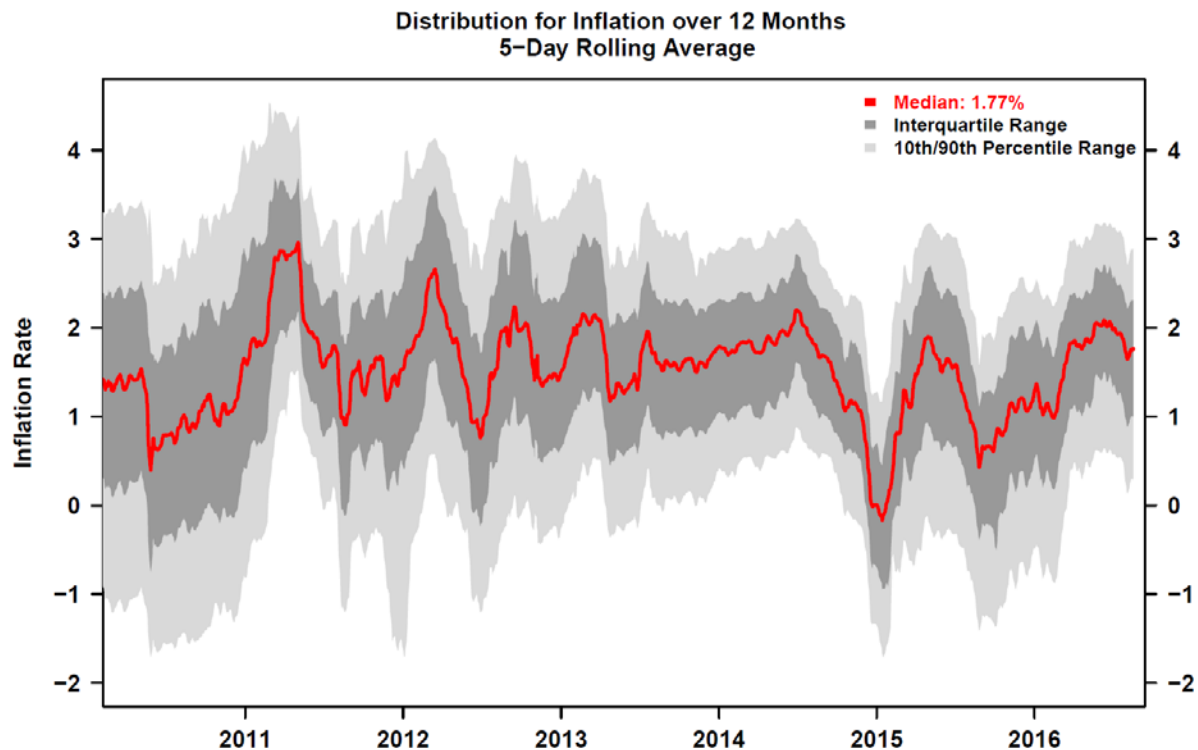


Minneapolis Options Report – August 19th

Market based inflation expectations rose for all tenors over the two-week period. MPD skews for Treasury options have fallen since June 2016 and currently point to future Treasury price reductions. The S&P 500 returned 0.85%, while the 19 banks we follow outperformed the markets, returning 3.7%. MPDs for USD-Yen currency options are skewed relative to the past four years, indicating that there is bias towards a comparatively stronger yen in the future. WTI crude jumped by 13% as oversupply concerns subsided.

Inflation

Market-based inflation expectations, derived from caps and floors on the CPI for 1-, 2- and 5-year periods, increased over the past two weeks to 1.78%, 1.62%, and 1.55%, respectively. The 1-year tenor, best demonstrates this increase (see figure below).



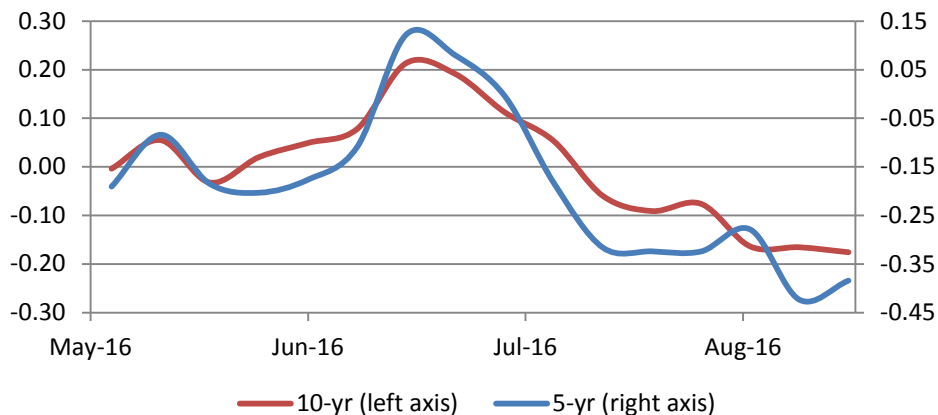
Additional detail:

- While median expectations for the 1- and 2-year tenors have settled closer to their respective long term median values, the 5-year tenor remains much lower.

Interest Rates

Prices for 5- and 10-year Treasuries each fell by -0.4%, and consequently yields rose. Current skew levels, for both tenors, appear to signal that there is bias towards lower treasury prices (higher yields) in the future. MPD skews for both tenors are well below their respective historic 25th percentile values and have trended downward since June 15, 2016 (see plot below).

MPD Skew for 5- and 10-year Treasury Tenors



The 3- and 5-year LIBOR tenors posted mixed changes, with the 3-year tenor increasing by 6.1 bps and the 5-year tenor falling by -4.9 bps. Changes in MPD statistics for both LIBOR tenors were flat over the two week period. The probability of low LIBOR rates, defined by the market probability of less than 1% LIBOR for the 5-year tenor, stands slightly higher than 50% after rising by 1.8 percentage points.

Banks and Insurance Companies

The S&P 500 returned 0.85% over the past two weeks posting a new all-time high. The 19 domestic banks outperformed the market returning with an average of 3.7%, while the 11 insurance company stocks we follow underperformed the index, returning 0.5%.

Additional details:

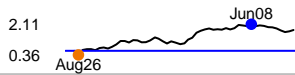
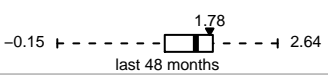



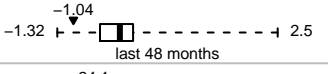

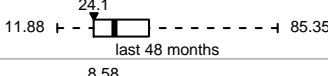

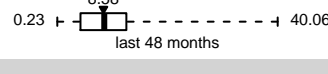
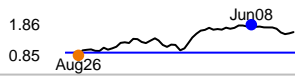
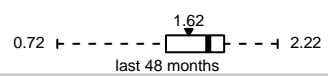
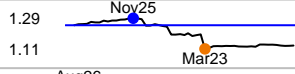
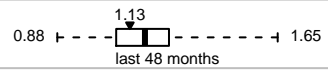
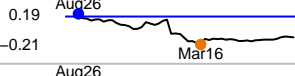
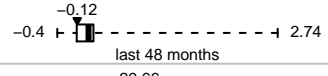
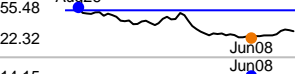
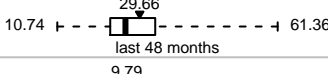
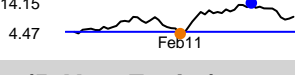
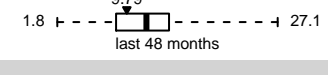
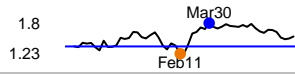
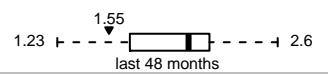


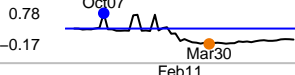
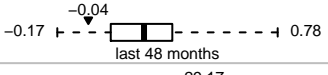
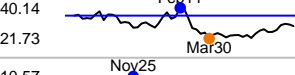
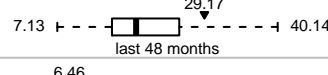
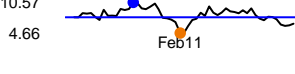
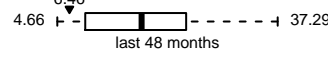
- MPD standard deviation moved higher by 1 percentage point for the 6-month S&P 500 tenor, whereas the metric was lower by -0.5 percentage points for the 12-month tenor. This implies that investor uncertainty has increased for the broader market over the shorter term period relative to the longer term.
- MPD standard deviation fell for nearly all banks we follow, with FBOs posting the largest declines over the two week reporting period. The metric stands near four-year median values for most banks except the FBOs whose MPD standard deviation remains slightly above the 75th percentile level.
- While MPD standard deviation fell for most insurance companies we follow, Ameriprise moved higher by 1 percentage point.

Other Markets

- iShares US Real Estate Index underperformed the market, returning -1.4%. Its MPD standard deviation fell slightly by 0.47 percentage points.
- The dollar was stronger against the pound and weaker against the euro and yen. MPD skews have trended higher for all currency pairs with the USD-Euro and USD-Pound pairing indicating neutral bias currently, and the USD-Yen pairs signaling a comparatively stronger yen in the future.
- Spots prices for gold and silver were lower by -1.2% and -3.4 respectively. Silver experienced a -2.1 percentage point fall in MPD standard deviation signaling a reduction in investor uncertainty.
- WTI crude spots jumped by 13% as oversupply concerns diminished although its current level, at \$50.12, is slightly higher than its 4-year 25th percentile level. MPD standard deviation fell by -3.4 percentage points.
- Agricultural crops were higher, on average, returning 3.1%. Changes in MPD standard deviation for corn and wheat were lower by -1.2 percentage points on average, whereas the change for soy was lower by 0.4 percentage points.

- Agricultural livestock produced mixed returns with cattle losing -1.1% and hogs gaining 1.5%. MPD standard deviation for hogs fell by 1 percentage point however its overall level remains elevated relative to its 22-month median value.

Inflation MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Inflation (1-Year Expiry)				
Median	1.78%	0.12%		
MPD Std Dev	1.03%	-0.0015%		
MPD Skew	-1.04	-0.072		
Market Prob of Less Than 1% Inflation	24.1%	-3.7%		
Market Prob of More Than 3% Inflation	8.58%	2%		
Inflation (2-Year Expiry)				
Median	1.62%	0.067%		
MPD Std Dev	1.13%	0.002%		
MPD Skew	-0.12	-0.011		
Market Prob of Less Than 1% Inflation	29.66%	-1.9%		
Market Prob of More Than 3% Inflation	9.79%	0.89%		
Inflation (5-Year Expiry)				
Median	1.55%	0.051%		
MPD Std Dev	1%	0.0015%		
MPD Skew	-0.04	-0.015		
Market Prob of Less Than 1% Inflation	29.17%	-1.4%		
Market Prob of More Than 3% Inflation	6.46%	0.42%		

Medium-to-Long Bond Price MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
5 Year Treasury (3-Month Expiry)				
Spot	121.41	-0.39%		
MPD Std Dev	1.59%	-0.0036%		
MPD Skew	-0.38	-0.11		
Market Prob of -3% or More Decline	3.89%	0.019%		
Volume	20089	170%		
10 Year Treasury (3-Month Expiry)				
Spot	131.13	-0.39%		
MPD Std Dev	2.48%	-0.082%		
MPD Skew	-0.18	-0.012		
Market Prob of -5% or More Decline	2.97%	-0.36%		
Volume	52945	130%		


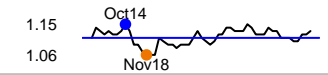
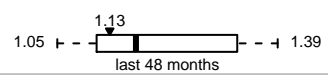


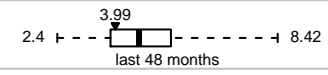

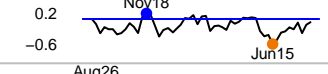


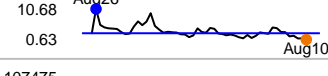
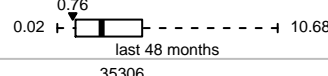


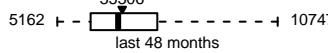

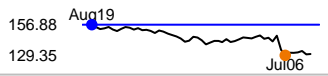


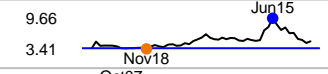


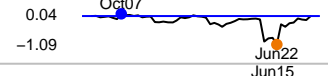
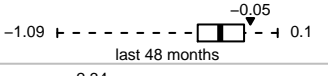

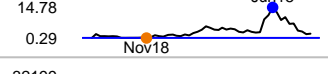
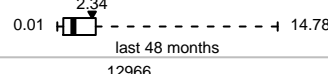


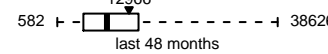

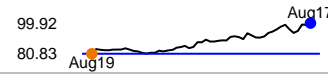
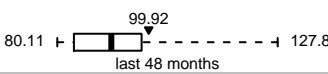

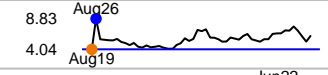
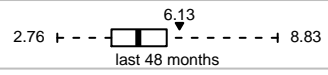

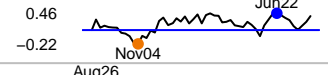
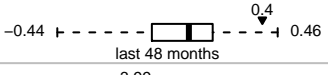

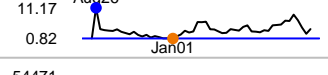
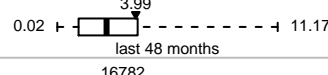


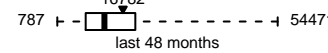
Short Interest Rates MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
3 Month LIBOR (3-Year Expiry)				
Median	0.95%	0.061%		
MPD Std Dev	1.04%	0.016%		
MPD Skew	1.05	-0.063		
Market Prob of Less Than 0.5% LIBOR	27.37%	-2.1%		
Market Prob of More Than 1% + Spot	22.21%	4.6%		
3 Month LIBOR (5-Year Expiry)				
Median	1%	-0.049%		
MPD Std Dev	1.38%	-0.056%		
MPD Skew	1.4	-0.12		
Market Prob of Less Than 1% LIBOR	50.01%	1.8%		
Market Prob of More Than 2% + Spot	12.43%	-5.1%		

Equity Index MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
S&P 500 (6-Month Expiry)				
Spot	2182.22	0.85%		
MPD Std Dev	11.53%	1%		
MPD Skew	-1.45	-0.07		
Market Prob of -20% or More Decline	6.81%	1.6%		
Volume	32405	-60%		
S&P 500 (12-Month Expiry)				
Spot	2182.22	0.85%		
MPD Std Dev	16.62%	-0.49%		
MPD Skew	-1.54	-0.086		
Market Prob of -20% or More Decline	11.06%	-0.68%		
Volume	31996	35%		
iShares US Real Estate Index (3-Month Expiry)				
Spot	82.86	-1.4%		
MPD Std Dev	8.09%	-0.47%		
MPD Skew	-0.91	0.17		
Market Prob of -10% or More Decline	12.27%	-0.72%		
Volume	954	-96%		

Exchange Rate MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Dollar-Euro Futures (3-Month Expiry)				
Spot	1.13	 0.89%		
MPD Std Dev	3.99%	 0.16%		
MPD Skew	-0.03	 0.29		
Market Prob of -10% or More Decline	0.76%	 -0.26%		
Volume	35306	 13%		
Dollar-Pound Futures (3-Month Expiry)				
Spot	130.5	 -2.1%		
MPD Std Dev	4.95%	 -0.28%		
MPD Skew	-0.05	 0.12		
Market Prob of -10% or More Decline	2.34%	 -1%		
Volume	12966	 23%		
Dollar-Yen Futures (3-Month Expiry)				
Spot	99.92	 0.9%		
MPD Std Dev	6.13%	 0.057%		
MPD Skew	0.4	 0.21		
Market Prob of -10% or More Decline	3.99%	 -0.49%		
Volume	16782	 -43%		

Metal and Energy Commodity MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Gold (6-Month Expiry)				
Spot	1352.38	-1.2%		
MPD Std Dev	11.82%	0.31%		
MPD Skew	0.18	-0.032		
Market Prob of -20% or More Decline	4.8%	0.36%		
Volume	2516	-33%		
Silver (6-Month Expiry)				
Spot	19.88	-3.4%		
MPD Std Dev	18.44%	-2.1%		
MPD Skew	0.21	-0.034		
Market Prob of -20% or More Decline	13.87%	-2.3%		
Volume	130	-95%		
West Texas Intermediate Crude (6-Month Expiry)				
Spot	50.12	13%		
MPD Std Dev	26.82%	-3.4%		
MPD Skew	-0.46	-0.042		
Market Prob of -20% or More Decline	23.37%	-3.3%		
Volume	2975	-45%		

Agricultural Crop Commodity MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Corn (6-Month Expiry)				
Spot	340.15	1.5%	439.62 333.31	340.15 333.31 - 814.25 last 48 months
MPD Std Dev	15.6%	-1.1%	22.76 12.41	15.6 12.41 - 22.76 last 48 months
MPD Skew	0.19	-0.13	0.7 0.05	0.19 -0.19 - 0.7 last 48 months
Market Prob of -20% or More Decline	9.73%	-2%	21.96 4.96	9.73 4.96 - 21.96 last 48 months
Volume	188699	77%	315800 0	188699 5486 - 377209 last 48 months
Soybeans (6-Month Expiry)				
Spot	1007.33	6.3%	1159.12 864.89	1007.33 864.89 - 1691.25 last 48 months
MPD Std Dev	14.33%	-0.4%	23.86 10.21	14.33 10.21 - 23.86 last 48 months
MPD Skew	0.27	-0.13	0.89 -0.23	0.27 -0.5 - 0.89 last 48 months
Market Prob of -20% or More Decline	8.89%	-0.44%	17.39 2.96	8.89 2.96 - 17.39 last 48 months
Volume	8253	-27%	80482 0	8253 496 - 240059 last 48 months
Wheat (6-Month Expiry)				
Spot	443.31	1.6%	548.3 436.45	443.31 436.45 - 904.25 last 48 months
MPD Std Dev	16.78%	-1.3%	21.98 16.04	16.78 12.95 - 22.31 last 48 months
MPD Skew	0.68	0.065	0.74 0.23	0.68 0.01 - 0.74 last 48 months
Market Prob of -20% or More Decline	10.87%	-2.7%	20.35 10.87	10.87 5.67 - 22.05 last 48 months
Volume	24611	0.016%	26649 0	24611 179 - 51689 last 48 months

Agricultural Livestock Commodity MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Cattle (6-Month Expiry)				
Spot	113.54	-1.1%		
MPD Std Dev	12.62%	0.046%		
MPD Skew	-0.6	-0.094		
Market Prob of -5% or More Decline	31.31%	-0.75%		
Volume	2237	-48%		
Hogs (6-Month Expiry)				
Spot	61.41	1.5%		
MPD Std Dev	17.79%	-0.99%		
MPD Skew	-0.7	-0.079		
Market Prob of -20% or More Decline	14.06%	-1.9%		
Volume	2318	-23%		

Bank MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
MPD Standard Deviation (3-Month Expiry)				
American Express	10.27%	-0.78%		
Bank of America	11.39%	-1.3%		
BB&T	10.3%	-0.35%		
Barclays	19.57%	-2.5%		
Bank of NY Mellon	11.74%	-0.65%		
Citigroup	13.07%	-0.97%		
Capital One	12.66%	-0.89%		
Credit Suisse	18.06%	-4.4%		
Deutsche Bank	20.61%	-3.8%		
Fifth Third	11.62%	-2.3%		
Goldman Sachs	11.19%	-0.54%		
JP Morgan	10.54%	-0.72%		
Keycorp	12.78%	-0.9%		
Morgan Stanley	12.9%	-1%		
PNC Financial	10.22%	-0.5%		
Regions Financial	15.02%	0.4%		
SunTrust	11.82%	-0.82%		
State Street	12.74%	-0.72%		
UBS	13.36%			
US Bancorp	9.42%	0.33%		
Wells Fargo	8.33%	-0.37%		

Bank MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
MPD Skew (3-Month Expiry)				
American Express	-0.86	-0.023		
Bank of America	-0.41	0.1		
BB&T	-1.22	0.067		
Barclays	-0.41	0.55		
Bank of NY Mellon	-0.69	0.12		
Citigroup	-0.86	0.033		
Capital One	-0.87	-0.072		
Credit Suisse	-0.88	-0.15		
Deutsche Bank	-0.77	0.33		
Fifth Third	-0.46	0.18		
Goldman Sachs	-0.8	-0.028		
JP Morgan	-1.11	-0.038		
Keycorp	-0.64	0.024		
Morgan Stanley	-0.71	-0.067		
PNC Financial	-1.02	-0.1		
Regions Financial	-1.58	0.015		
SunTrust	-0.77	-0.051		
State Street	-0.83	-0.079		
UBS	-0.04			
US Bancorp	-0.97	0.21		
Wells Fargo	-0.47	0.11		

Bank MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Market Probability of -20% or More Decline (3-Month Expiry)				
American Express	4.37%	-0.85%		
Bank of America	4.75%	-1.6%		
BB&T	4.65%	-0.67%		
Barclays	16.32%	-1.2%		
Bank of NY Mellon	7.02%	-0.14%		
Citigroup	7.82%	-1.4%		
Capital One	7.49%	-2.3%		
Credit Suisse	12.19%	-6.8%		
Deutsche Bank	13.91%	-2.4%		
Fifth Third	5.41%	-4.5%		
Goldman Sachs	5.24%	-0.75%		
JP Morgan	5.25%	-0.94%		
Keycorp	7.16%	-2.6%		
Morgan Stanley	7.27%	-1.2%		
PNC Financial	4.61%	-0.44%		
Regions Financial	7.19%	2.4%		
SunTrust	6.1%	-0.91%		
State Street	6.86%	-1.3%		
UBS	7.28%			
US Bancorp	3.84%	0.32%		
Wells Fargo	1.97%	-0.48%		

Bank MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Volume (3-Month Expiry)				
American Express	5166	84%	22968 0	623 - 5166 - 32713 last 48 months
Bank of America	100033	2%	187673 0	7419 - 100033 - 244509 last 48 months
BB&T	2149	380%	6459 0	126 - 2149 - 6490 last 48 months
Barclays	1367	-81%	18909 0	8 - 1367 - 18909 last 48 months
Bank of NY Mellon	488	510%	33235 0	44 - 488 - 33235 last 48 months
Citigroup	6120	4.2%	90561 0	1104 - 6120 - 140439 last 48 months
Capital One	549	-47%	9096 0	136 - 549 - 16299 last 48 months
Credit Suisse	3090	440%	17340 0	0 - 3090 - 17340 last 48 months
Deutsche Bank	2673	-84%	47326 0	76 - 2673 - 47326 last 42 months
Fifth Third	2167	290%	6257 0	28 - 2167 - 19127 last 48 months
Goldman Sachs	6511	-7.2%	20203 0	612 - 6511 - 28030 last 48 months
JP Morgan	4261	7.9%	132116 0	943 - 4261 - 132116 last 48 months
Keycorp	634	-79%	5129 0	44 - 634 - 27404 last 48 months
Morgan Stanley	5921	28%	36166 0	327 - 5921 - 69872 last 48 months
PNC Financial	678	10%	4932 0	42 - 678 - 5118 last 48 months
Regions Financial	1544	2500%	4832 0	20 - 1544 - 47940 last 47 months
SunTrust	1324	210%	5155 0	61 - 1324 - 13788 last 48 months
State Street	503	-56%	2700 0	19 - 503 - 5339 last 48 months
UBS	124		2034 0	23 - 124 - 6502 last 29 months
US Bancorp	794	94%	9418 0	52 - 794 - 29142 last 48 months
Wells Fargo	10395	-62%	47248 0	950 - 10395 - 121351 last 48 months

Insurance Company MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
MPD Standard Deviation (3-Month Expiry)				
Aflac	8.37%	-0.67%		
AIG	8.4%	-0.16%		
Allstate	7.46%	-1.4%		
Ameriprise	14.02%	1.3%		
Chubb	9.08%	-0.012%		
Hartford Financial	11.34%	-0.056%		
Lincoln National	15.08%	-1.4%		
Met Life	13.85%	-0.25%		
Principal Financial	11.09%	-2.3%		
Progressive	9.91%	0.21%		
Prudential	13.09%	-0.59%		



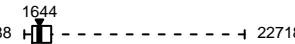


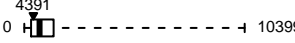


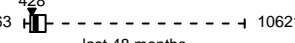


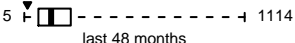


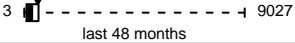


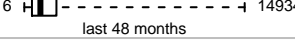

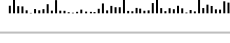
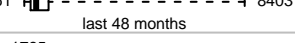


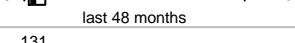


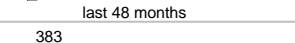

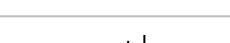
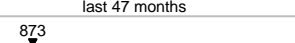


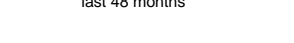
Insurance Company MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
MPD Skew (3-Month Expiry)				
Aflac	-1.15	0.0042	-0.24 -1.31 Sep09 Oct28	-1.31 -1.15 -0.24 last 48 months
AIG	-0.59	0.16	-0.49 -1.16 Nov11 Oct14	-1.16 -0.59 -0.23 last 48 months
Allstate	-1.26	-0.44	-0.16 -1.26 Oct14 Jun29	-1.5 -1.26 -0.12 last 48 months
Ameriprise	-1.18	-0.18	-0.32 -1.42 Jan07 Jul13	-4.03 -1.18 -0.11 last 48 months
Chubb	-1.43	-0.11	0.09 -1.57 Aug19 Jul06	-1.57 -1.43 0.09 last 48 months
Hartford Financial	-0.64	0.043	-0.16 -1.67 Nov04 Jul27	-1.67 -0.64 -0.09 last 48 months
Lincoln National	-0.69	0.12	-0.33 -1.15 Aug26 Apr06	-1.15 -0.69 0.15 last 48 months
Met Life	-0.84	0.35	-0.51 -1.24 Oct14 Jun01	-1.24 -0.84 -0.23 last 48 months
Principal Financial	-0.59	0.34	0.42 -1.38 Oct21 May04	-2.95 -0.59 0.42 last 48 months
Progressive	-1	-0.3	-0.02 -1.83 Dec02 Oct28	-3.54 -1 0.42 last 47 months
Prudential	-1.05	0.09	-0.47 -1.2 Jan14 May18	-1.44 -1.05 -0.33 last 48 months

Insurance Company MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Market Probability of -20% or More Decline (3-Month Expiry)				
Aflac	2.77%	-0.69%		
AIG	2.04%	-0.31%		
Allstate	2.14%	-0.65%		
Ameriprise	9.21%	1.3%		
Chubb	3.62%	0.31%		
Hartford Financial	6.48%	-0.44%		
Lincoln National	10.02%	-3%		
Met Life	9.49%	-0.26%		
Principal Financial	5.69%	-3%		
Progressive	4.37%	0.9%		
Prudential	8.46%	-0.98%		

Insurance Company MPD Statistics as of August 17, 2016

Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min
Volume (3-Month Expiry)				
Aflac	1644	 83%	13168 0 	1644 88  22718 last 48 months
AIG	4391	 200%	44233 0 	4391 110  103998 last 48 months
Allstate	428	 -70%	3039 0 	428 63  10621 last 48 months
Ameriprise	21	 -76%	1035 0 	21 5  1114 last 48 months
Chubb	557	 -53%	3292 0 	557 3  9027 last 48 months
Hartford Financial	695	 -43%	4752 0 	695 16  14934 last 48 months
Lincoln National	1449	 190%	4145 0 	1449 51  8403 last 48 months
Met Life	1785	 -3.4%	22250 0 	1785 319  74100 last 48 months
Principal Financial	131	 41%	610 0 	131 2  2956 last 48 months
Progressive	383	 11%	2216 0 	383 0  3415 last 47 months
Prudential	873	 250%	14512 0 	873 222  17185 last 48 months