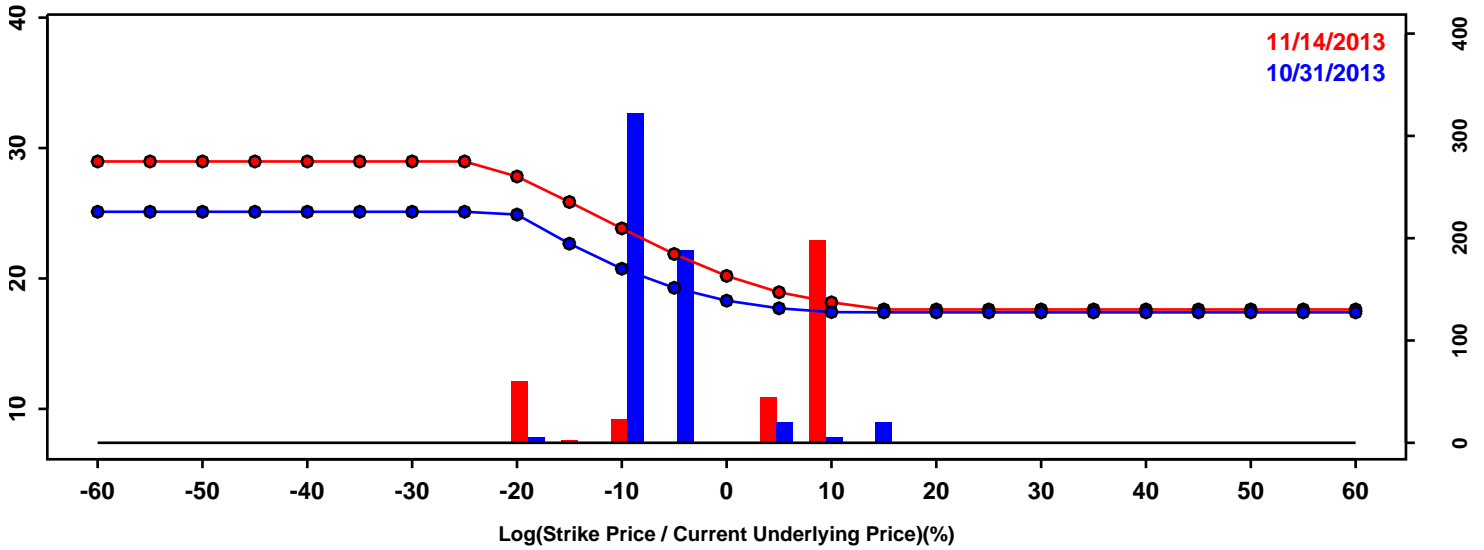
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-11.67%	-14.46%	-2.79%
50th Pct	0.30%	0.38%	0.08%
90th Pct	10.89%	11.22%	0.33%
Mean	-0.11%	-0.77%	-0.66%
Std Dev	9.16%	10.48%	1.32%
Skew	-0.40	-0.72	-0.32
Kurtosis	0.78	1.12	0.34

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.

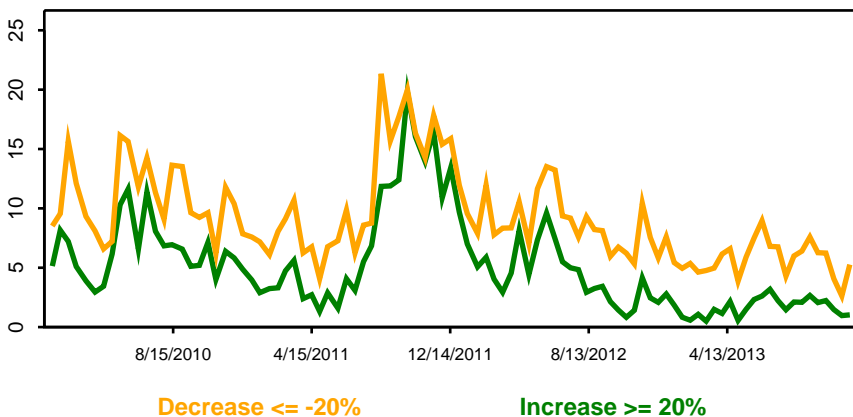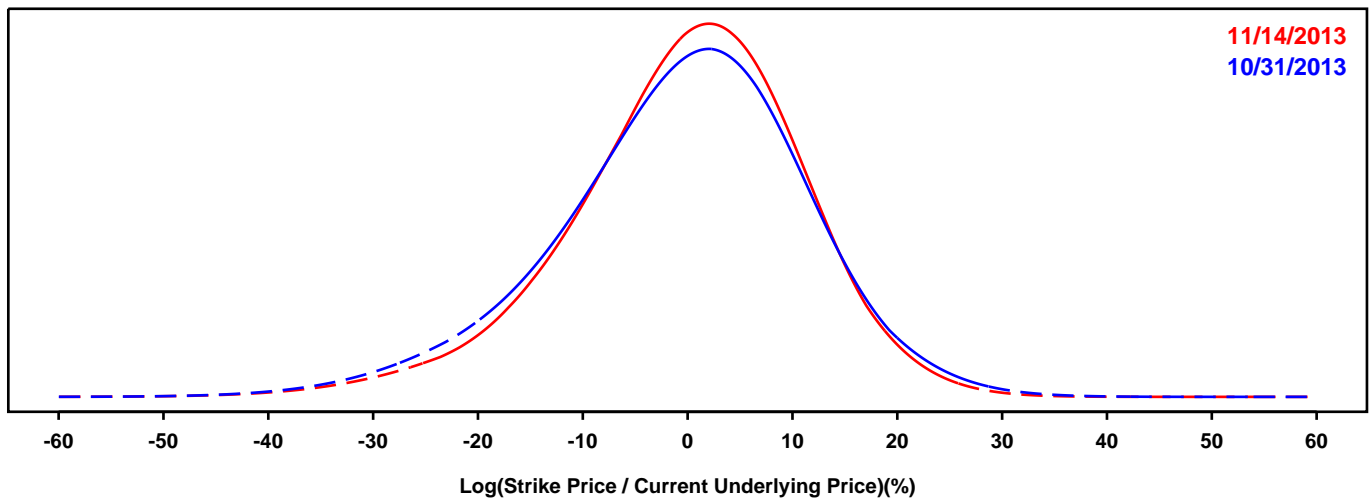### Implied Volatilities (lines--left axis) and Volume (bars--right axis)

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
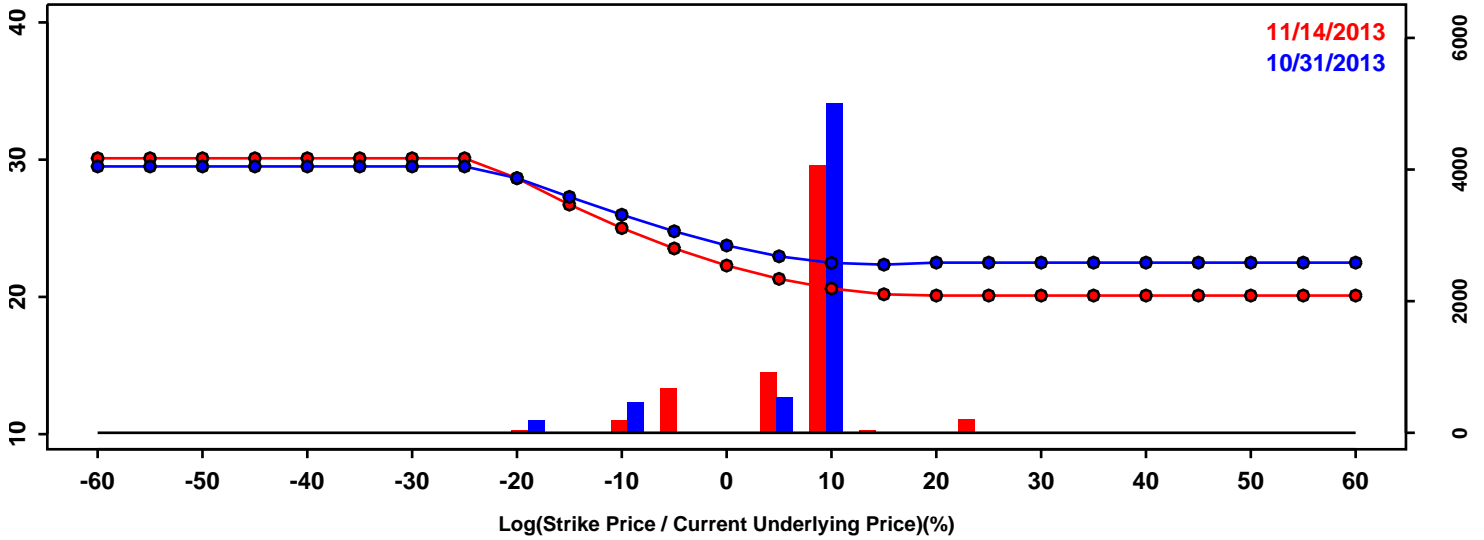
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-16.41%	-14.71%	1.71%
50th Pct	0.28%	0.64%	0.36%
90th Pct	13.66%	13.05%	-0.62%
Mean	-0.63%	-0.22%	0.41%
Std Dev	12.03%	11.23%	-0.79%
Skew	-0.41%	-0.52	-0.10
Kurtosis	0.52	0.77	0.25

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CAPITAL ONE

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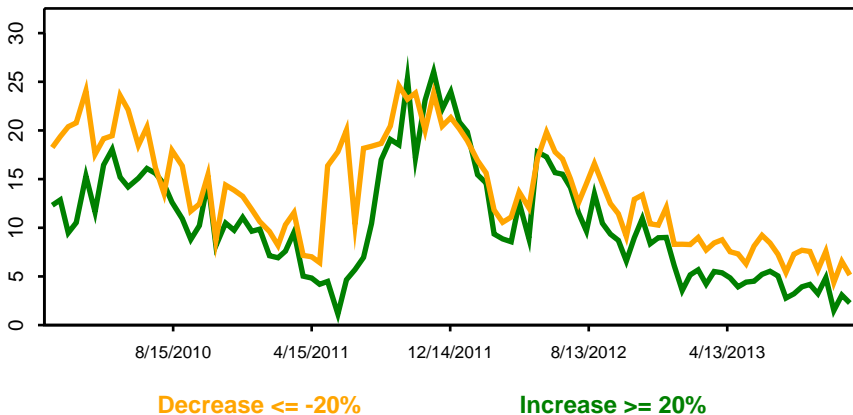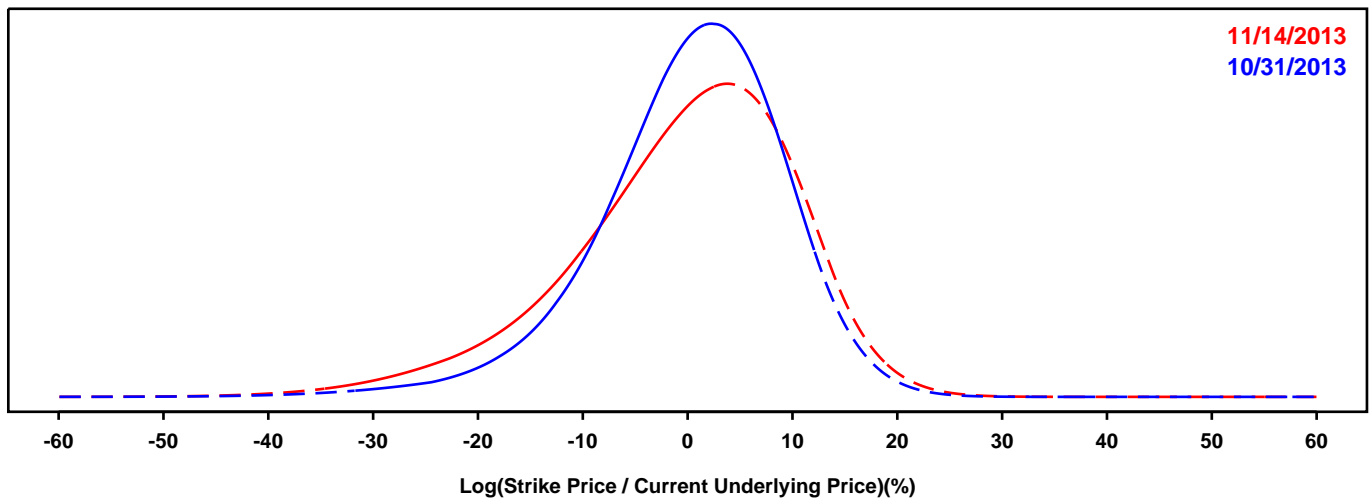derived from options that expire in approximately 3 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%　　　　　**Increase >= 20%**
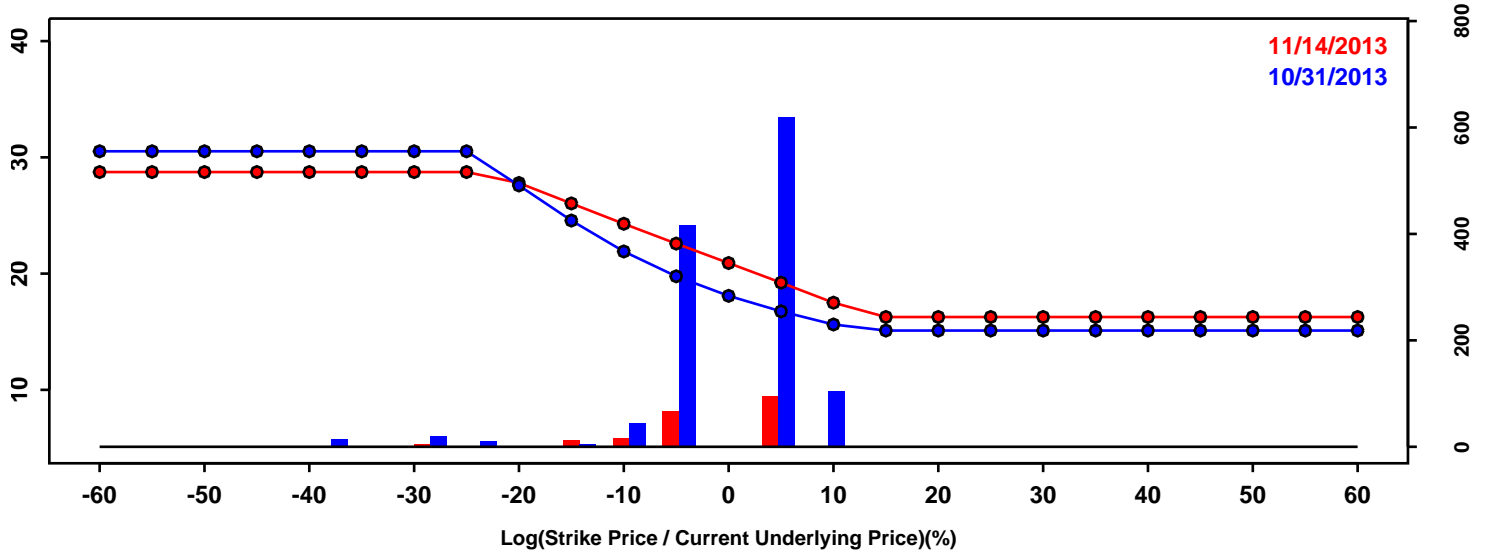
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-11.15%	-14.90%	-3.75%
50th Pct	1.07%	0.90%	-0.17%
90th Pct	10.73%	11.87%	1.14%
Mean	0.26%	-0.48%	-0.74%
Std Dev	9.08%	10.79%	1.72%
Skew	-0.76%	-0.73	0.03
Kurtosis	1.58	0.79	-0.78

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- FIFTH THIRD

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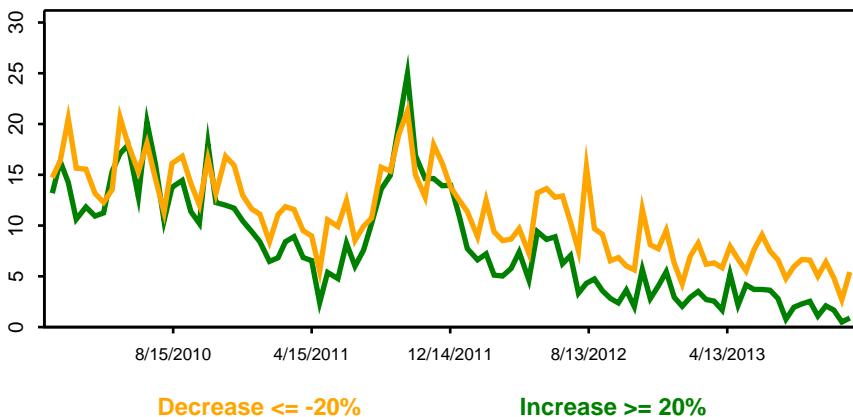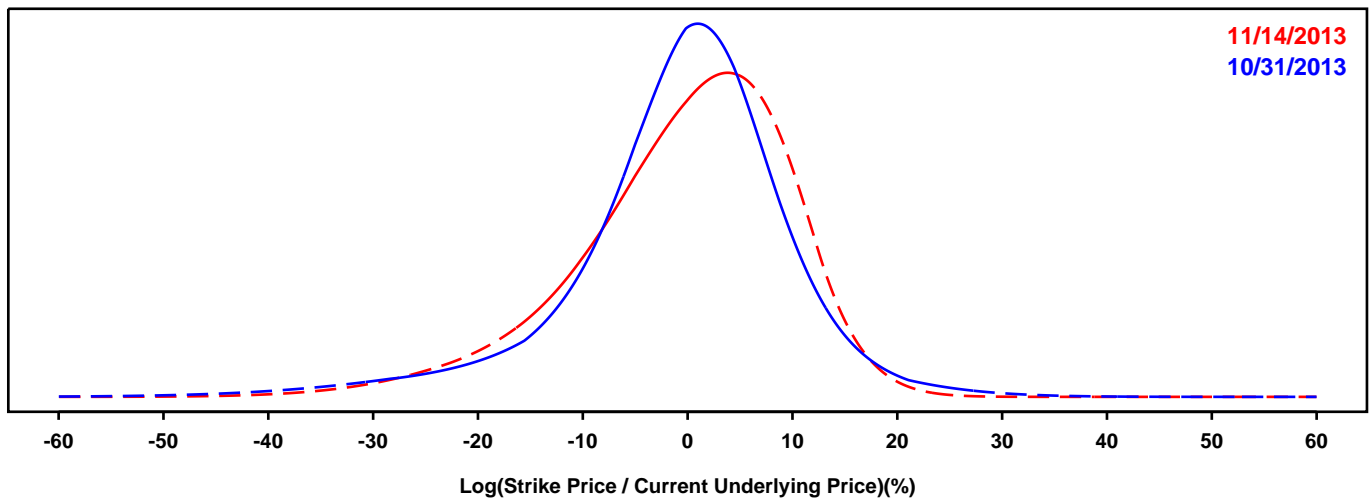derived from options that expire in approximately 3 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
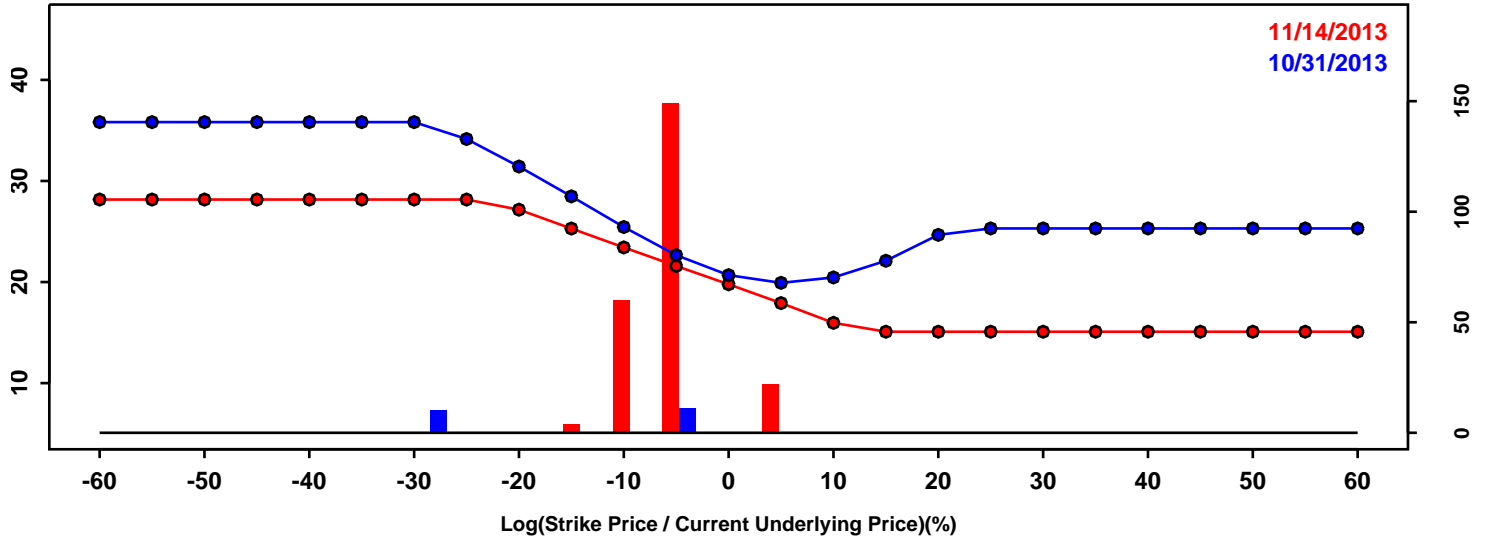
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-13.29%	-14.06%	-0.77%
50th Pct	0.28%	0.98%	0.70%
90th Pct	10.62%	11.12%	0.50%
Mean	-0.78%	-0.44%	0.35%
Std Dev	10.67%	10.22%	-0.46%
Skew	-0.92	-0.80	0.12
Kurtosis	2.79	0.96	-1.83

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- GOLDMAN SACHS

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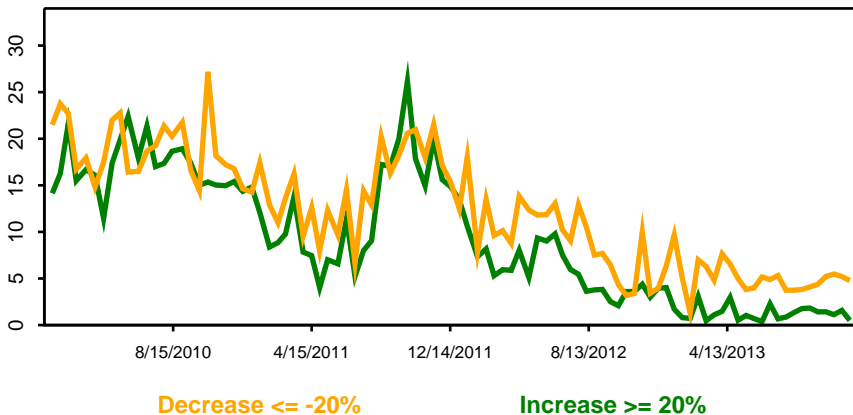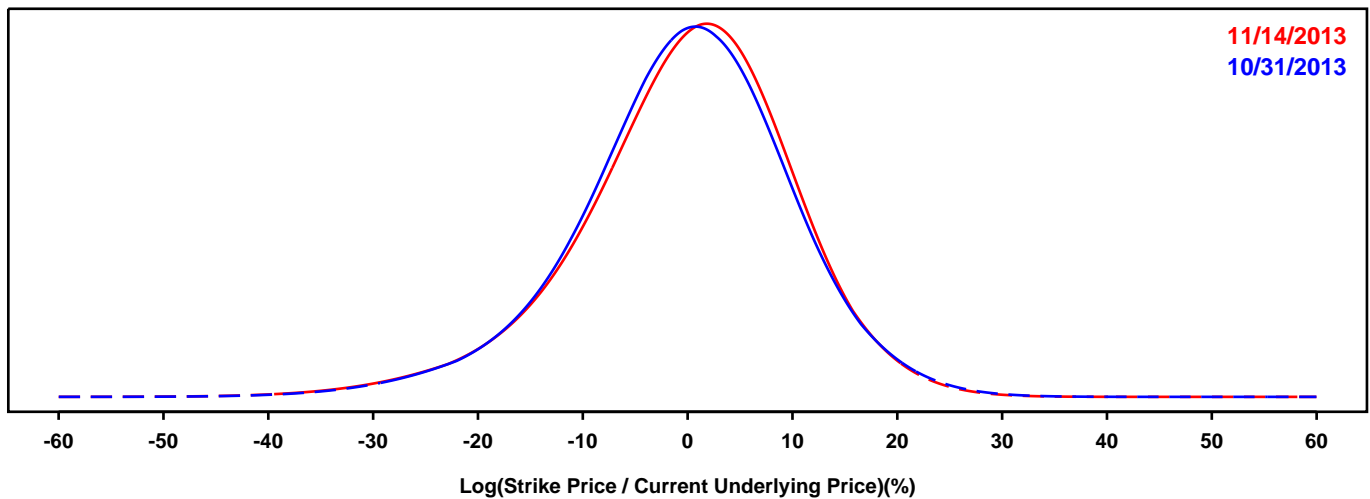derived from options that expire in approximately 3 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
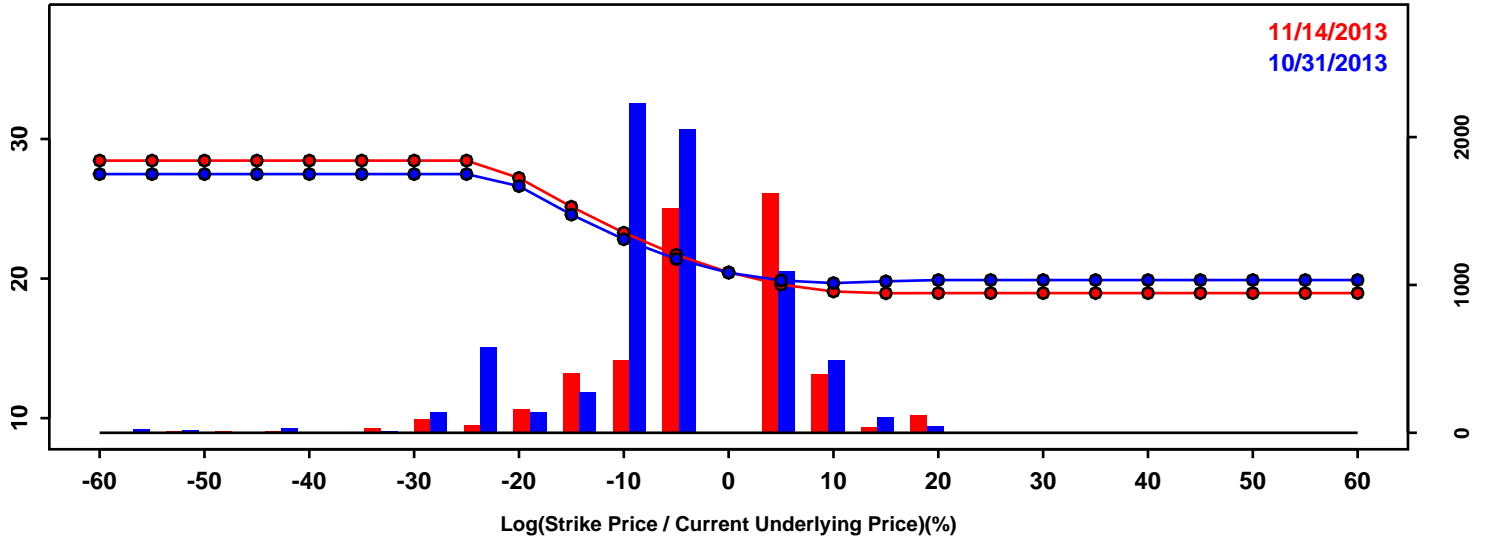
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-13.28%	-13.29%	-0.01%
50th Pct	0.15%	0.64%	0.49%
90th Pct	11.91%	11.95%	0.04%
Mean	-0.36%	-0.15%	0.22%
Std Dev	10.25%	10.30%	0.04%
Skew	-0.40	-0.52	-0.12
Kurtosis	0.80	0.90	0.10

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- JP MORGAN

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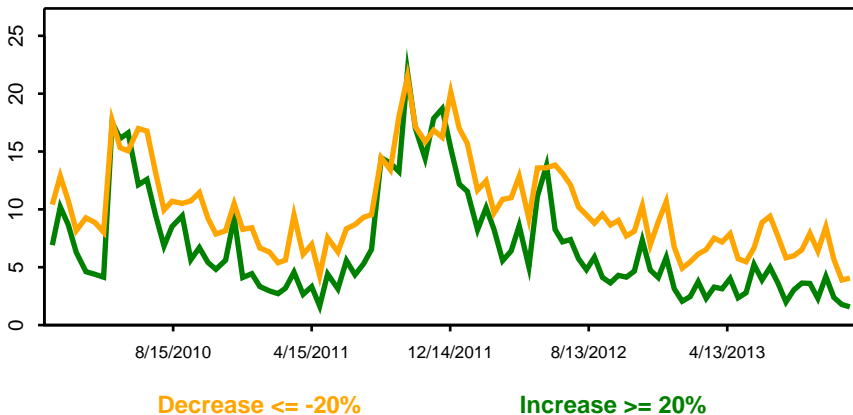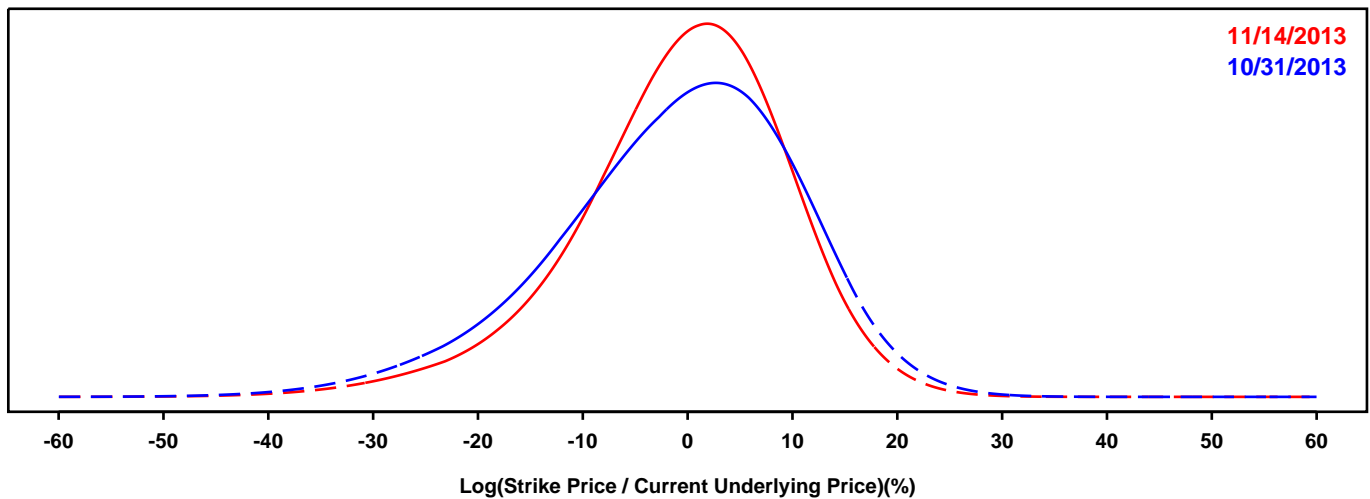derived from options that expire in approximately 3 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
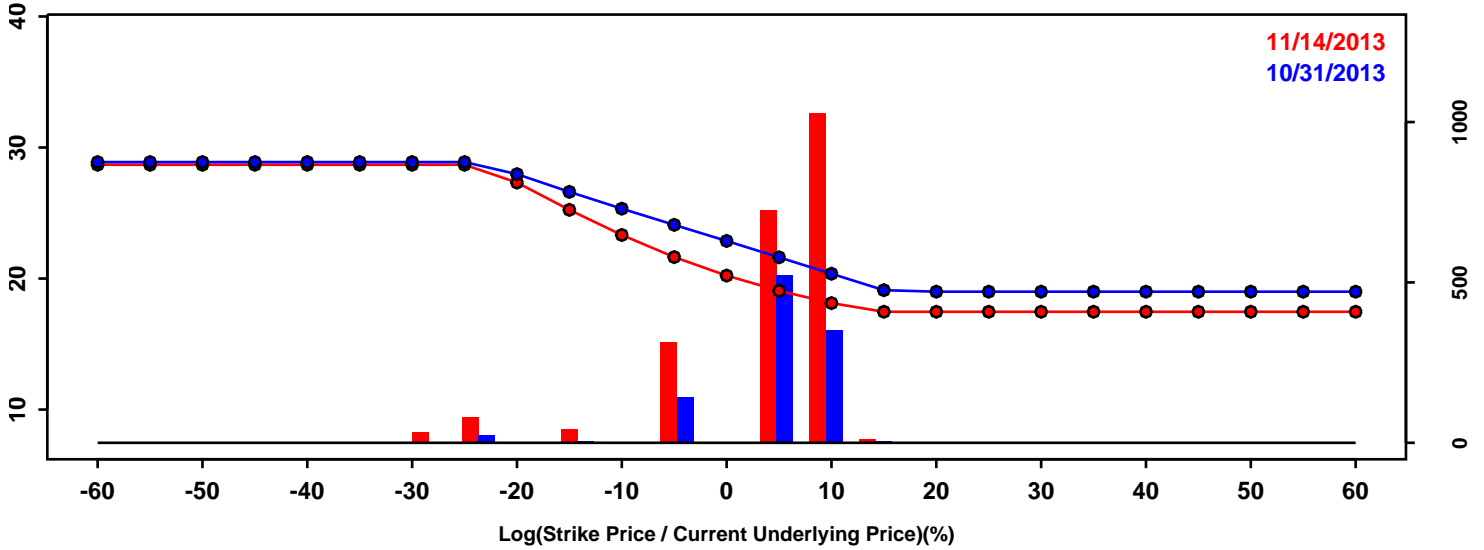
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-16.70%	-14.01%	2.69%
50th Pct	0.04%	0.26%	0.22%
90th Pct	12.83%	11.35%	-1.48%
Mean	-1.09%	-0.69%	0.39%
Std Dev	11.72%	10.33%	-1.40%
Skew	-0.52	-0.62	-0.10
Kurtosis	0.41	0.93	0.52

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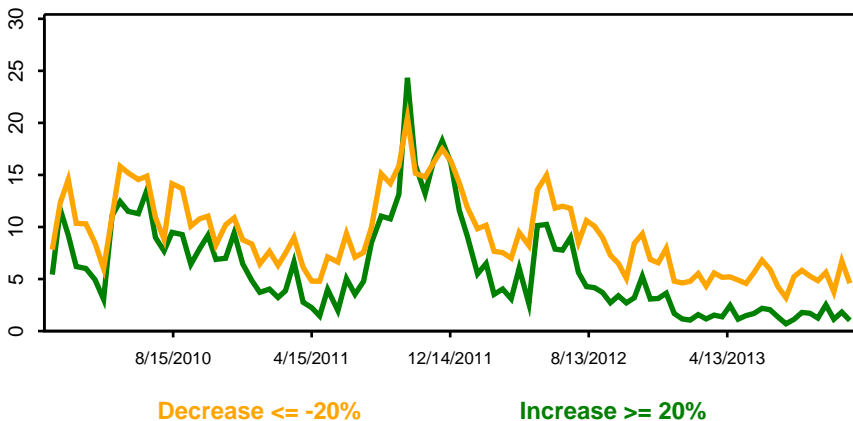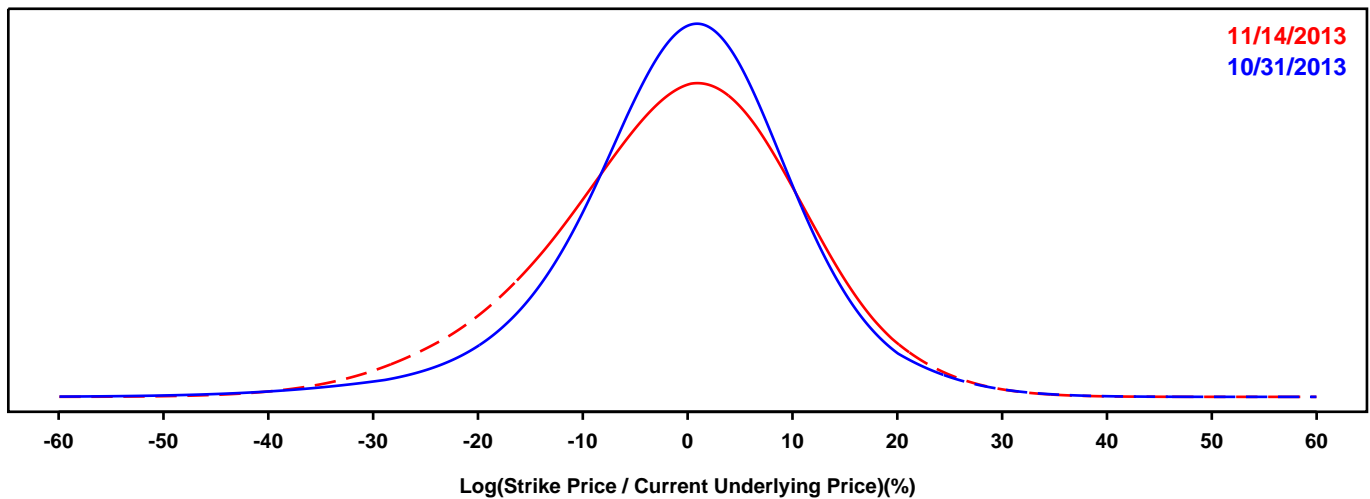
Implied Volatilities (lines--left axis) and Volume (bars--right axis)

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
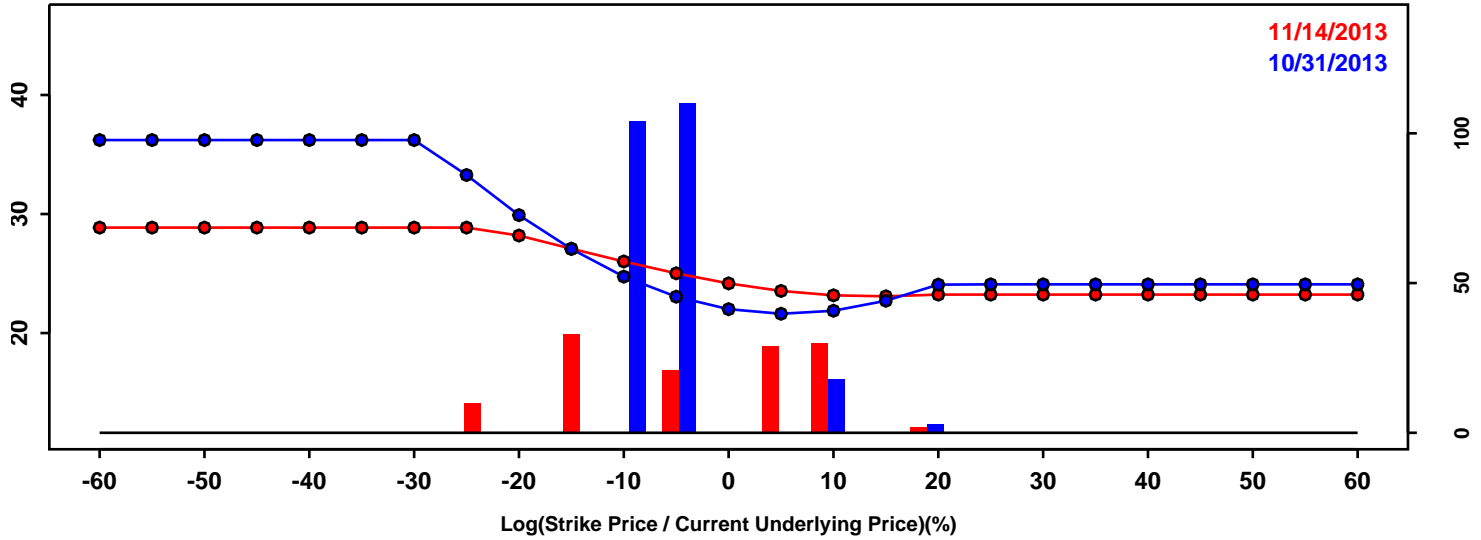
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-13.96%	-17.45%	-3.49%
50th Pct	0.24%	-0.53%	-0.76%
90th Pct	12.63%	13.42%	0.79%
Mean	-0.37%	-1.34%	-0.97%
Std Dev	11.24%	12.28%	1.04%
Skew	-0.51%	-0.34	0.17
Kurtosis	1.61	0.38	-1.23

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- MORGAN STANLEY

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derived from options that expire in approximately 3 months.*

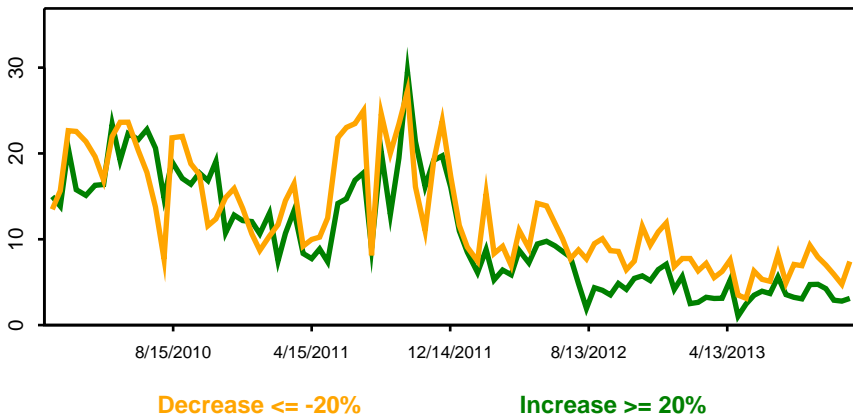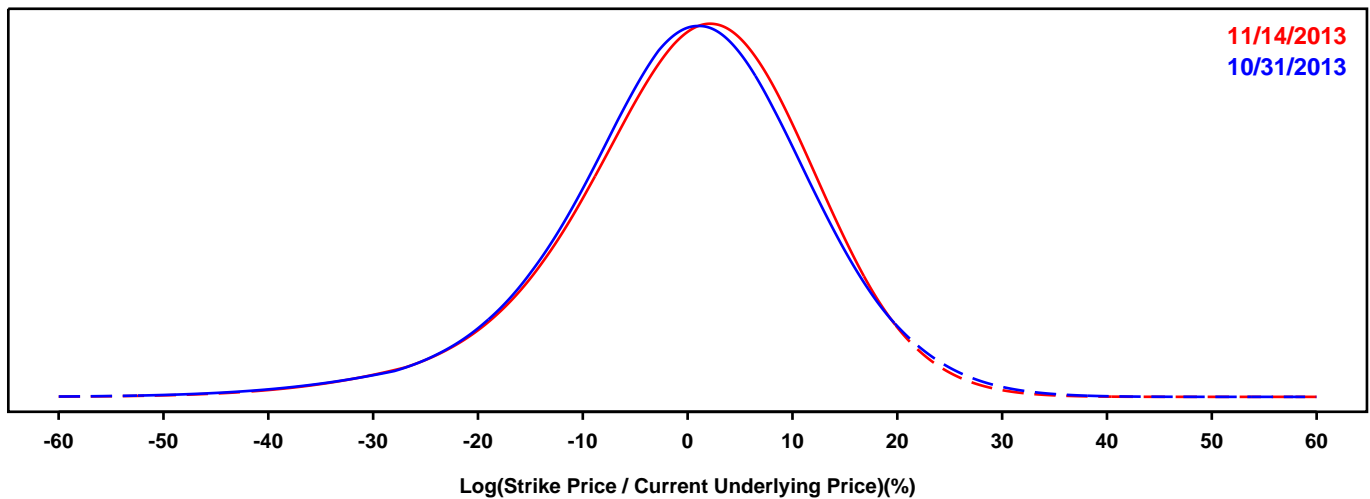### Implied Volatilities (lines--left axis) and Volume (bars--right axis)

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
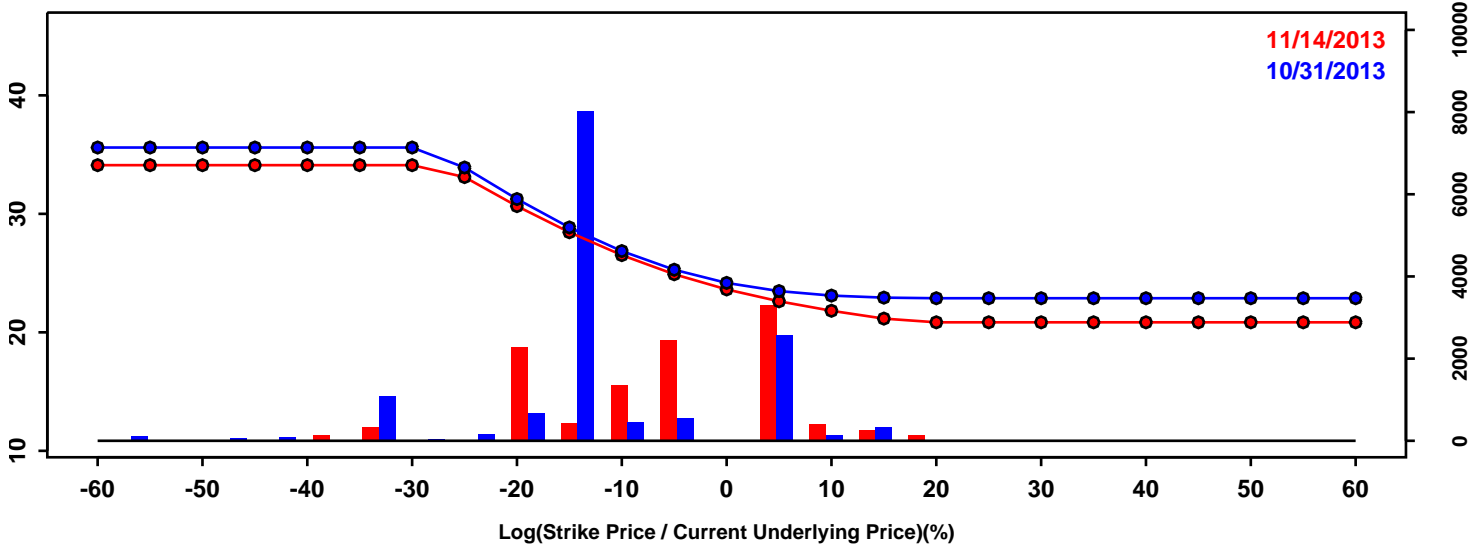
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-15.37%	-15.14%	0.22%
50th Pct	0.39%	0.90%	0.51%
90th Pct	14.25%	14.09%	-0.16%
Mean	-0.25%	0.02%	0.28%
Std Dev	12.16%	11.91%	-0.24%
Skew	-0.49	-0.57	-0.08
Kurtosis	1.08	0.97	-0.11

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PNC FINANCIAL

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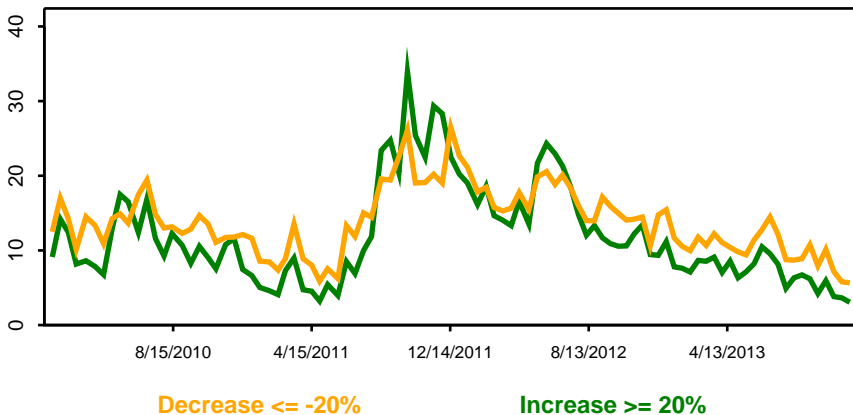*derived from options that expire in approximately 3 months.*

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

Risk Neutral PDF of the Log Return Distribution
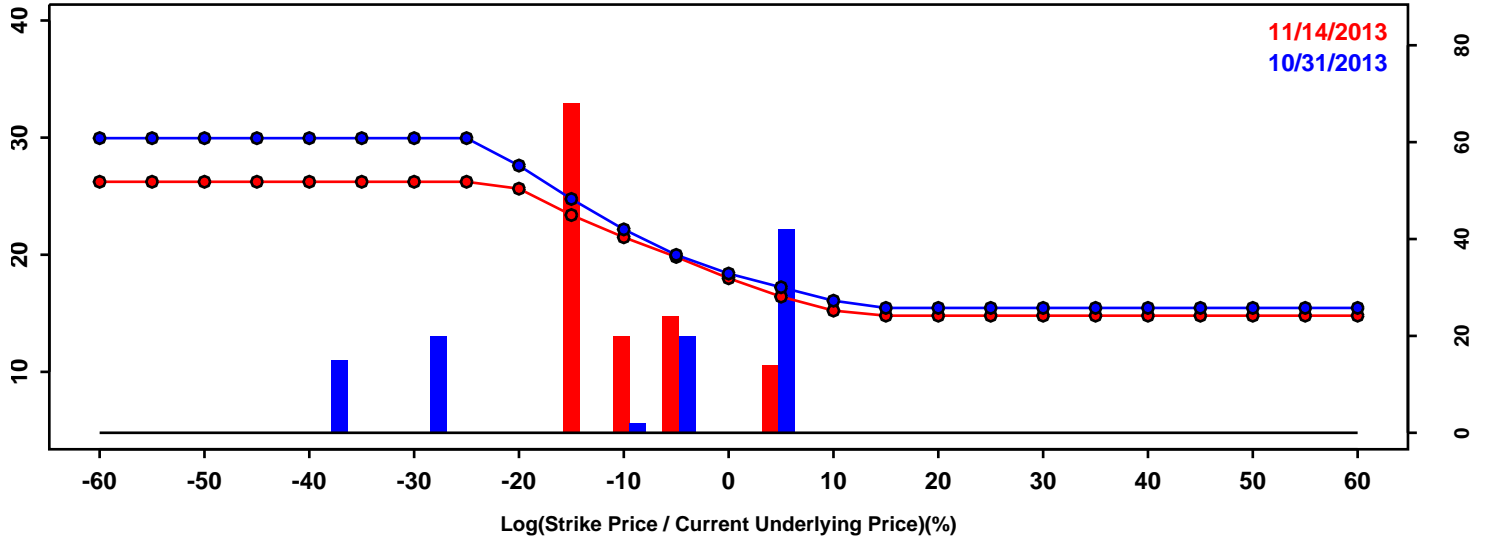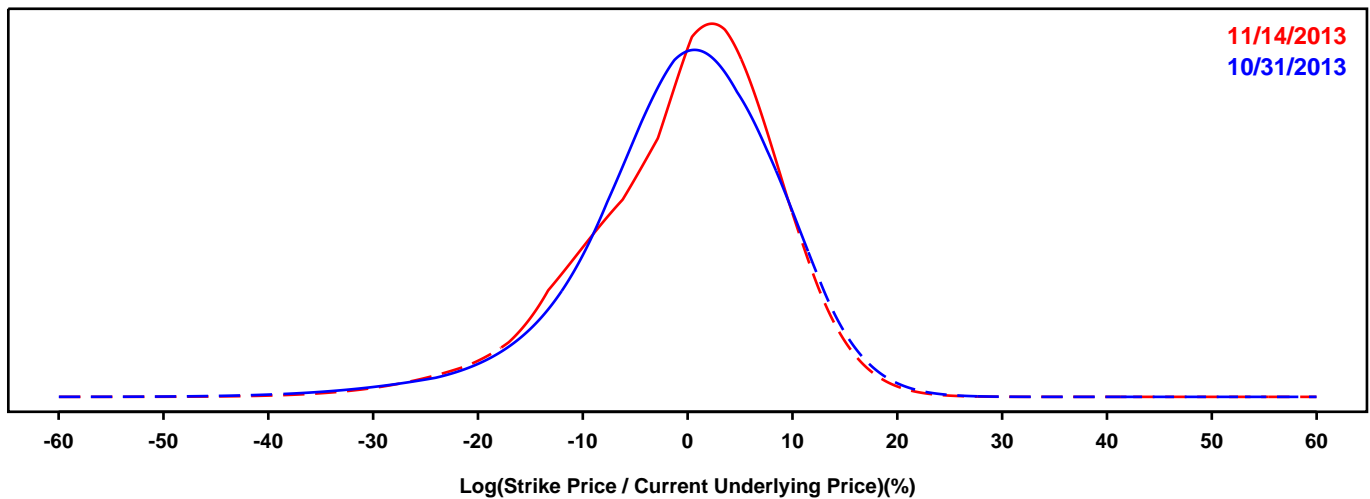

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**

Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-12.23%	-12.78%	-0.55%
50th Pct	0.20%	0.68%	0.48%
90th Pct	10.44%	10.01%	-0.43%
Mean	-0.54%	-0.54%	-0.00%
Std Dev	9.42%	9.24%	-0.18%
Skew	-0.76%	-0.72	0.04
Kurtosis	1.55	0.98	-0.57

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- REGIONS FINANCIAL

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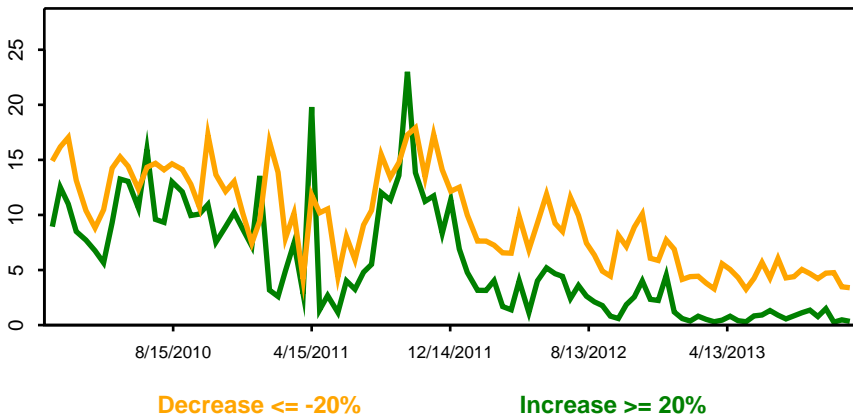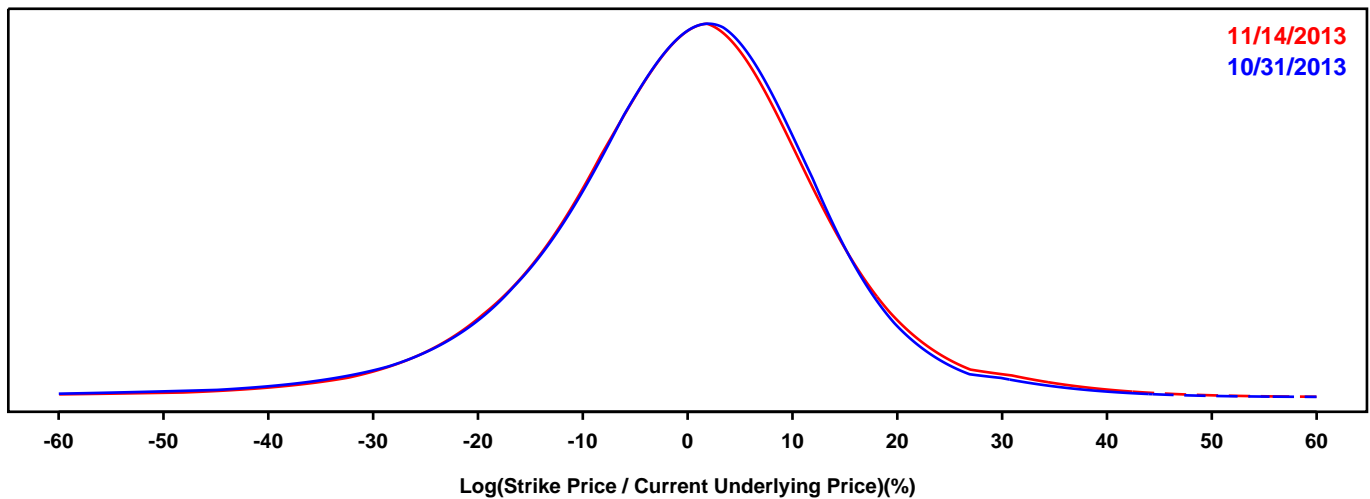derived from options that expire in approximately 3 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
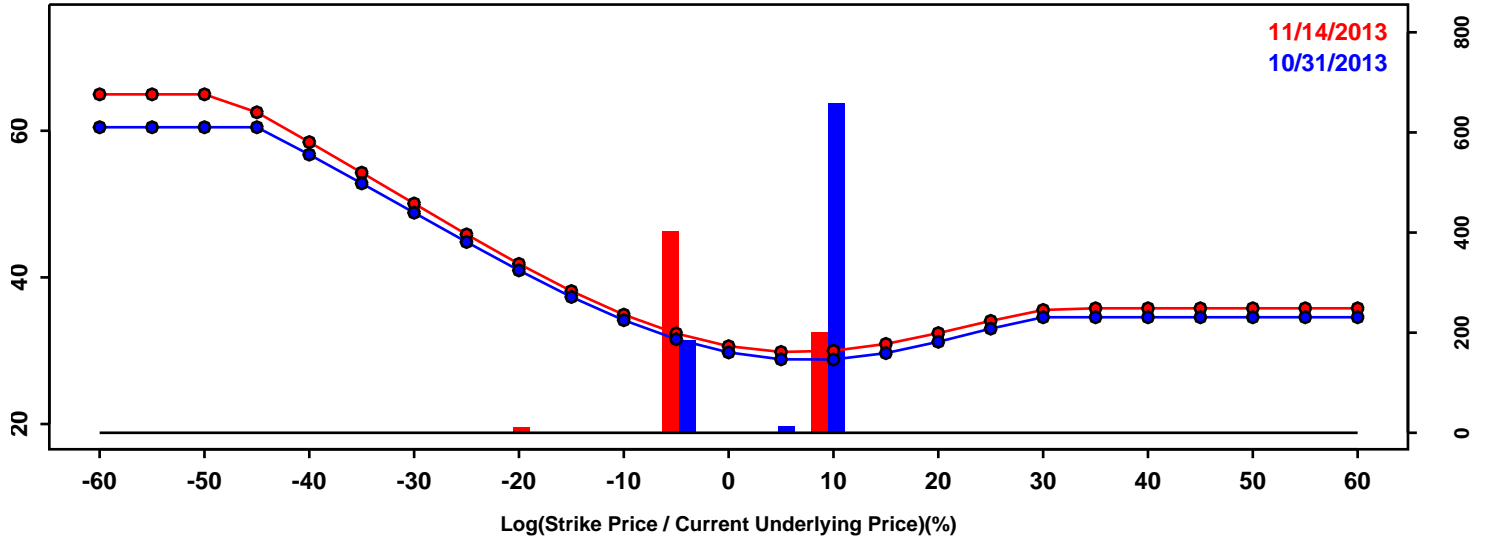
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-17.24%	-16.88%	0.36%
50th Pct	0.48%	0.56%	0.08%
90th Pct	14.86%	15.70%	0.84%
Mean	-0.64%	-0.24%	0.41%
Std Dev	14.41%	14.48%	0.07%
Skew	-0.91%	-0.72	0.18
Kurtosis	3.75	3.70	-0.05

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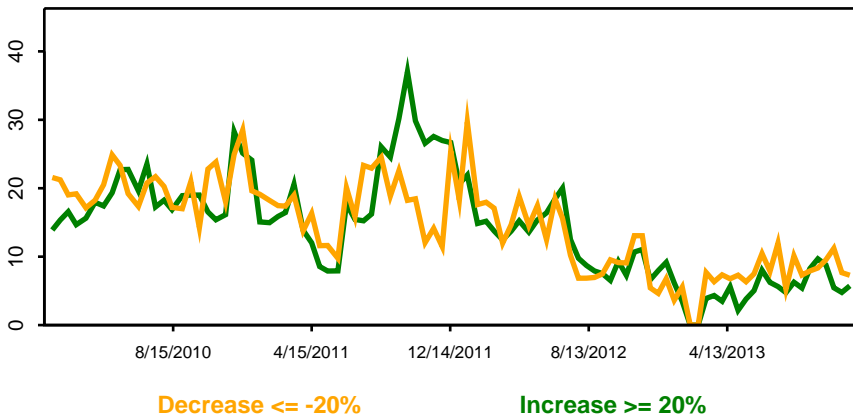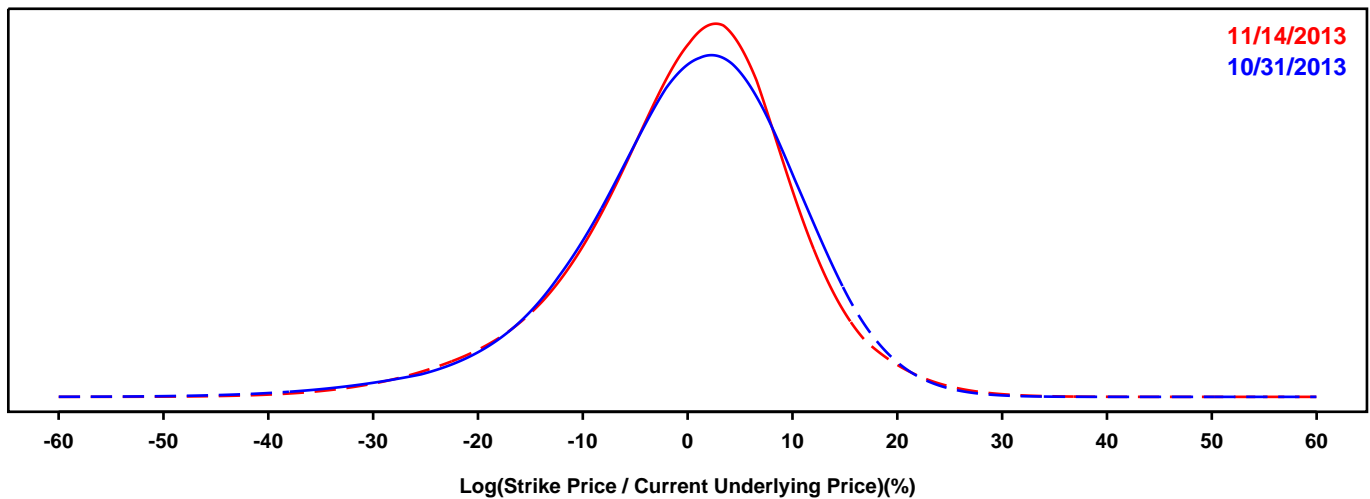
Implied Volatilities (lines--left axis) and Volume (bars--right axis)

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
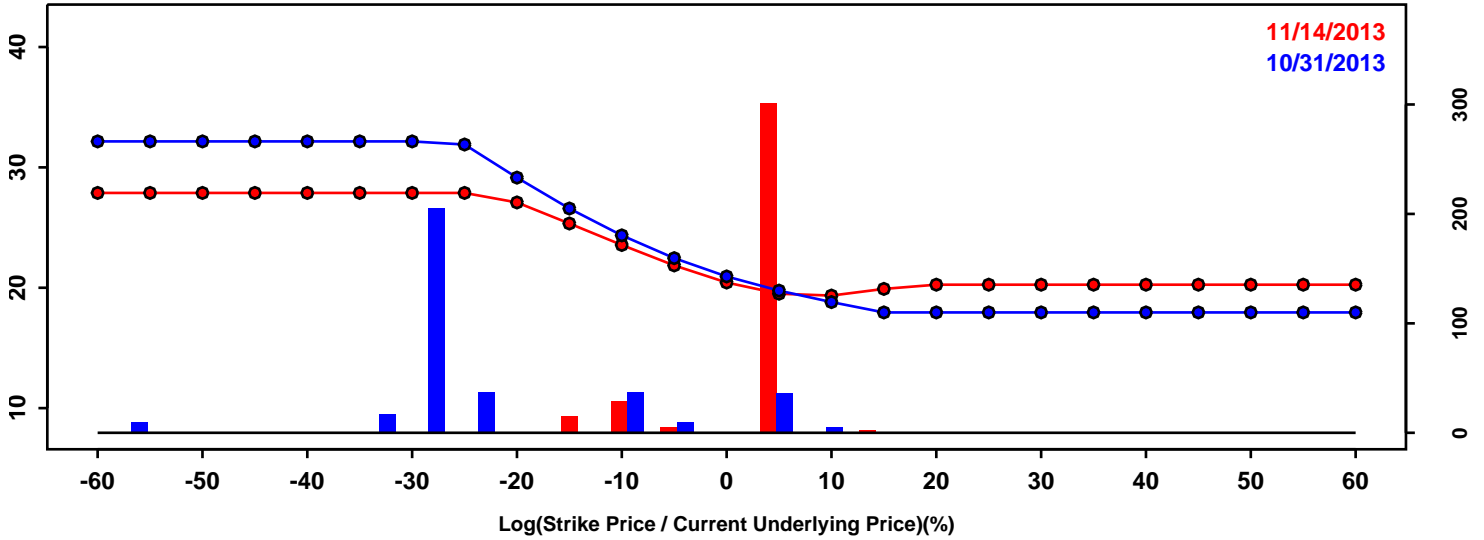
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-13.55%	-13.41%	0.15%
50th Pct	0.86%	0.79%	-0.07%
90th Pct	12.29%	11.57%	-0.73%
Mean	-0.09%	-0.15%	-0.06%
Std Dev	10.63%	10.27%	-0.36%
Skew	-0.69	-0.55	0.13
Kurtosis	1.26	1.02	-0.24

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- STATE STREET

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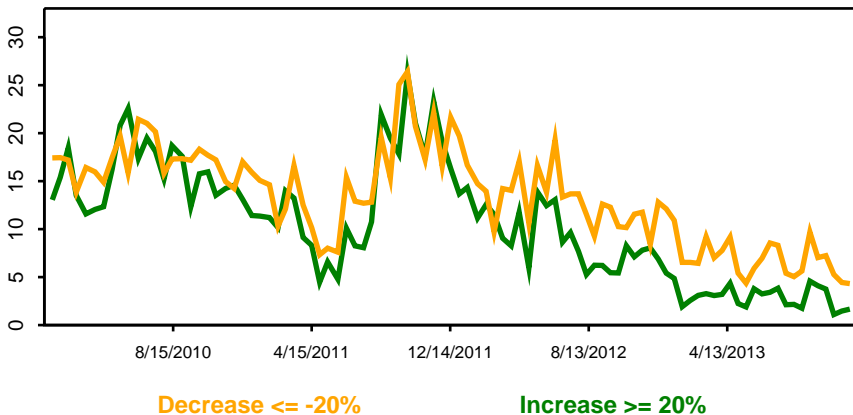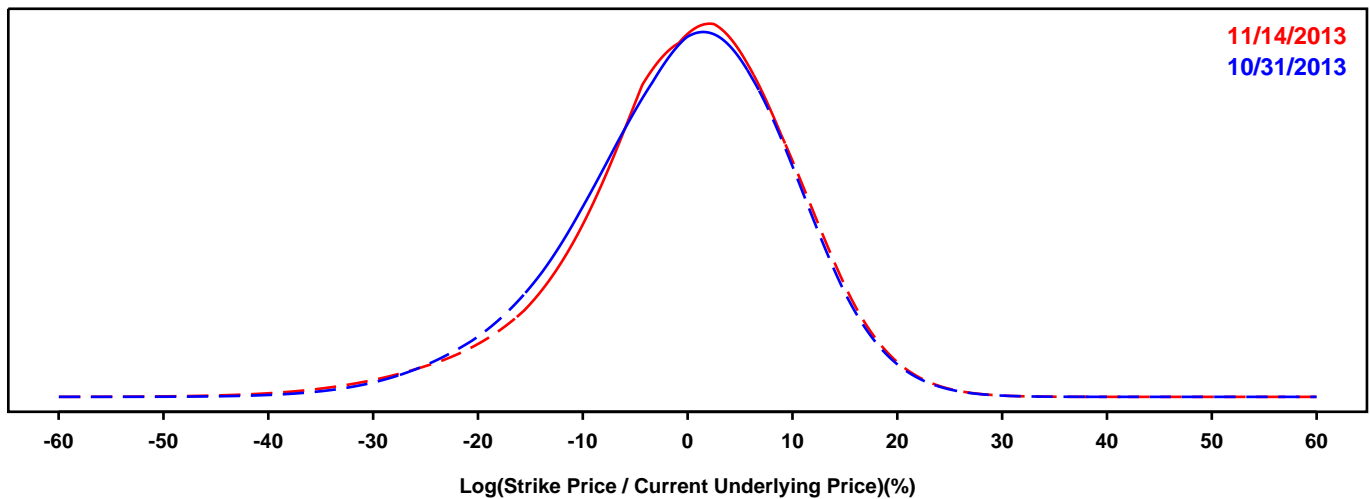derived from options that expire in approximately 3 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
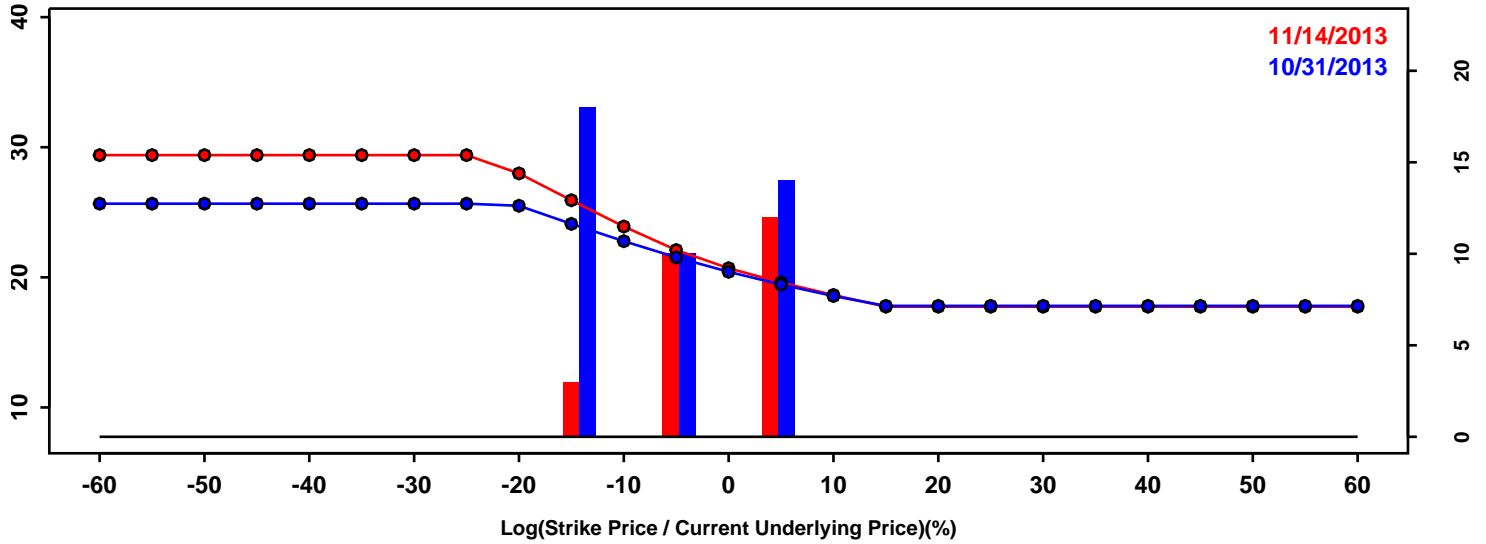
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-14.41%	-13.96%	0.45%
50th Pct	0.12%	0.47%	0.35%
90th Pct	11.75%	12.03%	0.28%
Mean	-0.70%	-0.40%	0.30%
Std Dev	10.41%	10.58%	0.17%
Skew	-0.47%	-0.64	-0.17
Kurtosis	0.45	0.99	0.54

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.*

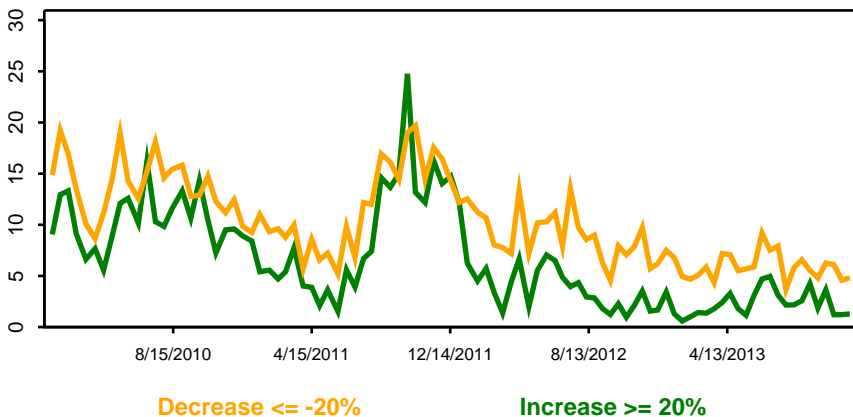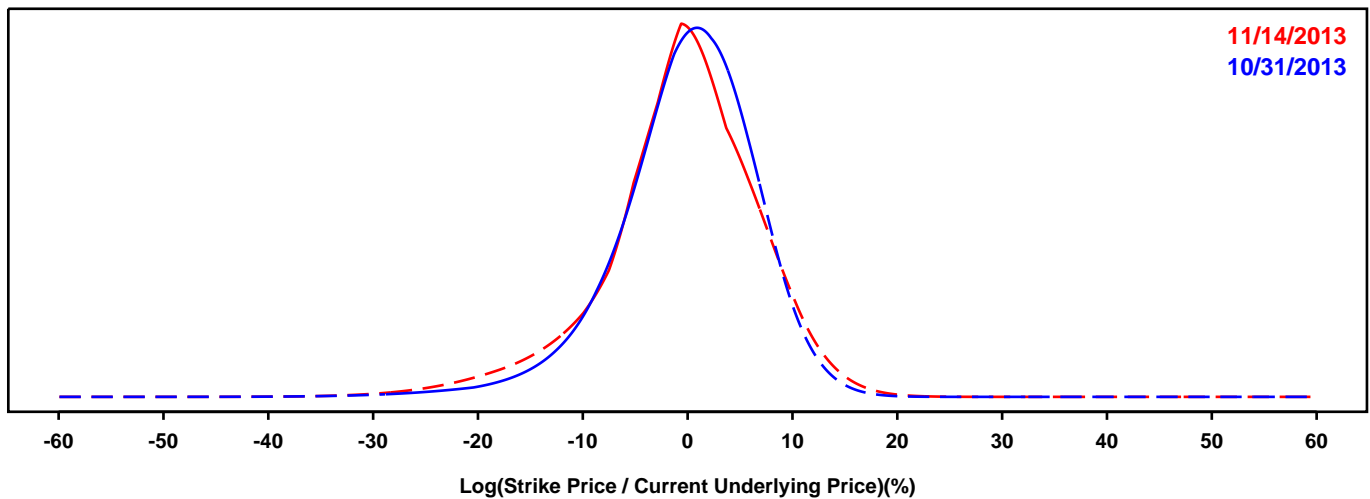### Implied Volatilities (lines--left axis) and Volume (bars--right axis)

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
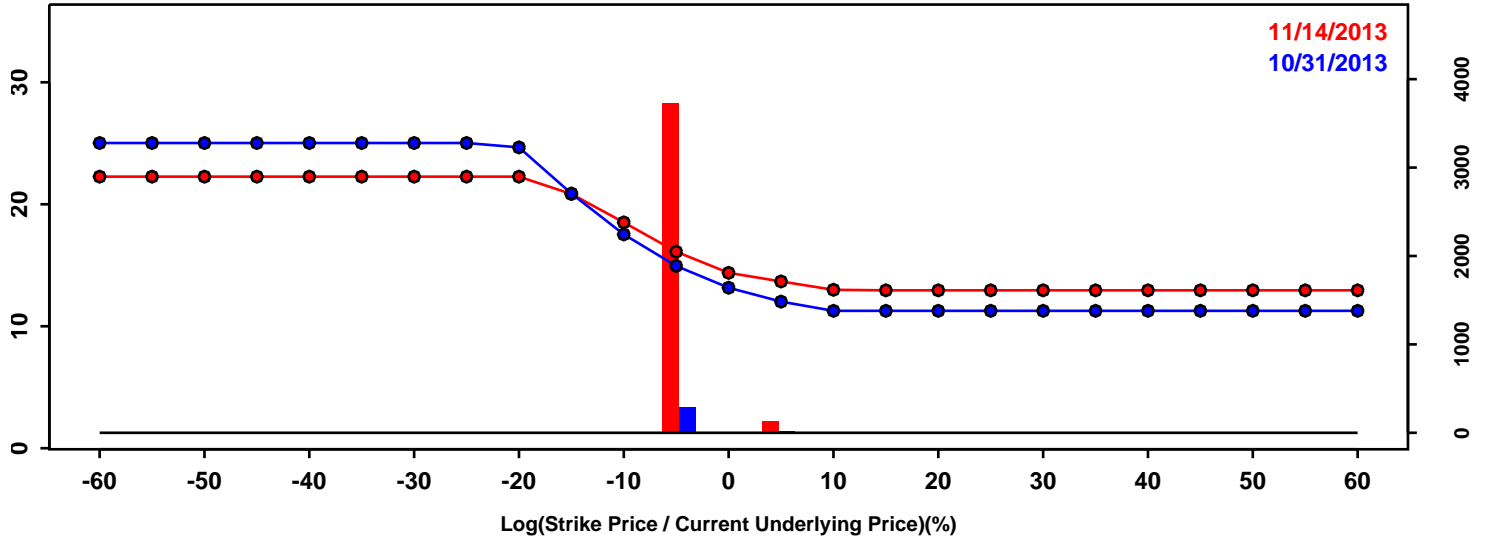
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-8.40%	-10.03%	-1.63%
50th Pct	0.42%	-0.07%	-0.49%
90th Pct	7.62%	8.15%	0.52%
Mean	-0.11%	-0.63%	-0.51%
Std Dev	6.72%	7.52%	0.80%
Skew	-0.83	-0.74	0.09
Kurtosis	2.08	1.51	-0.57

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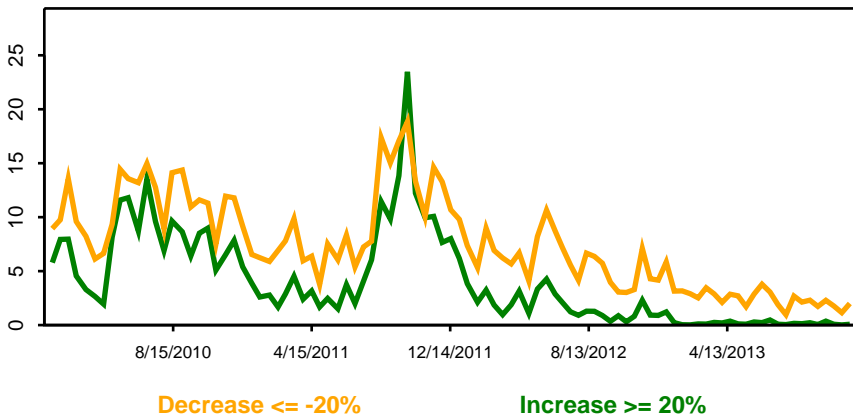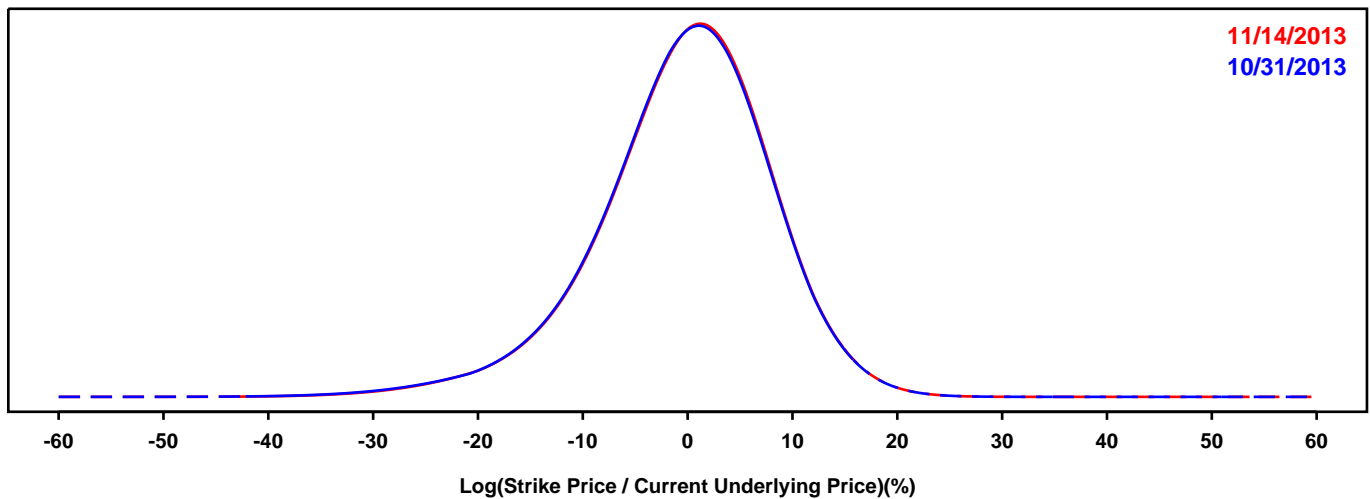
Implied Volatilities (lines--left axis) and Volume (bars--right axis)

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
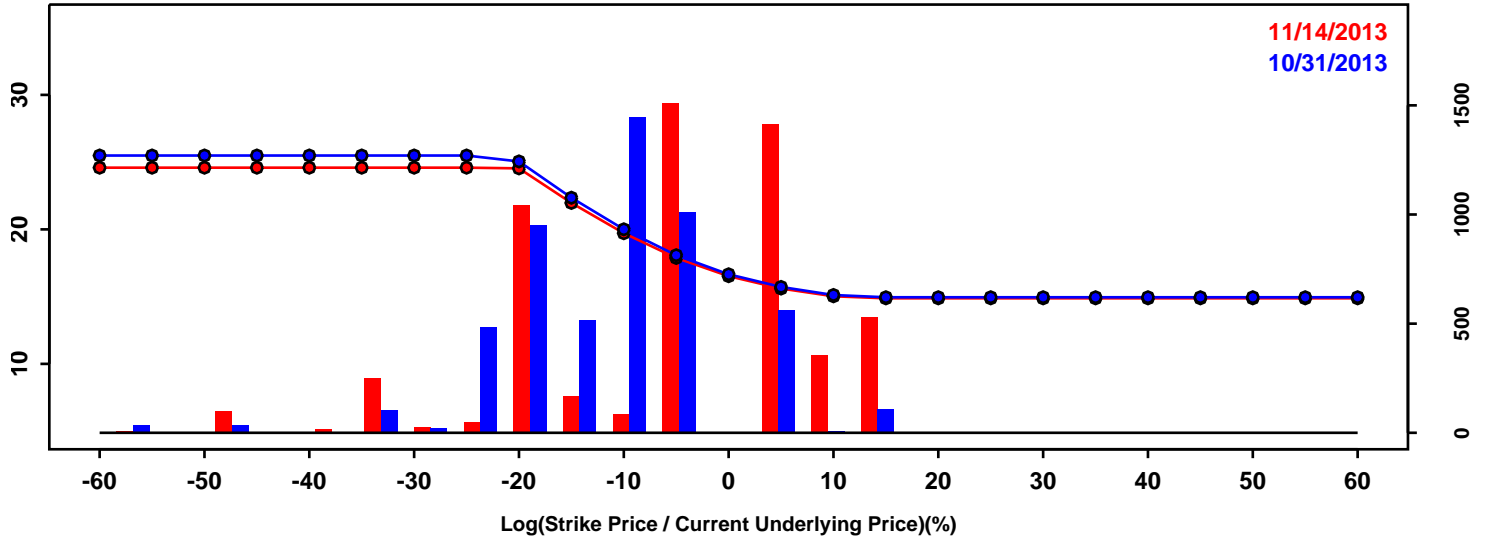
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-11.13%	-11.00%	0.13%
50th Pct	0.19%	0.32%	0.13%
90th Pct	9.43%	9.48%	0.05%
Mean	-0.45%	-0.34%	0.11%
Std Dev	8.46%	8.39%	-0.07%
Skew	-0.62%	-0.59	0.03
Kurtosis	1.21	1.09	-0.12

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- AIG

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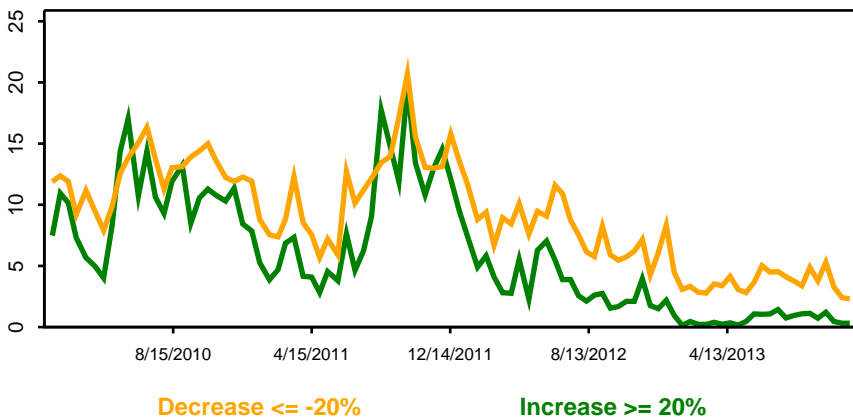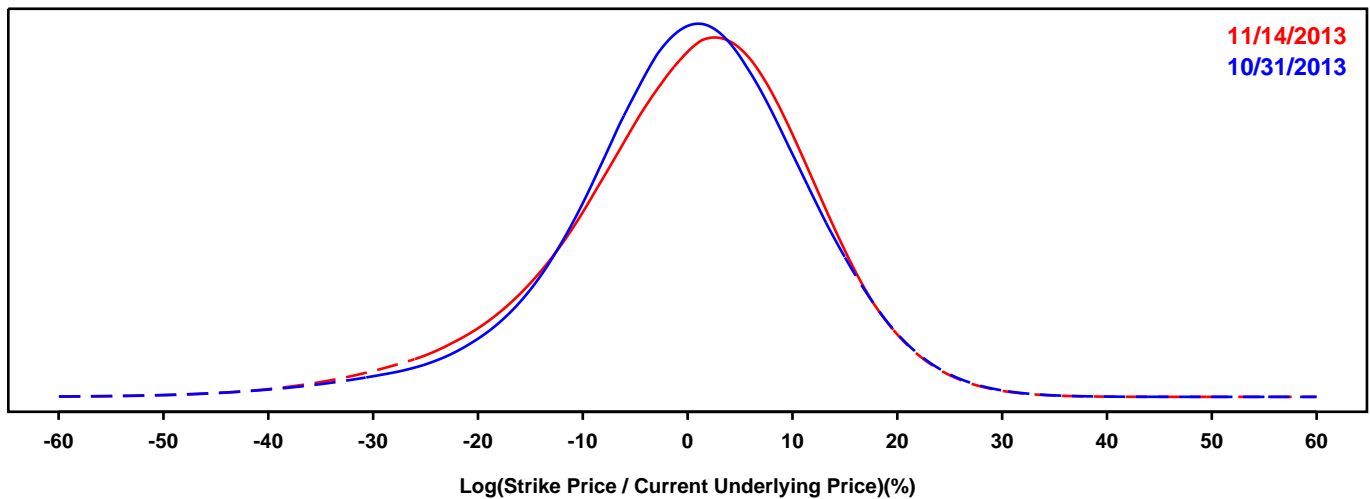derived from options that expire in approximately 3 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
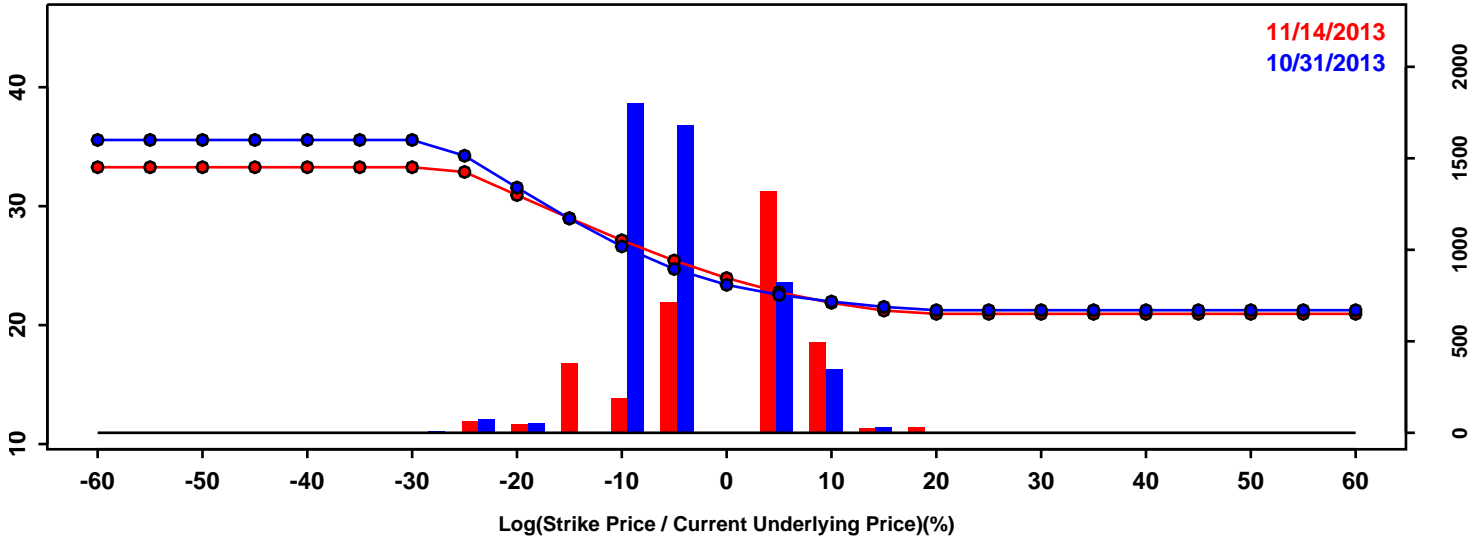
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-14.70%	-16.12%	-1.42%
50th Pct	0.52%	0.85%	0.33%
90th Pct	13.77%	13.83%	0.06%
Mean	-0.21%	-0.32%	-0.11%
Std Dev	11.81%	12.18%	0.37%
Skew	-0.61%	-0.63	-0.02
Kurtosis	1.35	0.94	-0.41

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- HARTFORD FINANCIAL

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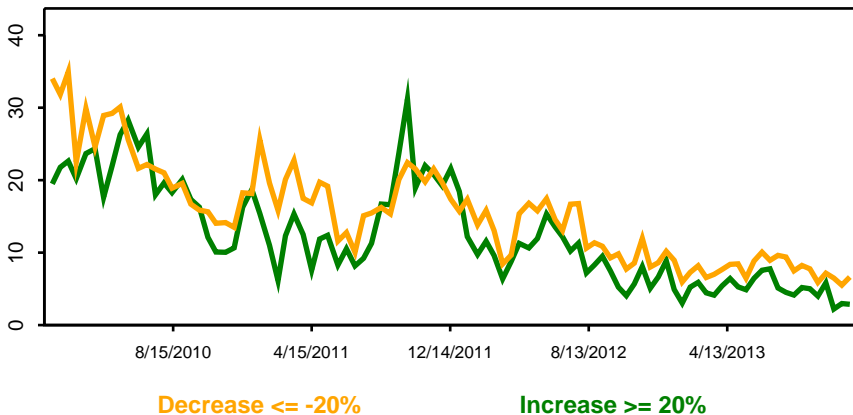derived from options that expire in approximately 3 months.*

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

Risk Neutral PDF of the Log Return Distribution

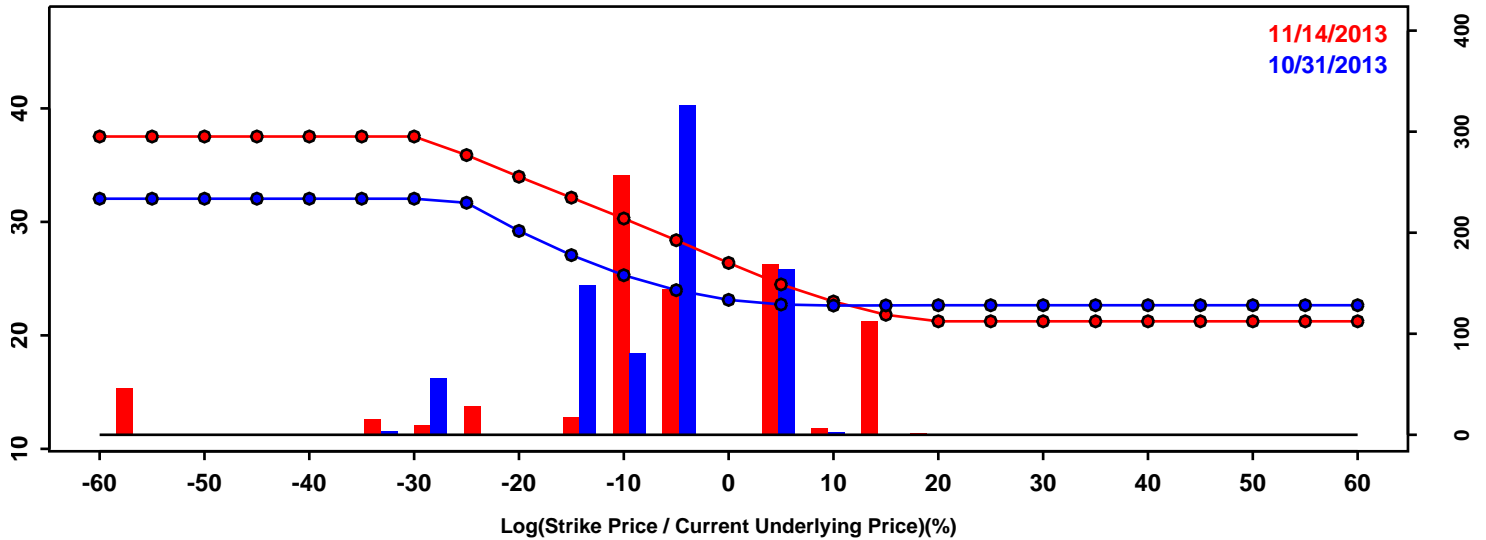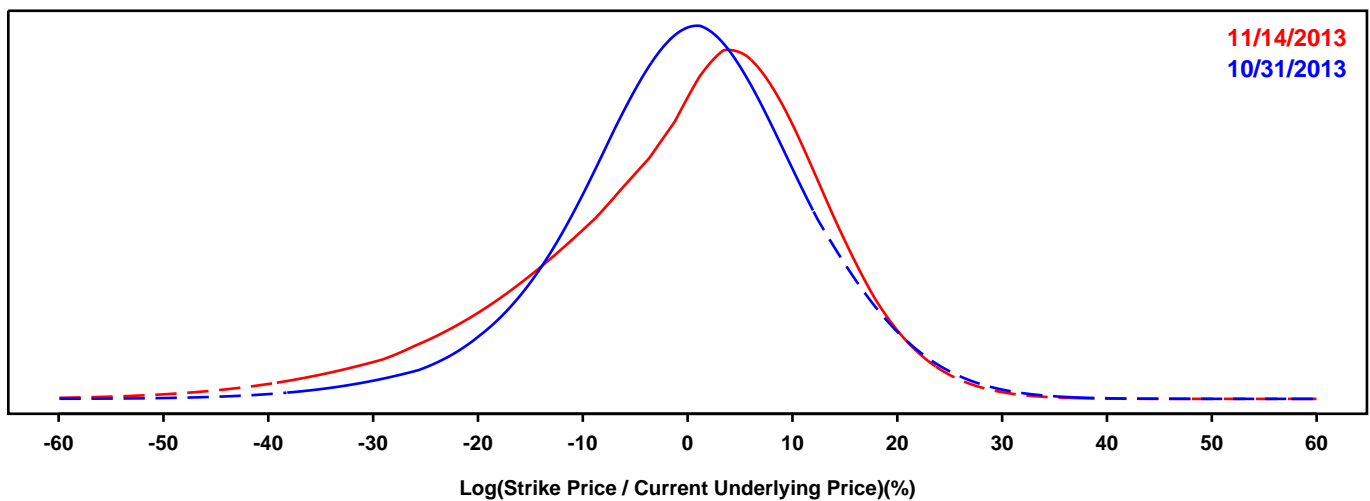

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**

Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-14.49%	-19.84%	-5.35%
50th Pct	0.30%	1.16%	0.86%
90th Pct	14.09%	14.31%	0.23%
Mean	-0.07%	-1.09%	-1.02%
Std Dev	11.61%	13.82%	2.21%
Skew	-0.34	-0.80	-0.46
Kurtosis	0.82	0.97	0.15

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- LINCOLN NATIONAL

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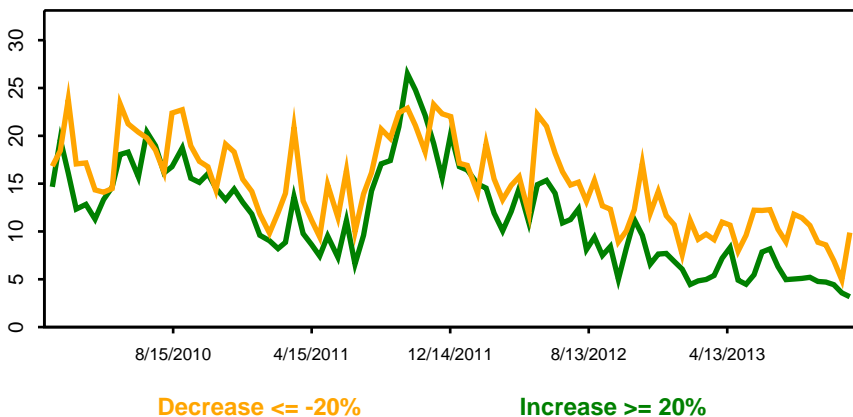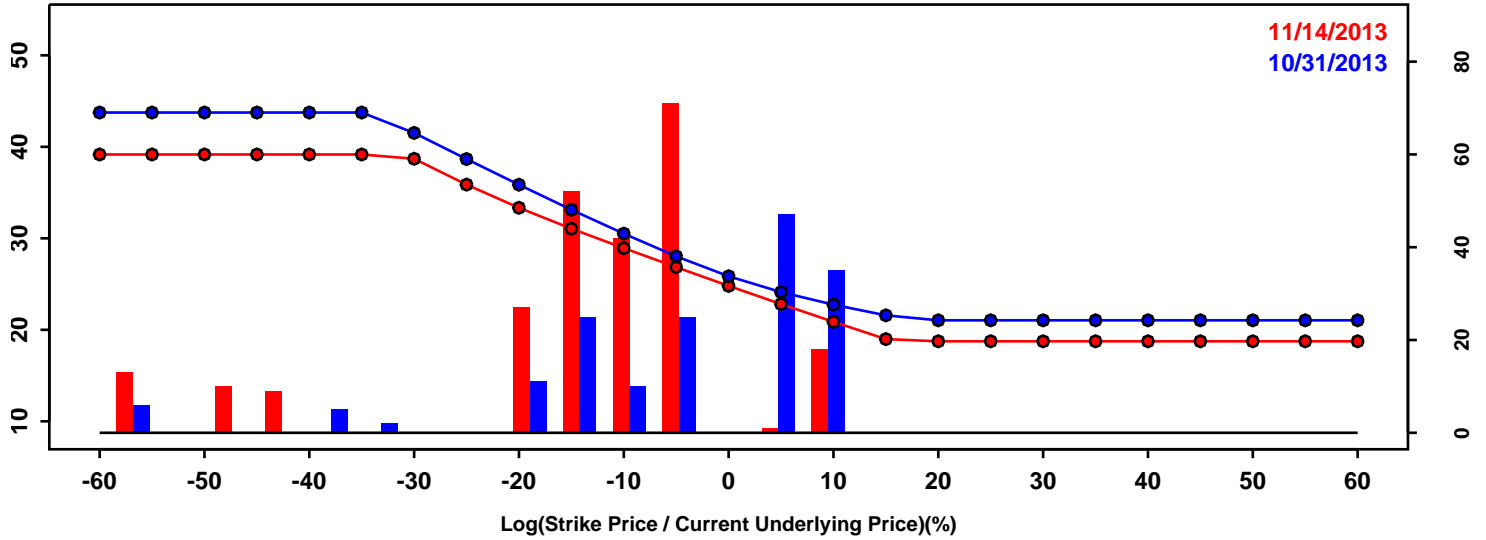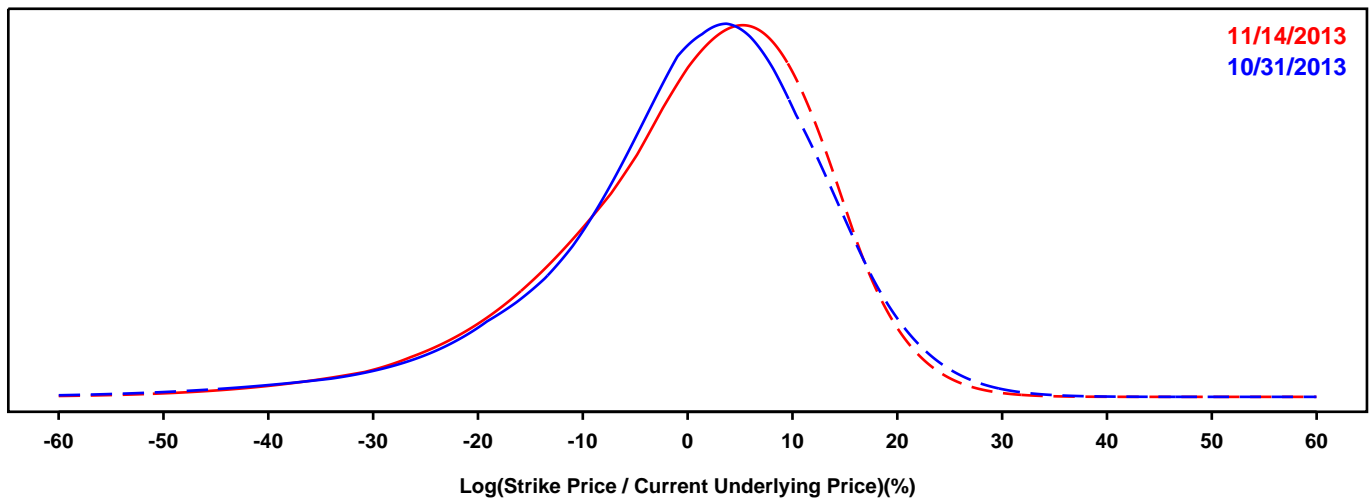derived from options that expire in approximately 3 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%　　　**Increase >= 20%**

Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-16.60%	-16.84%	-0.25%
50th Pct	1.72%	2.05%	0.34%
90th Pct	14.79%	14.28%	-0.51%
Mean	0.13%	0.13%	-0.00%
Std Dev	13.17%	12.81%	-0.36%
Skew	-0.96	-0.92	0.04
Kurtosis	2.05	1.43	-0.62

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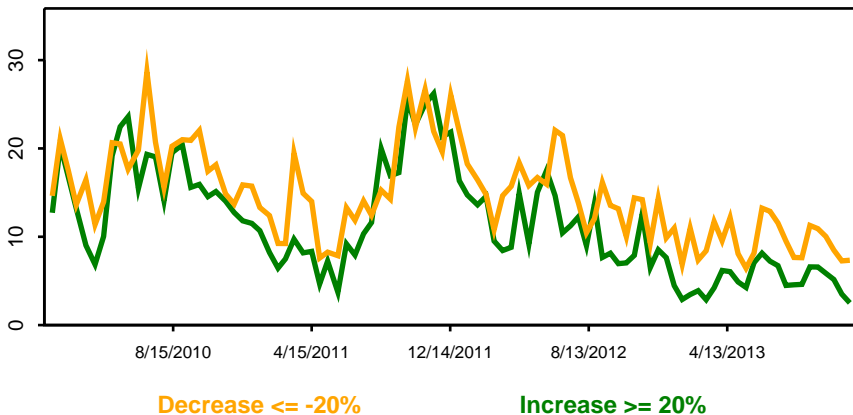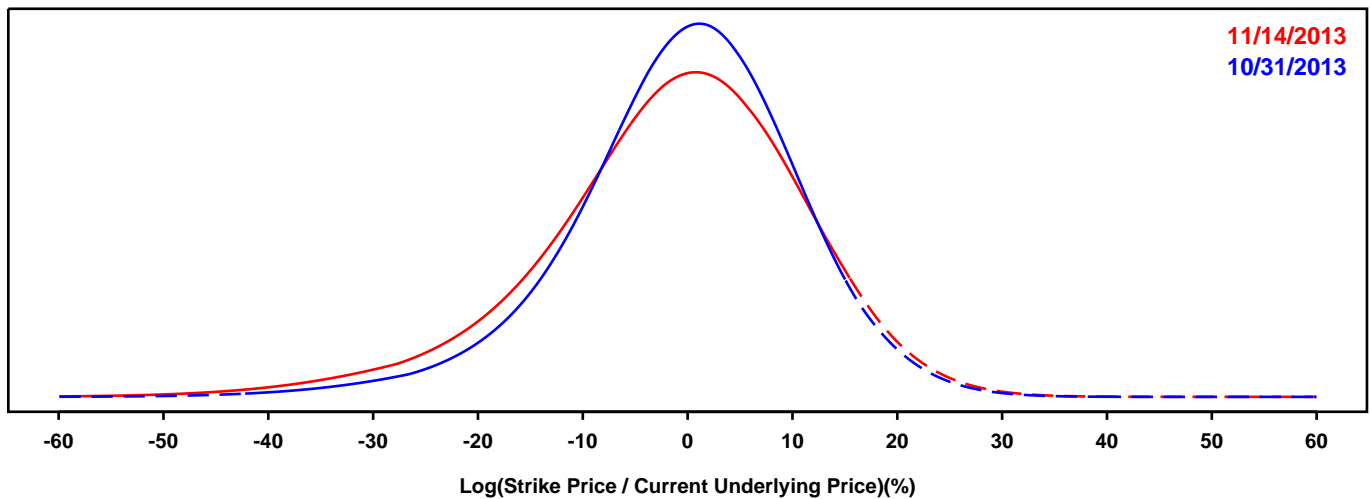
Implied Volatilities (lines--left axis) and Volume (bars--right axis)

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
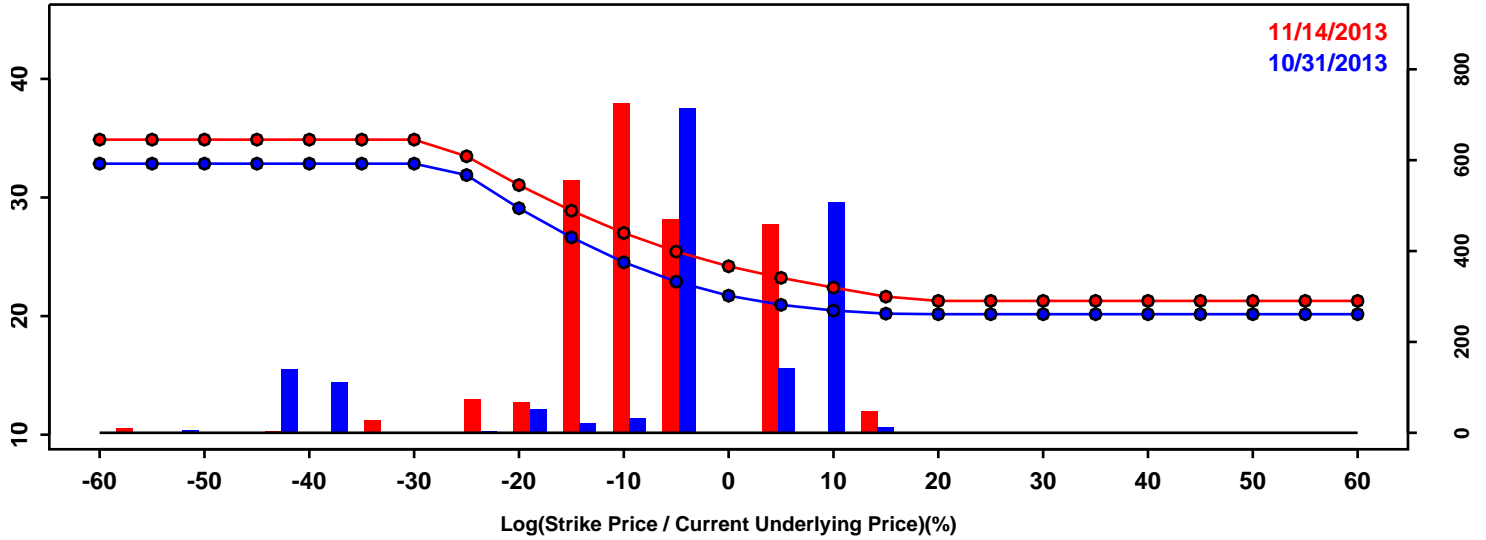
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-14.03%	-17.54%	-3.52%
50th Pct	0.36%	-0.45%	-0.81%
90th Pct	12.69%	13.33%	0.64%
Mean	-0.31%	-1.48%	-1.17%
Std Dev	10.96%	12.56%	1.60%
Skew	-0.54	-0.60	-0.07
Kurtosis	1.12	0.95	-0.17

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- PRUDENTIAL

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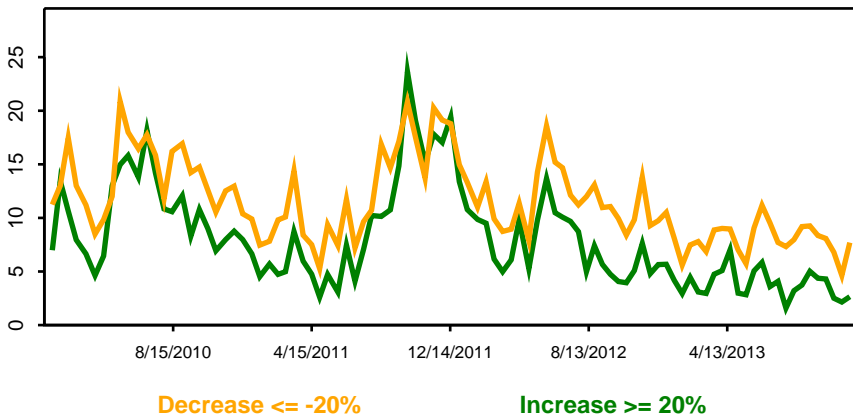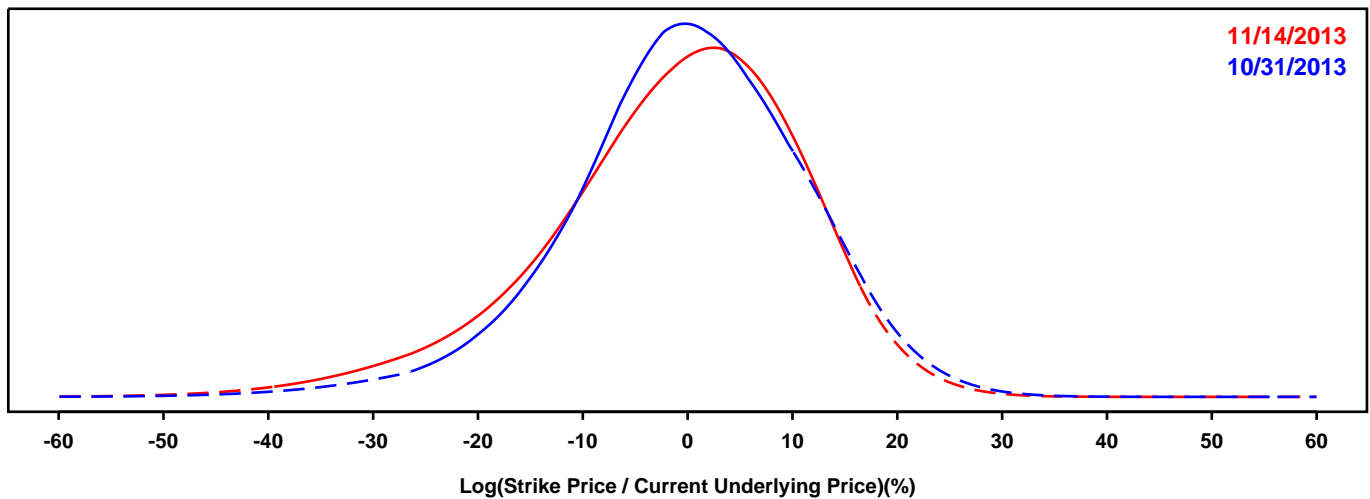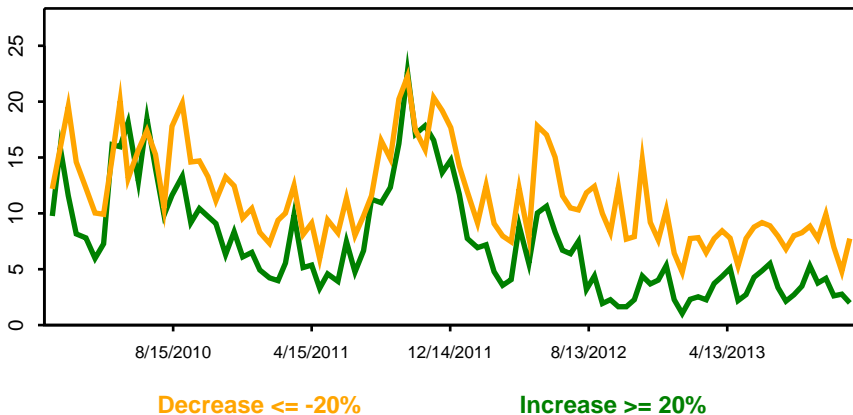derived from options that expire in approximately 3 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
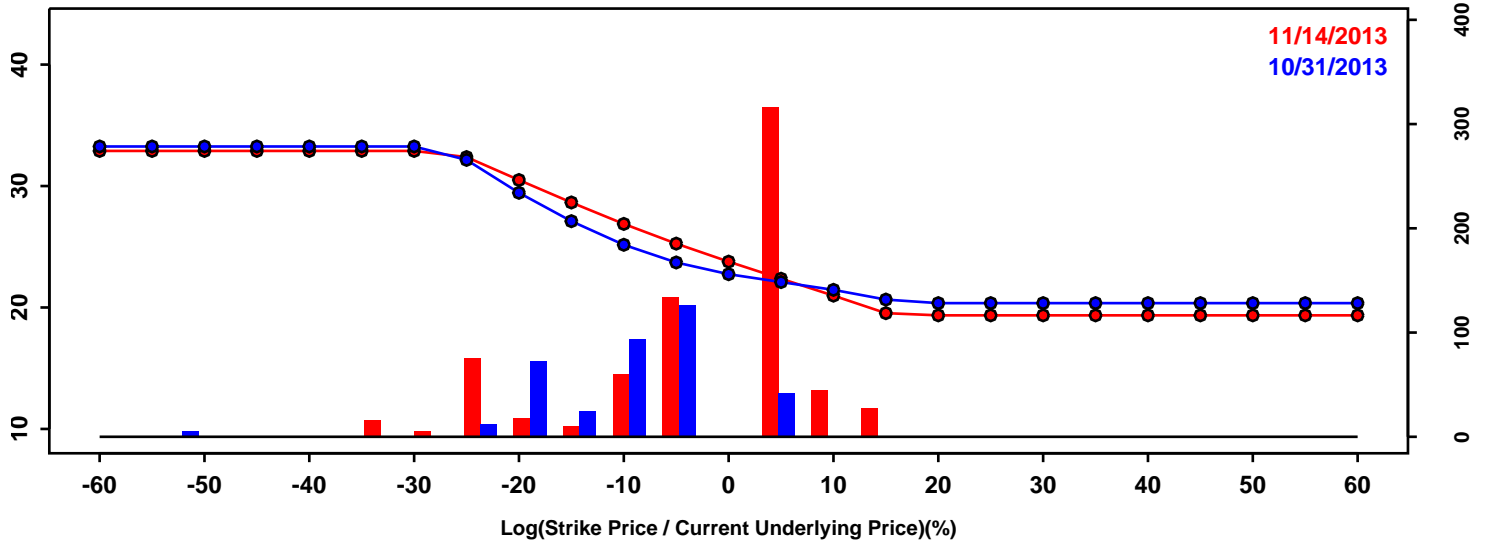
Statistics of the Log Return Distributions

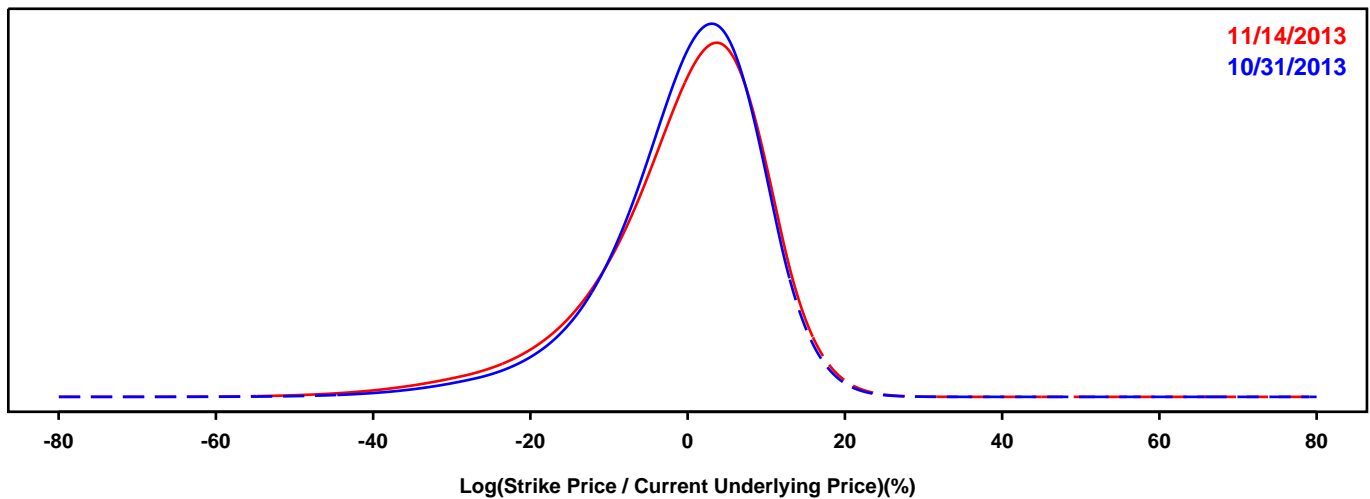|	10/31/2013	11/14/2013	Change
10th Pct	-14.42%	-17.54%	-3.12%
50th Pct	0.24%	0.00%	-0.24%
90th Pct	13.82%	13.04%	-0.78%
Mean	-0.15%	-1.32%	-1.17%
Std Dev	11.41%	12.34%	0.92%
Skew	-0.45	-0.66	-0.22
Kurtosis	0.86	0.79	-0.07

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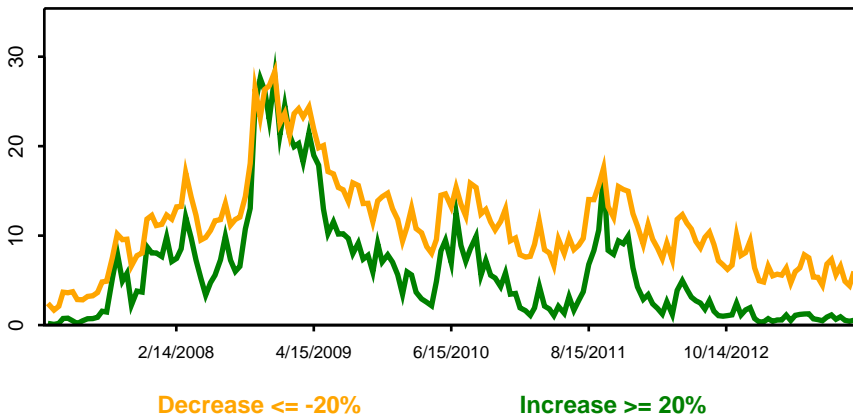
Implied Volatilities (lines--left axis) and Volume (bars--right axis)

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%　　**Increase >= 20%**
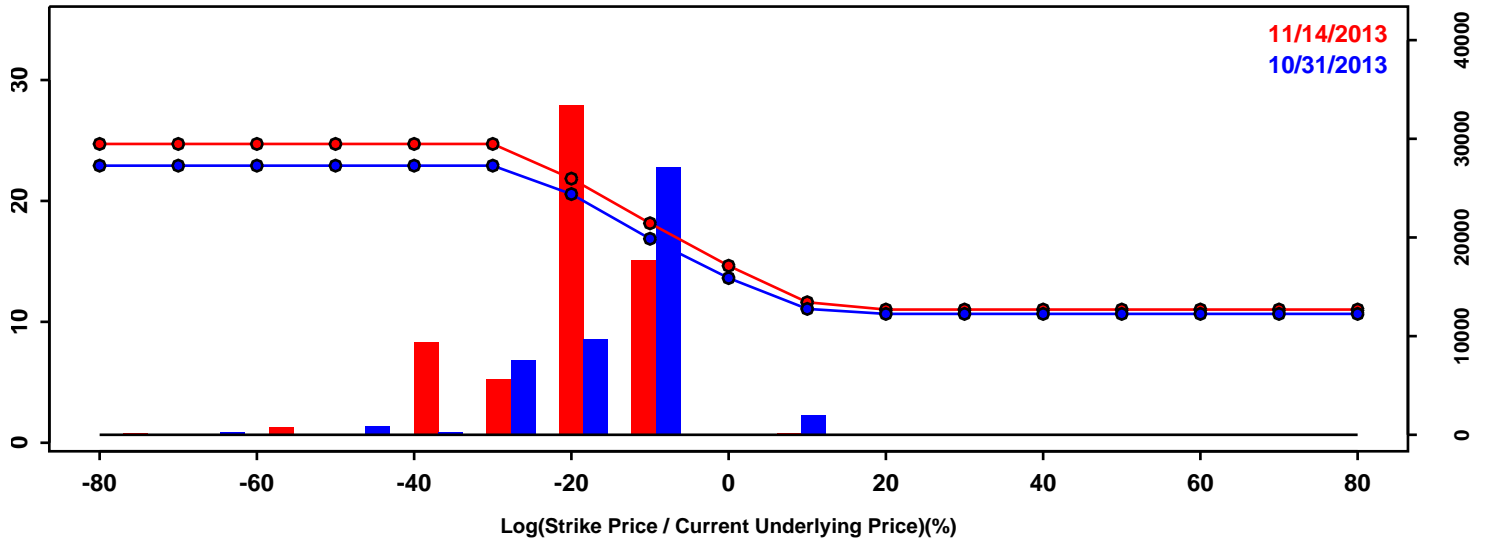
Statistics of the Log Return Distributions

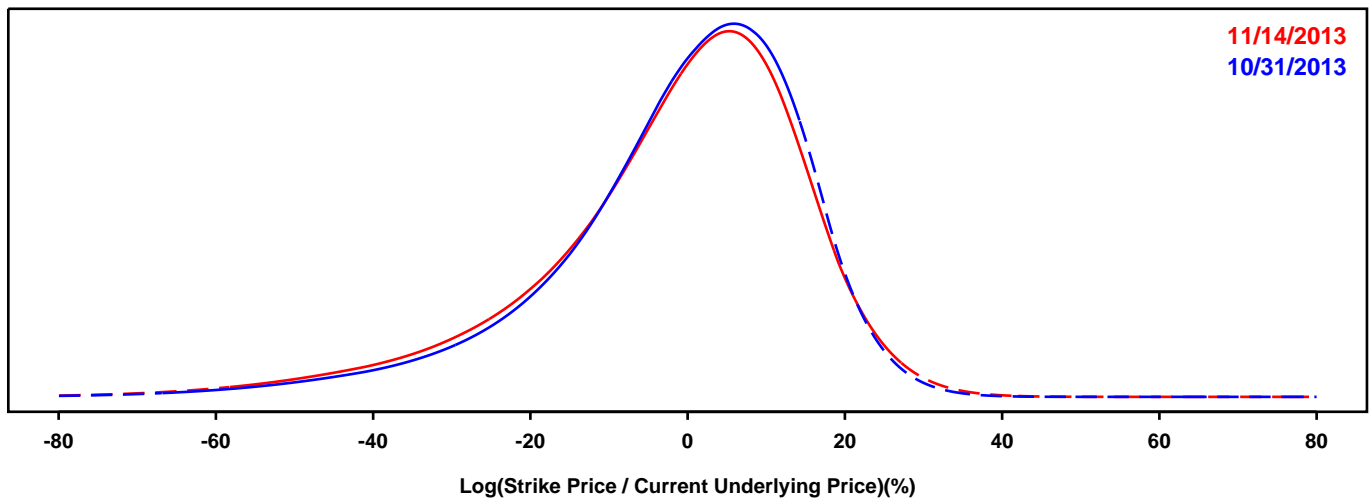|	10/31/2013	11/14/2013	Change
10th Pct	-13.07%	-14.98%	-1.91%
50th Pct	1.00%	1.01%	0.01%
90th Pct	10.57%	10.97%	0.40%
Mean	-0.37%	-0.77%	-0.40%
Std Dev	9.95%	10.95%	1.01%
Skew	-1.00%	-1.11	-0.10
Kurtosis	1.95	2.07	0.11

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.
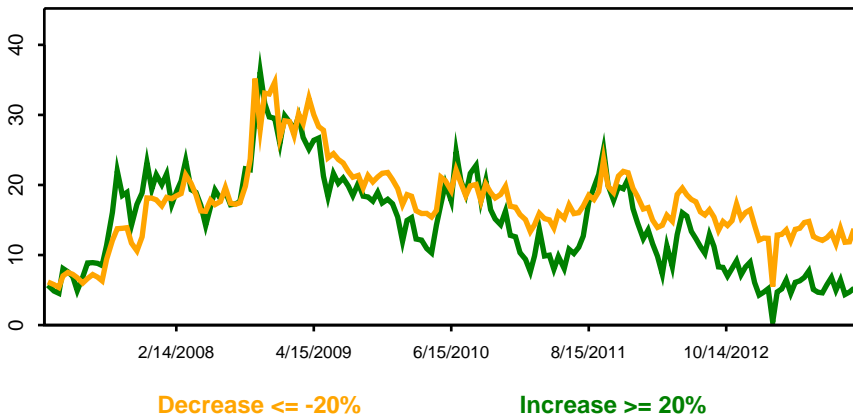
Implied Volatilities (lines--left axis) and Volume (bars--right axis)
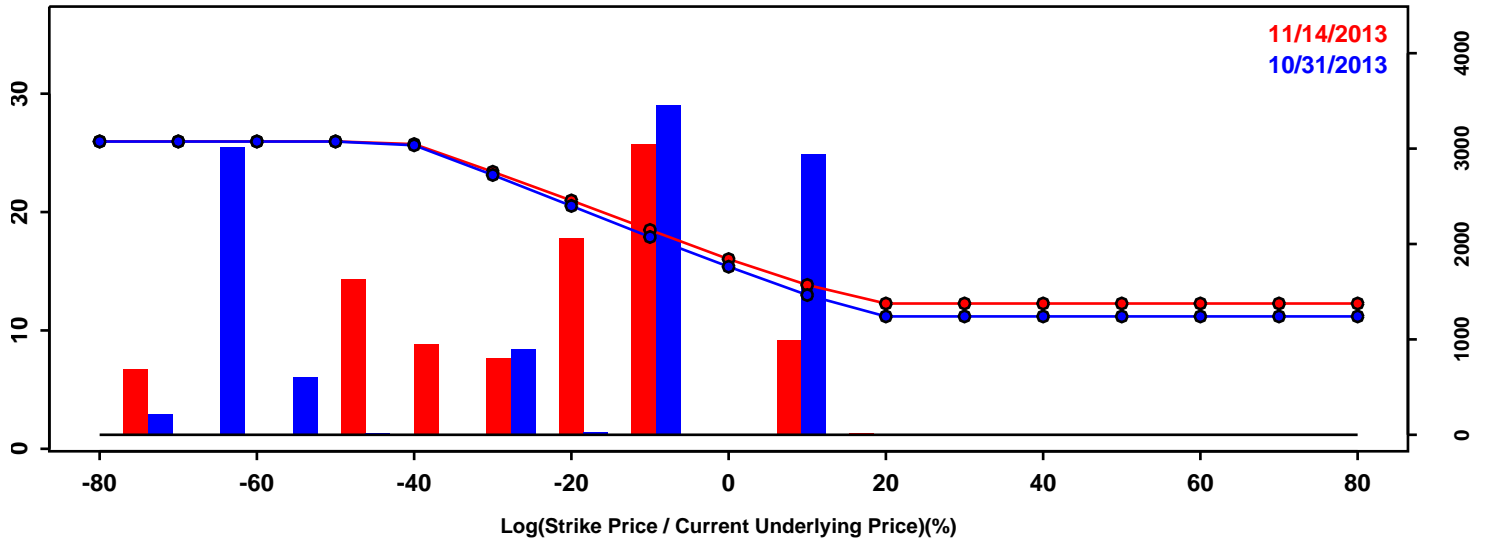
11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   Increase >= 20%

Statistics of the Log Return Distributions

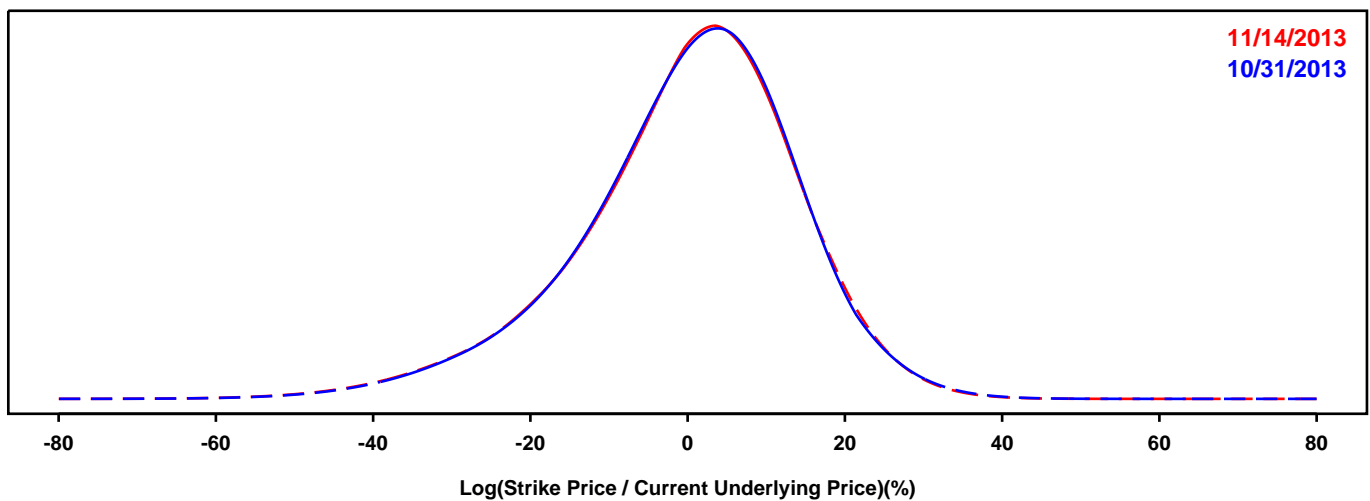|	10/31/2013	11/14/2013	Change
10th Pct	-22.54%	-24.97%	-2.43%
50th Pct	1.51%	0.89%	-0.62%
90th Pct	16.21%	16.27%	0.07%
Mean	-1.23%	-2.10%	-0.86%
Std Dev	16.34%	17.22%	0.88%
Skew	-1.13	-1.07	0.06
Kurtosis	2.07	1.79	-0.28

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

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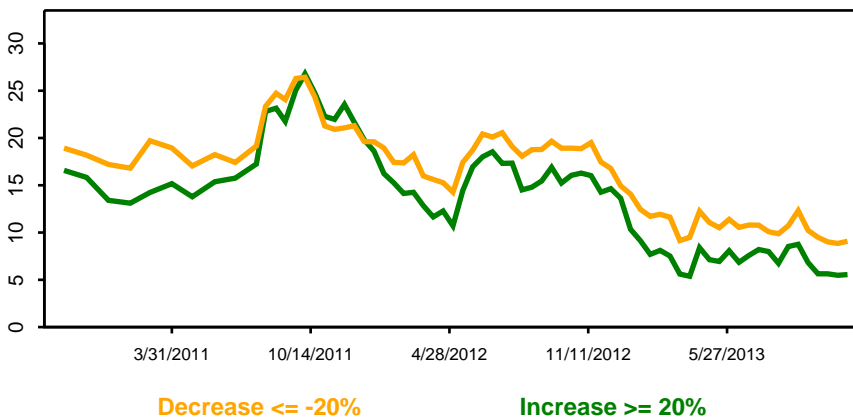*derived from options that expire in approximately 6 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
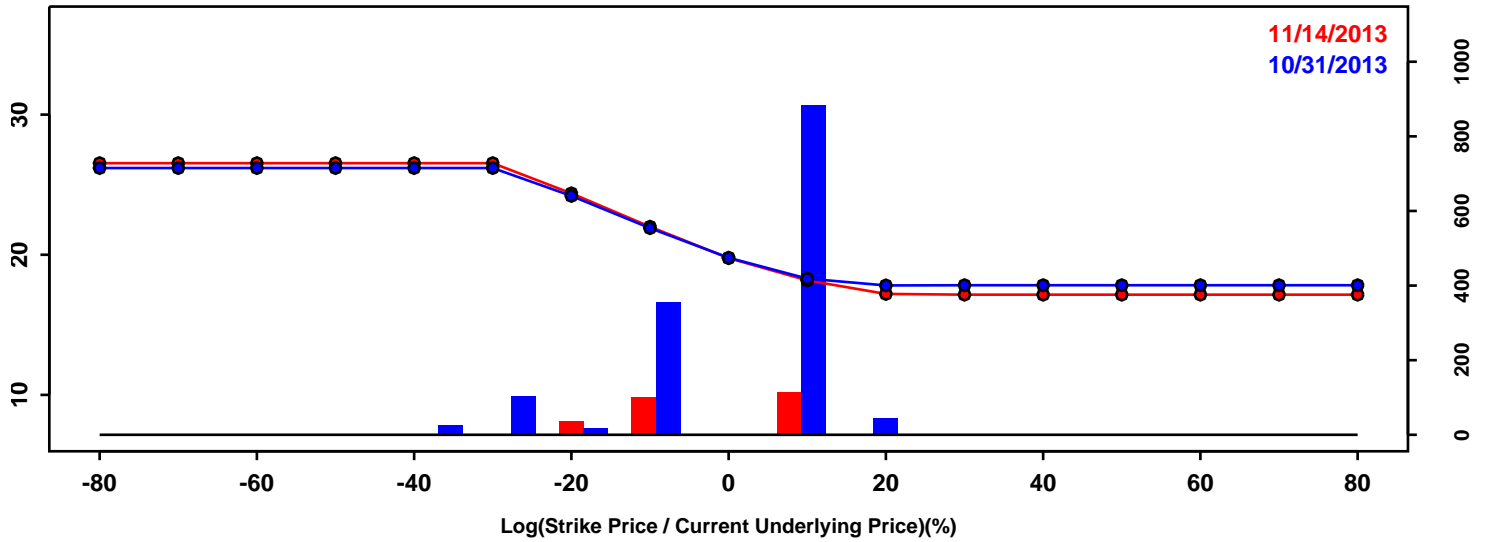
Statistics of the Log Return Distributions

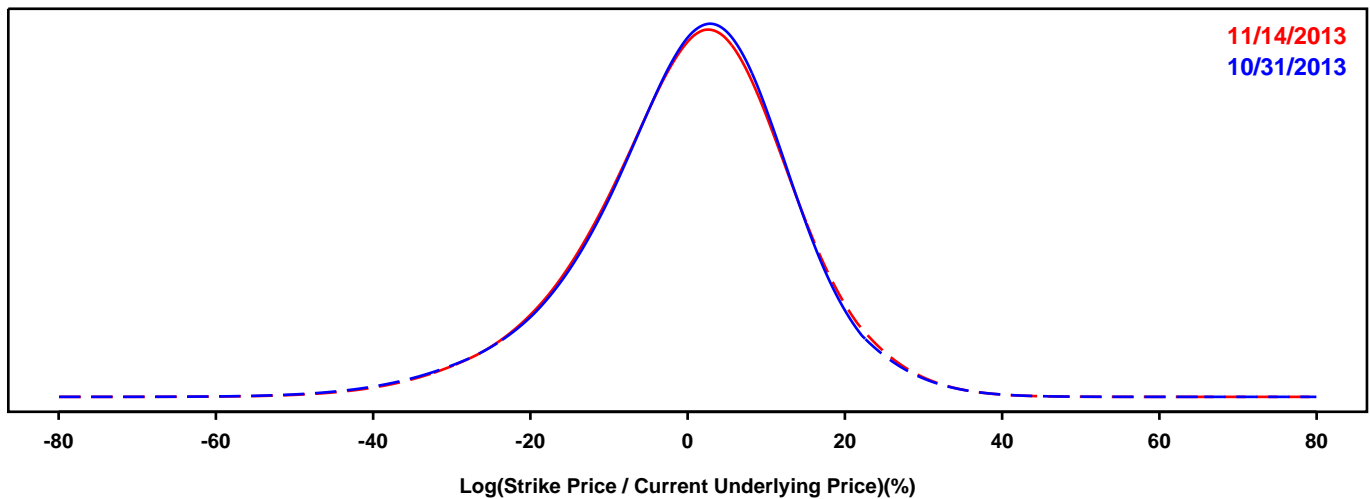|	10/31/2013	11/14/2013	Change
10th Pct	-18.67%	-18.93%	-0.26%
50th Pct	1.38%	1.36%	-0.02%
90th Pct	16.28%	16.38%	0.10%
Mean	-0.05%	-0.12%	-0.06%
Std Dev	14.12%	14.21%	0.09%
Skew	-0.58%	-0.61	-0.03
Kurtosis	0.79	0.81	0.02

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

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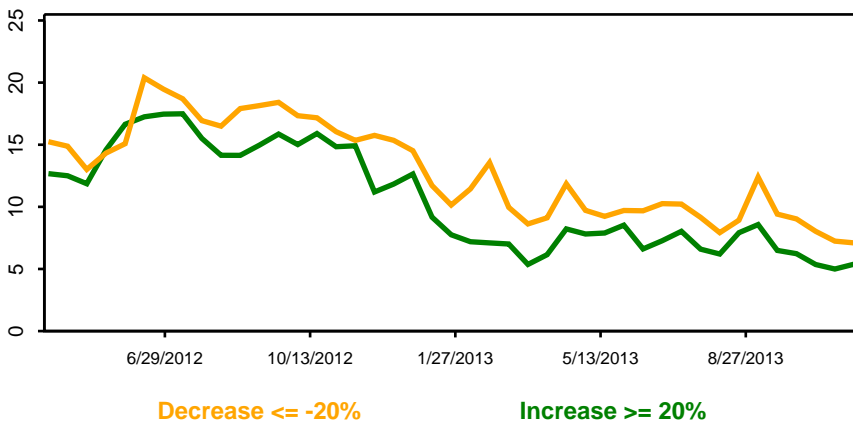derived from options that expire in approximately 6 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
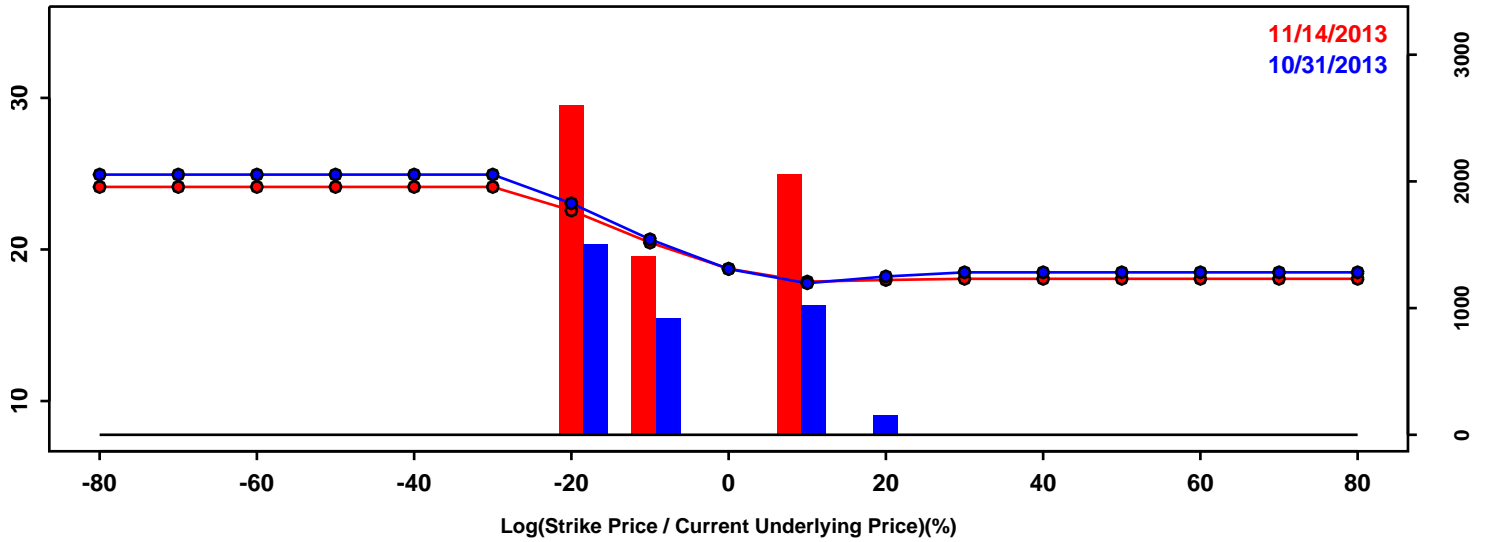
Statistics of the Log Return Distributions

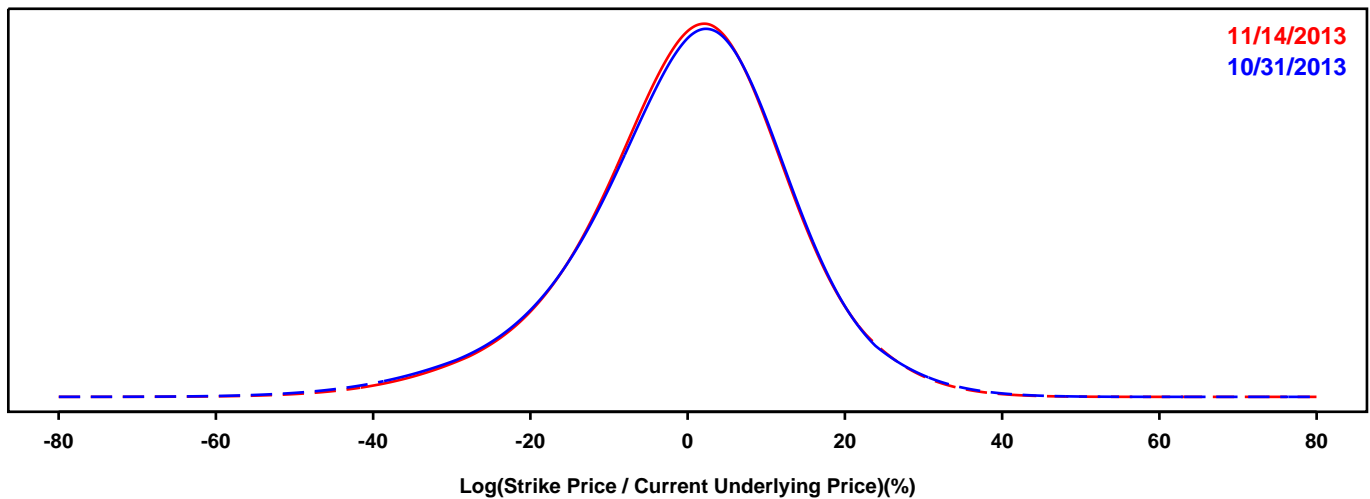|	10/31/2013	11/14/2013	Change
10th Pct	-16.86%	-16.79%	0.07%
50th Pct	1.26%	1.23%	-0.03%
90th Pct	15.57%	15.98%	0.41%
Mean	0.21%	0.31%	0.10%
Std Dev	13.23%	13.22%	-0.01%
Skew	-0.48	-0.42	0.06
Kurtosis	0.89	0.71	-0.18

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- GOLD FUTURES

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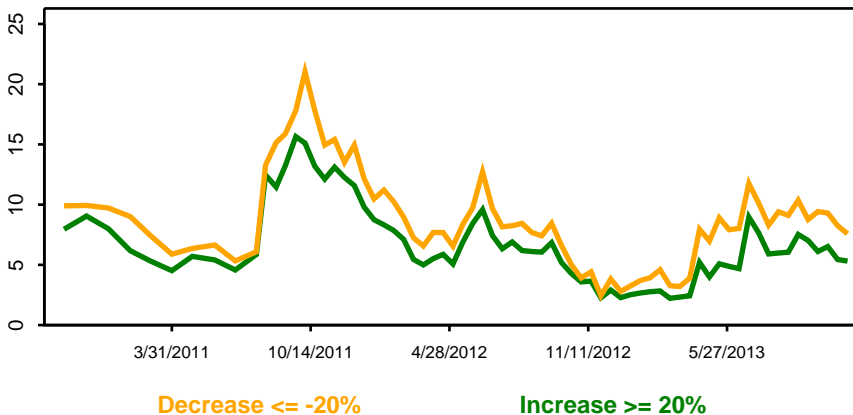derived from options that expire in approximately 6 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
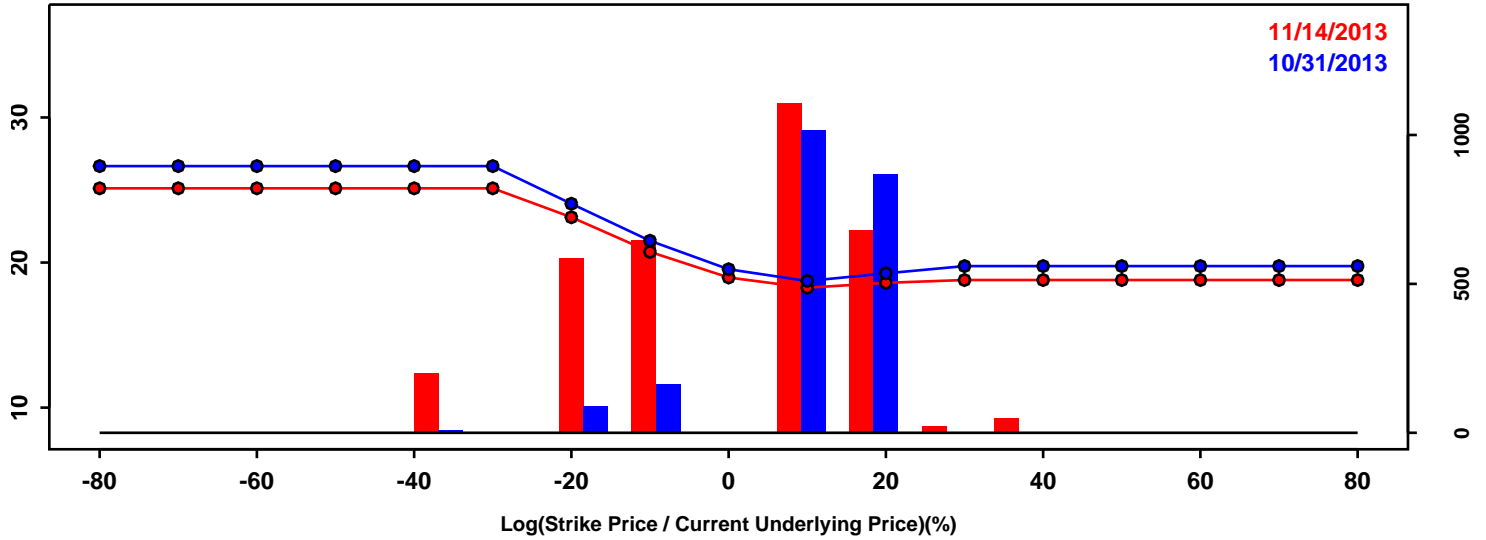
Statistics of the Log Return Distributions

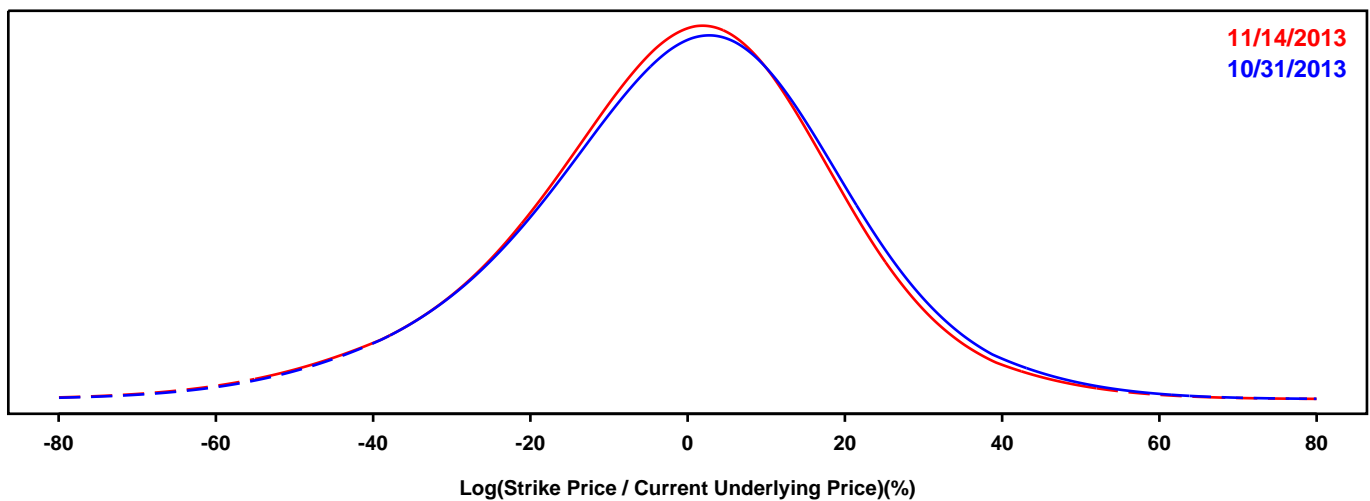|	10/31/2013	11/14/2013	Change
10th Pct	-17.97%	-17.25%	0.72%
50th Pct	0.79%	0.78%	-0.01%
90th Pct	15.85%	15.76%	-0.09%
Mean	-0.24%	-0.11%	0.13%
Std Dev	13.89%	13.46%	-0.43%
Skew	-0.49%	-0.43%	0.06%
Kurtosis	0.99	0.84	-0.15

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SILVER FUTURES

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 6 months.
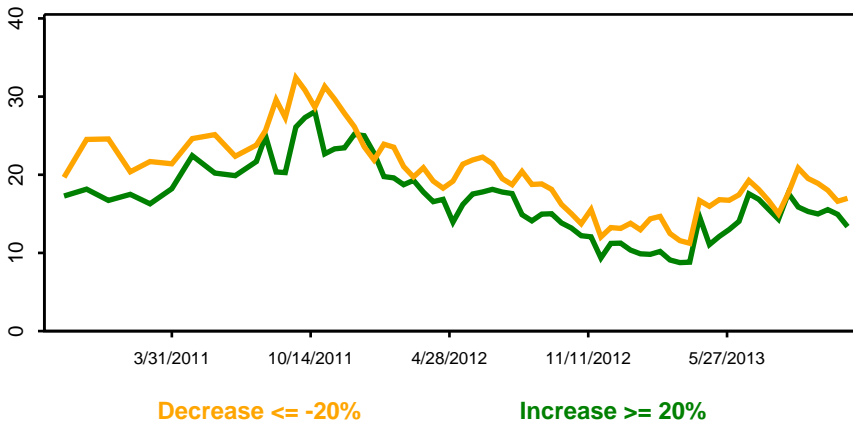
Implied Volatilities (lines--left axis) and Volume (bars--right axis)

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   Increase >= 20%
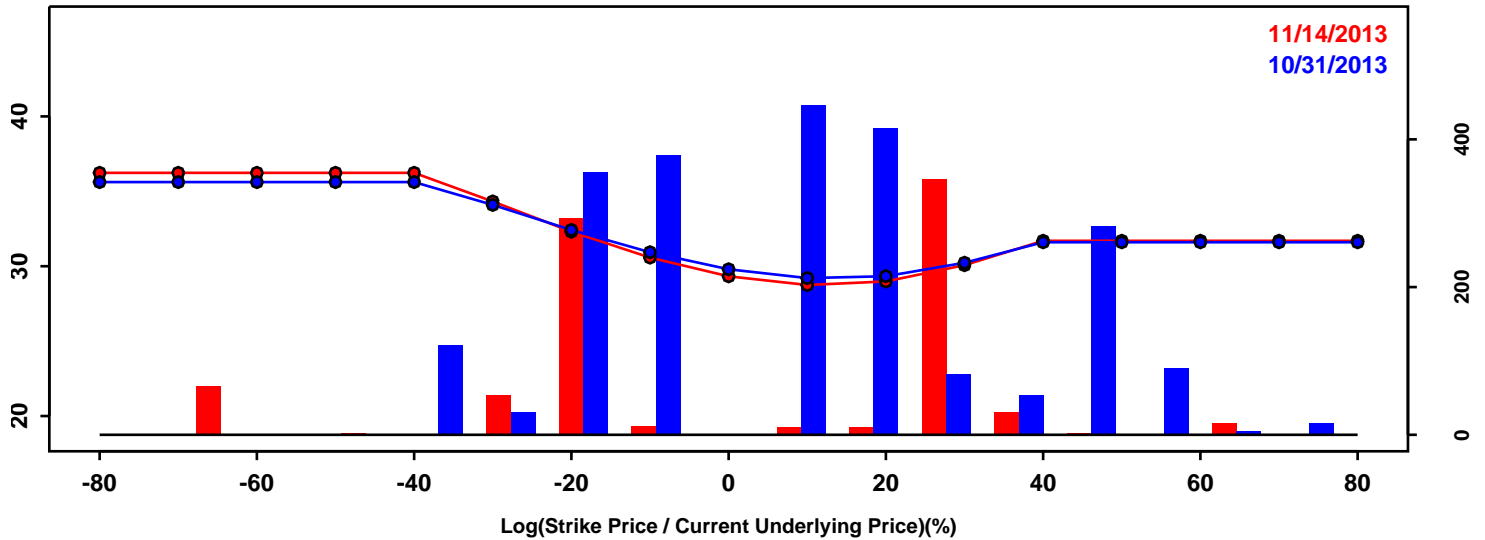
Statistics of the Log Return Distributions

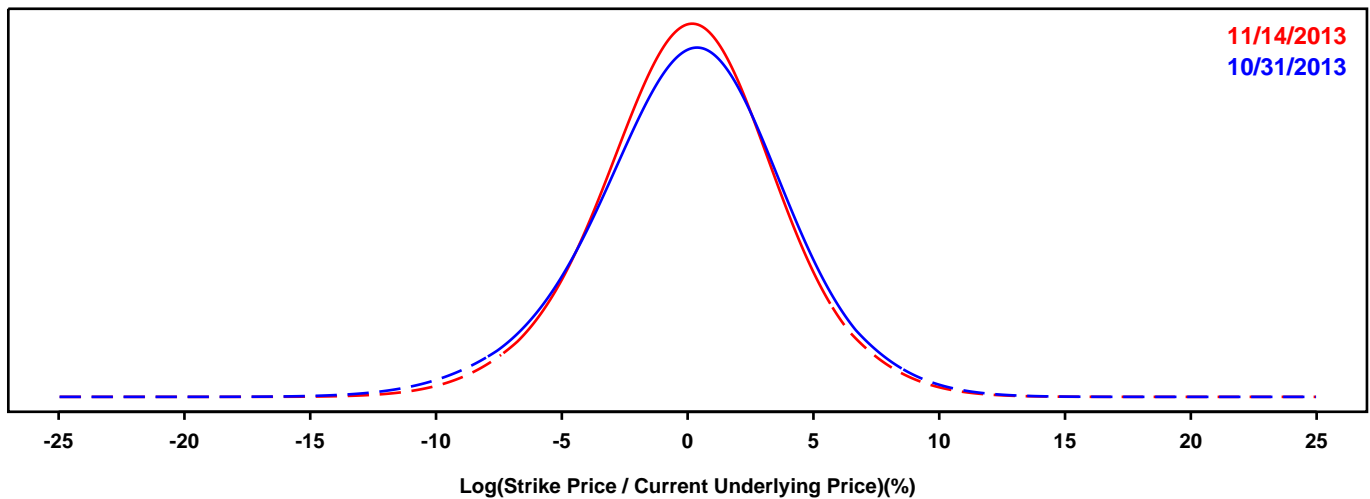|	10/31/2013	11/14/2013	Change
10th Pct	-27.70%	-28.15%	-0.44%
50th Pct	0.56%	-0.14%	-0.70%
90th Pct	24.66%	23.26%	-1.40%
Mean	-0.52%	-1.38%	-0.86%
Std Dev	21.07%	20.81%	-0.26%
Skew	-0.27%	-0.32	-0.05
Kurtosis	0.55	0.67	0.13

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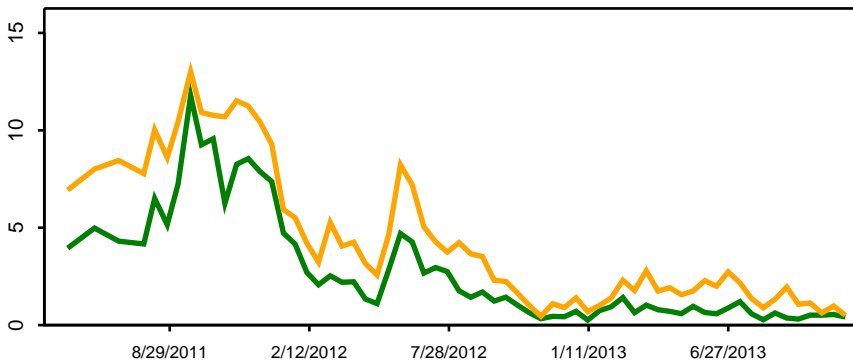
Implied Volatilities (lines--left axis) and Volume (bars--right axis)

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)
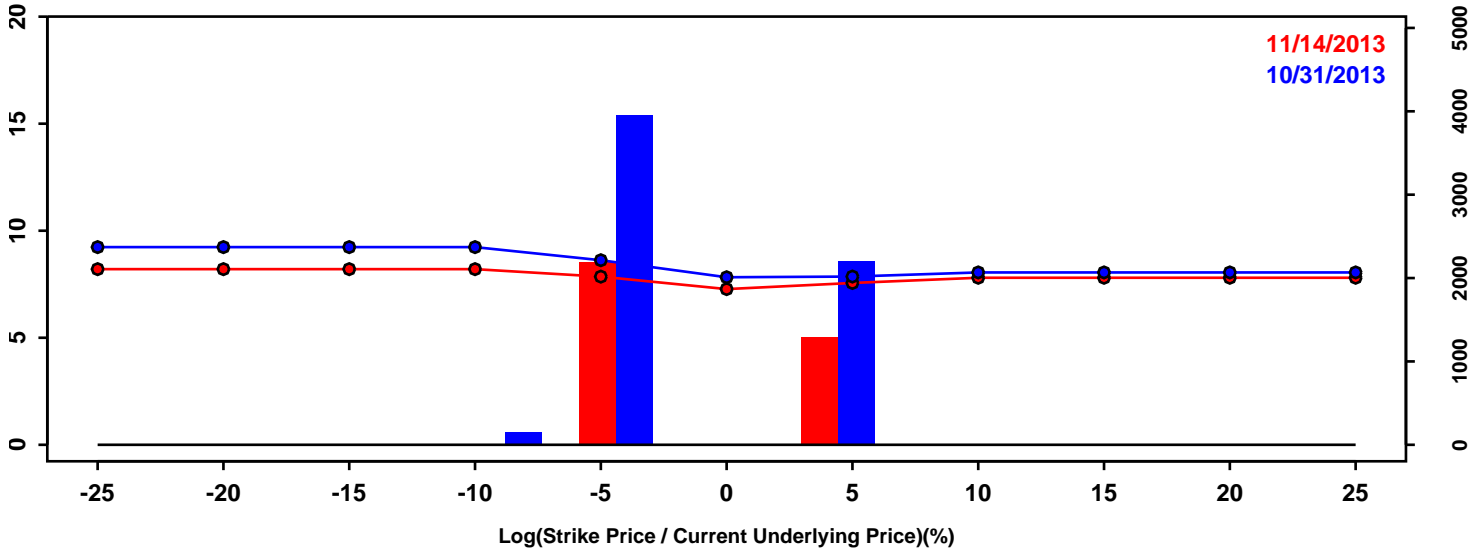
Probability of a Large Change

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

Statistics of the Log Return Distributions

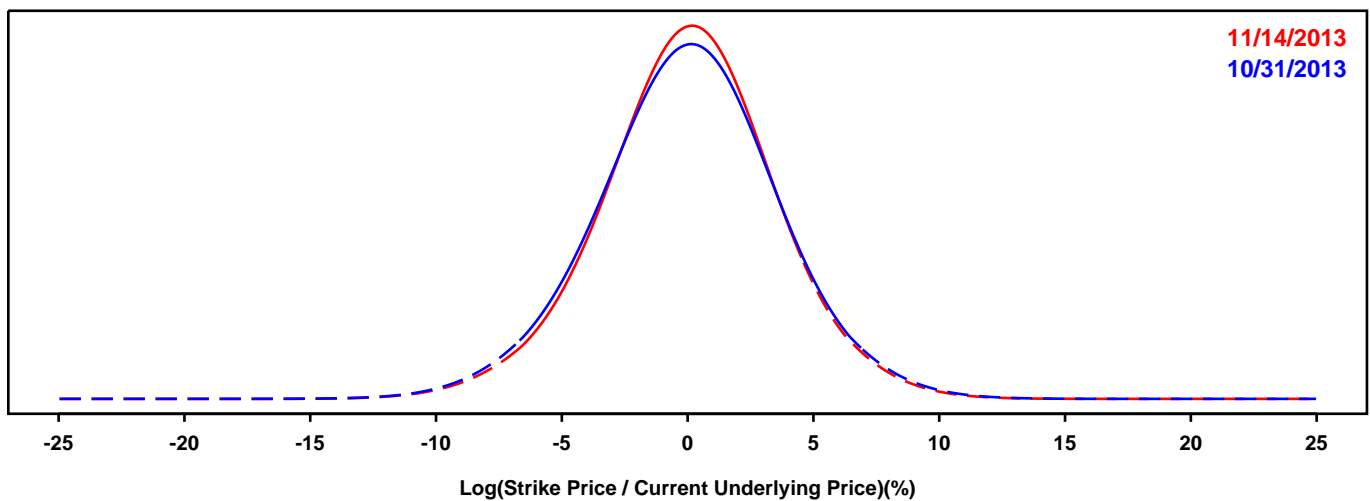|	10/31/2013	11/14/2013	Change
10th Pct	-4.88%	-4.48%	0.40%
50th Pct	0.14%	0.09%	-0.05%
90th Pct	4.88%	4.57%	-0.31%
Mean	0.09%	0.09%	0.00%
Std Dev	3.90%	3.63%	-0.28%
Skew	-0.18	-0.07	0.11
Kurtosis	0.44	0.39	-0.05

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

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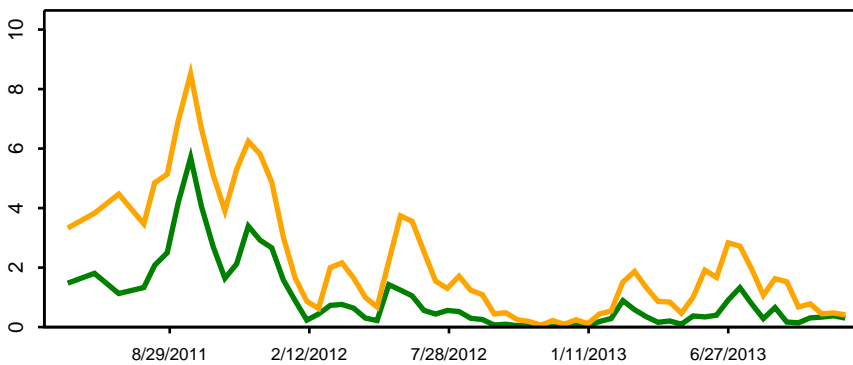derived from options that expire in approximately 3 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)
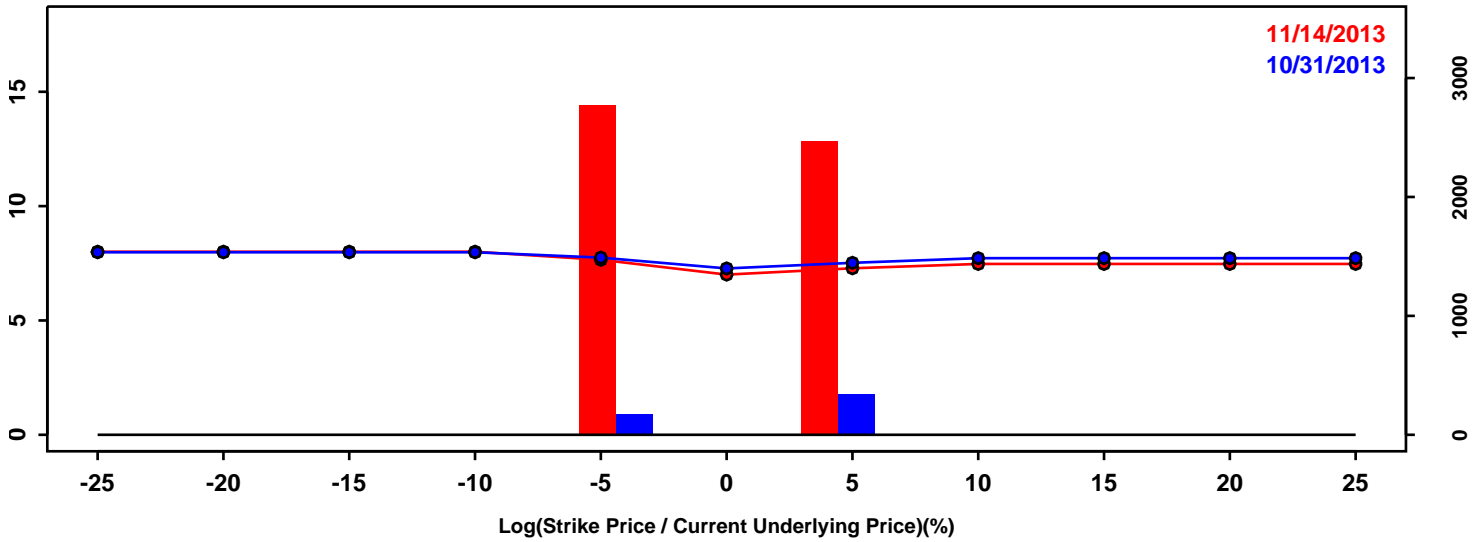
Probability of a Large Change

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

Statistics of the Log Return Distributions

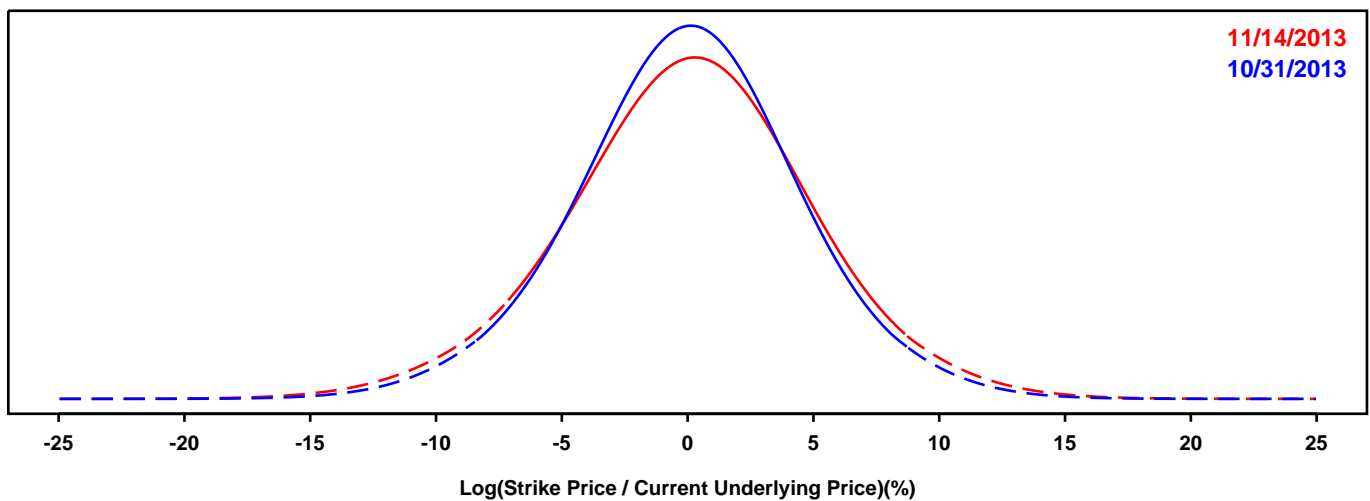|	10/31/2013	11/14/2013	Change
10th Pct	-4.59%	-4.39%	0.20%
50th Pct	0.07%	0.09%	0.02%
90th Pct	4.53%	4.39%	-0.15%
Mean	0.04%	0.09%	0.05%
Std Dev	3.63%	3.49%	-0.14%
Skew	-0.06%	-0.08	-0.03
Kurtosis	0.31	0.41	0.10

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

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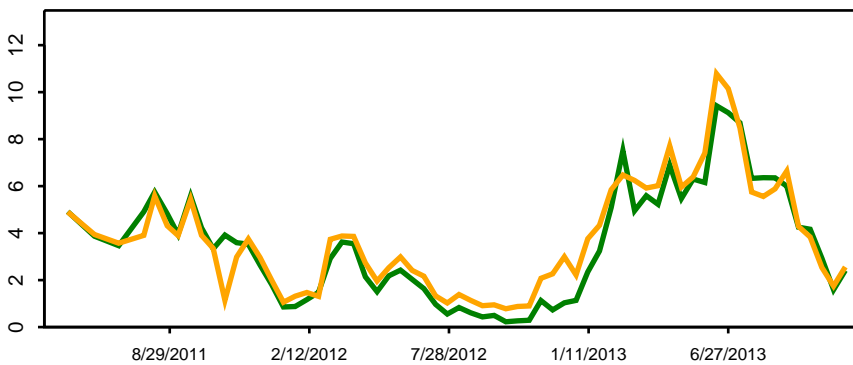*derived from options that expire in approximately 3 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)
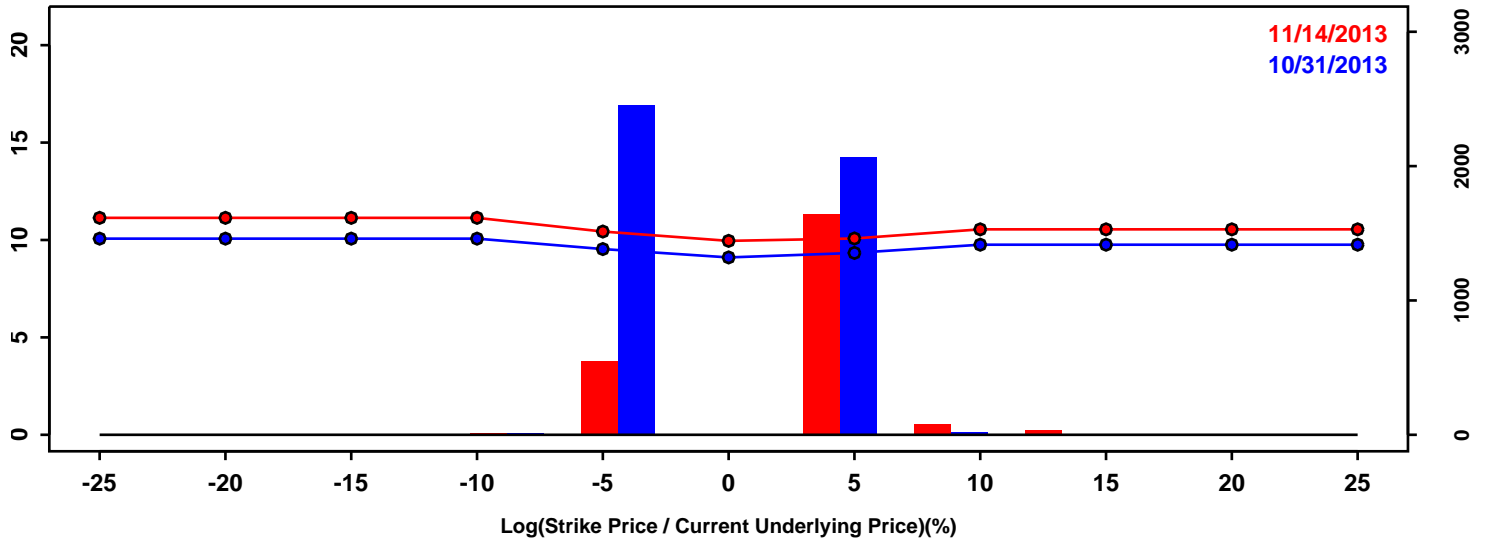
Probability of a Large Change

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

Statistics of the Log Return Distributions

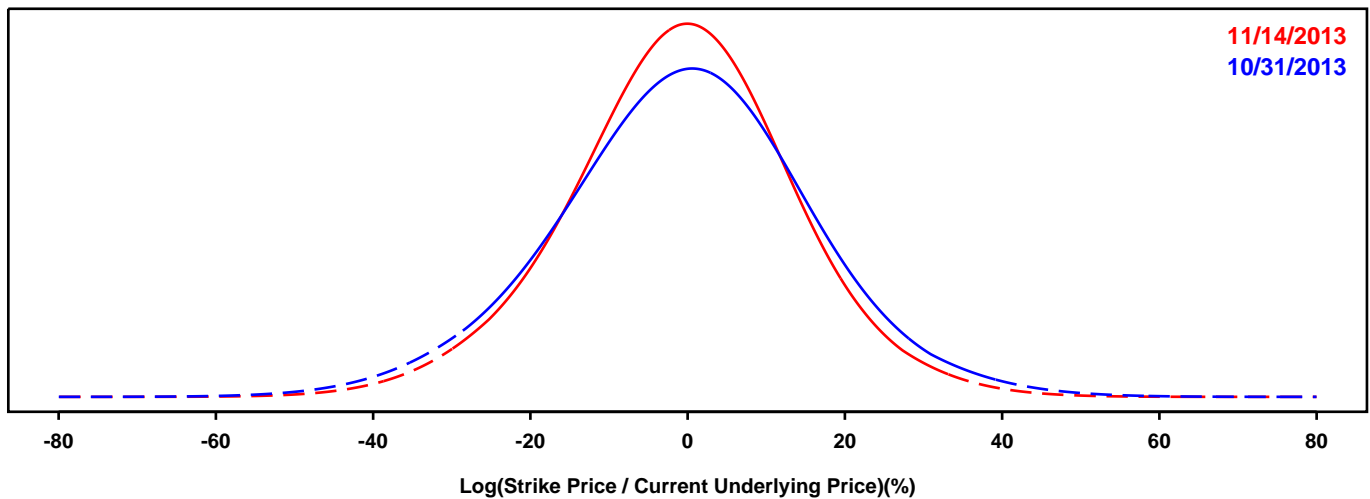|	10/31/2013	11/14/2013	Change
10th Pct	-5.69%	-6.15%	-0.47%
50th Pct	0.07%	0.18%	0.11%
90th Pct	5.70%	6.24%	0.54%
Mean	0.06%	0.14%	0.08%
Std Dev	4.54%	4.96%	0.42%
Skew	-0.04	-0.08	-0.03
Kurtosis	0.35	0.35	0.00

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CORN FUTURES

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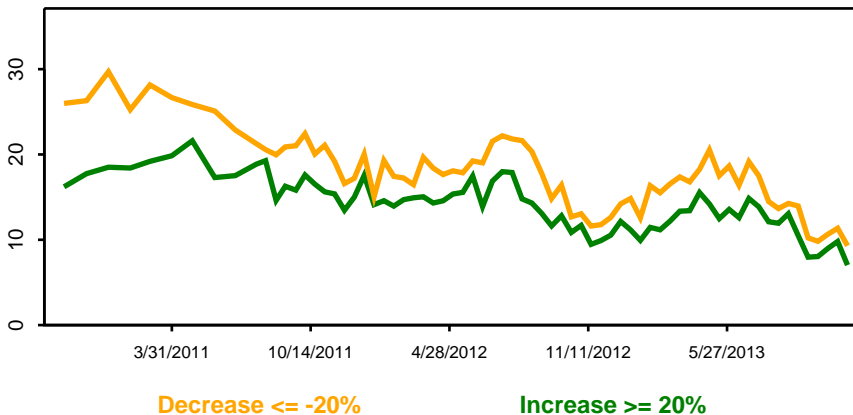derived from options that expire in approximately 6 months.*

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

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
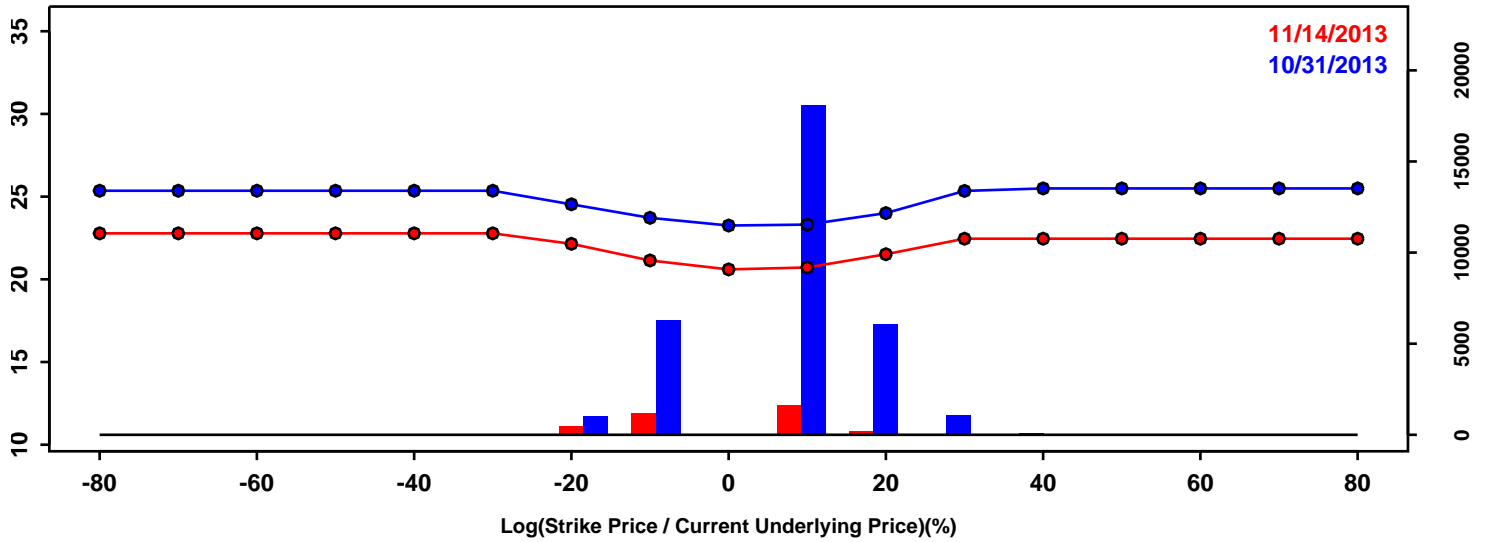
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-21.35%	-19.30%	2.04%
50th Pct	-0.17%	-0.57%	-0.40%
90th Pct	19.80%	17.09%	-2.71%
Mean	-0.43%	-0.81%	-0.39%
Std Dev	16.39%	14.53%	-1.86%
Skew	-0.06%	-0.08	-0.02
Kurtosis	0.35	0.38	0.03

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SOYBEAN FUTURES

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

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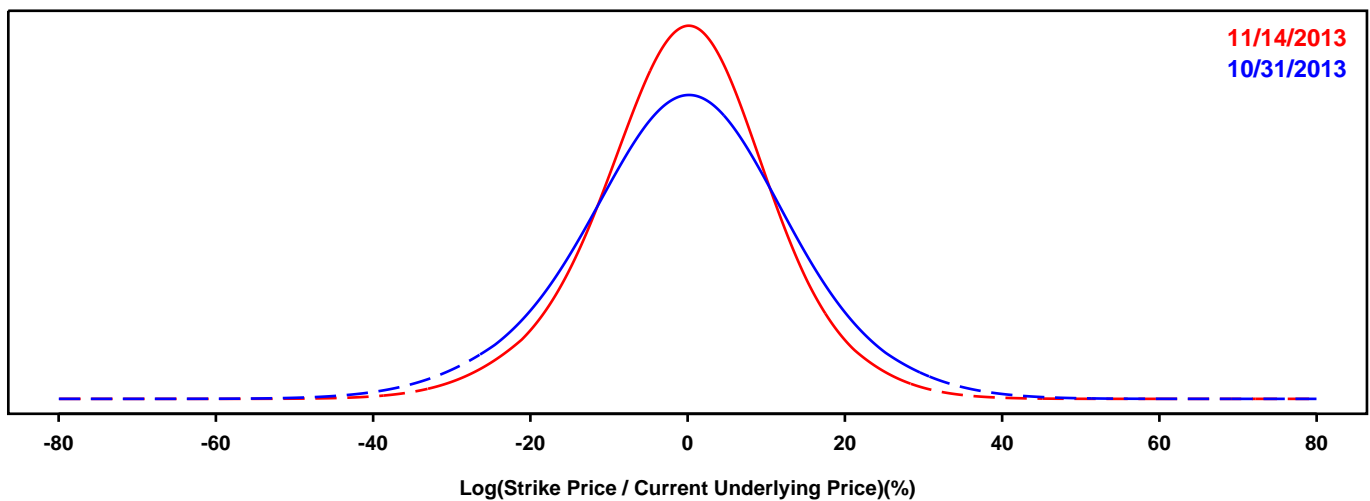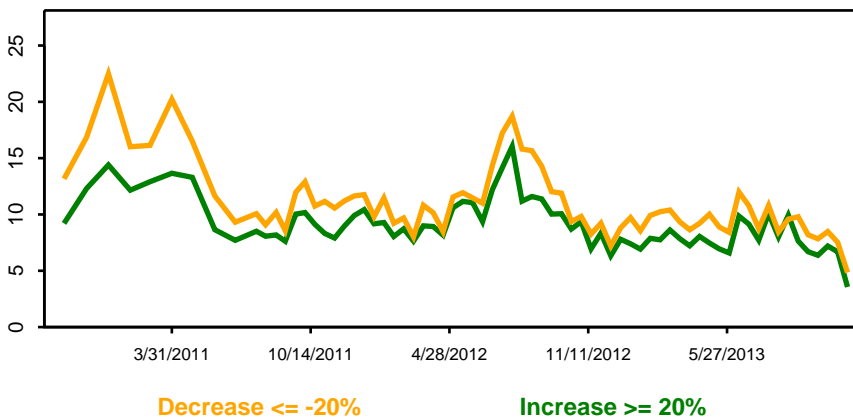

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -20%   **Increase >= 20%**
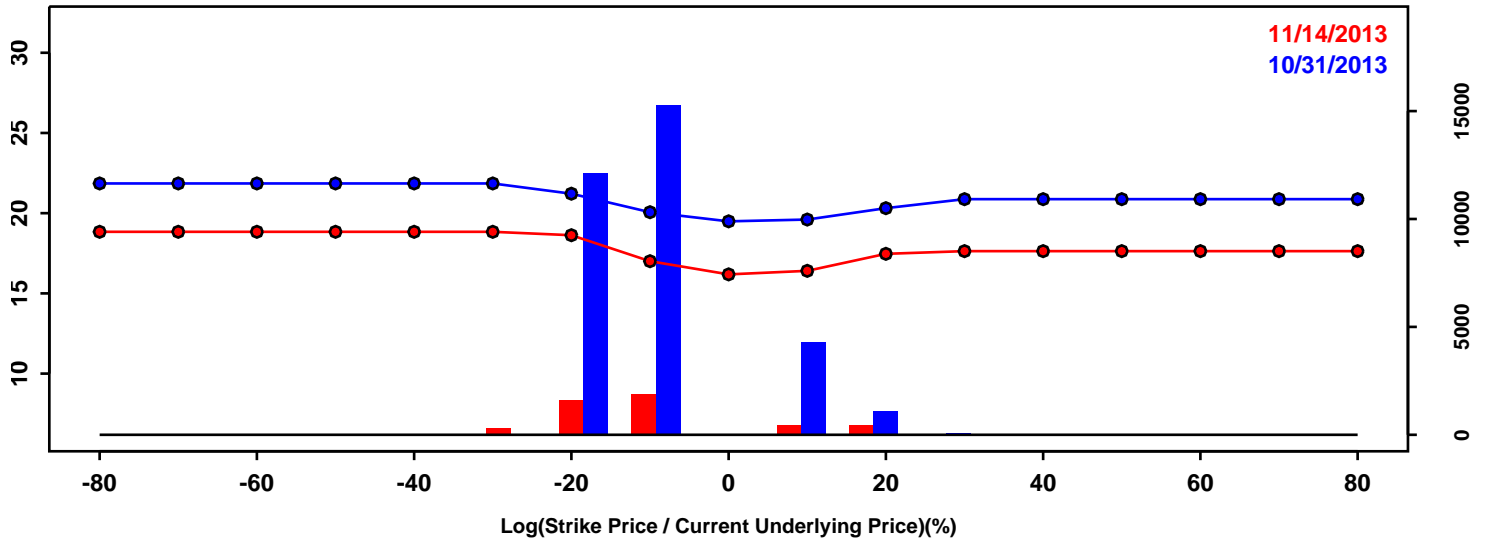
Statistics of the Log Return Distributions

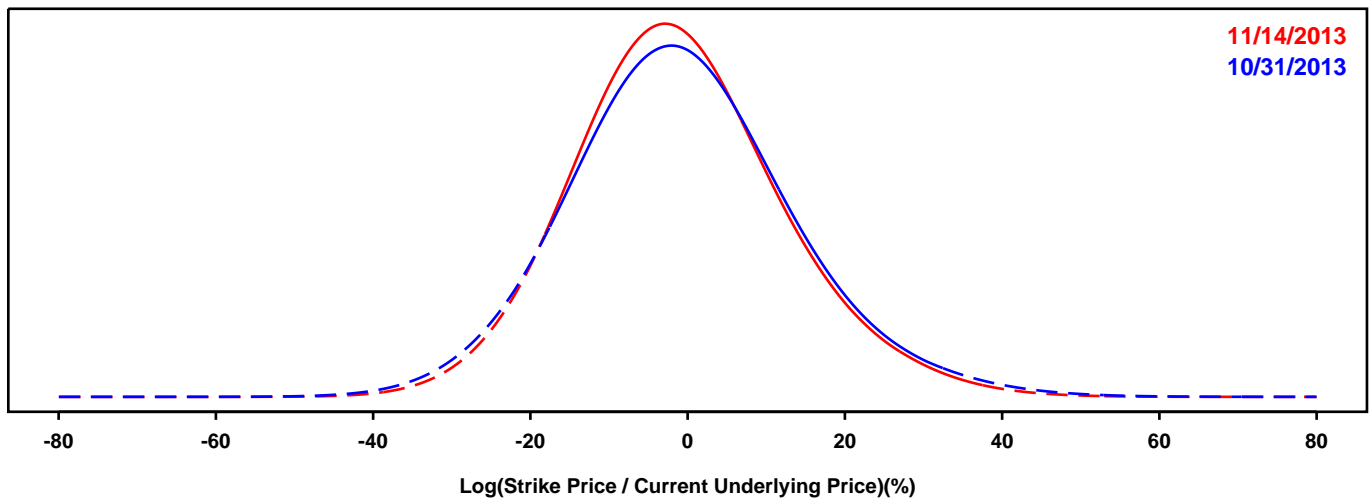|	10/31/2013	11/14/2013	Change
10th Pct	-17.56%	-14.80%	2.76%
50th Pct	-0.06%	-0.24%	-0.18%
90th Pct	16.84%	13.53%	-3.31%
Mean	-0.21%	-0.44%	-0.24%
Std Dev	13.75%	11.41%	-2.34%
Skew	-0.08	-0.12	-0.04
Kurtosis	0.38	0.51	0.13

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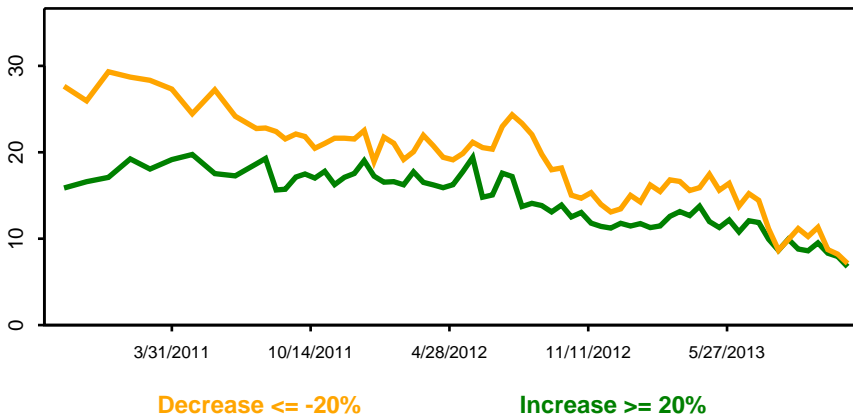
Implied Volatilities (lines--left axis) and Volume (bars--right axis)

Log(Strike Price / Current Underlying Price)(%)

11/14/2013
10/31/2013

Risk Neutral PDF of the Log Return Distribution

Log(Strike Price / Current Underlying Price)(%)

11/14/2013
10/31/2013

Probability of a Large Change

Decrease <= -20%   Increase >= 20%
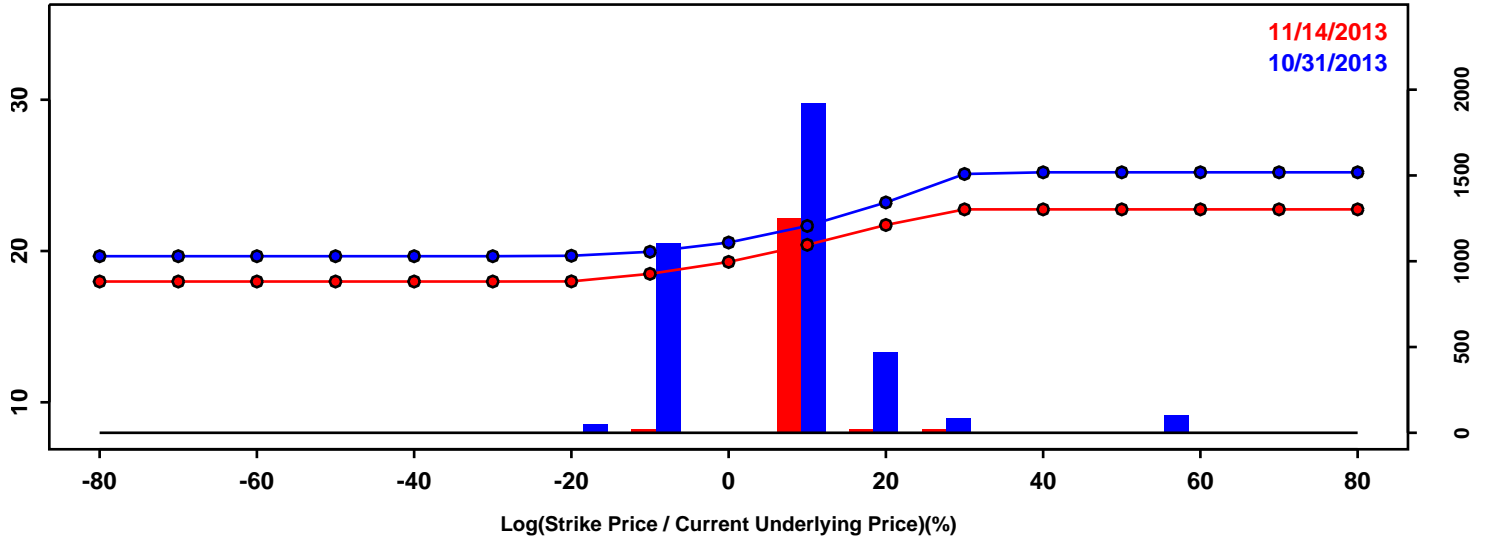
Statistics of the Log Return Distributions

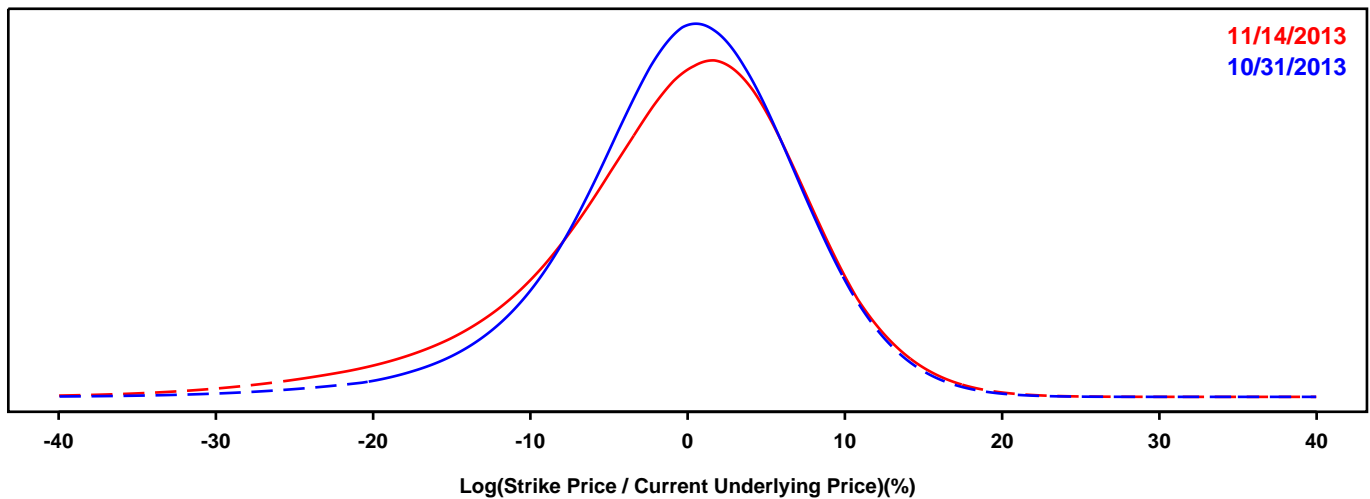|	10/31/2013	11/14/2013	Change
10th Pct	-18.55%	-17.72%	0.82%
50th Pct	-1.26%	-1.76%	-0.51%
90th Pct	17.83%	16.52%	-1.31%
Mean	-0.66%	-1.05%	-0.39%
Std Dev	14.50%	13.56%	-0.94%
Skew	0.27	0.29	0.02
Kurtosis	0.43	0.32	-0.10

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

Log returns are based on the risk neutral density function of the underlying asset derived from options that expire in approximately 3 months.
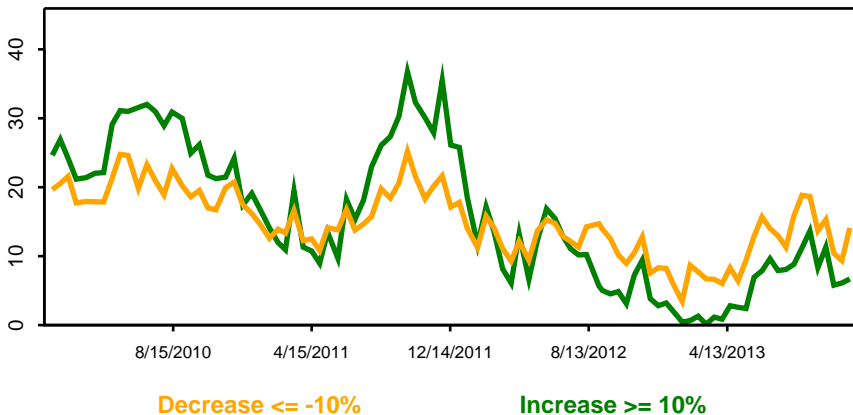
Implied Volatilities (lines--left axis) and Volume (bars--right axis)

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Risk Neutral PDF of the Log Return Distribution

11/14/2013
10/31/2013

Log(Strike Price / Current Underlying Price)(%)

Probability of a Large Change

Decrease <= -10%   **Increase >= 10%**
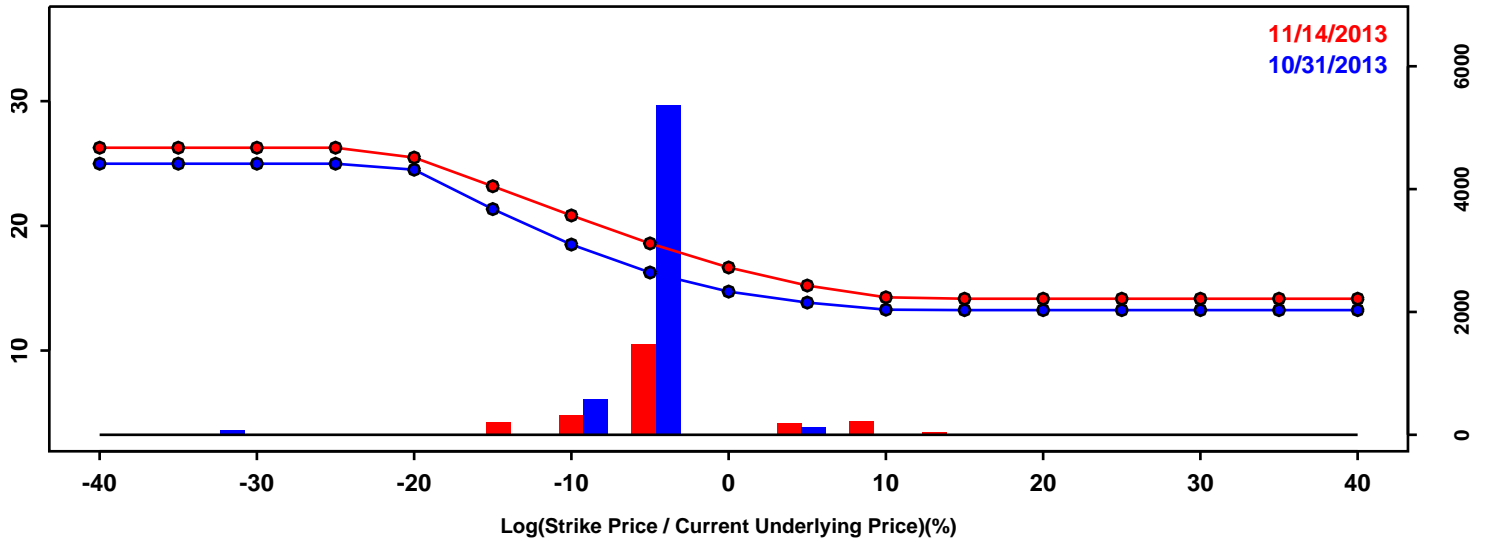
Statistics of the Log Return Distributions

	10/31/2013	11/14/2013	Change
10th Pct	-9.61%	-12.52%	-2.91%
50th Pct	0.12%	-0.07%	-0.19%
90th Pct	8.35%	8.59%	0.24%
Mean	-0.40%	-1.20%	-0.81%
Std Dev	7.47%	8.78%	1.31%
Skew	-0.68%	-0.87	-0.20
Kurtosis	1.59	1.54	-0.04

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- Inflation Caps & Floors

Probabilty of Deflation and High Inflation over the next 12 Months
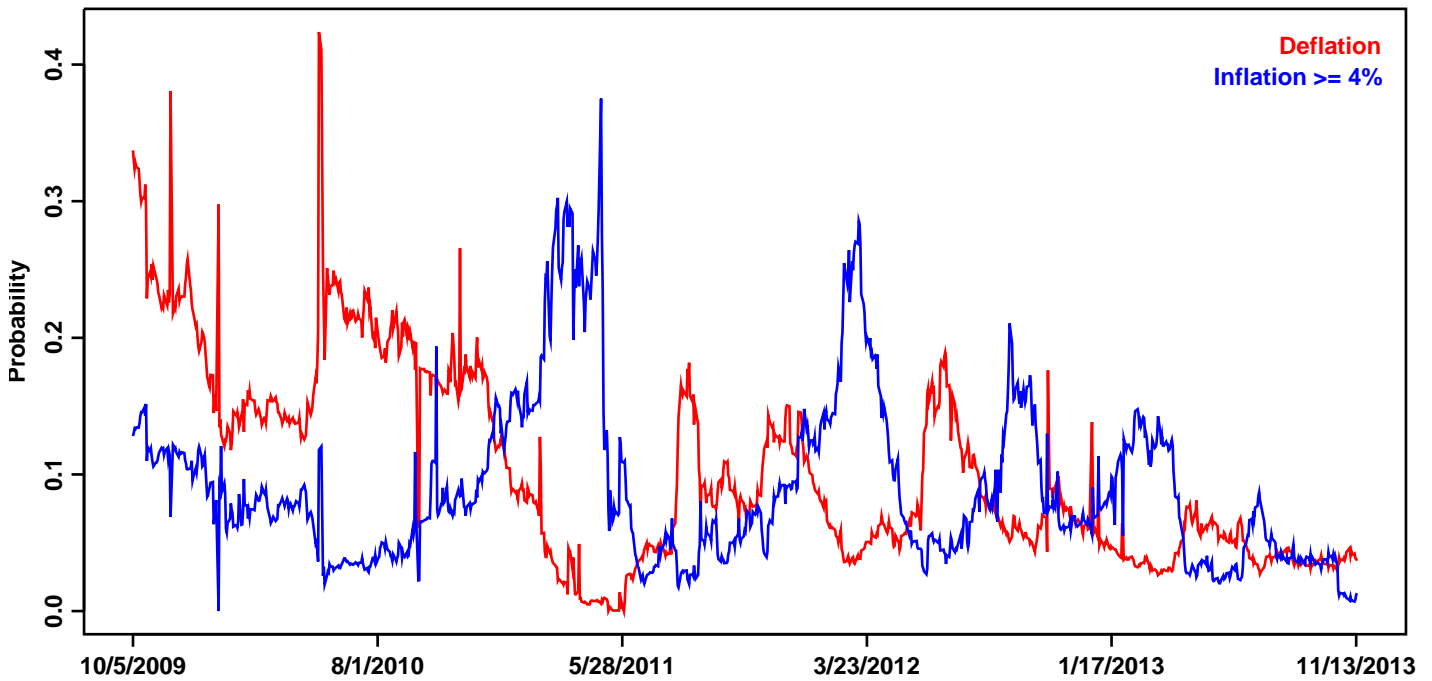
Risk Neutral Density Function for Inflation over the next 12 Months
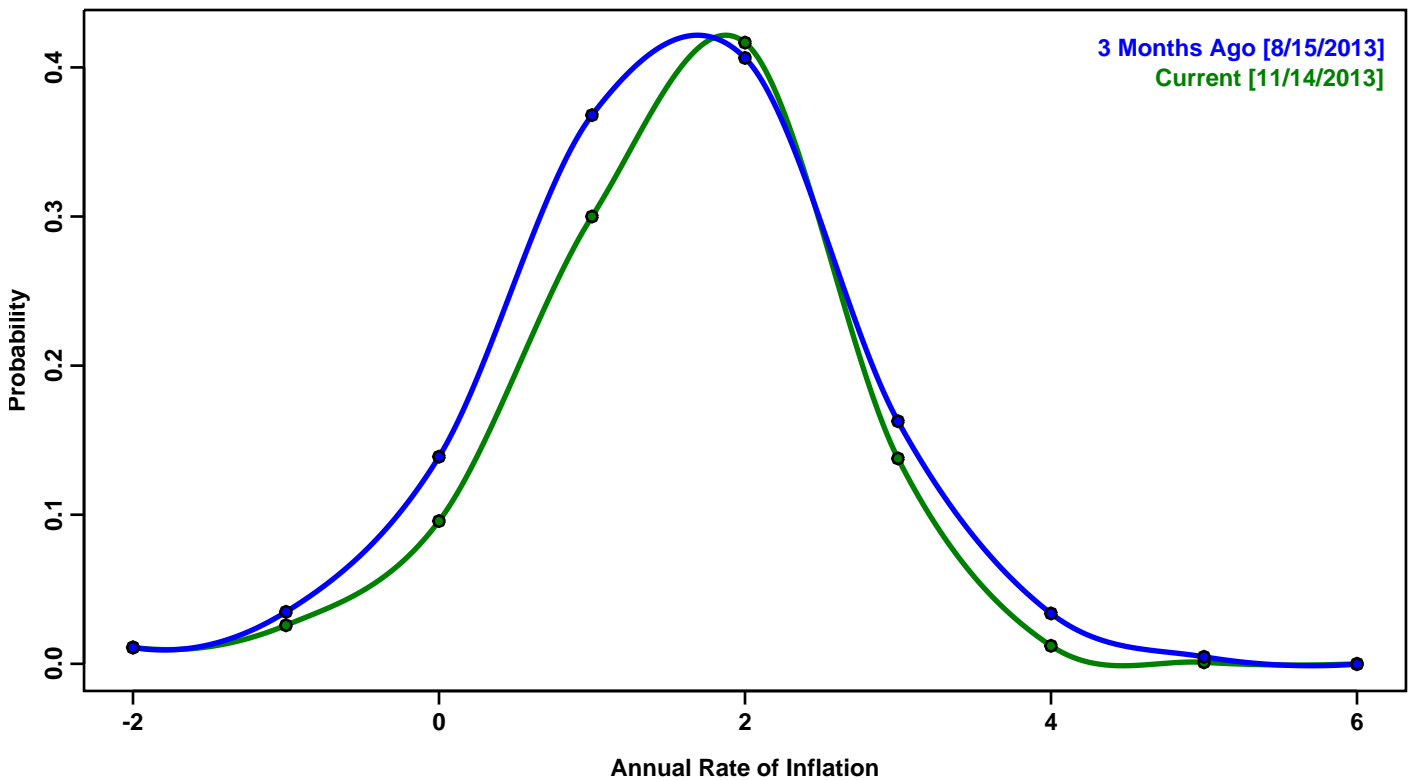
RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- Inflation Caps & Floors

Probabilty of Deflation and High Inflation over the next 5 Years