

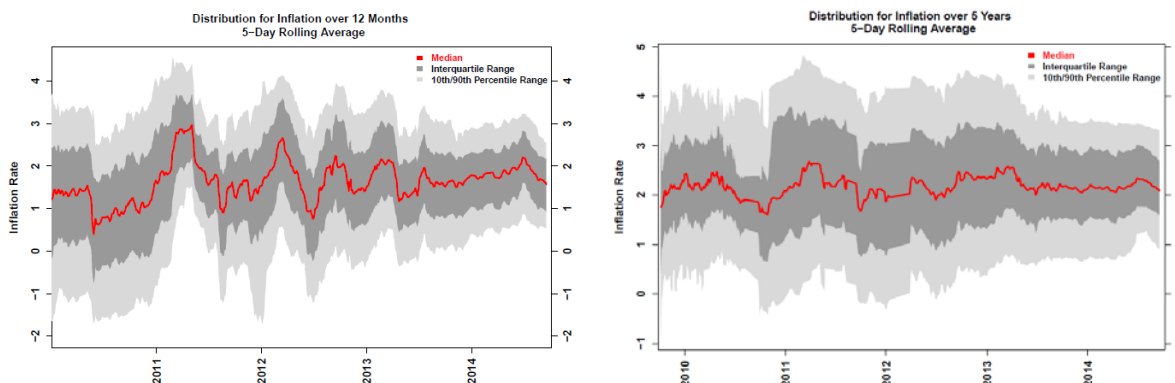
FEDERAL RESERVE BANK OF MINNEAPOLIS
BANKING AND POLICY STUDIES

Minneapolis Options Report – September 19th

Risk neutral expectations for inflation at or above the Fed’s 2% target continue to decline. Bank and insurance company MPD standard deviations increased over the past two weeks suggesting a higher risk of tail events. Options trading was active for exchange rate futures last week. In particular, MPDs derived from options on dollar-pound futures exhibited market concerns about downside risk ahead of the Scottish independence vote.

Inflation

Inflation expectations derived from CPI caps and floors declined for all expiries. The median expected inflation rate over the next 12 months declined 22 basis points to 1.47% over the last two weeks. The decline was similar for the median inflation rates derived from caps and floors with two and five year expiries. The declines were 16 and 11 basis points respectively. The risk-neutral probability of inflation below 1% has increased to 31% over the next 12 months and 23% over the next two years. The risk-neutral probability of inflation above 3% over the next two years is now 8%, a four year low.

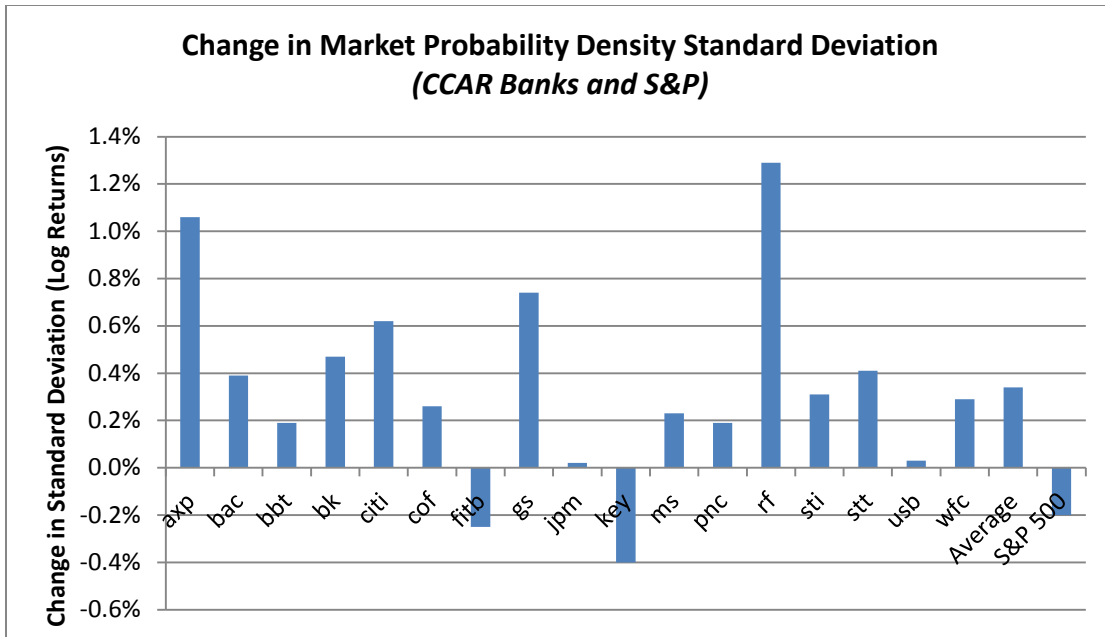


Interest rates

The ten year treasury rate MPD is largely unchanged relative to two weeks ago. Spot prices decreased slightly (interest rates increased) over the last two weeks. The skew decreased and is negative indicating bias toward higher interest rates.

Banks and Insurance Companies

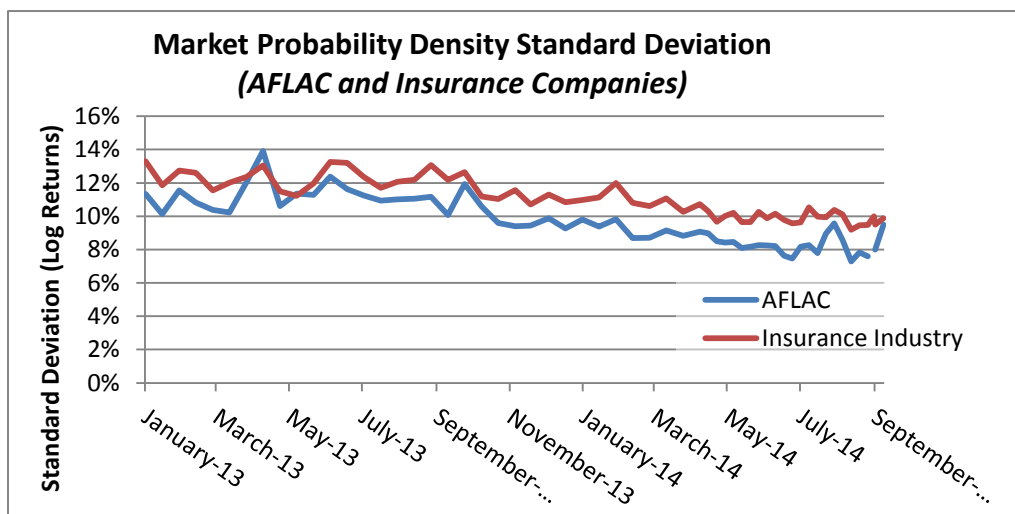
Options trading on financial equity securities with 6 months to expiry showed generally higher volumes relative to the last report. MPD standard deviations for banks generally rose even as share prices did likewise. This is in contrast to the MPD standard deviation derived from options on the S&P 500 index which declined slightly. The MPD standard deviations for most banks remain low relative to standard deviations measured over the last 4 years.



The average insurance company shares underperformed banks by about 180 basis points over the past two weeks. Like the bank MPDs, insurance company MPD standard deviations were mostly higher.

Additional Details:

The MPD standard deviation derived from options on AFLAC experienced a large increase on high volume last week. The standard deviation for AFLAC moved closer to the industry median. This is notable in that the property and casualty firms tend to exhibit less tail risk than the median. Our data indicated a similar increase to the MPD standard deviation based on PGR options, another property and casualty company.

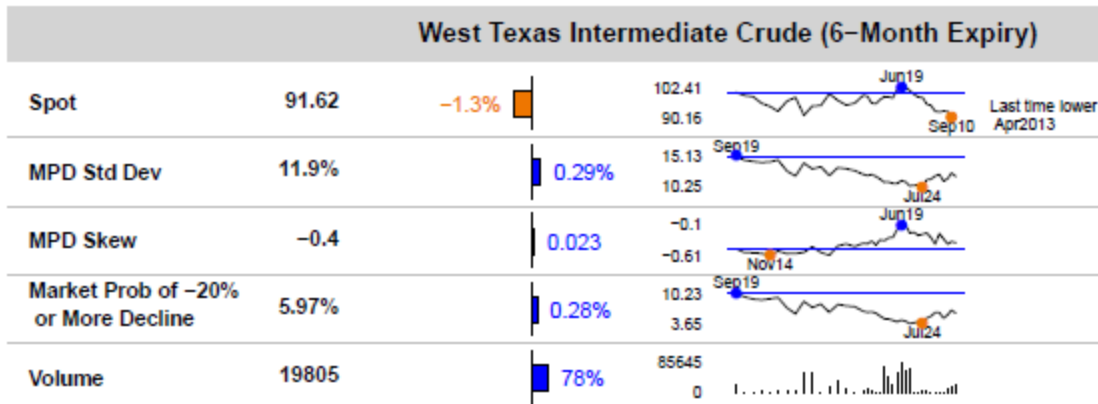


Other Commodity Markets

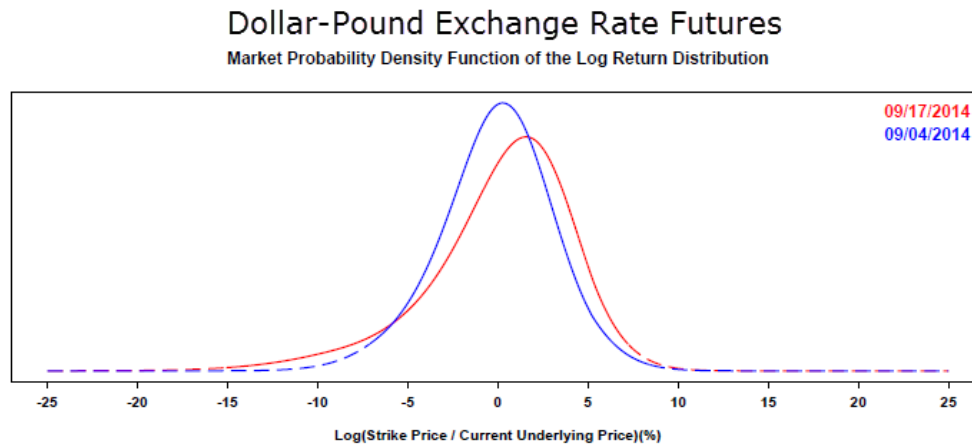
Trading volumes were low in most commodity markets we track and spot prices declined in each of the markets we follow. Tail risks as measured by MPD standard deviations were higher with the exception of the grain markets.

Additional details:

- Spot prices declined meaningfully for corn, soybeans, and wheat futures over the past two weeks (-1.5%, -1.9%, and -6.1% respectively) where they stand at five year lows. Risk-neutral probabilities of large downside price moves are also near five year lows suggesting limited expectation of additional large declines.
- Spot prices on 6 month gold futures dropped -2.4% and spot prices on 6 month silver futures dropped -2.1% over the past two weeks. At the same time, the skews derived from MPDs related to the options on these futures also declined indicating increased market based expectations for even lower prices.
- As oil prices continue to decline, the standard deviation of the MPD derived from options on WTI crude futures has increased. Though this tends to indicate increased tail risk, the current absolute level of tail risk remains historically low.



- The standard deviation of the MPD derived from options on dollar-pound futures increased 92 basis points. The MPD skew declined to the lowest level we have measured over the last 4 years. These large changes are occurred on high volume and likely reflect market uncertainty surrounding the independence vote in Scotland. Volumes were more concentrated at out of the money strikes favoring a stronger dollar. The changes in the shape of the MPD indicate increased down side risk to the pound



Inflation MPD Statistics as of September 17, 2014

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Inflation (1-Year Expiry)				
Median	1.47%	-0.22%		
MPD Std Dev	0.84%	0.01%		
MPD Skew	-0.38	0.12		
Market Prob of Less Than 1% Inflation	30.68%	6.4%		
Market Prob of More Than 3% Inflation	4.15%	-1.9%		
Inflation (2-Year Expiry)				
Median	1.73%	-0.16%		
MPD Std Dev	0.89%	-0.002%		
MPD Skew	-0.11	0.017		
Market Prob of Less Than 1% Inflation	22.86%	5.4%		
Market Prob of More Than 3% Inflation	7.78%	-3.3%		
Inflation (5-Year Expiry)				
Median	2.04%	-0.11%		
MPD Std Dev	0.94%	-0.015%		
MPD Skew	0.02	-0.042		
Market Prob of Less Than 1% Inflation	12.65%	2.5%		
Market Prob of More Than 3% Inflation	15.35%	-4%		

Equity, Bond, and Index MPD Statistics as of September 17, 2014

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
S&P 500 (6-Month Expiry)				
Spot	2001.57	0.2%		
MPD Std Dev	9.87%	-0.2%		
MPD Skew	-1.26	-0.063		
Market Prob of -20% or More Decline	4.75%	-0.29%		
Volume	41720	34%		
S&P 500 (12-Month Expiry)				
Spot	2001.57	0.2%		
MPD Std Dev	15.08%	-0.39%		
MPD Skew	-1.29	-0.067		
Market Prob of -20% or More Decline	10.02%	-0.73%		
Volume	24001	-21%		
10 Year Treasury (3-Month Expiry)				
Spot	124.05	-0.75%		
MPD Std Dev	2.42%	-0.0026%		
MPD Skew	-0.17	-0.11		
Market Prob of -5% or More Decline	2.7%	0.18%		
Volume	273618	14%		
iShares US Real Estate Index (3-Month Expiry)				
Spot	71.43	-3.6%		
MPD Std Dev	7.14%	1.5%		
MPD Skew	-0.87	0.009		
Market Prob of -10% or More Decline	9.39%	3.2%		
Volume	35170	97%		

Exchange Rate MPD Statistics as of September 17, 2014

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Dollar-Euro Futures (3-Month Expiry)				
Spot	1.29	-0.18%		
MPD Std Dev	3.51%	0.11%		
MPD Skew	-0.17	0.074		
Market Prob of -10% or More Decline	0.51%	0.069%		
Volume	24574	-41%		
Dollar-Pound Futures (3-Month Expiry)				
Spot	162.79	-0.24%		
MPD Std Dev	4.13%	0.92%		
MPD Skew	-0.92	-0.67		
Market Prob of -10% or More Decline	2.54%	2.2%		
Volume	16875	91%		
Dollar-Yen Futures (3-Month Expiry)				
Spot	92.66	-2.6%		
MPD Std Dev	4.03%	0.4%		
MPD Skew	0.09	-0.016		
Market Prob of -10% or More Decline	0.83%	0.44%		
Volume	14260	74%		

Metal and Energy Commodity MPD Statistics as of September 17, 2014

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Gold (6-Month Expiry)				
Spot	1236.8	-2.4%		
MPD Std Dev	10.43%	1%		
MPD Skew	-0.32	-0.25		
Market Prob of -20% or More Decline	3.99%	1.6%		
Volume	7995	150%		
Silver (6-Month Expiry)				
Spot	18.78	-2.1%		
MPD Std Dev	13.63%	0.18%		
MPD Skew	-0.11	-0.1		
Market Prob of -20% or More Decline	7.66%	0.11%		
Volume	2370	41%		
West Texas Intermediate Crude (6-Month Expiry)				
Spot	91.62	-1.3%		
MPD Std Dev	11.9%	0.29%		
MPD Skew	-0.4	0.023		
Market Prob of -20% or More Decline	5.97%	0.28%		
Volume	19805	78%		

Agricultural Commodity MPD Statistics as of September 17, 2014

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Corn (6-Month Expiry)				
Spot	354	-1.5%	513.25 354 47 month low	354 823.75 last 47 months
MPD Std Dev	14.45%	-1.1%	21.43 12.43 Apr03 Jan23	14.45 29.14 last 47 months
MPD Skew	0.01	0.033	0.31 -0.12 Jun26 Jan09	0.01 0.36 last 47 months
Market Prob of -20% or More Decline	8.95%	-1.8%	18.97 5.73 Apr03 Jan23	8.95 29.69 last 47 months
Volume	53360	4.5%	216660 0	53360 472954 last 47 months
Soybeans (6-Month Expiry)				
Spot	998.75	-1.9%	1331.75 998.75 47 month low	998.75 1691.25 last 47 months
MPD Std Dev	12.54%	-1.3%	15.76 10.93 Apr17 Jan23	12.54 23.07 last 47 months
MPD Skew	-0.31	0.055	0.17 -0.38 Apr03 Aug28	-0.31 0.75 last 47 months
Market Prob of -20% or More Decline	6.65%	-2.1%	10.49 4.07 Apr17 Jan23	6.65 22.49 last 47 months
Volume	17875	13%	238213 0	17875 326132 last 47 months
Wheat (6-Month Expiry)				
Spot	516.25	-6.1%	743.75 516.25 47 month low	516.25 930 last 47 months
MPD Std Dev	14.56%	-0.81%	21.56 12.95 Mar20 Dec12	14.56 28.19 last 47 months
MPD Skew	0.15	0.006	0.4 0.03 Oct03 Jun12	0.15 0.54 last 47 months
Market Prob of -20% or More Decline	9.05%	-1.6%	19.59 5.67 Mar20 Dec12	9.05 29.32 last 47 months
Volume	5808	40%	46977 0	5808 51689 last 47 months
Cattle (3-Month Expiry)				
Spot	160.62	2.5%	161.4 129.05 14 month high	129.05 161.4 last 14 months
MPD Std Dev	6.17%	-0.39%	7.6 3.6 Aug14 Jan09	6.17 7.6 last 14 months
MPD Skew	-0.52	-0.075	-0.17 -0.94 May08 Jan09	-0.52 -0.17 last 14 months
Market Prob of -5% or More Decline	18.96%	-1.9%	24.31 8.46 Aug14 Jan09	18.96 24.31 last 14 months
Volume	11300	19%	33850 0	11300 33850 last 14 months

Bank MPD Statistics as of September 17, 2014

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
MPD Standard Deviation (3-Month Expiry)				
American Express	9.09%	1.1%		48 month low 7.82 9.09 24.05 last 48 months
Bank of America	10.78%	0.39%		48 month low 10.22 10.78 44.07 last 48 months
BB&T	8.1%	0.19%		48 month low 7.29 8.1 27.58 last 48 months
Barclays	13.24%	1.1%		48 month low 12.11 13.24 42.39 last 48 months
Bank of NY Mellon	9.39%	0.47%		48 month low 7.88 9.39 27.34 last 48 months
Citigroup	9.71%	0.62%		48 month low 8.52 9.71 33.38 last 48 months
Capital One	8.62%	0.26%		48 month low 7.72 8.62 29.49 last 48 months
Credit Suisse	13.67%	1.7%		48 month low 9.84 13.67 34.13 last 48 months
Deutsche Bank	12.43%	-0.099%		48 month low 11.33 12.43 41.68 last 48 months
Fifth Third	9.32%	-0.25%		48 month low 8.21 9.32 30.73 last 48 months
Goldman Sachs	9.34%	0.74%		48 month low 8.23 9.34 31.2 last 48 months
JP Morgan	8.76%	0.025%		48 month low 7.41 8.76 30.37 last 48 months
Keycorp	11.06%	-0.4%		48 month low 9.76 11.06 35.48 last 48 months
Morgan Stanley	11.24%	0.23%		48 month low 10.11 11.24 41.77 last 48 months
PNC Financial	7.79%	0.19%		48 month low 7.45 7.79 26.31 last 48 months
Regions Financial	12.23%	1.3%		48 month low 10.57 12.23 39.37 last 48 months
SunTrust	10.32%	0.31%		48 month low 8.87 10.32 34.43 last 48 months
State Street	9.14%	0.41%		48 month low 8.73 9.14 27.95 last 48 months
UBS	10.86%	0.61%		48 month low 10.04 10.86 39.87 last 48 months
US Bancorp	7.41%	0.026%		48 month low 6.58 7.41 26.01 last 48 months
Wells Fargo	7.72%	0.29%		48 month low 7.16 7.72 28.37 last 48 months

Bank MPD Statistics as of September 17, 2014

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
MPD Skew (3-Month Expiry)				
American Express	-0.48	-0.11		
Bank of America	-0.25	0.065		
BB&T	-0.59	0.0077		
Barclays	-0.75	-0.2		
Bank of NY Mellon	-0.6	-0.091		
Citigroup	-0.49	0.048		
Capital One	-0.77	-0.3		
Credit Suisse	0.68	0.38		
Deutsche Bank	-0.58	-0.033		
Fifth Third	-0.64	-0.37		
Goldman Sachs	-0.78	-0.19		
JP Morgan	-0.66	-0.14		
Keycorp	-1.34	-0.84		
Morgan Stanley	-0.6	-0.045		
PNC Financial	-0.78	-0.4		
Regions Financial	-0.37	-0.088		
SunTrust	-0.77	-0.14		
State Street	-0.68	-0.13		
UBS	-0.54	-0.54		
US Bancorp	-0.86	0.09		
Wells Fargo	-0.76	-0.13		

Bank MPD Statistics as of September 17, 2014

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Market Probability of -20% or More Decline (3-Month Expiry)				
American Express	3.01%	1.4%		48 month low
Bank of America	4.07%	0.17%		
BB&T	2.3%	0.12%		48 month low
Barclays	6.94%	1.4%		48 month low
Bank of NY Mellon	3.57%	0.88%		
Citigroup	3.26%	0.47%		
Capital One	2.72%	0.63%		
Credit Suisse	5.81%	0.82%		
Deutsche Bank	6.76%	-0.29%		
Fifth Third	3.27%	0.027%		
Goldman Sachs	3.45%	1.2%		
JP Morgan	2.8%	0.0054%		
Keycorp	4.31%	-0.72%		
Morgan Stanley	5.52%	0.39%		48 month low
PNC Financial	1.96%	0.52%		48 month low
Regions Financial	6.01%	1.2%		Last time lower Jan2013
SunTrust	4.38%	0.4%		
State Street	2.69%	0.46%		48 month low
UBS	4.07%	0.94%		48 month low
US Bancorp	1.58%	0.021%		
Wells Fargo	2%	0.55%		

Bank MPD Statistics as of September 17, 2014

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Volume (3-Month Expiry)				
American Express	5896	34%	11926 0	623 - 5896 - 23041 last 48 months
Bank of America	52492	60%	132589 0	7419 - 52492 - 363160 last 48 months
BB&T	777	-4.7%	6490 0	190 - 777 - 6903 last 48 months
Barclays	817	-93%	11011 0	29 - 817 - 15208 last 48 months
Bank of NY Mellon	264	-24%	15678 0	59 - 264 - 17091 last 48 months
Citigroup	5816	-18%	78527 0	1104 - 5816 - 284278 last 48 months
Capital One	517	-25%	9311 0	189 - 517 - 38646 last 48 months
Credit Suisse	25	-81%	4011 0	0 - 25 - 14201 last 48 months
Deutsche Bank	348	-80%	7411 0	62 - 348 - 29575 last 48 months
Fifth Third	1759	140%	15351 0	28 - 1759 - 19324 last 48 months
Goldman Sachs	11080	75%	21840 0	296 - 11080 - 43413 last 48 months
JP Morgan	5278	-17%	52517 0	943 - 5278 - 119246 last 48 months
Keycorp	572	-22%	2780 0	66 - 572 - 76270 last 48 months
Morgan Stanley	8239	180%	32137 0	327 - 8239 - 84281 last 48 months
PNC Financial	1007	59%	4810 0	118 - 1007 - 13224 last 48 months
Regions Financial	3217	780%	6989 0	20 - 3217 - 19649 last 48 months
SunTrust	1462	240%	4232 0	61 - 1462 - 13788 last 48 months
State Street	974	69%	5339 0	42 - 974 - 5370 last 48 months
UBS	40	-92%	2766 0	6 - 40 - 6502 last 48 months
US Bancorp	407	67%	5746 0	133 - 407 - 29201 last 48 months
Wells Fargo	17219	40%	121351 0	950 - 17219 - 167820 last 48 months

Insurance Company MPD Statistics as of September 17, 2014

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
MPD Standard Deviation (3-Month Expiry)				
Aflac	9.49%	1.9%	<p>11.93 7.29 Oct03 Aug21</p>	48 month low 7.29 9.49 28.3 last 48 months
AIG	9.53%	0.83%	<p>13.72 8.7 Oct03 Sep04</p>	48 month low 8.7 9.53 34.63 last 48 months
Allstate	7.7%	-0.38%	<p>11.13 5.83 Oct03 Aug28</p>	48 month low 5.83 7.7 22.82 last 48 months
Ameriprise	9.89%	-0.026%	<p>14.6 9.76 Sep19 Jun26</p>	48 month low 9.76 9.89 28.12 last 48 months
Chubb	6.78%	0.016%	<p>8.63 6.43 May29 Jul24</p>	48 month low 6.43 6.78 18.33 last 48 months
Hartford Financial	9.32%	0.3%	<p>13.99 8.68 Sep19 Jul31</p>	48 month low 8.68 9.32 34.59 last 48 months
Lincoln National	13.08%	0.53%	<p>15.84 10.28 Sep19 Aug28</p>	48 month low 10.28 13.08 35.56 last 48 months
Met Life	10.5%	0.3%	<p>13.71 10.08 Oct03 Jul24</p>	48 month low 10.08 10.5 31.28 last 48 months
Principal Financial	11.45%	-0.78%	<p>19.04 8.31 Nov14 Jun10</p>	48 month low 8.31 11.45 34.89 last 48 months
Progressive	10.45%	1.6%	<p>11.32 6.2 Jan09 Mar20</p>	48 month low 6.2 10.45 24.84 last 48 months
Prudential	10.49%	0.16%	<p>14.32 10.11 Oct03 Jul24</p>	48 month low 10.11 10.49 30.06 last 48 months

Insurance Company MPD Statistics as of September 17, 2014

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
MPD Skew (3-Month Expiry)				
Aflac	-0.39	0.22		
AIG	-0.51	0.012		
Allstate	-1.01	-0.2		
Ameriprise	-1.16	-0.51		
Chubb	-0.65	0.02		
Hartford Financial	-0.96	-0.52		
Lincoln National	-1.19	-0.46		
Met Life	-0.63	0.16		
Principal Financial	-1.6	0.025		
Progressive	-1.1	-0.096		
Prudential	-0.47	-0.047		

Insurance Company MPD Statistics as of September 17, 2014

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Market Probability of -20% or More Decline (3-Month Expiry)				
Aflac	3.09%	1.3%		
AIG	3.05%	0.5%		
Allstate	2.23%	-0.058%		
Ameriprise	3.83%	0.15%		
Chubb	1%	-0.12%		
Hartford Financial	3.53%	0.41%		
Lincoln National	7.64%	0.035%		
Met Life	4.34%	0.17%		
Principal Financial	6.37%	-3%		
Progressive	7.46%	3.1%		
Prudential	4.49%	0.23%		

Insurance Company MPD Statistics as of September 17, 2014

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Volume (3-Month Expiry)				
Aflac	13232	1200%	13232 0	541 22718 last 48 months
AIG	6612	200%	38744 0	432 103998 last 48 months
Allstate	138	-50%	5708 0	71 68926 last 48 months
Ameriprise	136	170%	1114 0	5 1317 last 48 months
Chubb	379	33%	2541 0	43 11114 last 48 months
Hartford Financial	289	-34%	13441 0	198 37285 last 48 months
Lincoln National	177	-39%	8403 0	51 10682 last 48 months
Met Life	11160	2200%	14685 0	319 161416 last 48 months
Principal Financial	2	-99%	306 0	2 3846 last 48 months
Progressive	0	-100%	680 0	0 4335 last 48 months
Prudential	1750	-60%	13225 0	222 13225 last 48 months