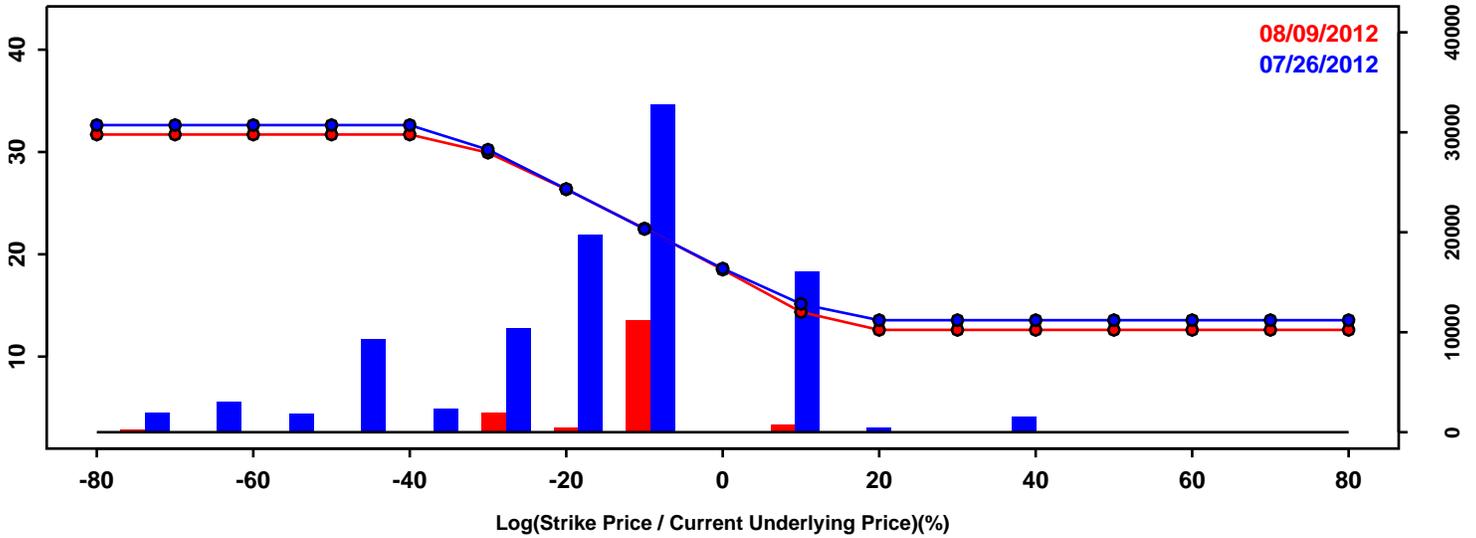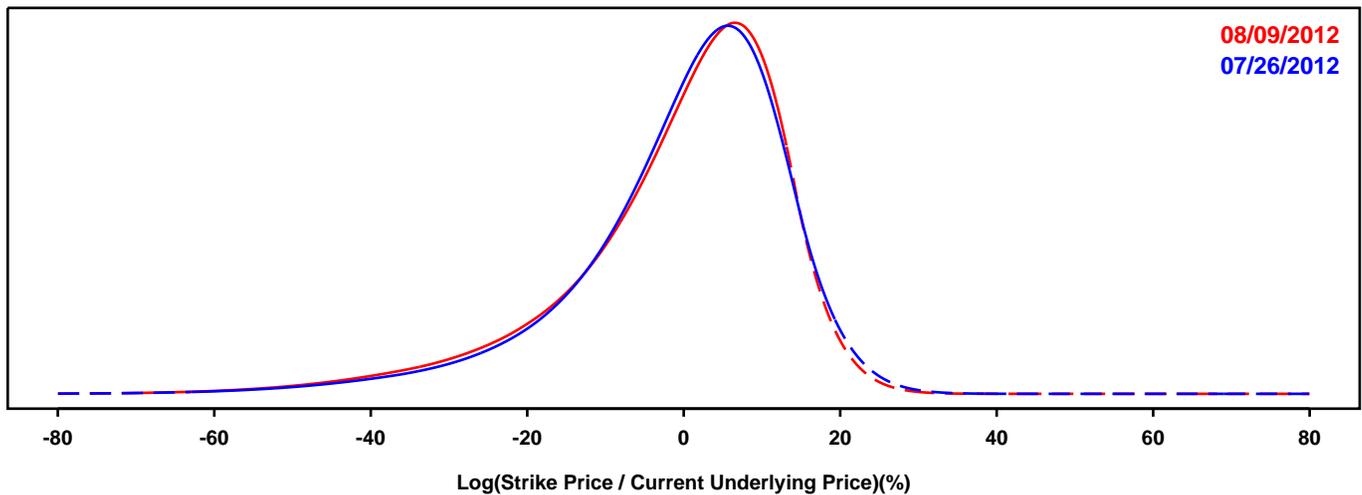# RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- S&P 500

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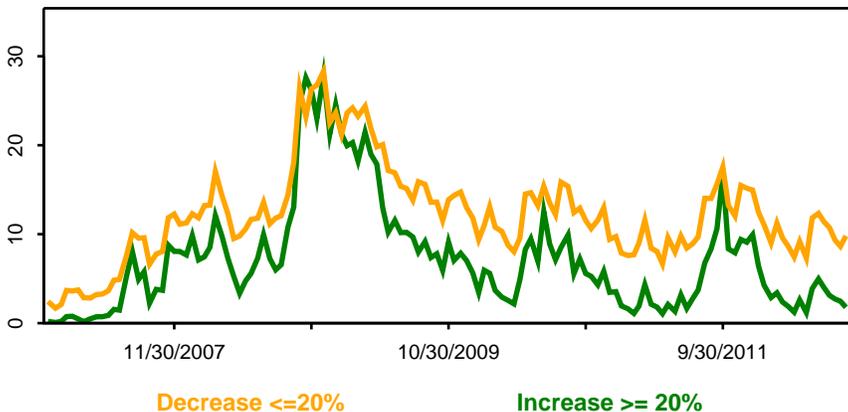
Implied Volatilities (lines--left axis) and Volume (bars--right axis)

08/09/2012
07/26/2012

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

Risk Neutral PDF of the Log Return Distribution

08/09/2012
07/26/2012

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

Probability of a Large Change

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

Statistics of the Log Return Distributions

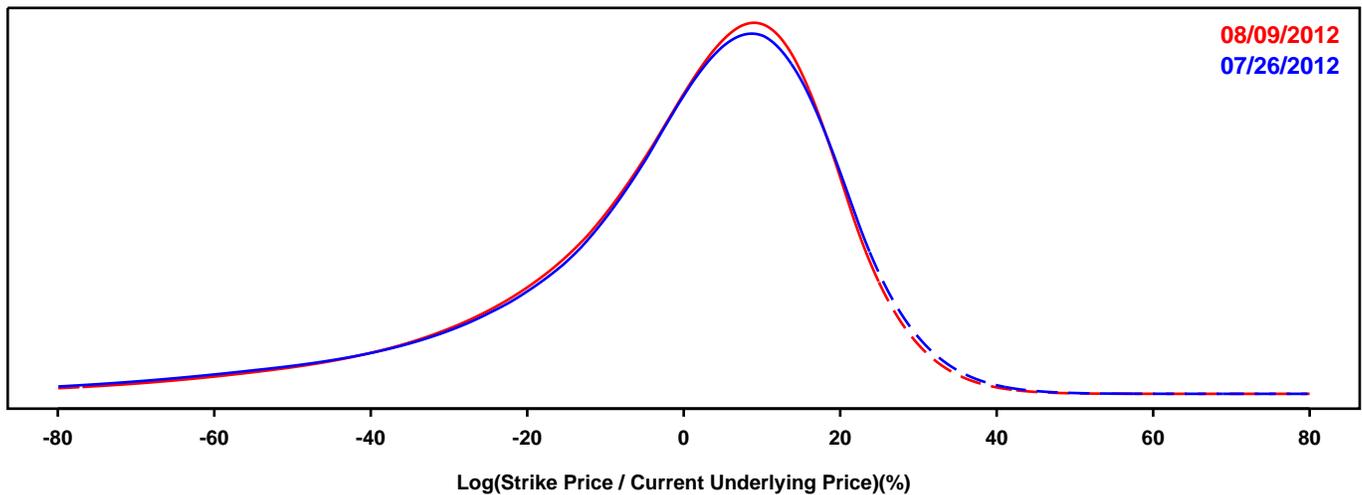|	07/26/2012	08/09/2012	Change
10th Pct	-18.09%	-19.76%	-1.68%
50th Pct	2.17%	2.14%	-0.03%
90th Pct	14.12%	13.67%	-0.44%
Mean	-0.29%	-0.83%	-0.54%
Std Dev	13.80%	14.17%	0.37%
Skew	-1.23	-1.27	-0.04
Kurtosis	2.50	2.30	-0.21

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- S&P 500

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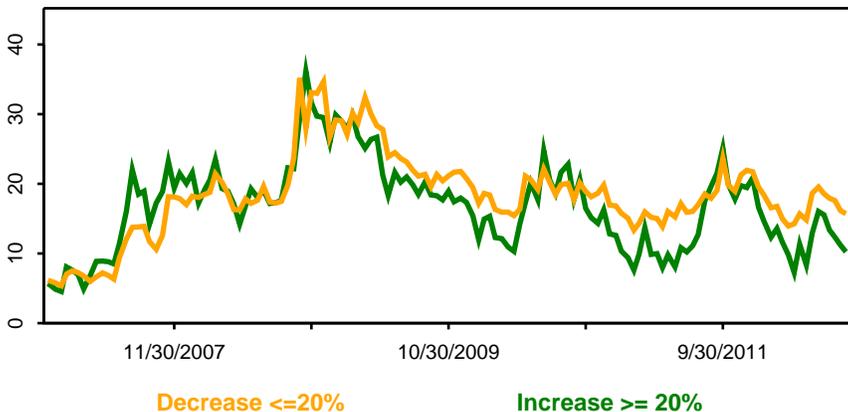*derived from options that expire in approximately 12 months.*

Implied Volatilities (lines--left axis) and Volume (bars--right axis)
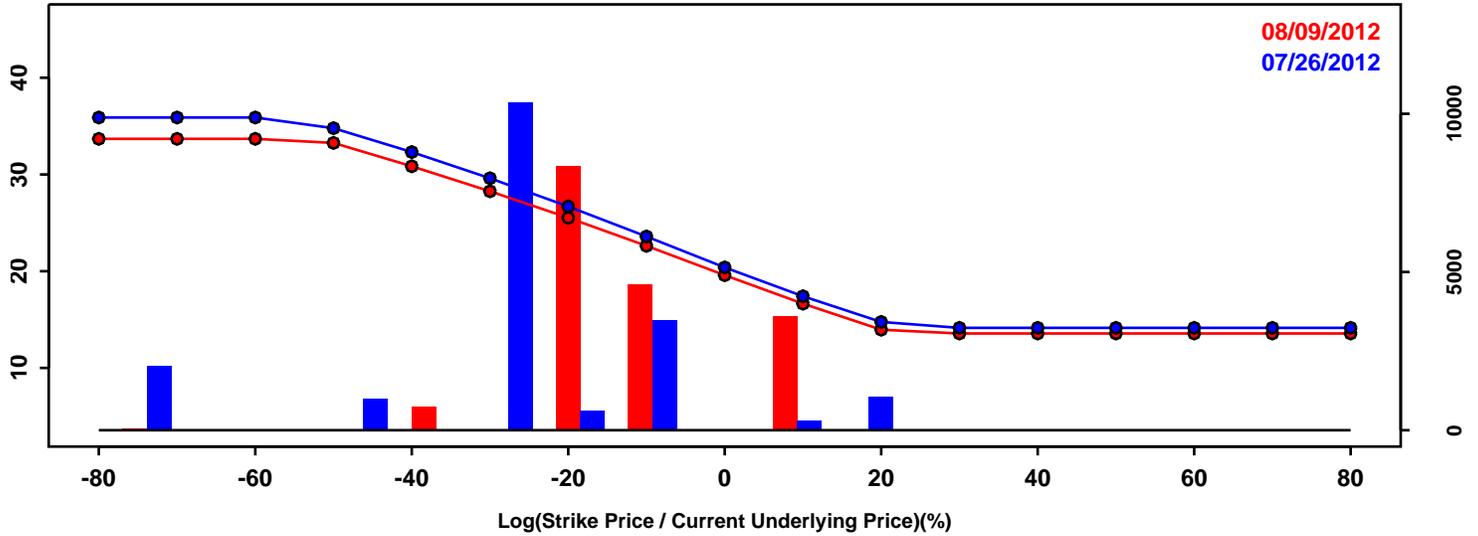
08/09/2012
07/26/2012

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

Risk Neutral PDF of the Log Return Distribution

08/09/2012
07/26/2012

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

Probability of a Large Change

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

Statistics of the Log Return Distributions

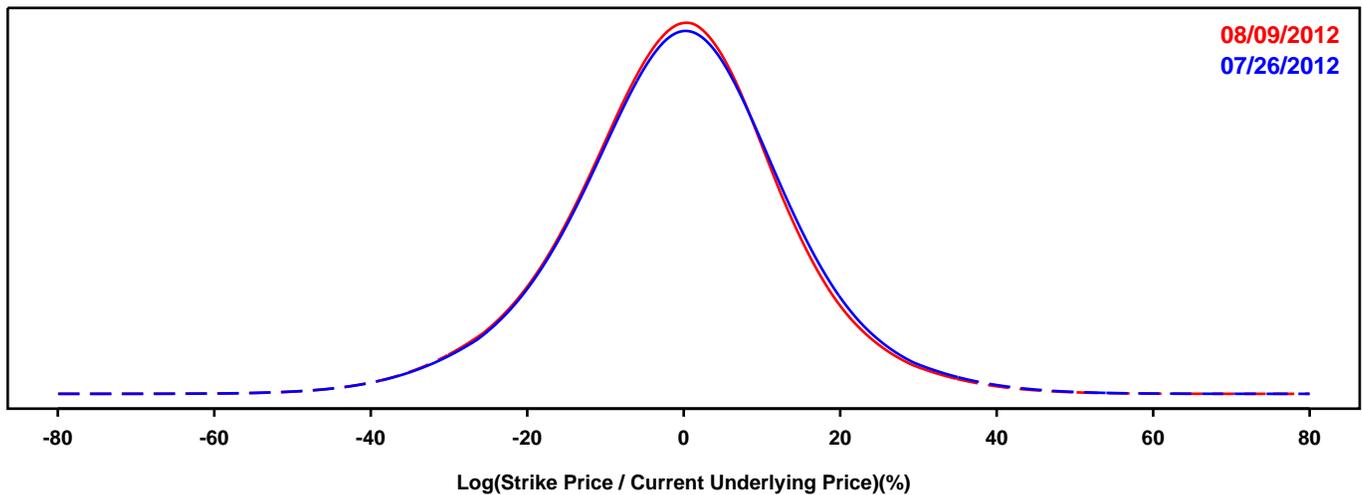|	07/26/2012	08/09/2012	Change
10th Pct	-30.81%	-29.34%	1.47%
50th Pct	3.29%	3.22%	-0.07%
90th Pct	20.79%	20.15%	-0.64%
Mean	-1.43%	-1.24%	0.19%
Std Dev	22.20%	21.10%	-1.11%
Skew	-1.38	-1.31	0.07
Kurtosis	2.72	2.45	-0.27

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- GOLD FUTURES

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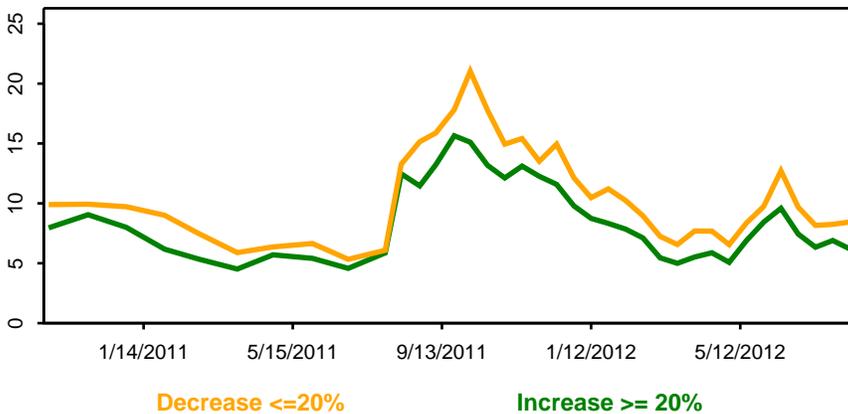derived from options that expire in approximately 6 months.*

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

08/09/2012
07/26/2012

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

Risk Neutral PDF of the Log Return Distribution

08/09/2012
07/26/2012

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

Probability of a Large Change

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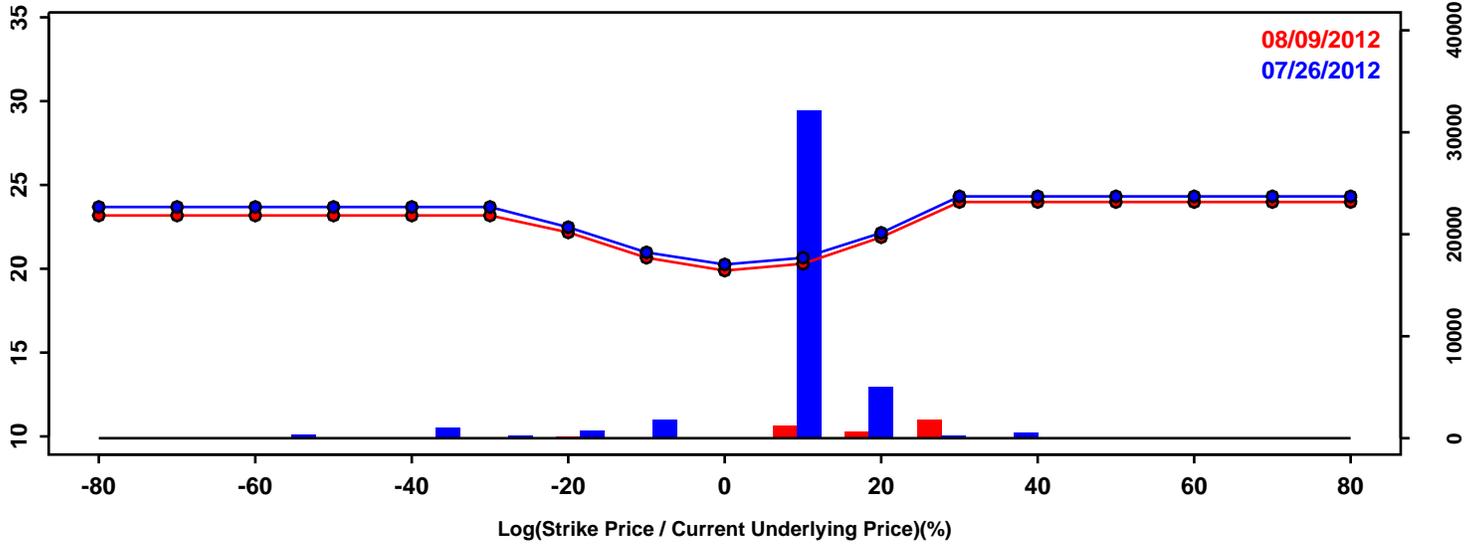
Statistics of the Log Return Distributions

	07/26/2012	08/09/2012	Change
10th Pct	-18.21%	-18.45%	-0.25%
50th Pct	-0.22%	-0.51%	-0.29%
90th Pct	16.89%	16.05%	-0.84%
Mean	-0.41%	-0.83%	-0.43%
Std Dev	14.28%	14.04%	-0.24%
Skew	-0.06%	-0.08%	-0.02%
Kurtosis	0.70	0.71	0.01

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SILVER FUTURES

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

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

Risk Neutral PDF of the Log Return Distribution
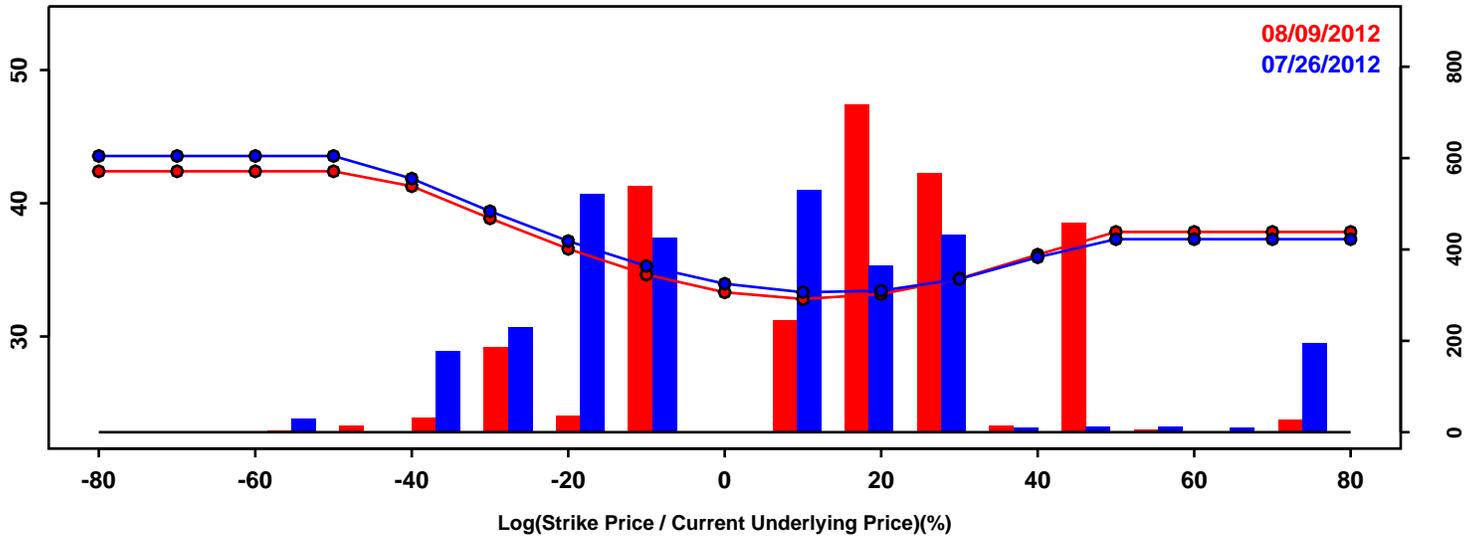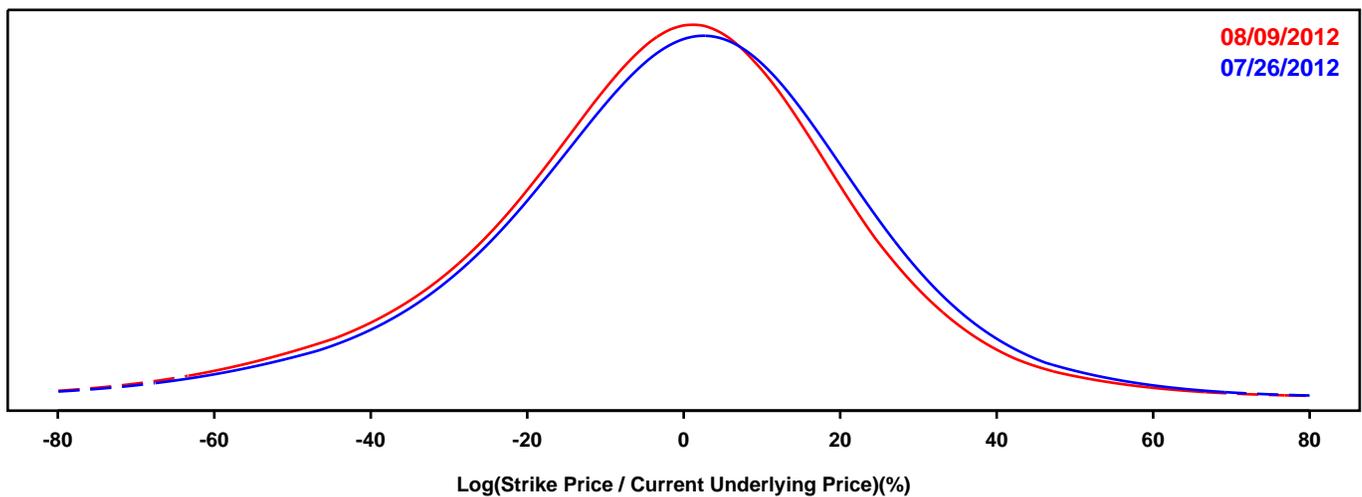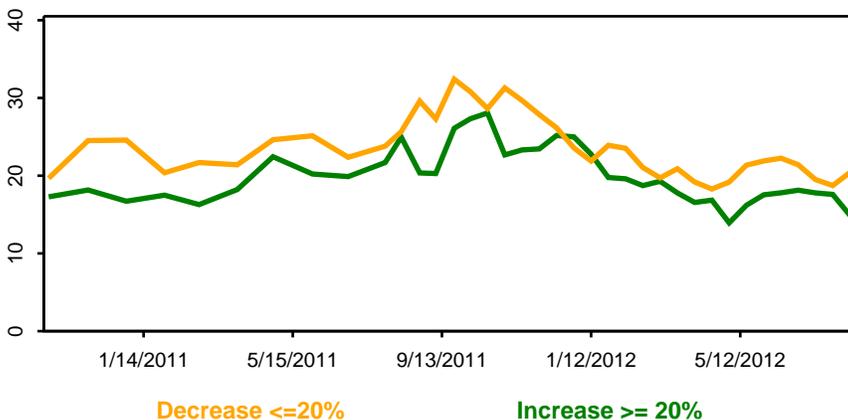

Probability of a Large Change

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

Statistics of the Log Return Distributions

	07/26/2012	08/09/2012	Change
10th Pct	-31.09%	-33.05%	-1.96%
50th Pct	0.60%	-1.08%	-1.68%
90th Pct	27.62%	25.19%	-2.43%
Mean	-0.70%	-2.62%	-1.92%
Std Dev	24.00%	23.77%	-0.24%
Skew	-0.33%	-0.38	-0.04
Kurtosis	0.84	0.83	-0.01

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

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

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

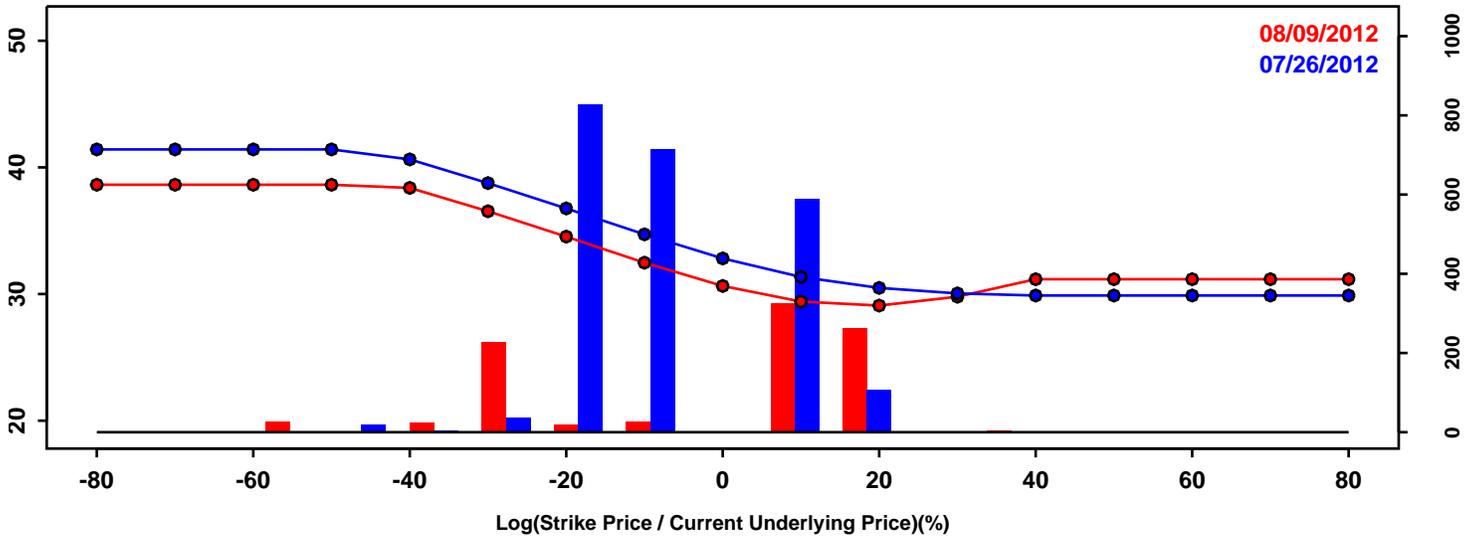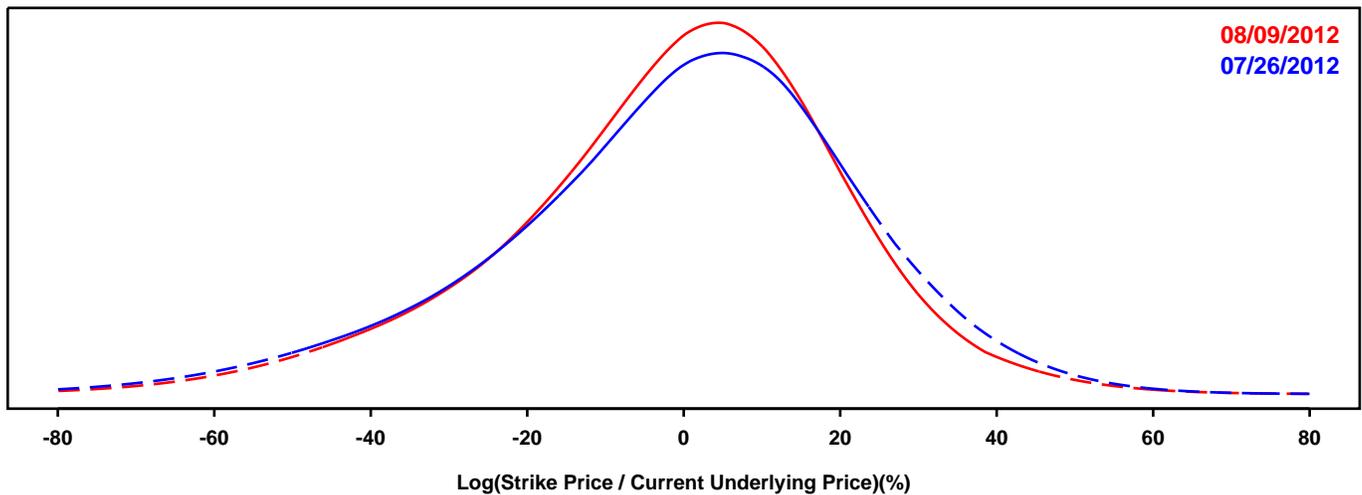### Risk Neutral PDF of the Log Return Distribution

Probability of a Large Change

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

Statistics of the Log Return Distributions

	07/26/2012	08/09/2012	Change
10th Pct	-32.32%	-30.56%	1.76%
50th Pct	1.37%	0.81%	-0.56%
90th Pct	26.79%	24.09%	-2.70%
Mean	-0.87%	-1.30%	-0.42%
Std Dev	23.60%	22.01%	-1.59%
Skew	-0.51	-0.48	0.03
Kurtosis	0.60	0.69	0.09

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

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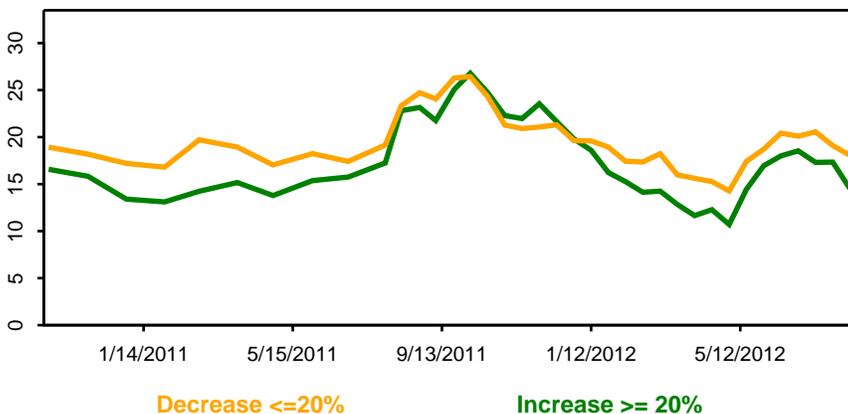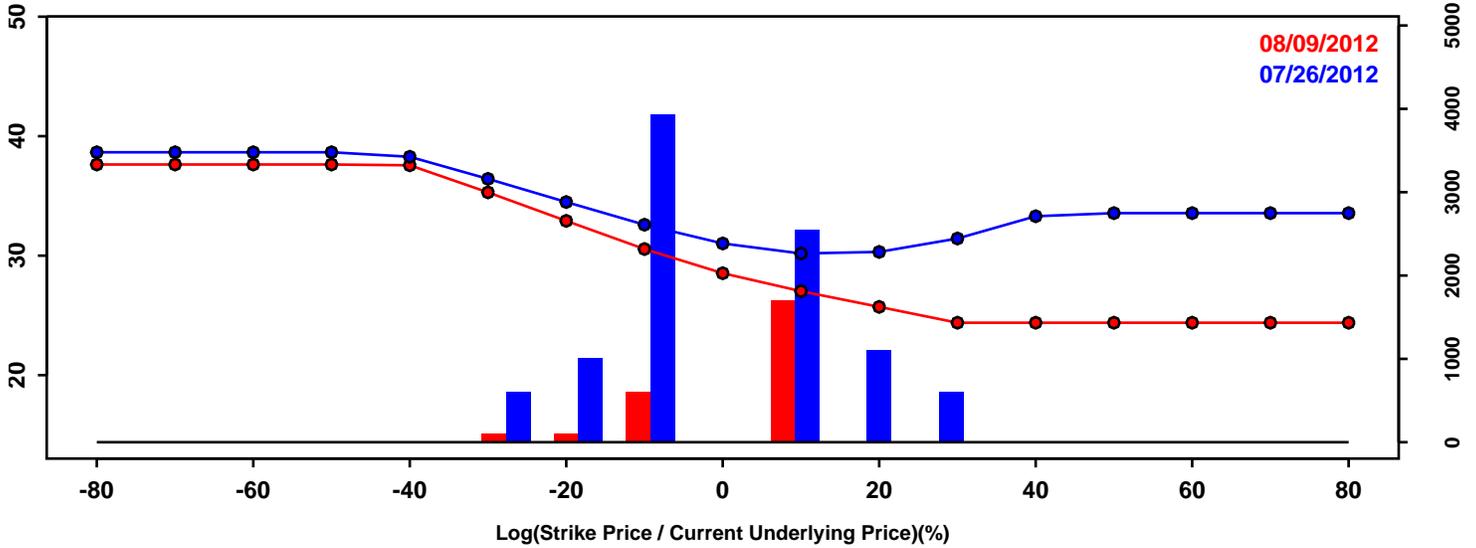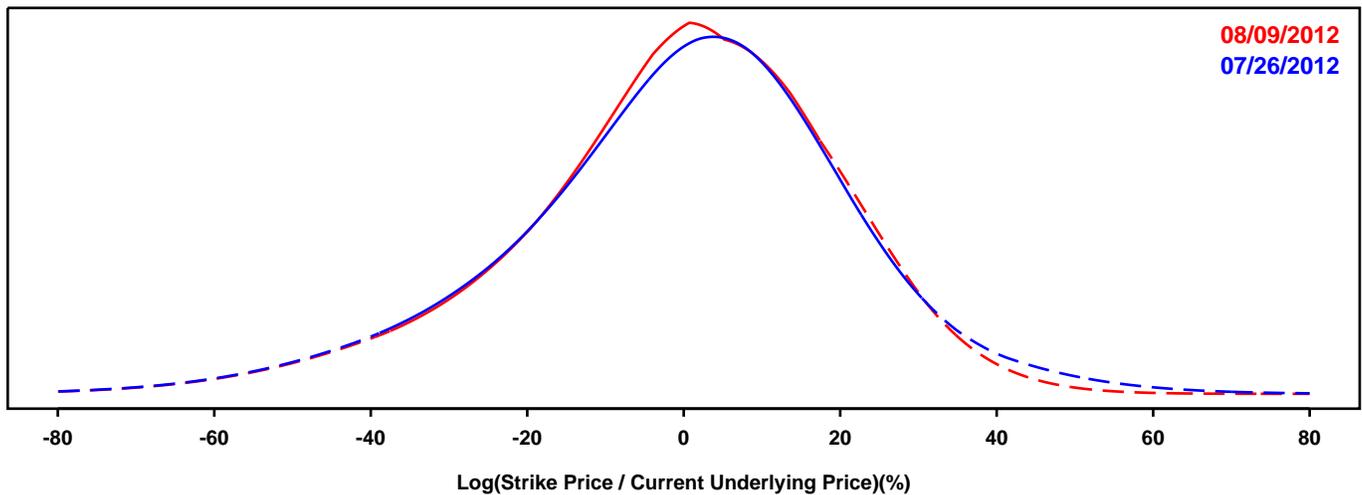derived from options that expire in approximately 6 months.*

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

08/09/2012
07/26/2012

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

Risk Neutral PDF of the Log Return Distribution

08/09/2012
07/26/2012

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

Probability of a Large Change

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

Statistics of the Log Return Distributions

	07/26/2012	08/09/2012	Change
10th Pct	-29.00%	-28.38%	0.62%
50th Pct	1.28%	0.85%	-0.43%
90th Pct	25.16%	23.49%	-1.67%
Mean	-0.35%	-1.01%	-0.65%
Std Dev	21.97%	20.74%	-1.23%
Skew	-0.37	-0.58	-0.22
Kurtosis	0.75	0.71	-0.05

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

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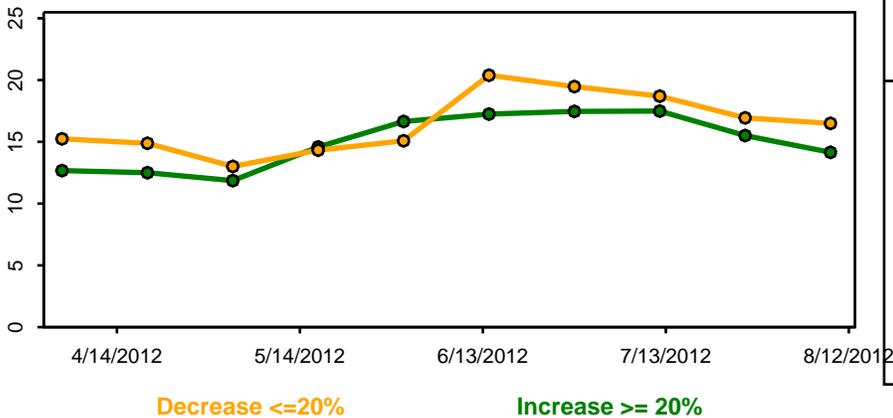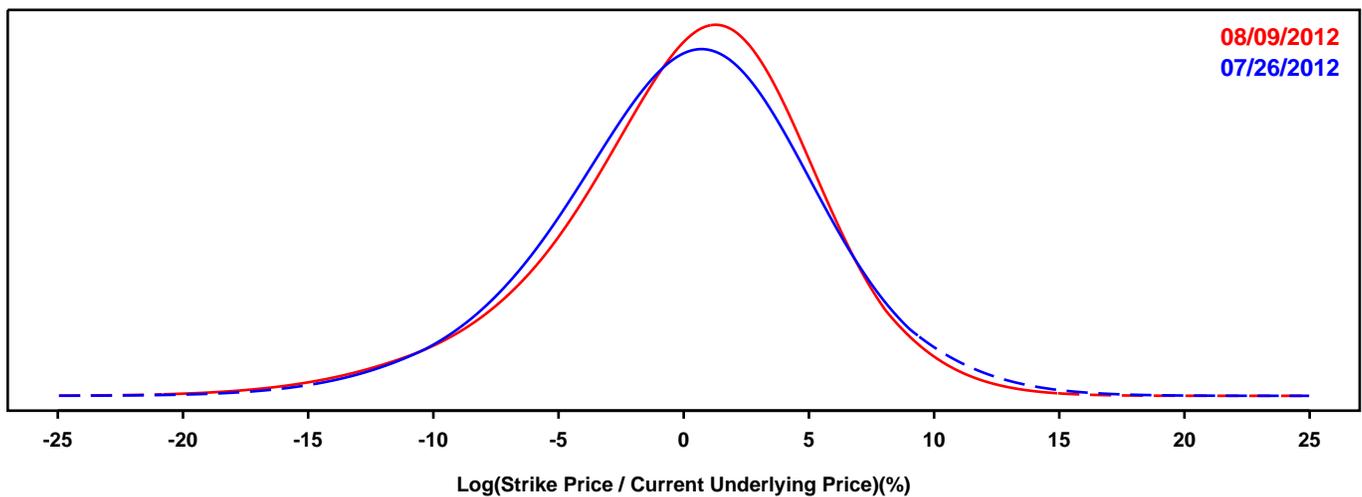derived from options that expire in approximately 3 months.*

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

08/09/2012
07/26/2012

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

Risk Neutral PDF of the Log Return Distribution

08/09/2012
07/26/2012

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

Probability of a Large Change

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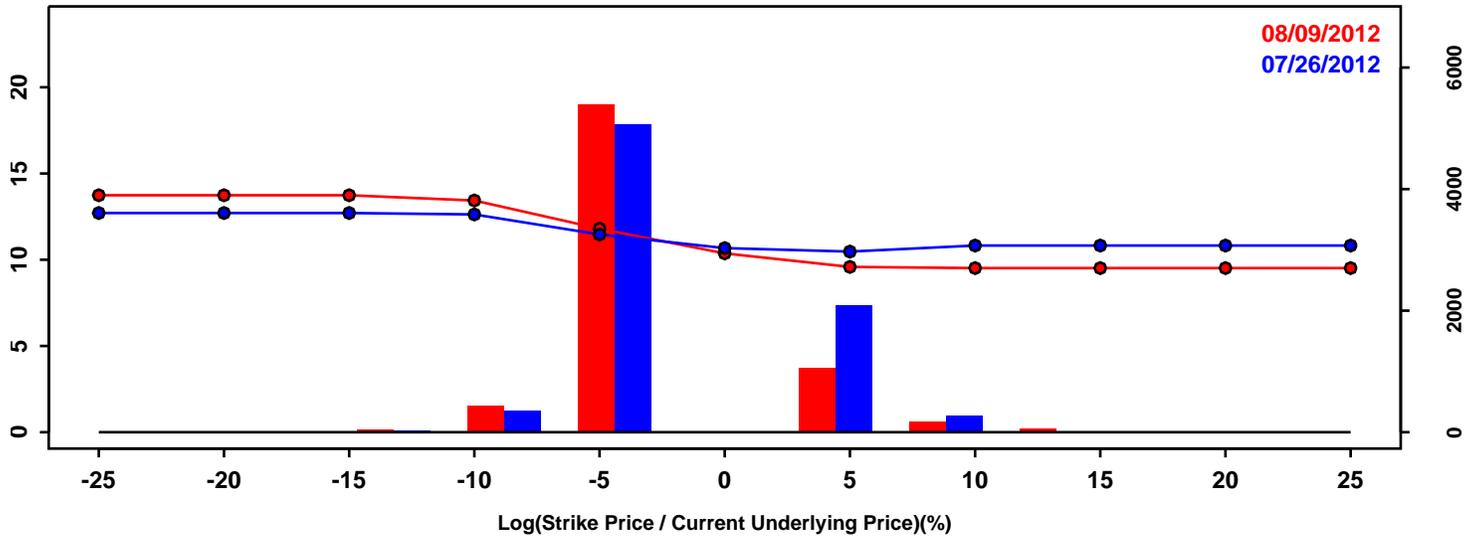
Statistics of the Log Return Distributions

	07/26/2012	08/09/2012	Change
10th Pct	-6.71%	-6.74%	-0.03%
50th Pct	0.33%	0.55%	0.21%
90th Pct	6.55%	6.18%	-0.37%
Mean	0.12%	0.09%	-0.03%
Std Dev	5.32%	5.22%	-0.10%
Skew	-0.23	-0.53	-0.30
Kurtosis	0.45	0.78	0.33

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

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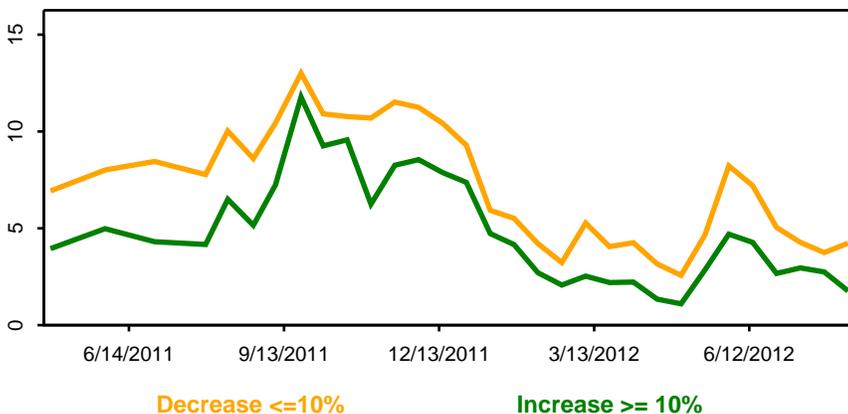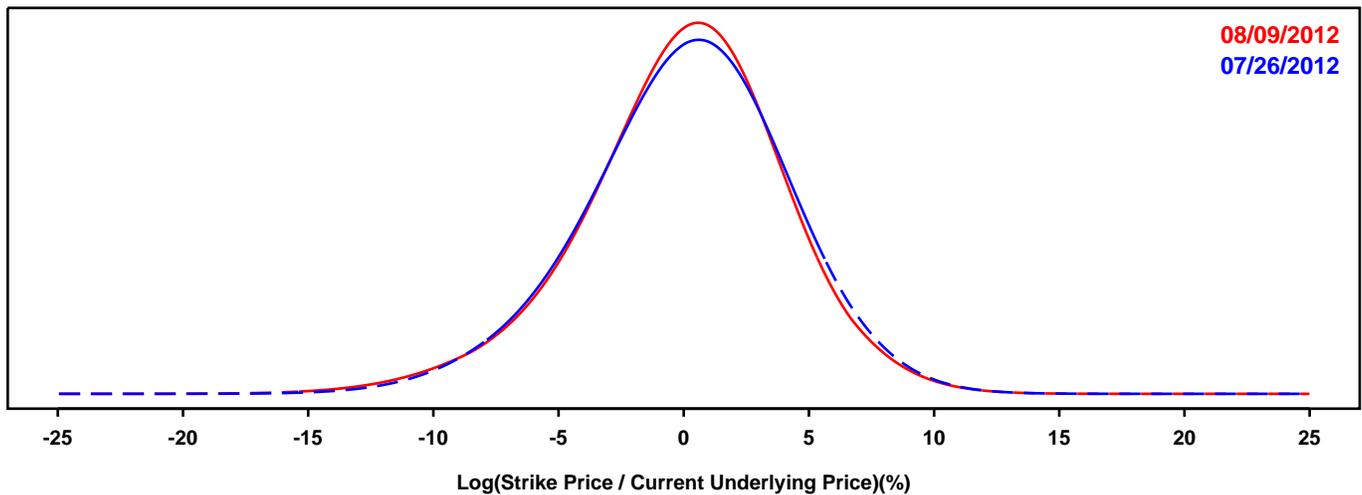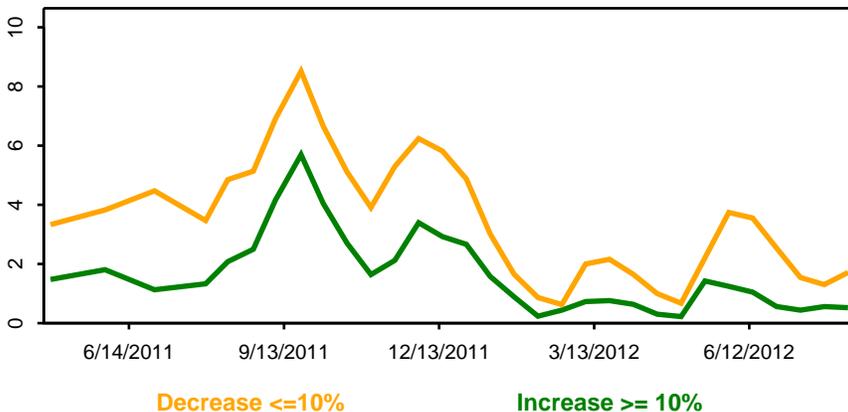*derived from options that expire in approximately 3 months.*

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

08/09/2012
07/26/2012

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

Risk Neutral PDF of the Log Return Distribution

08/09/2012
07/26/2012

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

Probability of a Large Change

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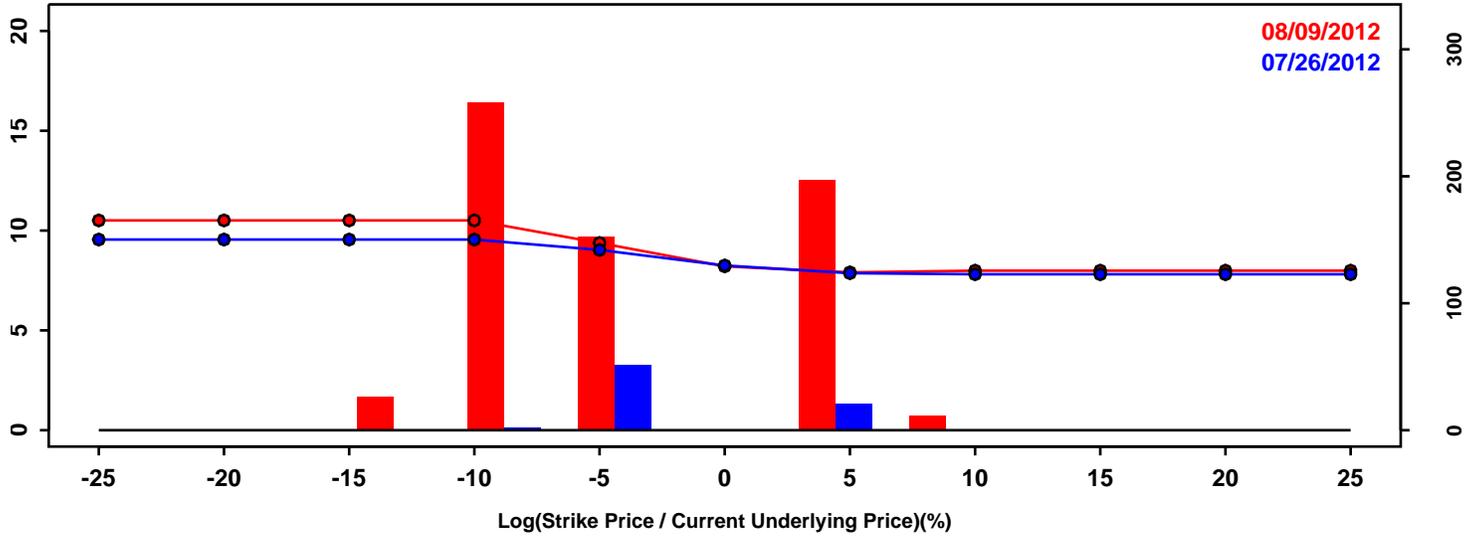
Statistics of the Log Return Distributions

	07/26/2012	08/09/2012	Change
10th Pct	-5.26%	-5.31%	-0.05%
50th Pct	0.27%	0.20%	-0.07%
90th Pct	5.15%	4.90%	-0.25%
Mean	0.11%	-0.02%	-0.14%
Std Dev	4.12%	4.11%	-0.01%
Skew	-0.26%	-0.37	-0.11
Kurtosis	0.28	0.64	0.36

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

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

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

Risk Neutral PDF of the Log Return Distribution
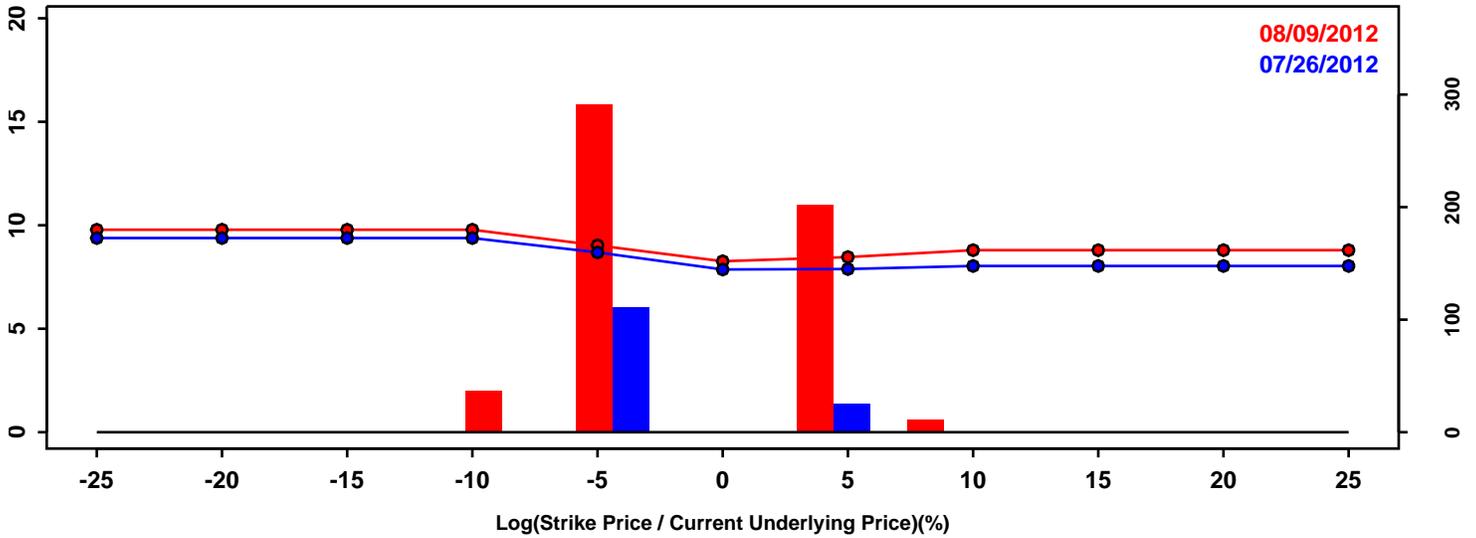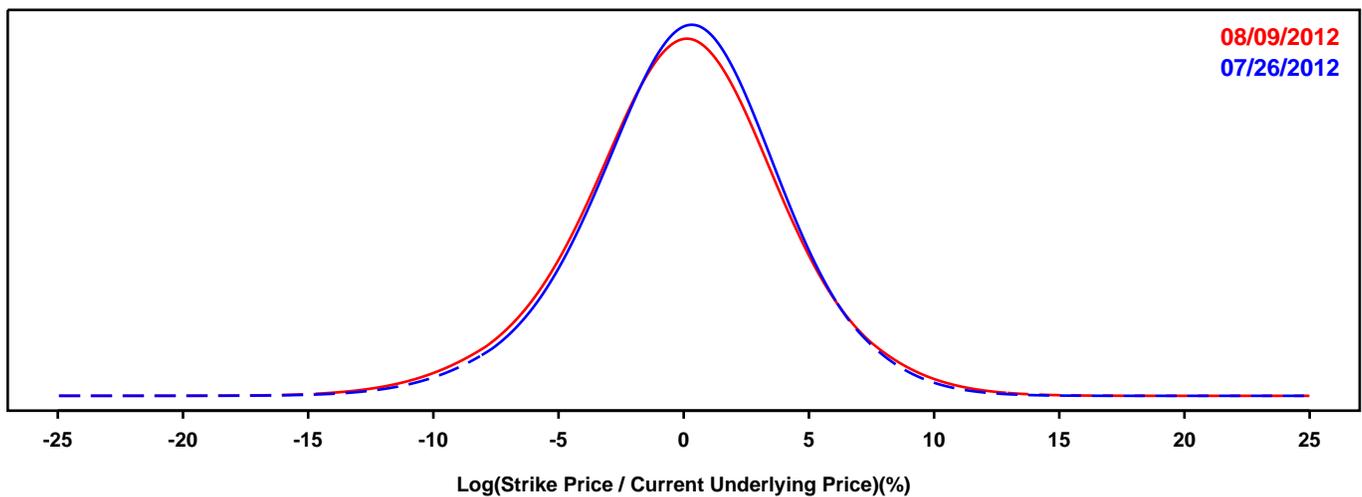

Probability of a Large Change

Decrease <=10%   **Increase >= 10%**

Statistics of the Log Return Distributions

	07/26/2012	08/09/2012	Change
10th Pct	-4.92%	-5.27%	-0.36%
50th Pct	0.13%	0.00%	-0.13%
90th Pct	4.89%	5.01%	0.12%
Mean	0.09%	-0.05%	-0.14%
Std Dev	3.92%	4.12%	0.20%
Skew	-0.19	-0.14	0.04
Kurtosis	0.46	0.52	0.06

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- CORN FUTURES

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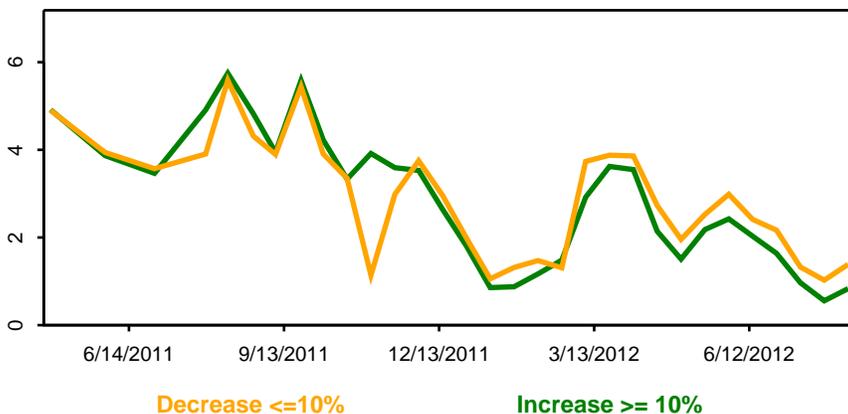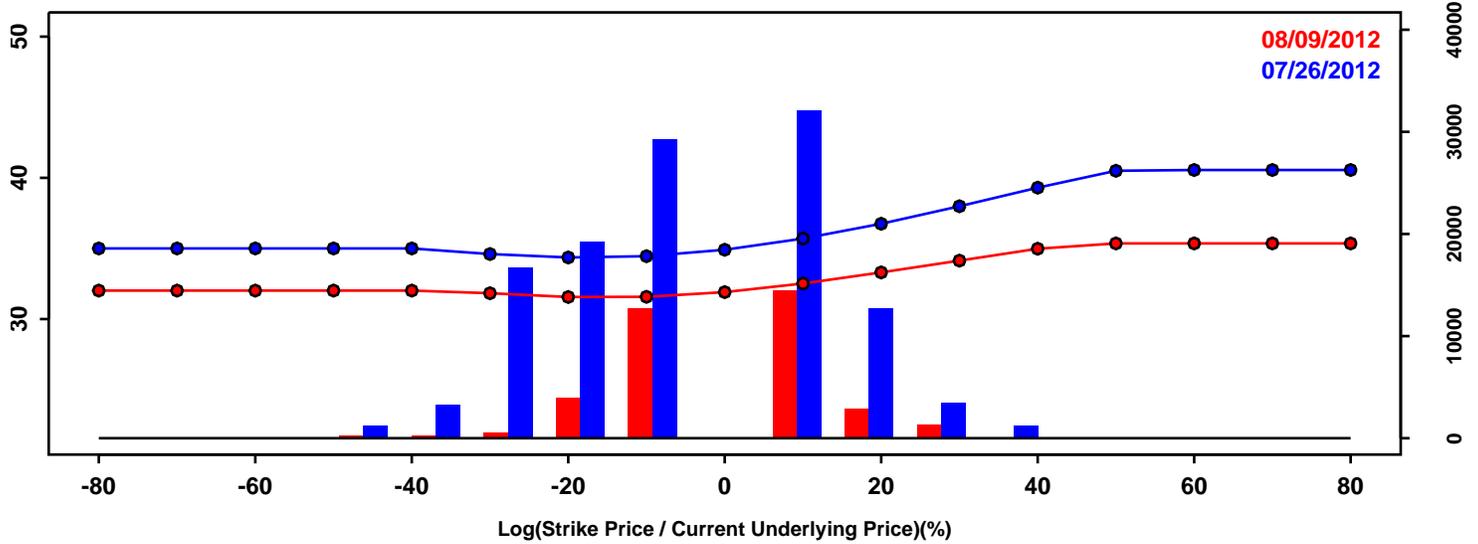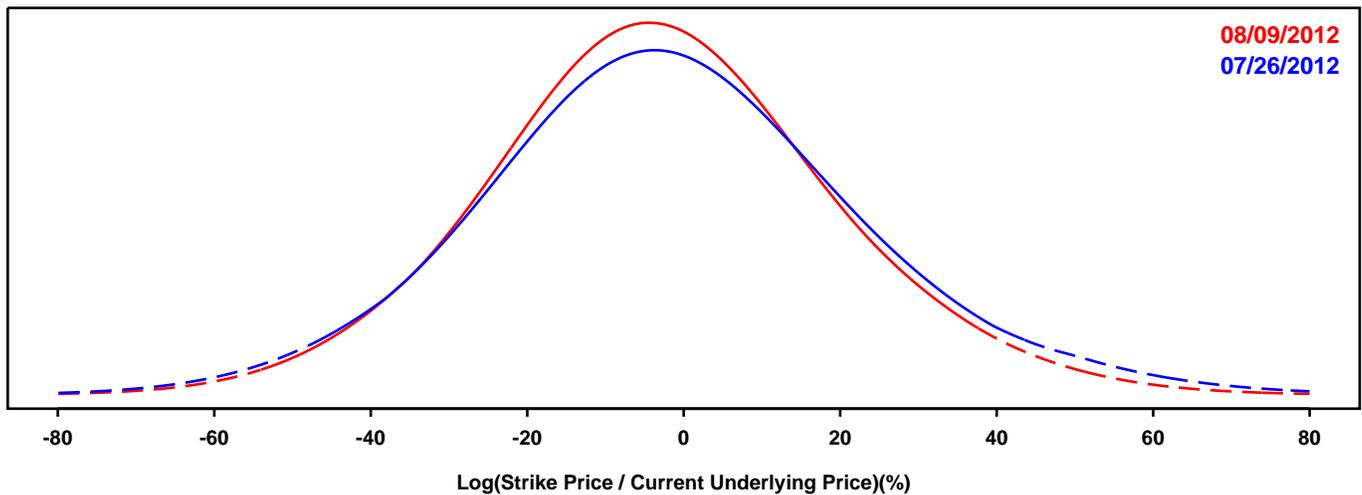derived from options that expire in approximately 6 months.*

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

08/09/2012
07/26/2012

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

Risk Neutral PDF of the Log Return Distribution

08/09/2012
07/26/2012

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

Probability of a Large Change

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

Statistics of the Log Return Distributions

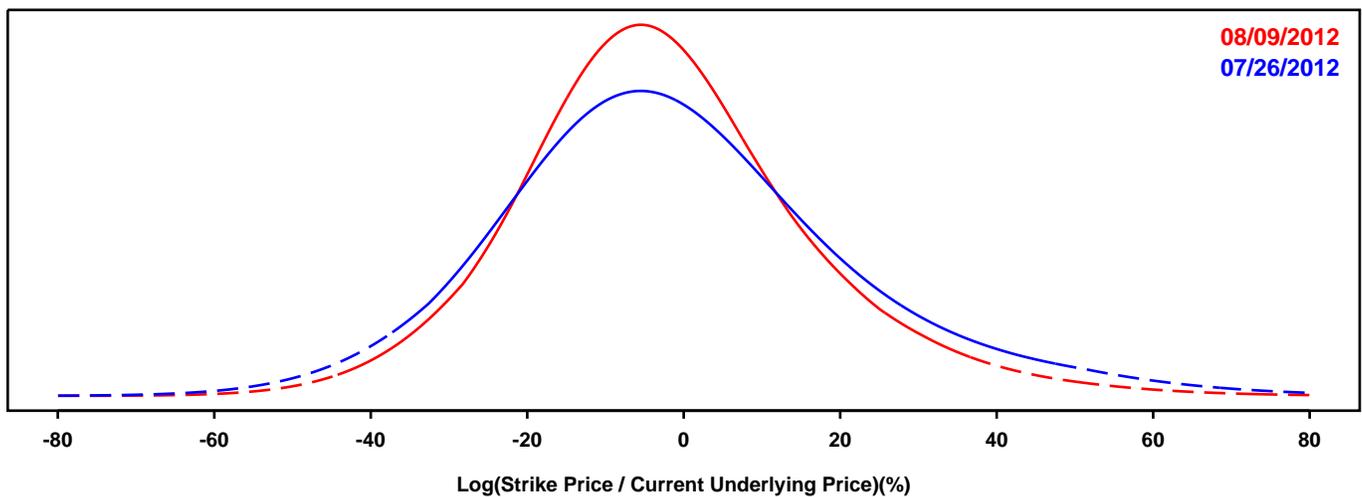|	07/26/2012	08/09/2012	Change
10th Pct	-31.91%	-30.95%	0.95%
50th Pct	-2.29%	-3.43%	-1.13%
90th Pct	29.80%	25.82%	-3.98%
Mean	-1.52%	-2.92%	-1.40%
Std Dev	24.60%	22.39%	-2.21%
Skew	0.19	0.11	-0.08
Kurtosis	0.38	0.23	-0.15

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- SOYBEAN FUTURES

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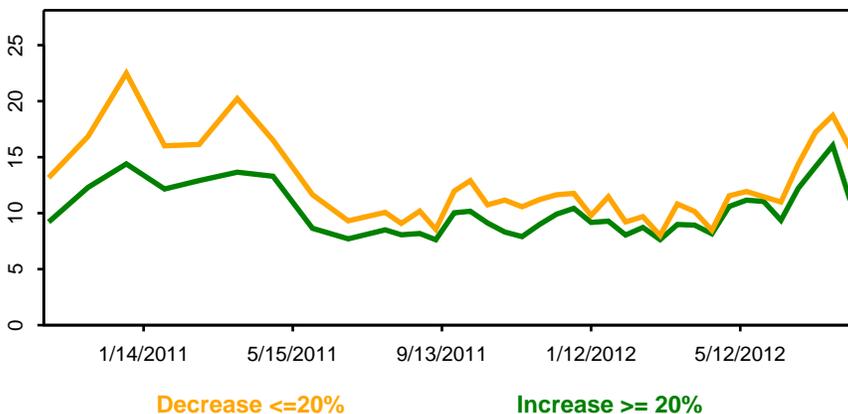*derived from options that expire in approximately 6 months.*

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

08/09/2012
07/26/2012

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

Risk Neutral PDF of the Log Return Distribution

08/09/2012
07/26/2012

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

Probability of a Large Change

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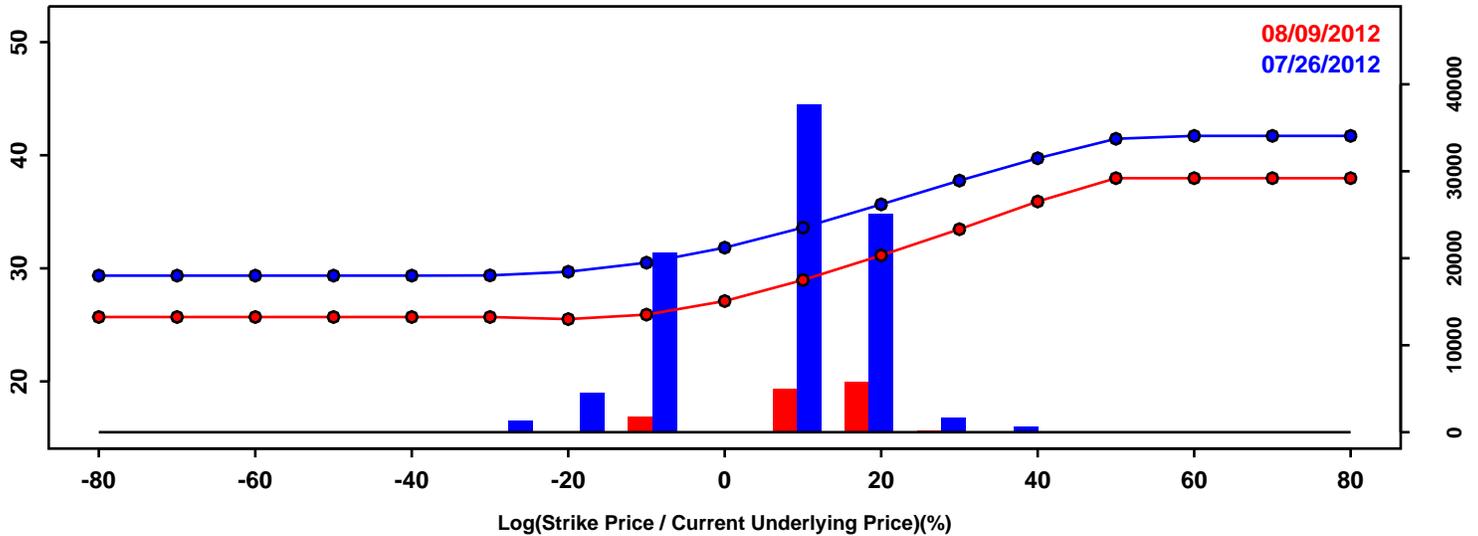
Statistics of the Log Return Distributions

	07/26/2012	08/09/2012	Change
10th Pct	-27.65%	-24.79%	2.87%
50th Pct	-2.81%	-3.74%	-0.93%
90th Pct	28.34%	21.52%	-6.82%
Mean	-0.93%	-2.46%	-1.53%
Std Dev	22.65%	18.83%	-3.82%
Skew	0.51	0.45	-0.06
Kurtosis	0.76	0.85	0.09

RISK NEUTRAL PROBABILITY DENSITY FUNCTIONS -- WHEAT FUTURES

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

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

Risk Neutral PDF of the Log Return Distribution
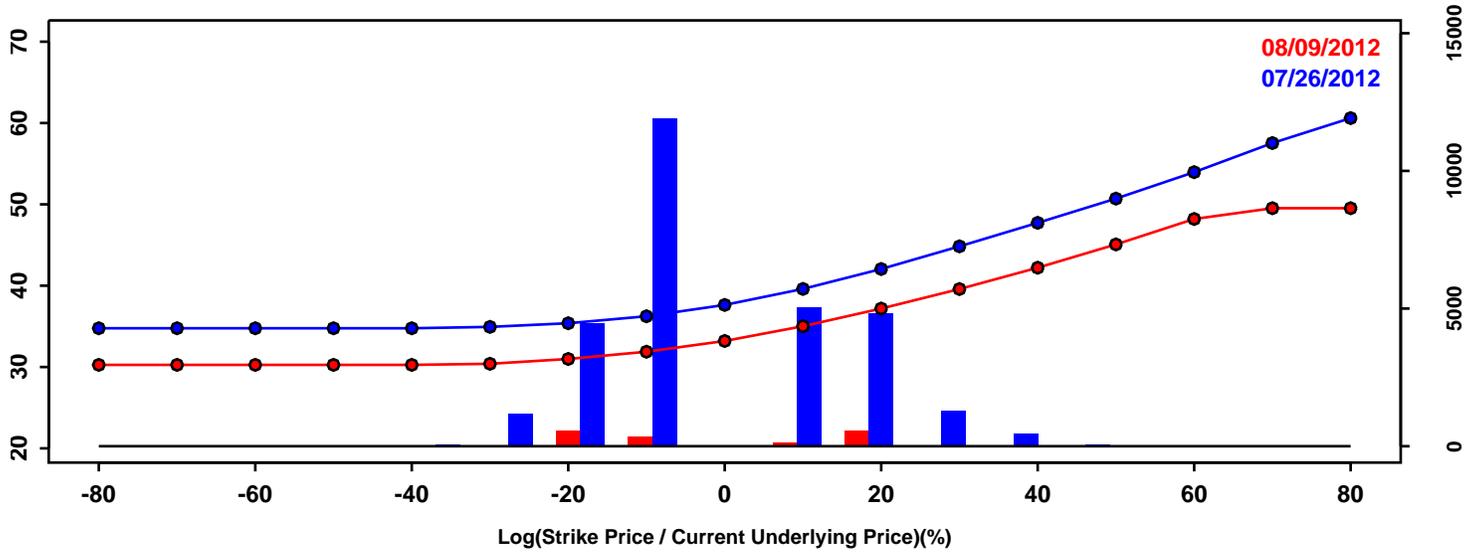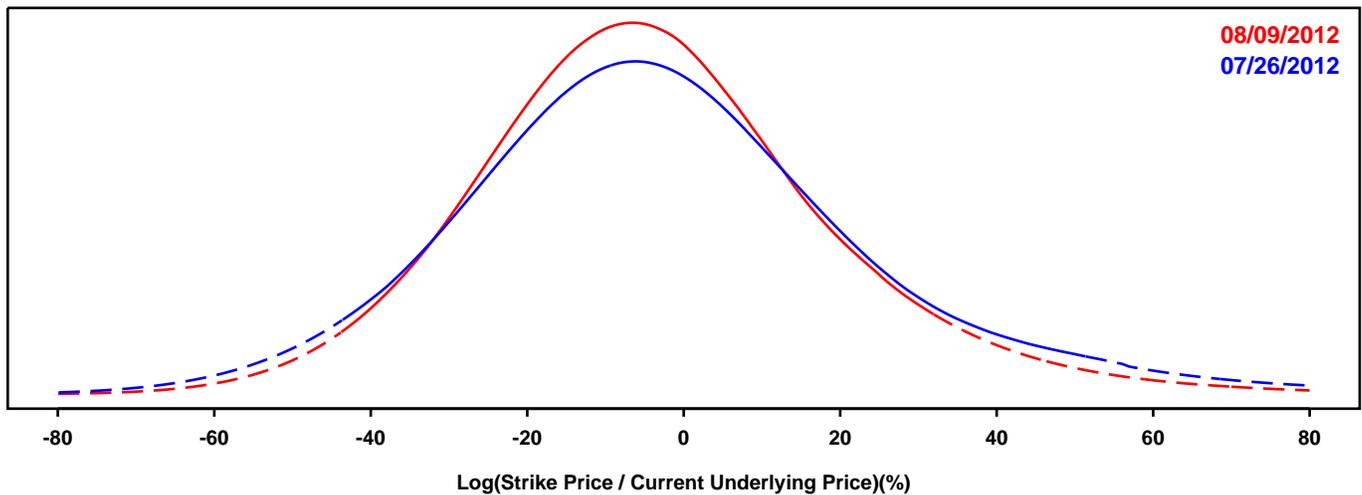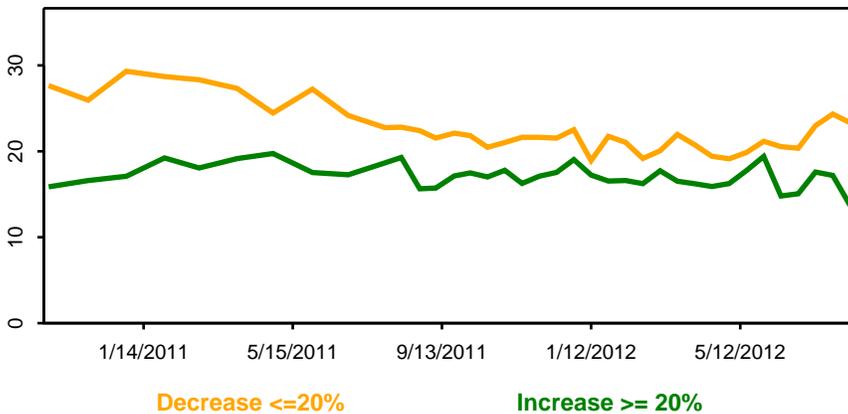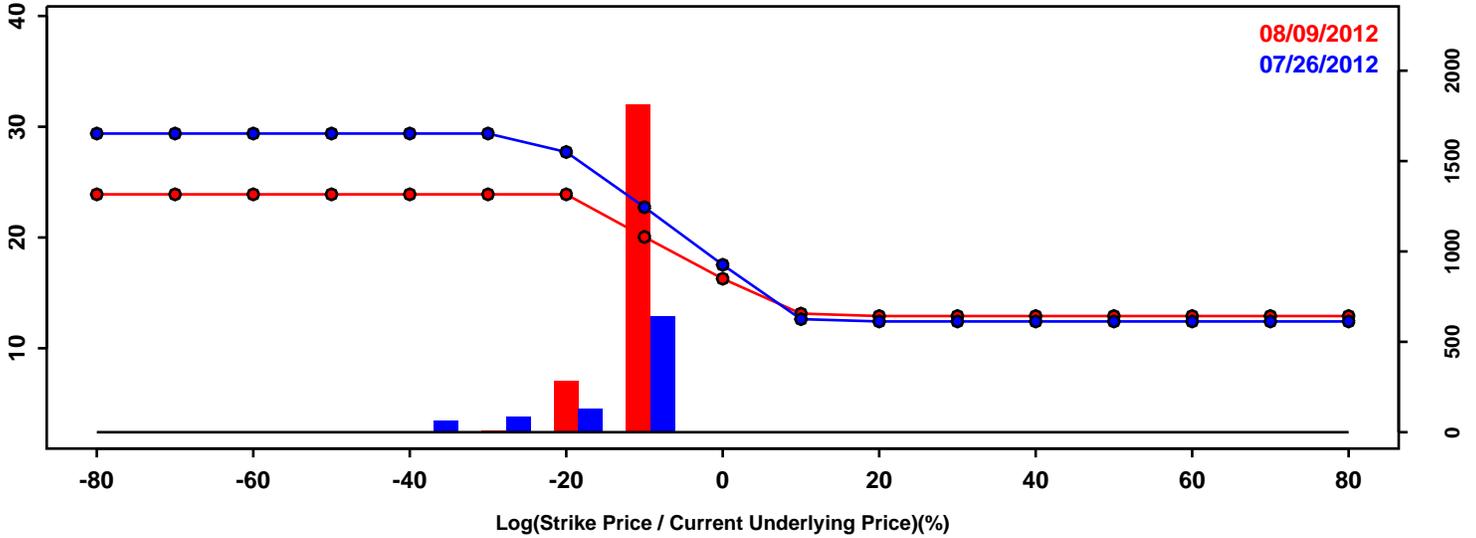

Probability of a Large Change

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

Statistics of the Log Return Distributions

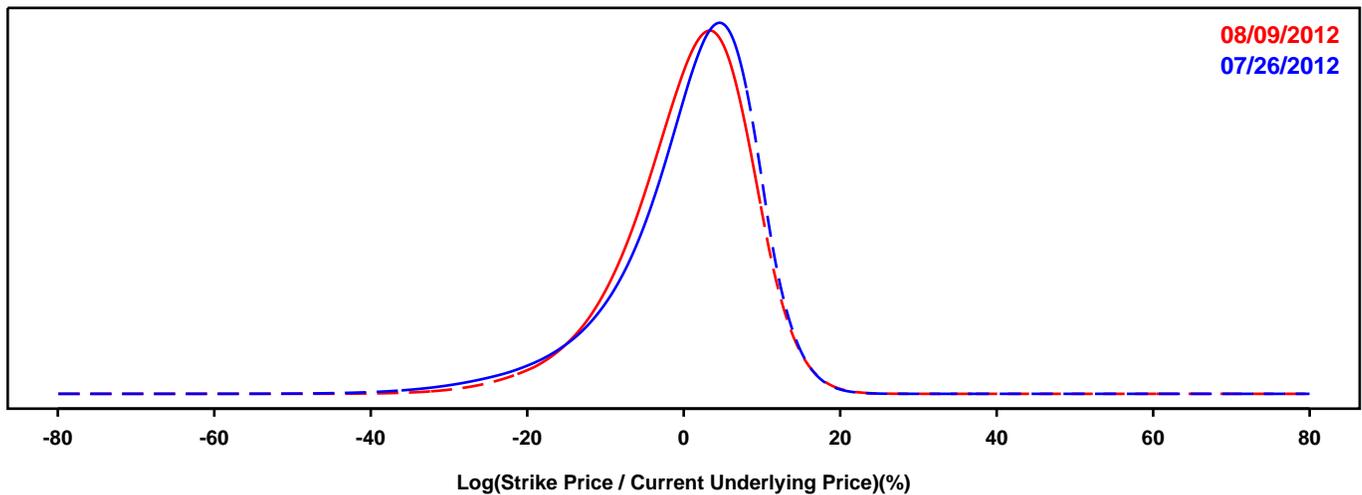|	07/26/2012	08/09/2012	Change
10th Pct	-33.57%	-31.31%	2.26%
50th Pct	-4.23%	-5.24%	-1.00%
90th Pct	31.06%	25.22%	-5.84%
Mean	-2.31%	-3.86%	-1.55%
Std Dev	26.50%	22.76%	-3.75%
Skew	0.54	0.41	-0.13
Kurtosis	0.98	0.62	-0.36

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
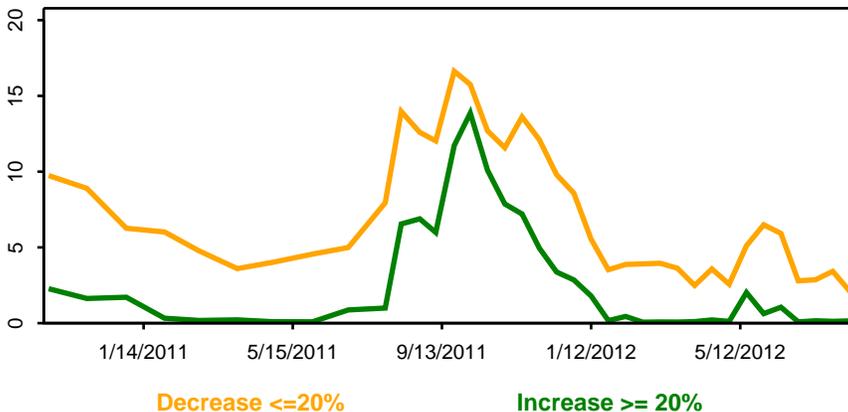*derived from options that expire in approximately 3 months.*

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

08/09/2012
07/26/2012

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

Risk Neutral PDF of the Log Return Distribution

08/09/2012
07/26/2012

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

Probability of a Large Change

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

Statistics of the Log Return Distributions

	07/26/2012	08/09/2012	Change
10th Pct	-11.20%	-10.33%	0.87%
50th Pct	2.19%	1.48%	-0.71%
90th Pct	10.03%	9.70%	-0.33%
Mean	0.59%	0.47%	-0.12%
Std Dev	9.00%	8.19%	-0.81%
Skew	-1.18	-0.79	0.39
Kurtosis	2.22	1.17	-1.05