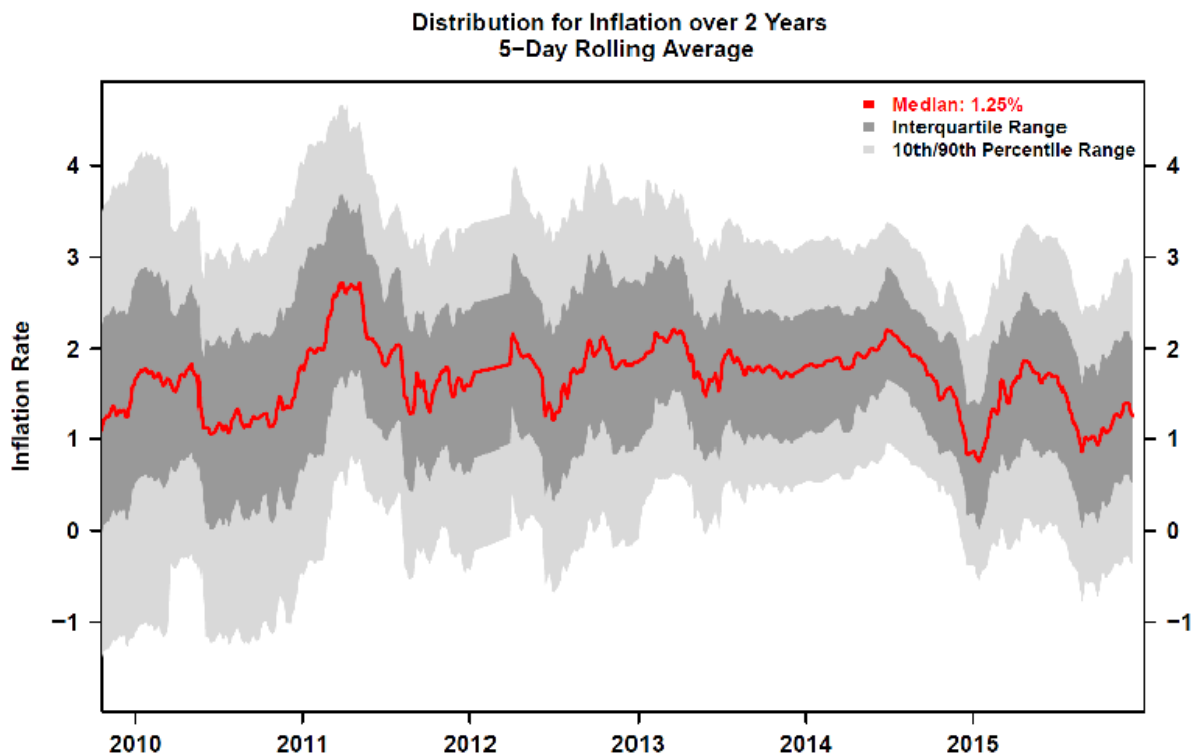


## Minneapolis Options Report – December 18<sup>th</sup>

Over the past two weeks, market-implied inflation expectations fell across all tenors we follow (1-, 2-, and 5-year periods) as market-based probability distribution (MPD) standard deviations and skews held steady for most inflation tenors. The S&P 500 returned -0.3% and its associated statistics were largely unchanged. The banking firms we follow, on average, outperformed the market with a 0.3% return, while insurance firms underperformed with a -3.1% return. All the currencies we follow, strengthened against the dollar, and notably the statistical skew for the USD-Yen pairing rose to a four year high signaling a comparatively stronger yen in the future. WTI crude lost -9.9% as higher market volatility added to increasing uncertainty as measured by MPD standard deviation.

### *Inflation*

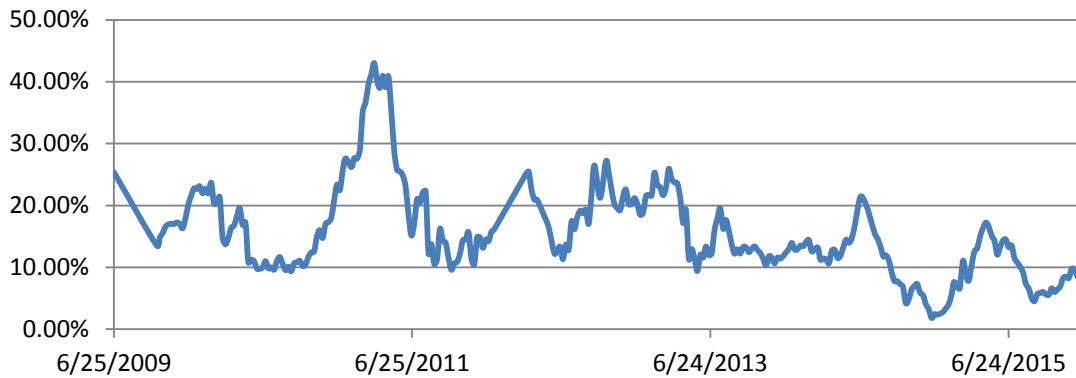
Market-based inflation expectations derived from caps and floors on the CPI for 1-, 2-, and 5-year periods rose over the 2-week period to 1.09%, 1.25% and 1.51%, respectively. This fall is best observed in the 2-year tenor, as inflation expectations have recently declined after a multi-month rise.



### Additional detail:

- The probability of low inflation (market probability of less than 1% inflation) remains elevated well above the upper quartile for the 4-year time series.
- The probability of high inflation (market probability of more than 3% inflation) for all tenors has decreased following steady gains. The 2-year tenor best captures this trend in the plot below.

## Market Probability of More Than 3% Inflation in Next 2 Years



### *Interest Rate*

Spot prices for all Treasury tenors fell over the two week period, and consequently yields rose. Though MPD skew for the 5-year Treasury experienced a large upward movement, its absolute level continues to signal a neutral bias towards long term rate levels. 3- and 5-year LIBOR tenors rose by 13 and 18 basis points respectively. Uncertainty, as measured by MPD standard deviation has steadily risen for the 5-year tenor since September 23, 2015. Statistical skew for the 3-year LIBOR tenor fell by 20%, closing close to its 4-year low; the measure remains biased towards higher future short term rates.

### *Banks and Insurance Companies*

The S&P 500 lost -0.3% over the past two weeks. The 19 bank firms we follow posted a 0.3% return, outperforming the market. Change in MPD standard deviation, for most firms, was negligible; however 17 out of 19 firms have standard deviations above their 4-year medians. The 11 insurance companies we follow underperformed market, returning - 3.1% on average, and changes in statistical measures were negligible.

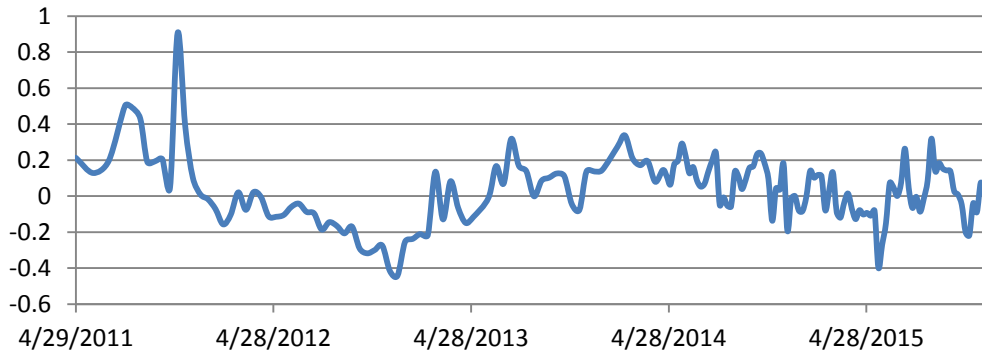
### *Additional details:*

- RF experienced large changes in its MPD standard deviation and tail risk (the market probability of -20% or more decline) statistics over the two week reporting period. The 5% uptick in MPD standard deviation and the 7% uptick in tail risk represented one of the largest moves for this set of statistics in 12 months.

### *Other Markets*

- MPD standard deviation has trended upward for the 12-month-out S&P 500 since November, 2015. This indicates increased market-implied uncertainty about the future equity index price.
- All currencies we follow strengthened against the dollar over the two week reporting period. Statistical skew for the USD-Yen pair moved sharply and posted a new 4-year high signaling bias towards a comparatively stronger yen in the future. Statistical skew is experiencing one of its longest upward climbs and has not been at this absolute level since 2011 as demonstrated in the plot below.

## Statistical Skew for US-Yen Currency Pair



- The iShares US Real Estate Index outperformed the market with a 1.2% return over the two week period. MPD skew fell by -0.76, ending below its 4-year median value.
- Spot prices for gold and silver rose above fresh 4-year lows by 2.2% and 1.8%, respectively. MPD skew for silver posted a sharp change of 0.24; however, it remains negative, signaling bias towards lower future silver prices.
- MPD standard deviation for corn and soybeans moved lower over the two week period. Corn set a new 4-year low at 12.4% and soybeans ended at 11.3% (slightly above its 4-year low of 10.9%).
- WTI crude lost -9.9% over the two week period as oil, once again, set a new 4-year low. MPD standard deviation and options volume are well above their respective 4-year median values. Statistical skew continues to increment closer to its 4-year high signaling a reduction in bias towards lower future oil prices (see chart below).

## Metal and Energy Commodity MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>West Texas Intermediate Crude (6-Month Expiry)</b>				
MPD Std Dev	28.77%	0.46%	32.63 (Dec24) 22.03 (Jun10) 27.63 (Sep02) 17.51 (May20)	10.25 (min) 28.77 (max) last 48 months
MPD Skew	-0.25	0.032	-0.24 (Dec24) -0.76 (Mar04) -0.1 (Nov25)	-0.81 (min) -0.25 (max) last 48 months
Market Prob of -20% or More Decline	25.42%	0.067%	27.63 (Sep02) 17.51 (May20)	3.65 (min) 25.42 (max) last 48 months
Volume	42436	96%	99667 (max) 0 (min)	165 (min) 42436 (max) last 48 months


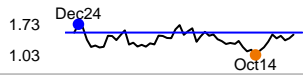
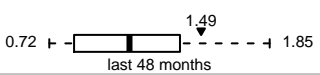

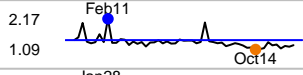
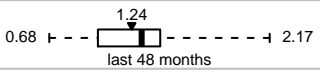

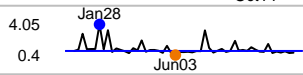
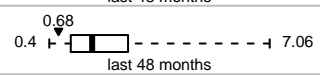

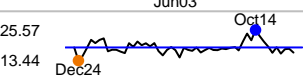
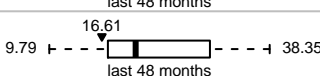

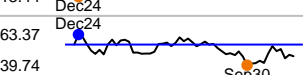
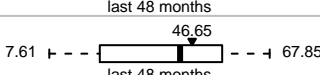



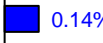


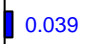
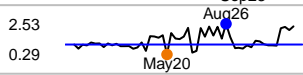
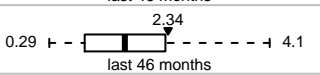

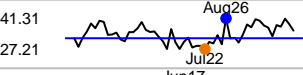
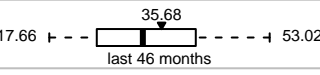

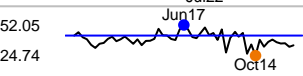
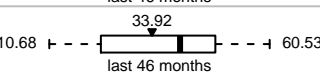
## Inflation MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>Inflation (1-Year Expiry)</b>				
Median	1.09%	-0.1%	1.9 -0.15 Jan14 Apr29	-0.15 1.09 2.65 last 48 months
MPD Std Dev	1.2%	-0.039%	1.51 0.95 Dec17 May06	0.83 1.2 2.75 last 48 months
MPD Skew	-0.61	-0.0075	0.2 -0.73 Jan14 Nov04	-0.77 -0.61 2.5 last 48 months
Market Prob of Less Than 1% Inflation	46.88%	3.2%	85.35 27.11 Dec17 Apr29	11.88 46.88 85.35 last 48 months
Market Prob of More Than 3% Inflation	3.53%	-1.7%	15.81 0.23 Dec17 Apr29	0.23 3.53 40.43 last 48 months
<b>Inflation (2-Year Expiry)</b>				
Median	1.25%	-0.13%	1.85 0.72 Jan07 Apr22	0.72 1.25 2.22 last 47 months
MPD Std Dev	1.25%	-0.043%	1.32 0.96 Dec17 Apr29	0.88 1.25 1.66 last 47 months
MPD Skew	0.08	0.087	0.22 -0.4 Jan07 Mar25	-0.4 0.08 2.74 last 47 months
Market Prob of Less Than 1% Inflation	41.04%	3.5%	61.36 25.22 Jan07 Apr22	10.74 41.04 61.36 last 47 months
Market Prob of More Than 3% Inflation	7.85%	-1.8%	17.23 1.8 Dec17 Apr29	1.8 7.85 27.1 last 47 months
<b>Inflation (5-Year Expiry)</b>				
Median	1.51%	-0.11%	1.91 1.29 Jun17 Sep30	1.29 1.51 2.6 last 47 months
MPD Std Dev	1.17%	-0.04%	1.23 0.96 Feb18 Oct07	0.91 1.17 1.79 last 47 months
MPD Skew	0.25	-0.49	0.78 -0.08 Mar25 Oct07	-0.1 0.25 0.78 last 47 months
Market Prob of Less Than 1% Inflation	31.4%	3%	38.01 19.52 Mar04 Jun17	7.13 31.4 38.01 last 47 months
Market Prob of More Than 3% Inflation	9.26%	-1.2%	15.28 5.02 Jan07 Jun17	5.02 9.26 37.29 last 47 months

## Medium-to-Long Bond Price MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>5 Year Treasury (3-Month Expiry)</b>				
Spot	118.35	-0.35%		
MPD Std Dev	1.65%	0.04%		
MPD Skew	-0.02	0.14		
Market Prob of -3% or More Decline	3.99%	0.27%		
Volume	71348	290%		
<b>10 Year Treasury (3-Month Expiry)</b>				
Spot	125.77	-0.75%		
MPD Std Dev	2.57%	0.057%		
MPD Skew	-0.02	-0.028		
Market Prob of -5% or More Decline	3.03%	0.27%		
Volume	159198	160%		


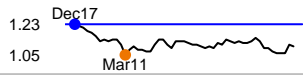
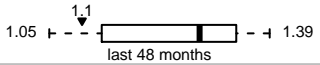
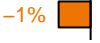
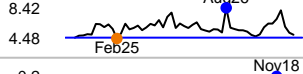
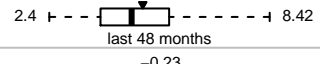

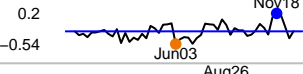
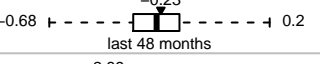

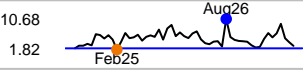
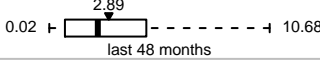


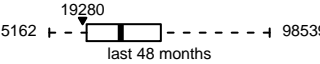

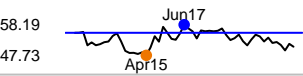
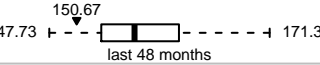

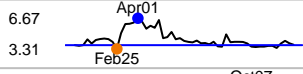
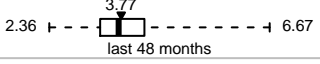

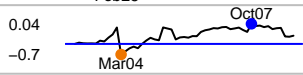
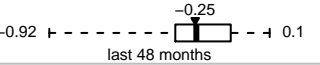

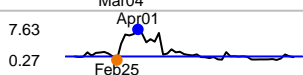
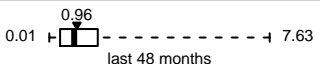


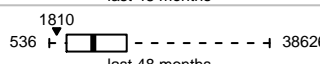
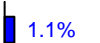
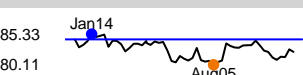
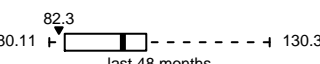

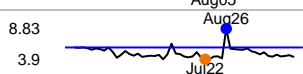
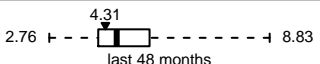

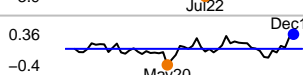
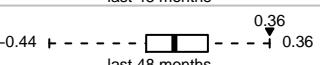

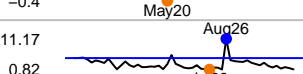
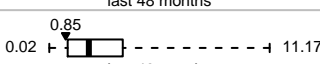


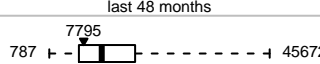
## Short Interest Rates MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>3 Month LIBOR (3-Year Expiry)</b>				
Median	1.49%	 0.13%		
MPD Std Dev	1.24%	 0.027%		
MPD Skew	0.68	 -0.17		
Market Prob of Less Than 0.5% LIBOR	16.61%	 -1.4%		
Market Prob of More Than 1% + Spot	46.65%	 1.6%		
<b>3 Month LIBOR (5-Year Expiry)</b>				
Median	1.43%	 0.18%		
MPD Std Dev	1.98%	 0.14%		
MPD Skew	2.34	 0.039		
Market Prob of Less Than 1% LIBOR	35.68%	 -5.5%		
Market Prob of More Than 2% + Spot	33.92%	 -1.8%		

## Equity Index MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>S&amp;P 500 (6-Month Expiry)</b>				
Spot	2073.07	-0.31%		
MPD Std Dev	13.03%	0.54%		
MPD Skew	-1.66	-0.28		
Market Prob of -20% or More Decline	8.12%	0.52%		
Volume	55361	120%		
<b>S&amp;P 500 (12-Month Expiry)</b>				
Spot	2073.07	-0.31%		
MPD Std Dev	19.29%	0.17%		
MPD Skew	-1.53	-0.14		
Market Prob of -20% or More Decline	13.43%	-0.49%		
Volume	55008	15%		
<b>iShares US Real Estate Index (3-Month Expiry)</b>				
Spot	75.73	1.4%		
MPD Std Dev	8.76%	-0.056%		
MPD Skew	-1.34	-0.76		
Market Prob of -10% or More Decline	12.23%	-2.5%		
Volume	2870	35%		

## Exchange Rate MPD Statistics as of December 16, 2015


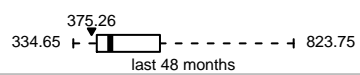
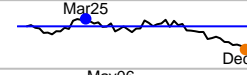

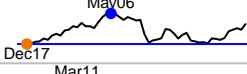
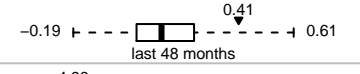

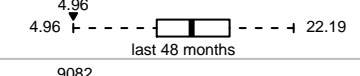

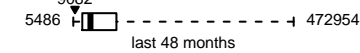
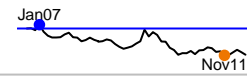

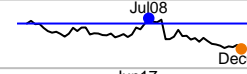




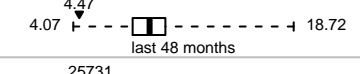

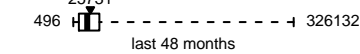
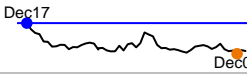
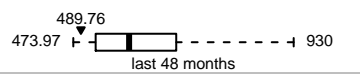
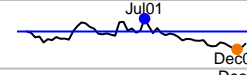

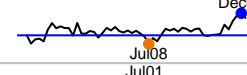
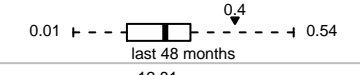
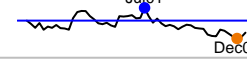
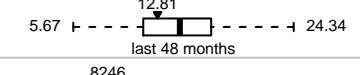

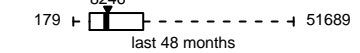
Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>Dollar-Euro Futures (3-Month Expiry)</b>				
Spot	1.1	 3.8%		
MPD Std Dev	4.95%	 -1%		
MPD Skew	-0.23	 -0.12		
Market Prob of -10% or More Decline	2.89%	 -2.2%		
Volume	19280	 16%		
<b>Dollar-Pound Futures (3-Month Expiry)</b>				
Spot	150.67	 0.85%		
MPD Std Dev	3.77%	 -0.43%		
MPD Skew	-0.25	 0.018		
Market Prob of -10% or More Decline	0.96%	 -0.65%		
Volume	1810	 -31%		
<b>Dollar-Yen Futures (3-Month Expiry)</b>				
Spot	82.3	 1.1%		
MPD Std Dev	4.31%	 -0.13%		
MPD Skew	0.36	 0.33		
Market Prob of -10% or More Decline	0.85%	 -0.76%		
Volume	7795	 230%		



## Metal and Energy Commodity MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>Gold (6-Month Expiry)</b>				
Spot	1077.95	2.2%		
MPD Std Dev	12.08%	0.5%		
MPD Skew	-0.24	0.11		
Market Prob of -20% or More Decline	5.97%	0.41%		
Volume	5747	-42%		
<b>Silver (6-Month Expiry)</b>				
Spot	14.28	1.8%		
MPD Std Dev	18.42%	-0.79%		
MPD Skew	-0.06	0.24		
Market Prob of -20% or More Decline	13.99%	-0.64%		
Volume	200	-83%		
<b>West Texas Intermediate Crude (6-Month Expiry)</b>				
Spot	40.31	-9.9%		
MPD Std Dev	28.77%	0.46%		
MPD Skew	-0.25	0.032		
Market Prob of -20% or More Decline	25.42%	0.067%		
Volume	42436	96%		

## Agricultural Crop Commodity MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>Corn (6-Month Expiry)</b>				
Spot	375.26	-0.17%	440.56 356.74 	375.26 334.65 823.75 
MPD Std Dev	12.41%	-1.3%	20.6 12.41 	12.41 12.41 24.61 
MPD Skew	0.41	0.076	0.61 0.04 	-0.19 0.41 0.61 
Market Prob of -20% or More Decline	4.96%	-2.2%	19.2 4.96 	4.96 4.96 22.19 
Volume	9082	-28%	377209 0 	9082 5486 472954 
<b>Soybeans (6-Month Expiry)</b>				
Spot	868.87	-3.6%	1065.04 864.89 	868.87 864.89 1691.25 
MPD Std Dev	11.26%	-0.8%	17.76 11.22 	11.26 10.93 22.65 
MPD Skew	-0.06	-0.12	0.24 -0.25 	-0.06 -0.5 0.51 
Market Prob of -20% or More Decline	4.47%	-0.93%	12.79 4.23 	4.47 4.07 18.72 
Volume	25731	9.6%	82132 0 	25731 496 326132 
<b>Wheat (6-Month Expiry)</b>				
Spot	489.76	3.3%	650.95 473.97 	489.76 473.97 930 
MPD Std Dev	17.17%	1.1%	22.31 16.04 	17.17 12.95 26.5 
MPD Skew	0.4	-0.024	0.44 0.15 	0.4 0.01 0.54 
Market Prob of -20% or More Decline	12.81%	1.8%	20.71 10.96 	12.81 5.67 24.34 
Volume	8246	32%	46232 0 	8246 179 51689 

## Agricultural Livestock Commodity MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>Cattle (6-Month Expiry)</b>				
Spot	117.81	-4.6%	156.32 117.76 	117.81 117.76 170.32 last 29 months
MPD Std Dev	14.42%	1.7%	14.81 7.8 	14.42 3.6 14.81 last 29 months
MPD Skew	-0.29	0.12	-0.18 -0.72 	-0.29 -0.94 -0.17 last 29 months
Market Prob of -5% or More Decline	35.84%	2.8%	35.84 23.02 	35.84 8.46 35.84 last 29 months
Volume	8367	15%	24569 0 	8367 1263 33850 last 29 months
<b>Hogs (6-Month Expiry)</b>				
Spot	76.31	1.8%	91.56 60.95 	76.31 60.95 94.48 last 14 months
MPD Std Dev	15.49%	0.54%	20.24 14.24 	15.49 13.88 20.24 last 14 months
MPD Skew	-0.35	-0.056	0.17 -0.69 	-0.35 -0.69 0.17 last 14 months
Market Prob of -20% or More Decline	11.29%	0.56%	16.97 9 	11.29 8.05 16.97 last 14 months
Volume	2580	49%	16073 0 	2580 53 16073 last 14 months

## Bank MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>MPD Standard Deviation (3-Month Expiry)</b>				
American Express	11.37%	0.7%		
Bank of America	12.94%	-1.1%		
BB&T	12.07%	0.69%		
Barclays	16.27%	0.065%		
Bank of NY Mellon	11.81%	1.3%		
Citigroup	12.32%	0.17%		
Capital One	13.19%	1%		
Credit Suisse	16.64%			
Deutsche Bank	18.01%	1.3%		
Fifth Third	12.97%	-0.43%		
Goldman Sachs	12.32%	0.84%		
JP Morgan	11.04%	0.21%		
Keycorp	15.31%	-0.15%		
Morgan Stanley	13.52%	0.91%		
PNC Financial	11.42%	1.3%		
Regions Financial	18.37%	5%		
SunTrust	12.8%	-0.0064%		
State Street	13.56%	1.7%		
UBS	13.36%			
US Bancorp	9.98%	0.19%		
Wells Fargo	9.86%	0.47%		

## Bank MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>MPD Skew (3-Month Expiry)</b>				
American Express	-0.86	-0.34		
Bank of America	-0.31	0.045		
BB&T	-0.9	0.14		
Barclays	0.07	0.37		
Bank of NY Mellon	-0.93	-0.46		
Citigroup	-0.74	-0.067		
Capital One	-1.02	-0.12		
Credit Suisse	0.64			
Deutsche Bank	-0.54	-0.96		
Fifth Third	-0.87	-0.19		
Goldman Sachs	-0.74	-0.2		
JP Morgan	-0.89	-0.18		
Keycorp	-0.81	0.062		
Morgan Stanley	-0.83	-0.49		
PNC Financial	-0.95	-0.24		
Regions Financial	-0.55	0.00092		
SunTrust	-0.58	0.56		
State Street	-0.86	-0.22		
UBS	-0.04			
US Bancorp	-1.27	-0.22		
Wells Fargo	-0.78	-0.13		

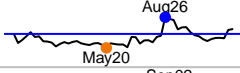
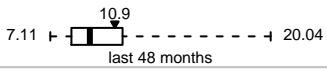
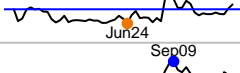
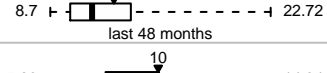
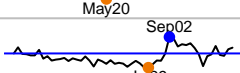
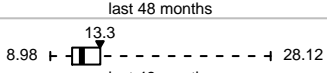
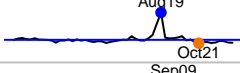
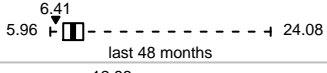
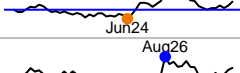
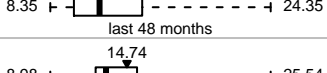
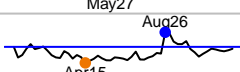
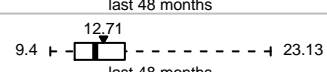


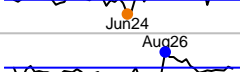
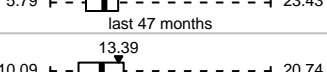
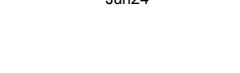
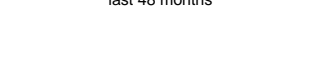




## Bank MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>Market Probability of -20% or More Decline (3-Month Expiry)</b>				
American Express	5.99%	0.78%	8.77 2.19 	1.53 - [ ] 5.99 - [ ] 10.63 last 48 months
Bank of America	6.73%	-2.2%	10.62 3.14 	3.13 - [ ] 6.73 - [ ] 20.24 last 48 months
BB&T	6.96%	0.99%	9.77 1.82 	1.68 - [ ] 6.96 - [ ] 34.9 last 48 months
Barclays	13.54%	0.67%	15.95 2.33 	2.33 - [ ] 13.54 - [ ] 30.94 last 48 months
Bank of NY Mellon	6.93%	2.4%	10.41 1.12 	1.12 - [ ] 6.93 - [ ] 13.52 last 48 months
Citigroup	6.38%	-0.27%	9.94 2.32 	1.93 - [ ] 6.38 - [ ] 20.17 last 48 months
Capital One	8.33%	1.1%	9.86 2.37 	1.64 - [ ] 8.33 - [ ] 15.78 last 48 months
Credit Suisse	14.13%		17.76 5.22 	2.87 - [ ] 14.13 - [ ] 24.65 last 48 months
Deutsche Bank	15.43%	-0.5%	19.81 6.37 	4.99 - [ ] 15.43 - [ ] 25.27 last 42 months
Fifth Third	6.72%	-1.9%	13.92 1.72 	0.99 - [ ] 6.72 - [ ] 18.01 last 48 months
Goldman Sachs	6.88%	1.1%	9.74 2.18 	1.79 - [ ] 6.88 - [ ] 16.97 last 48 months
JP Morgan	5.48%	0.2%	9.7 2.08 	1.31 - [ ] 5.48 - [ ] 14.98 last 48 months
Keycorp	10.76%	0.66%	13.06 2.08 	1.92 - [ ] 10.76 - [ ] 15.32 last 48 months
Morgan Stanley	8.85%	0.85%	13.91 2.57 	2.57 - [ ] 8.85 - [ ] 22.66 last 48 months
PNC Financial	6.43%	1.9%	9.41 1.67 	1.43 - [ ] 6.43 - [ ] 12.51 last 48 months
Regions Financial	13.66%	6.9%	15.77 3.34 	3.34 - [ ] 13.66 - [ ] 29.69 last 47 months
SunTrust	8.3%	0.17%	10.89 2.53 	1.73 - [ ] 8.3 - [ ] 19.7 last 48 months
State Street	8.91%	2.6%	11.17 2.96 	2.26 - [ ] 8.91 - [ ] 13.5 last 48 months
UBS	7.28%		18.15 1.53 	1.53 - [ ] 7.28 - [ ] 19.1 last 37 months
US Bancorp	4.47%	0.28%	9.41 1.39 	0.74 - [ ] 4.47 - [ ] 10.65 last 48 months
Wells Fargo	4.04%	0.16%	9.18 1.55 	1.3 - [ ] 4.04 - [ ] 13.57 last 48 months

## Bank MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>Volume (3-Month Expiry)</b>				
American Express	2606	140%	32713 0	623 - 2606 - 32713 last 48 months
Bank of America	187673	120%	187673 0	7419 - 187673 - 363160 last 48 months
BB&T	1080	-31%	6459 0	126 - 1080 - 6490 last 48 months
Barclays	789	-8.8%	4055 0	8 - 789 - 11011 last 48 months
Bank of NY Mellon	2501	1500%	13099 0	44 - 2501 - 15678 last 48 months
Citigroup	14908	82%	140439 0	1104 - 14908 - 150972 last 48 months
Capital One	2707	600%	6937 0	136 - 2707 - 16299 last 48 months
Credit Suisse	1		15145 0	0 - 1 - 15145 last 48 months
Deutsche Bank	639	-62%	7280 0	182 - 639 - 25112 last 42 months
Fifth Third	1359	110%	7607 0	28 - 1359 - 19127 last 48 months
Goldman Sachs	4437	240%	19311 0	296 - 4437 - 28374 last 48 months
JP Morgan	8243	35%	132116 0	943 - 8243 - 132116 last 48 months
Keycorp	1282	520%	3300 0	44 - 1282 - 76270 last 48 months
Morgan Stanley	9191	730%	36166 0	327 - 9191 - 69872 last 48 months
PNC Financial	949	580%	3466 0	42 - 949 - 7855 last 48 months
Regions Financial	1073	84%	47940 0	20 - 1073 - 47940 last 47 months
SunTrust	772	81%	4808 0	61 - 772 - 13788 last 48 months
State Street	599	840%	2086 0	19 - 599 - 5339 last 48 months
UBS	124		2034 0	6 - 124 - 6502 last 37 months
US Bancorp	1001	230%	9927 0	52 - 1001 - 29201 last 48 months
Wells Fargo	7316	-10%	55478 0	950 - 7316 - 121351 last 48 months

## Insurance Company MPD Statistics as of December 16, 2015


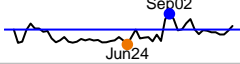
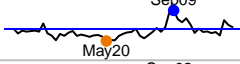
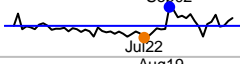

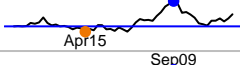
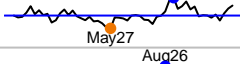
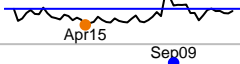
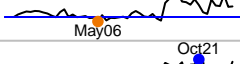
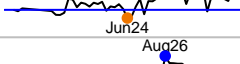

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>MPD Standard Deviation (3-Month Expiry)</b>				
<b>Aflac</b>	10.9%	1.9%	13.29 7.11 	7.11   10.9   20.04 last 48 months 
<b>AIG</b>	12.75%	1.9%	15.04 9.01 	8.7   12.75   22.72 last 48 months 
<b>Allstate</b>	10%	-0.38%	12.36 6.73 	5.83   10   14.34 last 48 months 
<b>Ameriprise</b>	13.3%	1.4%	15.2 9.76 	8.98   13.3   28.12 last 48 months 
<b>Chubb</b>	6.41%	-0.91%	24.08 6.17 	5.96   6.41   24.08 last 48 months 
<b>Hartford Financial</b>	12.83%	1.7%	16.35 8.35 	8.35   12.83   24.35 last 48 months 
<b>Lincoln National</b>	14.74%	1.9%	18.05 8.98 	8.98   14.74   25.54 last 48 months 
<b>Met Life</b>	12.71%	0.59%	16.59 9.4 	9.4   12.71   23.13 last 48 months 
<b>Principal Financial</b>	13.59%	-4.6%	18.54 8.26 	8.02   13.59   30.27 last 48 months 
<b>Progressive</b>	13.22%	1.5%	13.49 5.79 	5.79   13.22   23.43 last 47 months 
<b>Prudential</b>	13.39%	0.44%	17.36 10.09 	10.09   13.39   20.74 last 48 months 














## Insurance Company MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>MPD Skew (3-Month Expiry)</b>				
<b>Aflac</b>	-0.96	-0.15	-0.24 -1.31 Sep09 Oct28	-1.31 - -0.96 - -0.24 last 48 months
<b>AIG</b>	-0.93	-0.36	-0.23 -1.16 Dec31 Oct14	-1.16 - -0.93 - -0.03 last 48 months
<b>Allstate</b>	-0.8	0.18	-0.16 -1.46 Feb04 Oct14	-1.5 - -0.8 - -0.12 last 48 months
<b>Ameriprise</b>	-0.68	0.0088	-0.11 -0.98 Dec31 Aug26 Aug19	-4.03 - -0.68 - -0.11 last 48 months
<b>Chubb</b>	-1.06	-0.46	0.09 -1.42 Sep02 Jul22 Nov04	-1.56 - -1.06 - 0.09 last 48 months
<b>Hartford Financial</b>	-0.3	0.48	-0.09 -1.67 Aug05 Aug26	-1.67 - -0.3 - -0.09 last 48 months
<b>Lincoln National</b>	-0.59	0.15	-0.07 -1.15 Mar25 Aug05 Aug26	-1.15 - -0.59 - 0.15 last 48 months
<b>Met Life</b>	-0.89	0.027	-0.46 -0.96 Mar25 Aug05 Oct21	-1.15 - -0.89 - -0.23 last 48 months
<b>Principal Financial</b>	-0.36	0.76	0.42 -2.18 Dec24 Mar04 Oct21	-2.95 - -0.36 - 0.42 last 48 months
<b>Progressive</b>	-0.44	-0.41	0.42 -2.03 Mar04 Jun10	-3.54 - -0.44 - 0.42 last 47 months
<b>Prudential</b>	-0.81	-0.05	-0.33 -1.04 Apr22 Nov18	-1.44 - -0.81 - -0.33 last 48 months

## Insurance Company MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>Market Probability of -20% or More Decline (3-Month Expiry)</b>				
<b>Aflac</b>	5.09%	1.8%	7.53 1.37 	1.37   5.09   15.6 last 48 months
<b>AIG</b>	6.71%	1.9%	9.46 2.51 	2.44   6.71   17.45 last 48 months
<b>Allstate</b>	3.88%	-1.4%	7.32 1.01 	0.56   3.88   8.39 last 48 months
<b>Ameriprise</b>	8.55%	1.9%	11.32 3.68 	2.4   8.55   17.52 last 48 months
<b>Chubb</b>	1.41%	-0.027%	12.5 0.55 	0.55   1.41   12.5 last 48 months
<b>Hartford Financial</b>	7.84%	2.1%	11.78 2.61 	2.19   7.84   22.23 last 48 months
<b>Lincoln National</b>	11.2%	3.1%	14.3 2.26 	2.26   11.2   22.05 last 48 months
<b>Met Life</b>	7.48%	0.63%	12.61 3.26 	3.26   7.48   18.59 last 48 months
<b>Principal Financial</b>	9.82%	-5.8%	17.72 2.22 	0.43   9.82   21.38 last 48 months
<b>Progressive</b>	8.02%	2.5%	8.67 0.15 	0   8.02   39.73 last 47 months
<b>Prudential</b>	8.42%	0.11%	13.35 4.02 	3.99   8.42   17.82 last 48 months

## Insurance Company MPD Statistics as of December 16, 2015

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
<b>Volume (3-Month Expiry)</b>				
<b>Aflac</b>	2410	240%	13168 0	88  22718 last 48 months
<b>AIG</b>	6875	210%	69392 0	110  103998 last 48 months
<b>Allstate</b>	359	-78%	4626 0	63  10621 last 48 months
<b>Ameriprise</b>	351	470%	881 0	5  1114 last 48 months
<b>Chubb</b>	52	250%	9027 0	3  11114 last 48 months
<b>Hartford Financial</b>	2769	2100%	9444 0	16  37285 last 48 months
<b>Lincoln National</b>	501	520%	2635 0	51  8403 last 48 months
<b>Met Life</b>	3317	-22%	29248 0	319  161416 last 48 months
<b>Principal Financial</b>	82	360%	545 0	2  2956 last 48 months
<b>Progressive</b>	863	520%	2216 0	0  4283 last 47 months
<b>Prudential</b>	2466	-8.2%	17185 0	222  17185 last 48 months