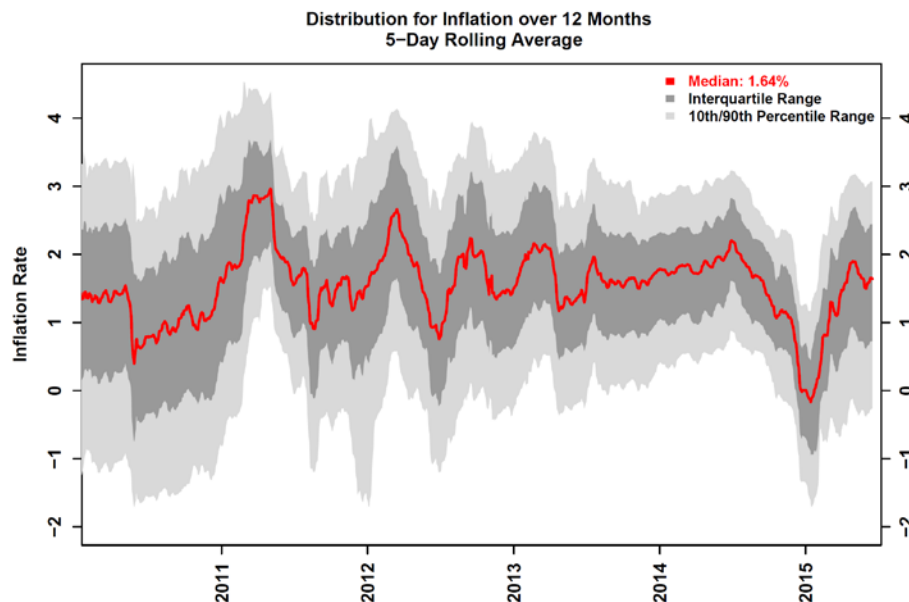


## Minneapolis Options Report – June 19<sup>th</sup>

Over the past two weeks, market-implied inflation expectations increased across the tenors we follow (1-, 2-, and 5-year periods). MPD skews on treasury options continued to imply bias towards higher future rates at the long end of the curve but this measure moderated considerably over the past two weeks. The dollar weakened against the pound and yen. The MPD skews associated with the USD-Yen pair increased and became positive, implying bias toward a weaker dollar. The banks and insurance companies that we follow outperformed the S&P 500's two-week loss, and investor uncertainty surrounding these banks and insurance companies, as measured by MPD standard deviations, continued to increase. Lean hogs continued to fall sharply (-6%) with market-implied bias continuing to point toward lower future prices.

### *Inflation*

Market-based inflation expectations derived from caps and floors on the CPI for 1-, 2-, and 5-year period increased over the past two weeks, as seen most clearly in the 1-year tenor (see figure below).



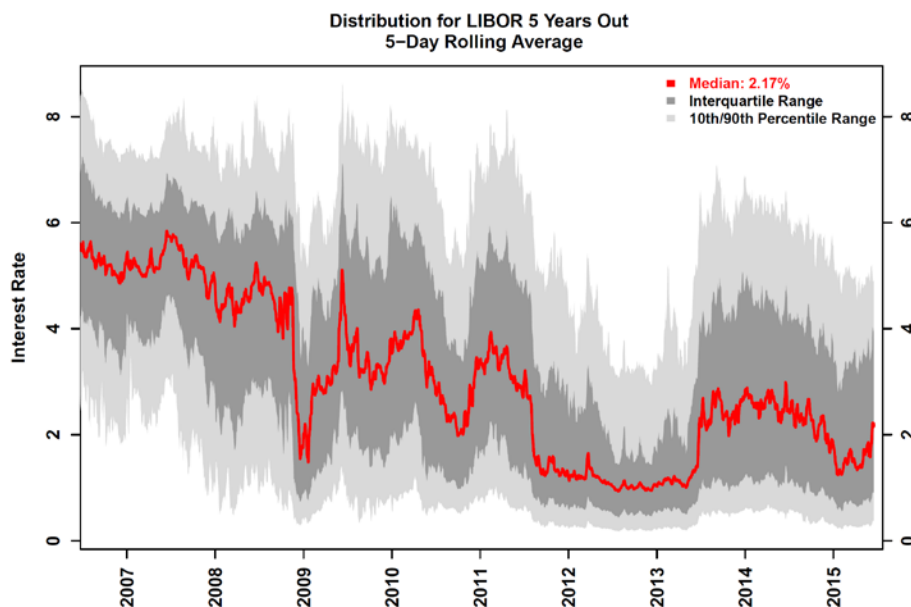
### Additional detail:

- Median expectations for inflation from market-based probability distributions (MPDs) currently sit at 1.65%, 1.76%, and 1.91% for the 1-, 2-, and 5-year tenors, respectively.
- MPD standard deviations remained fairly flat across tenors, suggesting little change in investor uncertainty. Current measures are near their 4-year medians.
- MPD skew on the 5-year tenor remains at the very high end of its 4-year range and positive (0.56), denoting a market-implied bias toward higher inflation rates over this time frame. Skews on the two nearer tenors are negative (-0.23 for the 1-year period MPD and -0.02 for the 2-year period MPD), suggesting market-implied bias towards lower rates in the near-term.

### *Interest Rates*

Prices on 5- and 10-year Treasury notes increased over the two week period (0.4% and 0.6%, respectively), and yields consequently fell. The trend since the beginning of the year has been towards higher yields. MPD skews increased but remained negative, suggesting a slightly modulated bias towards

lower prices and higher rates. Median short-term interest rate expectations, as derived from caps and floors on three month LIBOR, dropped for both tenors we follow. The 3-year tenor decreased 12 bps over the past two weeks to 1.49%, and the 5-year tenor decreased 2 bps to 1.92%. Despite the declines, these rates are considerably higher than those seen in early 2015 (see figure below).



#### *Banks and Insurance Companies*

The S&P 500 lost -0.6% again over the past two weeks. The 17 domestic bank company stocks and 11 insurance companies we follow outperformed this return (1.7% and 1.2%, respectively). Investor uncertainty surrounding the bank and insurance companies increased, as measured by increases in MPD standard deviations of 0.5% and 0.1%, respectively.

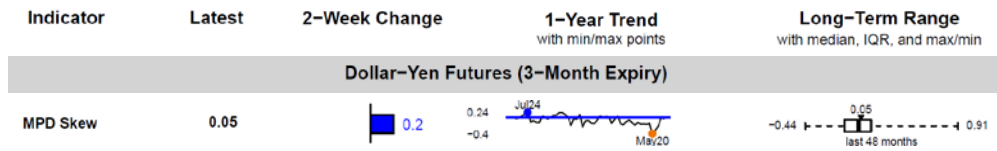
Additional details:

- Two banks, CS and KEY, had large positive shifts in their skews (1 and 0.82 percentage points), though the skews remained negative.
- The market implied probability of a -20% or more decline fell by 1.7 percentage points to 5.9% for CS.

#### *Other Markets*

- The MPD skew derived from 6- and 12-month-out options on the S&P 500 index increased over the past two weeks though it is still below its 4-year median, suggesting a slight moderation in market-implied bias toward lower prices.
- The iShares U.S. Real Estate Index outperformed the S&P500 over the last two weeks, remaining flat. The market-implied probability of a -10% or more decline, which peaked in early May, continued to decline and fell to 11.4%, suggesting that investors are factoring in lower tail risk in the sector.
- The dollar weakened against the pound and yen, and remained flat against the euro. The MPD skews associated with the USD-Yen pair increased and became positive, implying bias toward a weaker dollar (see figure below).

Exchange Rate MPD Statistics as of June 17, 2015

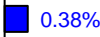

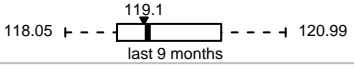

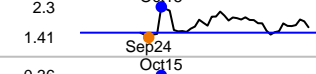
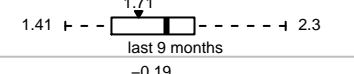
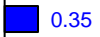
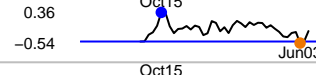
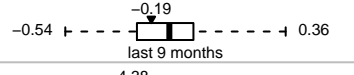

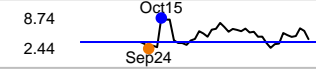



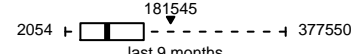
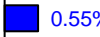
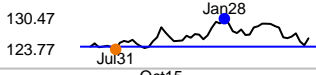
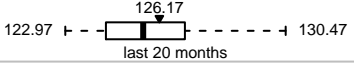

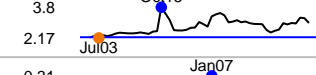
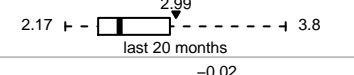

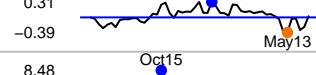
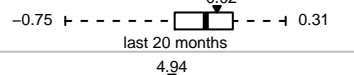

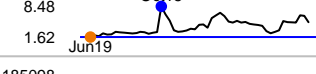
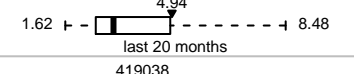


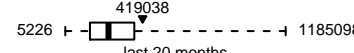


- Spot prices for gold and silver fell over the last two weeks (-0.7% and -3.2%, respectively) and remained near 4-year lows. Options volume for gold was up 120% and was much higher than the 4-year median.
- The spot price of WTI crude oil continued its climb (+1.3%). The MPD standard deviation increased but remained low compared to December 2014 highs (24% versus 33%). The MPD skew remained negative and near its 4-year 25<sup>th</sup> percentile, indicating a continued bias towards lower future prices of WTI crude.
- Corn and wheat prices declined (-0.4% and -3.3%, respectively), while soybeans increased (1.9%). MPD skew on all three crop commodities continued to be high and positive, suggesting market-implied bias toward higher future prices. Lean hog prices fell again (-5.9%) to an 8-month low. In addition, their market-implied probability of a -20% or more decline increased by 2.4 percentage points to 13.1%, indicating higher tail risk being factored in by investors.

## Inflation MPD Statistics as of June 17, 2015

| Indicator                             | Latest | 2-Week Change | 1-Year Trend<br>with min/max points | Long-Term Range<br>with median, IQR, and max/min |
|---------------------------------------|--------|---------------|-------------------------------------|--|
| <b>Inflation (1-Year Expiry)</b>      |        |               |                                     |  |
| Median                                | 1.65%  | 0.047%        |                                     |  |
| MPD Std Dev                           | 1.38%  | -0.0043%      |                                     |  |
| MPD Skew                              | -0.23  | 0.045         |                                     |  |
| Market Prob of Less Than 1% Inflation | 32.02% | -1.4%         |                                     |  |
| Market Prob of More Than 3% Inflation | 11.69% | 0.76%         |                                     |  |
| <b>Inflation (2-Year Expiry)</b>      |        |               |                                     |  |
| Median                                | 1.76%  | 0.076%        |                                     |  |
| MPD Std Dev                           | 1.26%  | -0.0095%      |                                     |  |
| MPD Skew                              | -0.02  | -0.013        |                                     |  |
| Market Prob of Less Than 1% Inflation | 26.96% | -2.3%         |                                     |  |
| Market Prob of More Than 3% Inflation | 14.5%  | 1.2%          |                                     |  |
| <b>Inflation (5-Year Expiry)</b>      |        |               |                                     |  |
| Median                                | 1.91%  | 0.072%        |                                     |  |
| MPD Std Dev                           | 1.2%   | 0.015%        |                                     |  |
| MPD Skew                              | 0.56   | -0.041        |                                     |  |
| Market Prob of Less Than 1% Inflation | 20.18% | -2%           |                                     |  |
| Market Prob of More Than 3% Inflation | 15.28% | 1.8%          |                                     |  |

## Medium-to-Long Bond Price MPD Statistics as of June 17, 2015

| Indicator                                | Latest | 2-Week Change  | 1-Year Trend<br>with min/max points  | Long-Term Range<br>with median, IQR, and max/min                                      |
|--|--------|--|--|---|
| <b>5 Year Treasury (3-Month Expiry)</b>  |        |  |  |   |
| Spot                                     | 119.1  |  0.38%  |    |    |
| MPD Std Dev                              | 1.71%  |  -0.23% |    |    |
| MPD Skew                                 | -0.19  |  0.35   |    |    |
| Market Prob of -3% or More Decline       | 4.38%  |  -2.2%  |    |    |
| Volume                                   | 181545 |  200%   |    |    |
| <b>10 Year Treasury (3-Month Expiry)</b> |        |  |  |   |
| Spot                                     | 126.17 |  0.55%  |    |    |
| MPD Std Dev                              | 2.99%  |  -0.25% |    |    |
| MPD Skew                                 | -0.02  |  0.32   |    |    |
| Market Prob of -5% or More Decline       | 4.94%  |  -1.5%  |   |   |
| Volume                                   | 419038 |  35%  |  |  |

## Short Interest Rates MPD Statistics as of June 17, 2015

| Indicator                            | Latest | 2-Week Change | 1-Year Trend<br>with min/max points | Long-Term Range<br>with median, IQR, and max/min |
|--------------------------------------|--------|---------------|-------------------------------------|--|
| <b>3 Month LIBOR (3-Year Expiry)</b> |        |               |                                     |  |
| Median                               | 1.49%  | -0.12%        |                                     |  |
| MPD Std Dev                          | 1.4%   | 0.094%        |                                     |  |
| MPD Skew                             | 0.75   | 0.35          |                                     |  |
| Market Prob of Less Than 0.5% LIBOR  | 18.48% | 0.9%          |                                     |  |
| Market Prob of More Than 1% + Spot   | 58.22% | 1.4%          |                                     |  |
| <b>3 Month LIBOR (5-Year Expiry)</b> |        |               |                                     |  |
| Median                               | 1.92%  | -0.023%       |                                     |  |
| MPD Std Dev                          | 2.08%  | -0.09%        |                                     |  |
| MPD Skew                             | 1.6    | 0.15          |                                     |  |
| Market Prob of Less Than 1% LIBOR    | 30.47% | 0.15%         |                                     |  |
| Market Prob of More Than 2% + Spot   | 52.05% | 13%           |                                     |  |

## Equity Index MPD Statistics as of June 17, 2015

| Indicator  | Latest  | 2-Week Change | 1-Year Trend<br>with min/max points | Long-Term Range<br>with median, IQR, and max/min |
|--|---------|---------------|-------------------------------------|--|
| <b>S&amp;P 500 (6-Month Expiry)</b>                  |         |               |                                     |  |
| Spot   | 2100.44 | -0.64%        |                                     |  |
| MPD Std Dev  | 11.12%  | 0.27%         |                                     |  |
| MPD Skew   | -1.33   | 0.069         |                                     |  |
| Market Prob of -20% or More Decline                  | 6.35%   | 0.25%         |                                     |  |
| Volume   | 164021  | 99%           |                                     |  |
| <b>S&amp;P 500 (12-Month Expiry)</b>                 |         |               |                                     |  |
| Spot   | 2100.44 | -0.64%        |                                     |  |
| MPD Std Dev  | 17.67%  | 0.36%         |                                     |  |
| MPD Skew   | -1.32   | 0.034         |                                     |  |
| Market Prob of -20% or More Decline                  | 12.98%  | 0.34%         |                                     |  |
| Volume   | 16037   | -41%          |                                     |  |
| <b>iShares US Real Estate Index (3-Month Expiry)</b> |         |               |                                     |  |
| Spot   | 74.46   | 0.013%        |                                     |  |
| MPD Std Dev  | 8.09%   | -0.37%        |                                     |  |
| MPD Skew   | -0.85   | -0.038        |                                     |  |
| Market Prob of -10% or More Decline                  | 11.4%   | -1.3%         |                                     |  |
| Volume   | 15039   | -47%          |                                     |  |

## Exchange Rate MPD Statistics as of June 17, 2015

| Indicator                                    | Latest | 2-Week Change | 1-Year Trend<br>with min/max points | Long-Term Range<br>with median, IQR, and max/min |
|--|--------|---------------|-------------------------------------|--|
| <b>Dollar-Euro Futures (3-Month Expiry)</b>  |        |               |                                     |  |
| Spot   | 1.13   | 0%            |                                     |  |
| MPD Std Dev                                  | 6.07%  | 0.24%         |                                     |  |
| MPD Skew                                     | -0.37  | 0.17          |                                     |  |
| Market Prob of -10% or More Decline          | 5.71%  | 0.0089%       |                                     |  |
| Volume                                       | 19309  | -45%          |                                     |  |
| <b>Dollar-Pound Futures (3-Month Expiry)</b> |        |               |                                     |  |
| Spot   | 158.19 | 3.4%          |                                     |  |
| MPD Std Dev                                  | 4.18%  | -0.18%        |                                     |  |
| MPD Skew                                     | -0.28  | 0.059         |                                     |  |
| Market Prob of -10% or More Decline          | 1.68%  | -0.44%        |                                     |  |
| Volume                                       | 8758   | 50%           |                                     |  |
| <b>Dollar-Yen Futures (3-Month Expiry)</b>   |        |               |                                     |  |
| Spot   | 81.13  | 0.76%         |                                     |  |
| MPD Std Dev                                  | 4.35%  | -0.47%        |                                     |  |
| MPD Skew                                     | 0.05   | 0.2           |                                     |  |
| Market Prob of -10% or More Decline          | 1.41%  | -1.3%         |                                     |  |
| Volume                                       | 5030   | 9.9%          |                                     |  |



## Metal and Energy Commodity MPD Statistics as of June 17, 2015

| Indicator   | Latest  | 2-Week Change | 1-Year Trend<br>with min/max points | Long-Term Range<br>with median, IQR, and max/min |
|---|---------|---------------|-------------------------------------|--|
| <b>Gold (6-Month Expiry)</b>                          |         |               |                                     |  |
| Spot  | 1179.27 | -0.66%        |                                     |  |
| MPD Std Dev   | 11.18%  | -0.19%        |                                     |  |
| MPD Skew  | -0.34   | -0.022        |                                     |  |
| Market Prob of -20% or More Decline                   | 4.89%   | -0.28%        |                                     |  |
| Volume  | 18723   | 120%          |                                     |  |
| <b>Silver (6-Month Expiry)</b>                        |         |               |                                     |  |
| Spot  | 16.05   | -3.2%         |                                     |  |
| MPD Std Dev   | 18.83%  | -0.036%       |                                     |  |
| MPD Skew  | -0.32   | 0.027         |                                     |  |
| Market Prob of -20% or More Decline                   | 14.78%  | -0.12%        |                                     |  |
| Volume  | 2802    | -19%          |                                     |  |
| <b>West Texas Intermediate Crude (6-Month Expiry)</b> |         |               |                                     |  |
| Spot  | 61.75   | 1.3%          |                                     |  |
| MPD Std Dev   | 23.62%  | 0.53%         |                                     |  |
| MPD Skew  | -0.6    | 0.02          |                                     |  |
| Market Prob of -20% or More Decline                   | 19.03%  | 0.14%         |                                     |  |
| Volume  | 70029   | 77%           |                                     |  |

## Agricultural Crop Commodity MPD Statistics as of June 17, 2015

| Indicator                           | Latest | 2-Week Change | 1-Year Trend<br>with min/max points | Long-Term Range<br>with median, IQR, and max/min |
|-------------------------------------|--------|---------------|-------------------------------------|--|
| <b>Corn (6-Month Expiry)</b>        |        |               |                                     |  |
| Spot                                | 375.31 | -0.44%        |                                     |  |
| MPD Std Dev                         | 17.98% | 0.18%         |                                     |  |
| MPD Skew                            | 0.48   | -0.064        |                                     |  |
| Market Prob of -20% or More Decline | 14.62% | 0.14%         |                                     |  |
| Volume                              | 146174 | 130%          |                                     |  |
| <b>Soybeans (6-Month Expiry)</b>    |        |               |                                     |  |
| Spot                                | 941.68 | 2.9%          |                                     |  |
| MPD Std Dev                         | 15.77% | 2%            |                                     |  |
| MPD Skew                            | 0.24   | 0.1           |                                     |  |
| Market Prob of -20% or More Decline | 9.42%  | 2.5%          |                                     |  |
| Volume                              | 18376  | 4.3%          |                                     |  |
| <b>Wheat (6-Month Expiry)</b>       |        |               |                                     |  |
| Spot                                | 511.03 | -3.3%         |                                     |  |
| MPD Std Dev                         | 19.45% | -0.43%        |                                     |  |
| MPD Skew                            | 0.28   | -0.0034       |                                     |  |
| Market Prob of -20% or More Decline | 17.35% | -0.73%        |                                     |  |
| Volume                              | 7014   | 8.7%          |                                     |  |

## Agricultural Livestock Commodity MPD Statistics as of June 17, 2015

| Indicator                           | Latest | 2-Week Change | 1-Year Trend<br>with min/max points | Long-Term Range<br>with median, IQR, and max/min |
|-------------------------------------|--------|---------------|-------------------------------------|--|
| <b>Cattle (6-Month Expiry)</b>      |        |               |                                     |  |
| Spot                                | 153.97 | 0.2%          |                                     |  |
| MPD Std Dev                         | 8.3%   | -0.19%        |                                     |  |
| MPD Skew                            | -0.57  | 0.05          |                                     |  |
| Market Prob of -5% or More Decline  | 23.7%  | -0.75%        |                                     |  |
| Volume                              | 7728   | -51%          |                                     |  |
| <b>Hogs (6-Month Expiry)</b>        |        |               |                                     |  |
| Spot                                | 64.11  | -5.9%         |                                     |  |
| MPD Std Dev                         | 17.19% | 1.8%          |                                     |  |
| MPD Skew                            | -0.4   | 0.1           |                                     |  |
| Market Prob of -20% or More Decline | 13.06% | 2.4%          |                                     |  |
| Volume                              | 9873   | 720%          |                                     |  |

## Bank MPD Statistics as of June 17, 2015

| Indicator                                      | Latest | 2-Week Change | 1-Year Trend<br>with min/max points | Long-Term Range<br>with median, IQR, and max/min |
|--|--------|---------------|-------------------------------------|--|
| <b>MPD Standard Deviation (3-Month Expiry)</b> |        |               |                                     |  |
| American Express                               | 9.58%  | 0.49%         |                                     |  |
| Bank of America                                | 10.48% | 0.72%         |                                     |  |
| BB&T   | 8.71%  | 0.36%         |                                     |  |
| Barclays                                       | 13.7%  | 0.25%         |                                     |  |
| Bank of NY Mellon                              | 9.28%  | 0.37%         |                                     |  |
| Citigroup                                      | 10.09% | 0.45%         |                                     |  |
| Capital One                                    | 8.88%  | 0.51%         |                                     |  |
| Credit Suisse                                  | 12.9%  | -0.057%       |                                     |  |
| Deutsche Bank                                  | 14.45% |               |                                     |  |
| Fifth Third                                    | 9.7%   | -0.31%        |                                     |  |
| Goldman Sachs                                  | 9.89%  | 0.45%         |                                     |  |
| JP Morgan                                      | 9.02%  | -0.025%       |                                     |  |
| Keycorp  | 11.15% | 0.2%          |                                     |  |
| Morgan Stanley                                 | 11.07% | 0.56%         |                                     |  |
| PNC Financial                                  | 8.78%  | 0.95%         |                                     |  |
| Regions Financial                              | 11.39% | 0.89%         |                                     |  |
| SunTrust                                       | 10.12% | 0.63%         |                                     |  |
| State Street                                   | 10.43% | 1.3%          |                                     |  |
| UBS  | 13.36% |               |                                     |  |
| US Bancorp                                     | 8.47%  | 0.29%         |                                     |  |
| Wells Fargo                                    | 8.89%  | 0.44%         |                                     |  |

## Bank MPD Statistics as of June 17, 2015

| Indicator                        | Latest | 2-Week Change | 1-Year Trend<br>with min/max points | Long-Term Range<br>with median, IQR, and max/min |
|----------------------------------|--------|---------------|-------------------------------------|--|
| <b>MPD Skew (3-Month Expiry)</b> |        |               |                                     |  |
| American Express                 | -0.55  | -0.015        |                                     |  |
| Bank of America                  | -0.28  | -0.022        |                                     |  |
| BB&T                             | -1.05  | -0.12         |                                     |  |
| Barclays                         | -0.91  | 0.32          |                                     |  |
| Bank of NY Mellon                | -0.68  | -0.062        |                                     |  |
| Citigroup                        | -0.64  | -0.065        |                                     |  |
| Capital One                      | -0.74  | -0.062        |                                     |  |
| Credit Suisse                    | -0.44  | 1             |                                     |  |
| Deutsche Bank                    | -0.74  |               |                                     |  |
| Fifth Third                      | -0.26  | 0.5           |                                     |  |
| Goldman Sachs                    | -0.67  | -0.02         |                                     |  |
| JP Morgan                        | -0.74  | -0.027        |                                     |  |
| Keycorp                          | -0.18  | 0.82          |                                     |  |
| Morgan Stanley                   | -0.71  | -0.11         |                                     |  |
| PNC Financial                    | -0.84  | -0.0031       |                                     |  |
| Regions Financial                | -0.61  | -0.062        |                                     |  |
| SunTrust                         | -0.49  | 0.16          |                                     |  |
| State Street                     | -0.68  | 0.19          |                                     |  |
| UBS                              | -0.04  |               |                                     |  |
| US Bancorp                       | -0.75  | -0.061        |                                     |  |
| Wells Fargo                      | -0.79  | 0.026         |                                     |  |

## Bank MPD Statistics as of June 17, 2015

| Indicator  | Latest | 2-Week Change | 1-Year Trend<br>with min/max points | Long-Term Range<br>with median, IQR, and max/min |
|--|--------|---------------|-------------------------------------|--|
| <b>Market Probability of -20% or More Decline (3-Month Expiry)</b> |        |               |                                     |  |
| American Express   | 3.65%  | 0.6%          |                                     |  |
| Bank of America  | 3.9%   | 0.74%         |                                     |  |
| BB&T   | 3.14%  | 0.6%          |                                     |  |
| Barclays   | 8.19%  | 0.78%         |                                     |  |
| Bank of NY Mellon  | 3.2%   | 0.31%         |                                     |  |
| Citigroup  | 3.94%  | 0.45%         |                                     |  |
| Capital One  | 2.93%  | 0.54%         |                                     |  |
| Credit Suisse  | 5.9%   | -1.7%         |                                     |  |
| Deutsche Bank  | 10.06% |               |                                     |  |
| Fifth Third  | 3.39%  | -0.72%        |                                     |  |
| Goldman Sachs  | 3.97%  | 0.41%         |                                     |  |
| JP Morgan  | 3.14%  | -0.12%        |                                     |  |
| Keycorp  | 5.07%  | 0.2%          |                                     |  |
| Morgan Stanley   | 5.61%  | 0.83%         |                                     |  |
| PNC Financial  | 2.88%  | 0.94%         |                                     |  |
| Regions Financial  | 4.71%  | 0.95%         |                                     |  |
| SunTrust   | 4.28%  | 1.2%          |                                     |  |
| State Street   | 4.51%  | 1.2%          |                                     |  |
| UBS  | 7.28%  |               |                                     |  |
| US Bancorp   | 2.52%  | 0.25%         |                                     |  |
| Wells Fargo  | 3.25%  | 0.41%         |                                     |  |

## Bank MPD Statistics as of June 17, 2015

| Indicator                      | Latest | 2-Week Change | 1-Year Trend<br>with min/max points | Long-Term Range<br>with median, IQR, and max/min |
|--------------------------------|--------|---------------|-------------------------------------|--|
| <b>Volume (3-Month Expiry)</b> |        |               |                                     |  |
| American Express               | 1113   | -20%          | 28004<br>0                          | 1113<br>623 - 28004<br>last 48 months            |
| Bank of America                | 58019  | -19%          | 138459<br>0                         | 58019<br>7419 - 363160<br>last 48 months         |
| BB&T                           | 1454   | 100%          | 5688<br>0                           | 1454<br>136 - 6495<br>last 48 months             |
| Barclays                       | 330    | 230%          | 11011<br>0                          | 330<br>13 - 15208<br>last 48 months              |
| Bank of NY Mellon              | 551    | -74%          | 13099<br>0                          | 551<br>59 - 17091<br>last 48 months              |
| Citigroup                      | 17558  | 140%          | 140439<br>0                         | 17558<br>1104 - 150972<br>last 48 months         |
| Capital One                    | 719    | 28%           | 5543<br>0                           | 719<br>148 - 16299<br>last 48 months             |
| Credit Suisse                  | 718    | 46%           | 15145<br>0                          | 718<br>0 - 15145<br>last 48 months               |
| Deutsche Bank                  | 6538   |               | 25112<br>0                          | 6538<br>182 - 29575<br>last 46 months            |
| Fifth Third                    | 679    | 12%           | 7607<br>0                           | 679<br>28 - 19127<br>last 48 months              |
| Goldman Sachs                  | 2927   | 32%           | 15721<br>0                          | 2927<br>296 - 37943<br>last 48 months            |
| JP Morgan                      | 10929  | 310%          | 79587<br>0                          | 10929<br>943 - 119246<br>last 48 months          |
| Keycorp                        | 535    | -11%          | 3300<br>0                           | 535<br>44 - 76270<br>last 48 months              |
| Morgan Stanley                 | 2849   | 3.4%          | 48955<br>0                          | 2849<br>327 - 84281<br>last 48 months            |
| PNC Financial                  | 524    | 10%           | 4810<br>0                           | 524<br>83 - 12224<br>last 48 months              |
| Regions Financial              | 955    | -5.1%         | 47940<br>0                          | 955<br>20 - 47940<br>last 47 months              |
| SunTrust                       | 978    | 270%          | 4808<br>0                           | 978<br>61 - 13788<br>last 48 months              |
| State Street                   | 240    | 38%           | 2086<br>0                           | 240<br>42 - 5339<br>last 48 months               |
| UBS                            | 124    |               | 2034<br>0                           | 124<br>6 - 6502<br>last 43 months                |
| US Bancorp                     | 1117   | 220%          | 9006<br>0                           | 1117<br>172 - 29201<br>last 48 months            |
| Wells Fargo                    | 3860   | -46%          | 62697<br>0                          | 3860<br>950 - 167820<br>last 48 months           |

## Insurance Company MPD Statistics as of June 17, 2015

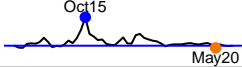
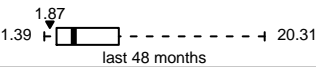
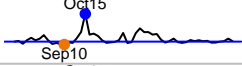
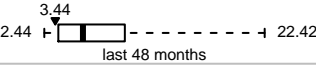

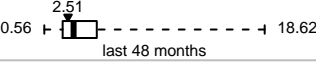
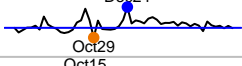
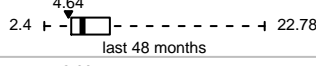
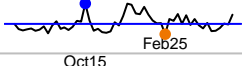
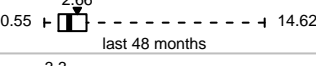

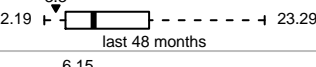
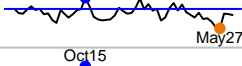
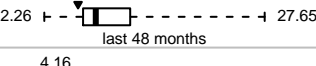

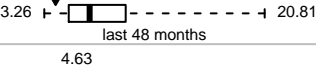
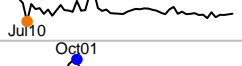
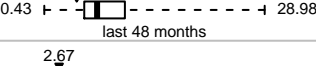
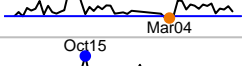
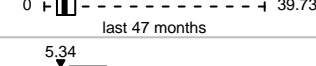
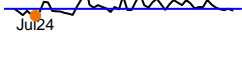
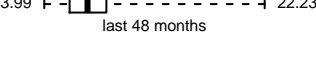
| Indicator                                      | Latest | 2-Week Change | 1-Year Trend<br>with min/max points | Long-Term Range<br>with median, IQR, and max/min |
|--|--------|---------------|-------------------------------------|--|
| <b>MPD Standard Deviation (3-Month Expiry)</b> |        |               |                                     |  |
| <b>Aflac</b>                                   | 7.8%   | -0.081%       |                                     |  |
| <b>AIG</b>                                     | 9.95%  | 0.19%         |                                     |  |
| <b>Allstate</b>                                | 8.28%  | 0.78%         |                                     |  |
| <b>Ameriprise</b>                              | 10.47% | 0.034%        |                                     |  |
| <b>Chubb</b>                                   | 8.21%  | 0.83%         |                                     |  |
| <b>Hartford Financial</b>                      | 9.28%  | 0.36%         |                                     |  |
| <b>Lincoln National</b>                        | 11.52% | 0.011%        |                                     |  |
| <b>Met Life</b>                                | 10.4%  | -0.29%        |                                     |  |
| <b>Principal Financial</b>                     | 10.3%  | 0.015%        |                                     |  |
| <b>Progressive</b>                             | 8.5%   | -0.32%        |                                     |  |
| <b>Prudential</b>                              | 11.24% | 0.028%        |                                     |  |



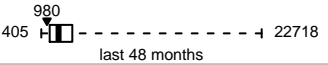

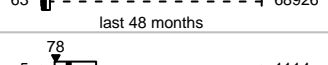
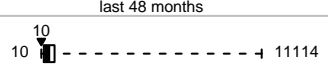
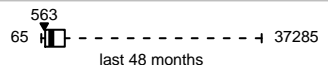
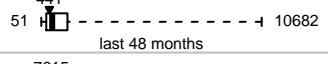
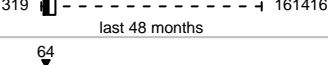
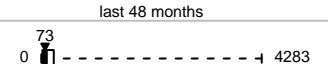
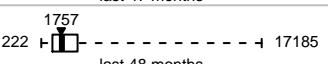


## Insurance Company MPD Statistics as of June 17, 2015

| Indicator                        | Latest | 2-Week Change | 1-Year Trend<br>with min/max points | Long-Term Range<br>with median, IQR, and max/min |
|----------------------------------|--------|---------------|-------------------------------------|--|
| <b>MPD Skew (3-Month Expiry)</b> |        |               |                                     |  |
| <b>Aflac</b>                     | -0.71  | -0.014        |                                     |  |
| <b>AIG</b>                       | -0.5   | 0.028         |                                     |  |
| <b>Allstate</b>                  | -0.69  | -0.3          |                                     |  |
| <b>Ameriprise</b>                | -0.6   | -0.16         |                                     |  |
| <b>Chubb</b>                     | -1.08  | -0.35         |                                     |  |
| <b>Hartford Financial</b>        | -0.65  | 0.045         |                                     |  |
| <b>Lincoln National</b>          | -0.47  | 0.27          |                                     |  |
| <b>Met Life</b>                  | -0.61  | -0.087        |                                     |  |
| <b>Principal Financial</b>       | -0.77  | 0.39          |                                     |  |
| <b>Progressive</b>               | -1.81  | 0.22          |                                     |  |
| <b>Prudential</b>                | -0.47  | -0.041        |                                     |  |

## Insurance Company MPD Statistics as of June 17, 2015

| Indicator  | Latest | 2-Week Change | 1-Year Trend<br>with min/max points   | Long-Term Range<br>with median, IQR, and max/min  |
|--|--------|---------------|---|---|
| <b>Market Probability of -20% or More Decline (3-Month Expiry)</b> |        |               |   |   |
| <b>Aflac</b>   | 1.87%  | -0.044%       | 8.55<br>1.39<br>    | 1.87<br>1.39<br><br>last 48 months   |
| <b>AIG</b>   | 3.44%  | -0.0025%      | 11.59<br>2.44<br>   | 3.44<br>2.44<br><br>last 48 months   |
| <b>Allstate</b>  | 2.51%  | 1.3%          | 4.67<br>0.75<br>    | 2.51<br>0.56<br><br>last 48 months   |
| <b>Ameriprise</b>  | 4.64%  | 0.021%        | 9.67<br>2.4<br>     | 4.64<br>2.4<br><br>last 48 months    |
| <b>Chubb</b>   | 2.66%  | 0.96%         | 3.86<br>0.55<br>    | 2.66<br>0.55<br><br>last 48 months   |
| <b>Hartford Financial</b>  | 3.3%   | 0.44%         | 7.78<br>2.19<br>    | 3.3<br>2.19<br><br>last 48 months    |
| <b>Lincoln National</b>  | 6.15%  | -0.41%        | 11.23<br>2.26<br>   | 6.15<br>2.26<br><br>last 48 months   |
| <b>Met Life</b>  | 4.16%  | -1.1%         | 11.04<br>3.26<br>   | 4.16<br>3.26<br><br>last 48 months   |
| <b>Principal Financial</b>   | 4.63%  | 0.6%          | 17.08<br>0.43<br>   | 4.63<br>0.43<br><br>last 48 months   |
| <b>Progressive</b>   | 2.67%  | -0.47%        | 8.74<br>1<br>      | 2.67<br>0<br><br>last 47 months     |
| <b>Prudential</b>  | 5.34%  | -0.084%       | 12.07<br>3.99<br> | 5.34<br>3.99<br><br>last 48 months |

## Insurance Company MPD Statistics as of June 17, 2015

| Indicator                      | Latest       | 2-Week Change | 1-Year Trend<br>with min/max points | Long-Term Range<br>with median, IQR, and max/min  |
|--------------------------------|--------------|---------------|-------------------------------------|---|
| <b>Volume (3-Month Expiry)</b> |              |               |                                     |   |
| <b>Aflac</b>                   | <b>980</b>   | -23%          | 13324<br>0                          | 980<br>405  22718<br>last 48 months    |
| <b>AIG</b>                     | <b>14066</b> | -8.3%         | 69392<br>0                          | 14066<br>432  103998<br>last 48 months |
| <b>Allstate</b>                | <b>183</b>   | 150%          | 4626<br>0                           | 183<br>63  68926<br>last 48 months     |
| <b>Ameriprise</b>              | <b>78</b>    | 1.3%          | 1071<br>0                           | 78<br>5  1114<br>last 48 months        |
| <b>Chubb</b>                   | <b>10</b>    | -88%          | 9027<br>0                           | 10<br>10  11114<br>last 48 months      |
| <b>Hartford Financial</b>      | <b>563</b>   | 5.4%          | 9199<br>0                           | 563<br>65  37285<br>last 48 months     |
| <b>Lincoln National</b>        | <b>441</b>   | 62%           | 8403<br>0                           | 441<br>51  10682<br>last 48 months     |
| <b>Met Life</b>                | <b>7615</b>  | -44%          | 29248<br>0                          | 7615<br>319  161416<br>last 48 months  |
| <b>Principal Financial</b>     | <b>64</b>    | 33%           | 545<br>0                            | 64<br>2  2956<br>last 48 months       |
| <b>Progressive</b>             | <b>73</b>    | 200%          | 773<br>0                            | 73<br>0  4283<br>last 47 months      |
| <b>Prudential</b>              | <b>1757</b>  | 250%          | 17185<br>0                          | 1757<br>222  17185<br>last 48 months |