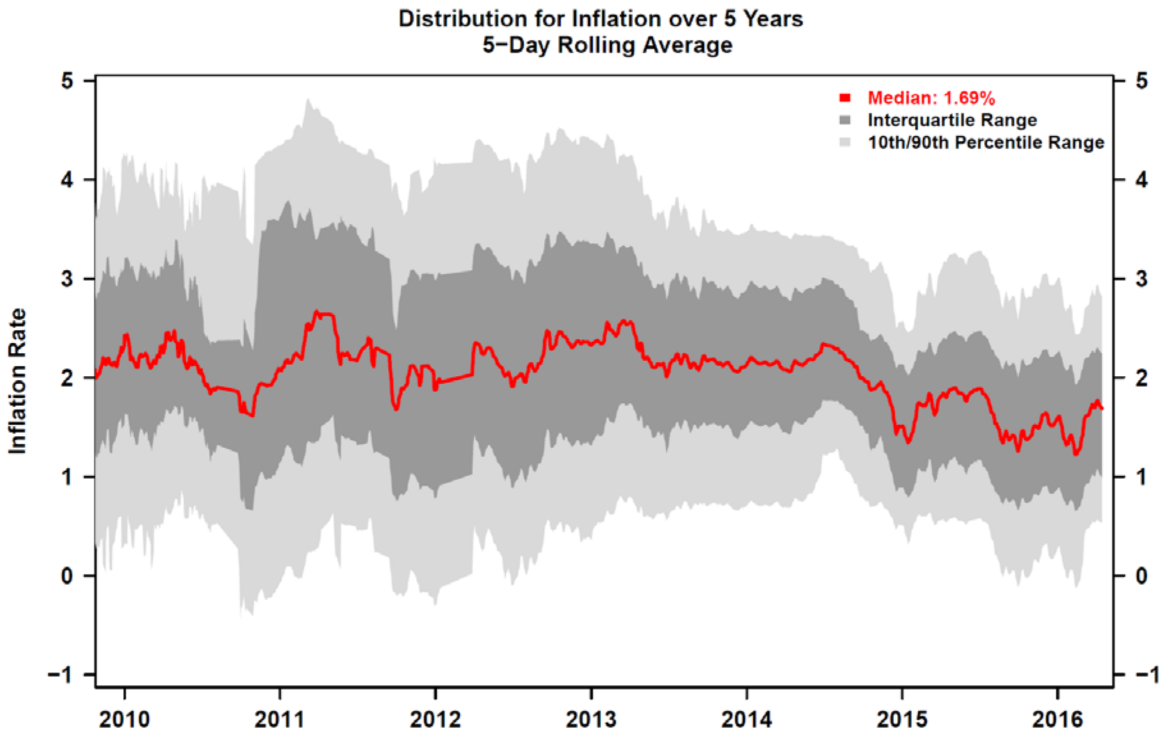
Minneapolis Options Report – April 15th

Median inflation expectations fell for all inflation tenors over the 2-week period. The S&P 500 returned 0.9% and closed near its 4-year high of 2125.9; banks and insurance firms we follow on average outperformed the market with an average return of 3.2% and 1.6%, respectively. The yen was stronger against the dollar setting a new 1-year high. MPD skew for metals and agricultural crops has steadily risen since the fourth quarter of 2015.

Inflation

Market-based inflation expectations derived from caps and floors on the CPI for 1-, 2-, and 5-year periods fell slightly over the 2-week period to 1.83%, 1.72% and 1.70%, respectively. This decrease is best observed in the 5-year tenor (see figure, below).



Additional detail:

- The probability of low inflation, market probability of less than 1% inflation, rose across all tenors, but more so for the 5-year tenor increasing by 3.2 percentage points, reversing a 2-month decline.
- MPD skew for the 1-year inflation tenor sits near historic 4-year lows implying bias towards lower short-term inflation expectations in the future. This follows an MPD skew spike on April 6th that registered a new 1-year high of 1.8.

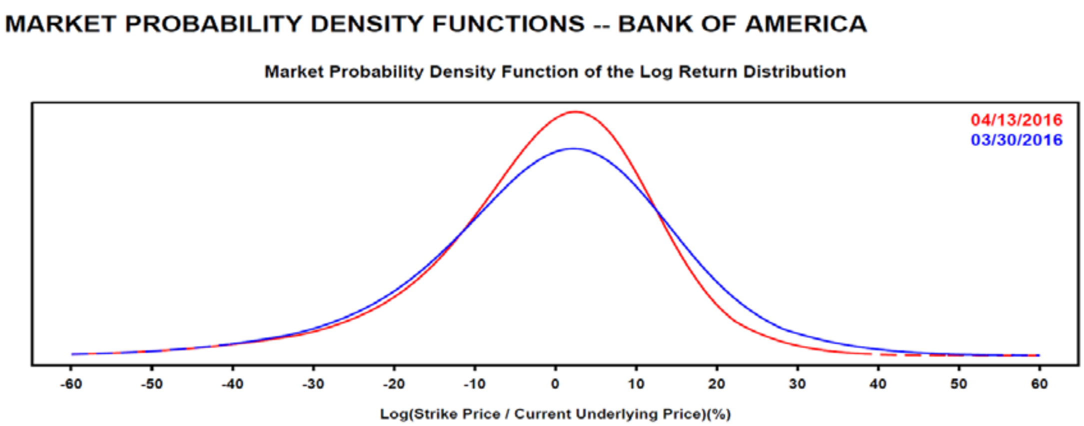
Interest Rates

Spots for the 5- and 10-year Treasuries increased slightly over the 2-week period and are approaching respective historic 19-month highs indicating that yields are at near historic lows. MPD standard deviation continues to decline for the each treasury tenor and have been doing so since February, 2016. MPD skew continues to signal neutral bias for each tenor. The 3- and 5-year-out 3-month LIBOR tenors fell by -3.8 and -12 bps over the two-week period. The 5-year-out LIBOR tenor experienced a 4.7 percentage point increase in its market probability of less than 1% LIBOR, just under its 4-year high at 54.32%.

Banks and Insurance Companies
The S&P 500 returned 0.9% over the past two weeks. Changes in MPD statistics for the S&P 500 were minimal. The 19 banking firms we follow posted a 3.2% return, outperforming the market. Changes in MPD standard deviation, for most firms, mirrored those of the S&P 500, remaining flat over the two-week reporting period. The 11 insurance companies we follow matched the market, returning 1.6% on average and changes in MPD statistics were flat.

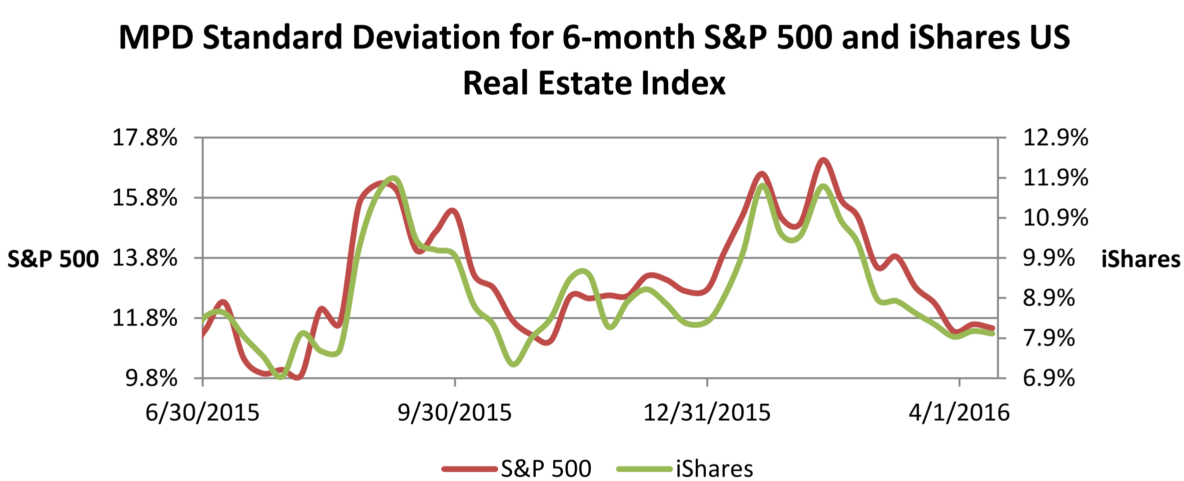
Additional details:

- 5 of 19 banks have MPD standard deviations that are above respective 4-year 75th percentiles. In particular, the MPD standard deviation for KEY rose by 3.7 percentage points, closing in on its 4-year high at 20.2%.
- 5 of the 19 banks we follow reported earnings this week: BAC (EPS: 0.2), C (EPS: 1.1), JPM (EPS: 1.25), PNC (EPS: 1.62), and WFC (EPS: 0.99). JPM and C posted the largest positive earnings surprises at 12.4% and 6.6% respectively. The largest negative earnings surprises were registered by BAC and PNC at -2.5% and -4.8%. WFC recorded a 1.77% surprise. BAC had demonstrated change in it MPD function as its right tail area diminished over the two-week period (see plot below).



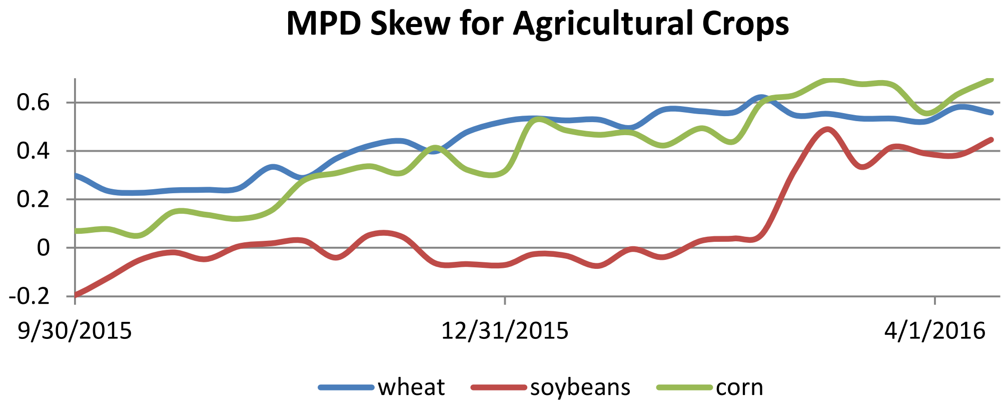
Other Markets

- The iShares US Real Estate Index underperformed the market, posting a 0.5% return. Recent declines in MPD standard deviation signal a reduction in investor uncertainty surrounding iShares equities. It is noteworthy that its MPD standard deviation has moved in unison with that of the S&P 500 since the third quarter of 2015 (see plot below).



- The yen was stronger against the dollar with spots increasing by 2.9% and setting a new 1-year high. Conversely the dollar was stronger against the pound with the US-Pound spot declining by -1.2%.

- MPD skews for corn, soybeans and wheat have nearly risen to their historic 4-year highs. Skews have been rising since October, 2015 (see figure, below).



- MPD skew for gold and silver rose over the 2-week period, ending above their respective 4-year 75th percentiles with silver setting a new 4-year high. This indicates that investors are biased towards higher future metal prices. Gold and silver MPD skews have steadily increased since late August 2015.
- WTI crude spots jumped by 7.8% over the 2-week period. The probability of a -20% or more decline ticked upwards by 2.1 percentage points, following a two-month period of decline.
- Lean hogs experienced a -16% decline over the 2-week period.

Inflation MPD Statistics as of April 13, 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	**1.83%**	−0.042%	1.9 Apr29 0.36 Aug26	−0.15 1.83 2.64 last 48 months
MPD Std Dev	**1.01%**	0.0018%	2.75 Apr06 1.01 Mar30	0.83 1.01 2.75 last 48 months
MPD Skew	**−1.08**	0.029	1.8 Apr06 −1.11 Mar30	−1.11 −1.08 2.5 last 48 months
Market Prob of Less Than 1% Inflation	**22.5%**	1.3%	72.57 Aug26 21.22 Mar30	11.88 22.5 85.35 last 48 months
Market Prob of More Than 3% Inflation	**9.33%**	−0.96%	15.81 Apr29 0.36 Aug26	0.23 9.33 40.06 last 48 months
Inflation (2−Year Expiry)				
Median	**1.72%**	−0.041%	1.85 Apr22 0.85 Aug26	0.72 1.72 2.22 last 48 months
MPD Std Dev	**1.13%**	0.011%	1.32 Apr29 1.11 Mar23	0.88 1.13 1.66 last 48 months
MPD Skew	**−0.14**	0.012	0.19 Aug26 −0.31 Apr22	−0.4 −0.14 2.74 last 48 months
Market Prob of Less Than 1% Inflation	**26.65%**	1.4%	55.48 Aug26 25.22 Apr22	10.74 26.65 61.36 last 48 months
Market Prob of More Than 3% Inflation	**11.3%**	−0.53%	17.23 Apr29 4.47 Feb11	1.8 11.3 27.1 last 48 months
Inflation (5−Year Expiry)				
Median	**1.7%**	−0.1%	1.91 Jun17 1.23 Feb11	1.23 1.7 2.6 last 48 months
MPD Std Dev	**1.01%**	−0.0035%	1.23 Oct07 1.01 Mar23	0.91 1.01 1.68 last 48 months
MPD Skew	**−0.14**	0.036	0.78 Oct07 −0.17 Mar30	−0.17 −0.14 0.78 last 48 months
Market Prob of Less Than 1% Inflation	**24.94%**	3.2%	40.14 Feb11 20.08 Apr29	7.13 24.94 40.14 last 48 months
Market Prob of More Than 3% Inflation	**8.13%**	−1.7%	15.28 Jun17 4.66 Feb11	4.66 8.13 37.29 last 48 months

Source: Bloomberg

Medium−to−Long Bond Price MPD Statistics as of April 13, 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	**121.18**	0.22%	121.46 / 118.22; Feb11, Nov11	118.05 – 121.46; 121.18; last 19 months
MPD Std Dev	**1.58%**	−0.076%	1.96 / 1.49; Jan21, Apr15	1.41 – 2.3; 1.58; last 19 months
MPD Skew	**−0.02**	−0.068	0.19 / −0.54; Feb18, Jun03	−0.54 – 0.36; −0.02; last 19 months
Market Prob of −3% or More Decline	**3.14%**	−0.71%	6.61 / 2.59; Jun03, Apr15	2.44 – 8.74; 3.14; last 19 months
Volume	**76408**	0.56%	335039 / 0	2054 – 377550; 76408; last 19 months
10 Year Treasury (3−Month Expiry)				
Spot	**130.63**	0.48%	131.11 / 124.66; Feb11, Jun10	122.97 – 131.11; 130.63; last 30 months
MPD Std Dev	**2.55%**	−0.13%	3.3 / 2.46; Jul08, Apr15	2.17 – 3.8; 2.55; last 30 months
MPD Skew	**0.07**	−0.012	0.2 / −0.39; Feb11, May13	−0.75 – 0.31; 0.07; last 30 months
Market Prob of −5% or More Decline	**2.66%**	−0.65%	6.49 / 2.46; Jun03, Apr15	1.62 – 8.48; 2.66; last 30 months
Volume	**379368**	44%	936747 / 0	5226 – 118509; 379368; last 30 months

Short Interest Rates MPD Statistics as of April 13, 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	**0.97%**	−0.038%	1.71 Jun10; 0.77 Feb11	0.72 – 1.85; 0.97; last 48 months
MPD Std Dev	**1.1%**	0.054%	2.04 Jul22; 1.05 Mar30	0.68 – 2.17; 1.1; last 48 months
MPD Skew	**1.86**	0.59	3.34 Jul22; 0.4 Jun03	0.4 – 7.06; 1.86; last 48 months
Market Prob of Less Than 0.5% LIBOR	**27.94%**	0.63%	37.56 Feb11; 14.23 Dec23	9.79 – 38.35; 27.94; last 48 months
Market Prob of More Than 1% + Spot	**24.58%**	−2.1%	61.18 Jun10; 17.77 Feb24	7.61 – 67.85; 24.58; last 48 months
3 Month LIBOR (5−Year Expiry)				
Median	**0.94%**	−0.12%	2.41 May20; 0.88 Feb11	0.88 – 2.99; 0.94; last 45 months
MPD Std Dev	**1.53%**	−0.026%	2.44 Aug26; 1.41 Feb03	1.41 – 2.85; 1.53; last 45 months
MPD Skew	**1.96**	0.54	2.53 Aug26; 0.2 Feb03	0.2 – 4.1; 1.96; last 45 months
Market Prob of Less Than 1% LIBOR	**52.55%**	4.7%	54.32 Feb11; 19.19 Feb03	17.66 – 54.32; 52.55; last 45 months
Market Prob of More Than 2% + Spot	**10.89%**	−11%	52.05 Jun17; 0.2 Feb03	0.2 – 60.53; 10.89; last 45 months

Source: Bloomberg

Equity Index MPD Statistics as of April 13, 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	**2082.42**	0.89%	2125.85 / 1851.86; May20, Feb11	1310.33 – 2125.85; 2082.42; last 48 months
MPD Std Dev	**11.41%**	0.11%	17 / 9.85; Feb11, Aug05	8.87 – 17.46; 11.41; last 48 months
MPD Skew	**−1.56**	−0.081	−1.27 / −1.74; Jan14, Mar03	−1.74 – −0.86; −1.56; last 48 months
Market Prob of −20% or More Decline	**6.4%**	0.15%	12.52 / 4.72; Feb11, Jul29	3.65 – 12.52; 6.4; last 48 months
Volume	**92225**	−33%	199186 / 0	13428 – 309308; 92225; last 48 months
S&P 500 (12−Month Expiry)				
Spot	**2082.42**	0.89%	2125.85 / 1851.86; May20, Feb11	1310.33 – 2125.85; 2082.42; last 48 months
MPD Std Dev	**17.96%**	0.08%	23.52 / 16; Jan21, Jul29	10.5 – 26.44; 17.96; last 48 months
MPD Skew	**−1.57**	−0.026	−1.27 / −1.78; Sep30, Mar03	−1.78 – −0.98; −1.57; last 48 months
Market Prob of −20% or More Decline	**12.6%**	0.12%	17.37 / 10.24; Jan21, Jul29	5.51 – 19.55; 12.6; last 48 months
Volume	**21551**	−53%	105728 / 0	3174 – 123271; 21551; last 48 months
iShares US Real Estate Index (3−Month Expiry)				
Spot	**77.82**	0.54%	77.88 / 67.26; Apr22, Feb11	61.19 – 82.44; 77.82; last 48 months
MPD Std Dev	**8.01%**	0.079%	11.83 / 6.94; Sep09, Jul29	4.77 – 12.46; 8.01; last 48 months
MPD Skew	**−0.89**	−0.089	−0.48 / −1.36; Jun24, Mar03	−2.09 – −0.35; −0.89; last 48 months
Market Prob of −10% or More Decline	**10.68%**	−0.69%	20.5 / 8.45; Sep09, Jul29	3.43 – 20.5; 10.68; last 48 months
Volume	**16066**	−66%	141443 / 0	32 – 141443; 16066; last 48 months

Exchange Rate MPD Statistics as of April 13, 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**	−0.88%	1.15 1.06 Oct14 Nov18	1.05 1.13 1.39 last 48 months
MPD Std Dev	**4.68%**	0.16%	8.42 4.51 Aug26 Mar30	2.4 4.68 8.42 last 48 months
MPD Skew	**−0.07**	0.16	0.2 −0.54 Nov18 Jun03	−0.68 −0.07 0.2 last 48 months
Market Prob of −10% or More Decline	**1.97%**	−0.081%	10.68 1.43 Aug26 Jan28	0.02 1.97 10.68 last 48 months
Volume	**24886**	10%	107475 0	5162 24886 107475 last 48 months
Dollar−Pound Futures (3−Month Expiry)				
Spot	**142.14**	−1.2%	158.19 139.15 Jun17 Feb25	139.15 142.14 171.39 last 48 months
MPD Std Dev	**5.58%**	0.19%	6.47 3.41 May06 Nov18	2.36 5.58 6.67 last 48 months
MPD Skew	**−0.23**	0.1	0.04 −0.44 Oct07 Mar23	−0.92 −0.23 0.1 last 48 months
Market Prob of −10% or More Decline	**4.43%**	0.13%	6.78 0.29 May06 Nov18	0.01 4.43 7.63 last 48 months
Volume	**7951**	90%	38626 0	536 7951 38626 last 48 months
Dollar−Yen Futures (3−Month Expiry)				
Spot	**91.69**	2.9%	91.69 80.11 Apr13 Aug05	80.11 91.69 127.97 last 48 months
MPD Std Dev	**5.72%**	0.46%	8.83 3.9 Aug26 Jul22	2.76 5.72 8.83 last 48 months
MPD Skew	**0.19**	−0.078	0.46 −0.4 Mar03 May20	−0.44 0.19 0.46 last 48 months
Market Prob of −10% or More Decline	**3.7%**	0.98%	11.17 0.82 Aug26 Jul29	0.02 3.7 11.17 last 48 months
Volume	**19089**	200%	54471 0	787 19089 54471 last 48 months

Sources: Chicago Mercantile Exchange, Bloomberg

Metal and Energy Commodity MPD Statistics as of April 13, 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	**1251.53**	1.7%	1259.72 / 1054.83; Mar10, Dec02	1054.83 – 1800.6; 1251.53; last 48 months
MPD Std Dev	**12.77%**	0.5%	14.59 / 10.81; Feb25, May27	9.39 – 17.15; 12.77; last 48 months
MPD Skew	**0.11**	0.014	0.35 / −0.6; Feb25, Jul22	−0.71 – 0.35; 0.11; last 48 months
Market Prob of −20% or More Decline	**6.46%**	1.1%	8.69 / 4.3; Feb25, May27	2.39 – 12.71; 6.46; last 48 months
Volume	**6720**	−21%	36077 / 0	378 – 49792; 6720; last 48 months
Silver (6−Month Expiry)				
Spot	**16.4**	7.3%	17.26 / 13.82; May13, Jan01	13.82 – 35.18; 16.4; last 48 months
MPD Std Dev	**18.91%**	0.44%	22.12 / 17.38; Aug26, Jan01	13.16 – 26.13; 18.91; last 48 months
MPD Skew	**0.27**	0.058	0.27 / −0.45; Apr13, Aug26	−0.63 – 0.27; 0.27; last 48 months
Market Prob of −20% or More Decline	**15.03%**	0.011%	17.92 / 11.99; Sep09, Jan01	6.54 – 22.25; 15.03; last 48 months
Volume	**1253**	23%	6702 / 0	72 – 27970; 1253; last 48 months
West Texas Intermediate Crude (6−Month Expiry)				
Spot	**45**	7.8%	63.65 / 32.5; May06, Jan21	32.5 – 104.03; 45; last 48 months
MPD Std Dev	**30.56%**	0.95%	39.37 / 22.03; Feb18, Jun10	10.25 – 39.37; 30.56; last 48 months
MPD Skew	**−0.43**	0.077	−0.24 / −0.66; Nov25, Apr29	−0.81 – −0.1; −0.43; last 48 months
Market Prob of −20% or More Decline	**25.91%**	2.1%	31.89 / 17.51; Feb11, May20	3.65 – 31.89; 25.91; last 48 months
Volume	**1082**	−94%	70029 / 0	165 – 180997; 1082; last 48 months

Sources: Chicago Mercantile Exchange, Bloomberg

Agricultural Crop Commodity MPD Statistics as of April 13, 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	**379.13**	0.66%	440.56 (Jul15) / 356.74 (May27)	334.65 / 379.13 / 823.75 — last 48 months
MPD Std Dev	**18.01%**	−0.4%	20.34 (Aug05) / 12.41 (Dec16)	12.41 / 18.01 / 24.61 — last 48 months
MPD Skew	**0.7**	0.14	0.7 (Apr13) / 0.05 (Oct14)	−0.19 / 0.7 / 0.7 — last 48 months
Market Prob of −20% or More Decline	**13.28%**	−1.4%	17.77 (Jul01) / 4.96 (Dec16)	4.96 / 13.28 / 22.19 — last 48 months
Volume	**34072**	−27%	377209 / 0	5486 / 34072 / 472954 — last 48 months
Soybeans (6−Month Expiry)				
Spot	**964.94**	4.9%	1032.2 (Jul01) / 864.89 (Nov11)	864.89 / 964.94 / 1691.25 — last 48 months
MPD Std Dev	**14.48%**	1.3%	17.76 (Jul08) / 10.21 (Feb25)	10.21 / 14.48 / 22.65 — last 48 months
MPD Skew	**0.45**	0.057	0.49 (Mar10) / −0.23 (Sep23)	−0.5 / 0.45 / 0.51 — last 48 months
Market Prob of −20% or More Decline	**7.93%**	1.5%	11.45 (Jul08) / 2.96 (Feb25)	2.96 / 7.93 / 18.72 — last 48 months
Volume	**14841**	100%	82132 / 0	496 / 14841 / 326132 — last 48 months
Wheat (6−Month Expiry)				
Spot	**477.04**	−0.97%	596.88 (Jul01) / 458.99 (Feb25)	458.99 / 477.04 / 930 — last 48 months
MPD Std Dev	**18.22%**	0.47%	22.31 (Jul01) / 16.04 (Dec02)	12.95 / 18.22 / 26.5 — last 48 months
MPD Skew	**0.56**	0.037	0.62 (Feb25) / 0.15 (Jul08)	0.01 / 0.56 / 0.62 — last 48 months
Market Prob of −20% or More Decline	**13.92%**	0.043%	20.71 (Jul01) / 10.96 (Dec02)	5.67 / 13.92 / 24.34 — last 48 months
Volume	**2826**	180%	46232 / 0	179 / 2826 / 51689 — last 48 months

Sources: Chicago Mercantile Exchange, Bloomberg

Agricultural Livestock Commodity MPD Statistics as of April 13, 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	**117.36**	−1.5%	156.32 / 117.36; Jun10, Apr13	117.36; 117.36 – 170.32; last 33 months
MPD Std Dev	**11.25%**	−1.2%	14.9 / 7.8; Jan21, Jun24	11.25; 3.6 – 14.9; last 33 months
MPD Skew	**−0.71**	0.11	−0.18 / −0.9; Sep30, Mar23	−0.71; −0.94 – −0.17; last 33 months
Market Prob of −5% or More Decline	**28.3%**	0.25%	35.84 / 23.02; Dec16, Jun24	28.3; 8.46 – 35.84; last 33 months
Volume	**7479**	7.1%	24569 / 0	7479; 1263 – 33850; last 33 months
Hogs (6−Month Expiry)				
Spot	**68.18**	−16%	81.22 / 60.95; Mar17, Jun24	68.18; 60.95 – 94.48; last 18 months
MPD Std Dev	**13.78%**	0.78%	20.24 / 13; Jul22, Mar30	13.78; 13 – 20.24; last 18 months
MPD Skew	**−0.5**	−0.027	−0.19 / −0.69; Nov18, Sep09	−0.5; −0.69 – 0.17; last 18 months
Market Prob of −20% or More Decline	**9.02%**	1.8%	16.97 / 7.18; Nov18, Mar30	9.02; 7.18 – 16.97; last 18 months
Volume	**847**	−75%	16073 / 0	847; 53 – 16073; last 18 months

Bank MPD Statistics as of April 13, 2016

MPD Standard Deviation (3−Month Expiry)

Indicator	Latest	2−Week Change	1−Year Trend with min/max points				Long−Term Range with median, IQR, and max/min	Latest		
American Express	11.02%	−0.48%	15.64	Feb11	8.53	May20	7.82	11.02	15.64	last 48 months
Bank of America	14.06%	−1.7%	21.78	Feb11	9.68	May27	9.68	14.06	25.42	last 48 months
BB&T	10.38%	−0.8%	16.69	Feb11	7.54	Jul22	7.29	10.38	16.69	last 48 months
Barclays	20.07%	1.2%	30.89	Feb11	13.21	Apr29	10.93	20.07	32.51	last 48 months
Bank of NY Mellon	10.83%	−2.2%	17.63	Feb11	7.13	Jul22	7.13	10.83	18.76	last 48 months
Citigroup	14.21%	0.07%	20.73	Feb11	8.94	Apr29	8.52	14.21	25.93	last 48 months
Capital One	12.3%	−0.64%	19.11	Jan21	8.35	Jun24	7.72	12.3	19.11	last 48 months
Credit Suisse	20.22%	−1.2%	30.72	Feb11	11.94	Jul29	9.84	20.22	30.72	last 48 months
Deutsche Bank	22.17%	−4.3%	29.56	Feb11	14.45	Apr22	11.33	22.17	29.56	last 42 months
Fifth Third	13.34%	−0.53%	19.87	Feb18	8.88	Apr29	8.21	13.34	19.87	last 48 months
Goldman Sachs	12.47%	−0.072%	18.62	Feb11	8.4	May27	8.23	12.47	20.08	last 48 months
JP Morgan	10.01%	−0.93%	16.5	Feb11	8.19	Jul22	7.41	10.01	20.58	last 48 months
Keycorp	18.8%	3.7%	18.8	Apr13	9.92	Jul29	8.98	18.8	20.21	last 48 months
Morgan Stanley	14.92%	−0.8%	22.74	Feb11	8.97	May27	8.97	14.92	31.36	last 48 months
PNC Financial	10.67%	−0.22%	15	Feb11	7.58	Jun24	7.45	10.67	16.73	last 48 months
Regions Financial	15.59%	−1.9%	21.74	Feb11	10.09	May27	10.09	15.59	24.66	last 47 months
SunTrust	13.22%	−0.91%	19.05	Feb18	8.49	May20	7.82	13.22	22.27	last 48 months
State Street	13.56%	−0.95%	18.49	Jan21	9.09	Jun03	8.81	13.56	18.49	last 48 months
UBS	13.36%		19.02	Mar06	8.7	Sep24	8.7	13.36	24.21	last 33 months
US Bancorp	9.6%	0.024%	14.54	Sep09	6.99	Jul15	6.58	9.6	15.53	last 48 months
Wells Fargo	10.02%	−0.26%	14.79	Aug26	7.32	Aug05	7.16	10.02	17.08	last 48 months

Source: FactSet

Bank MPD Statistics as of April 13, 2016

MPD Skew (3−Month Expiry)

Indicator	Latest	2−Week Change	1−Year Trend (with min/max points): Max				Long−Term Range (with median, IQR, and max/min): Min	Latest		
American Express	−0.71	0.052	−0.32	Apr15	−0.96	Sep02	−1.27	−0.71	−0.21	last 48 months
Bank of America	−0.74	−0.37	−0.05	Jan01	−0.99	Sep02	−1.01	−0.74	−0.02	last 48 months
BB&T	−0.84	0.2	−0.31	Sep09	−1.56	Nov04	−1.56	−0.84	−0.15	last 48 months
Barclays	−1.08	−0.47	0.6	Dec09	−1.81	Feb18	−2.51	−1.08	1.94	last 48 months
Bank of NY Mellon	−0.82	0.07	−0.01	Nov04	−1.39	Nov11	−1.39	−0.82	0.32	last 48 months
Citigroup	−0.69	0.033	−0.37	Apr22	−1.17	Aug26	−1.23	−0.69	−0.23	last 48 months
Capital One	−0.8	0.14	−0.23	Oct14	−1.2	Mar03	−1.2	−0.8	−0.16	last 48 months
Credit Suisse	−1.79	−1.1	1.81	Sep30	−1.79	Apr13	−2.07	−1.79	1.81	last 48 months
Deutsche Bank	−1.16	0.0038	0.41	Dec02	−1.17	Mar30	−1.17	−1.16	0.41	last 42 months
Fifth Third	−0.67	−0.16	0.25	Jan28	−1.69	Dec24	−1.69	−0.67	2.19	last 48 months
Goldman Sachs	−0.78	0.12	−0.52	Nov25	−1.09	Sep02	−1.21	−0.78	−0.34	last 48 months
JP Morgan	−0.67	0.2	−0.55	Oct21	−1.16	Sep02	−1.33	−0.67	−0.33	last 48 months
Keycorp	−0.57	0.15	0.34	Jan28	−1.59	May13	−2.24	−0.57	0.34	last 48 months
Morgan Stanley	−0.76	0.14	−0.34	Dec02	−1.12	Sep02	−1.16	−0.76	−0.25	last 48 months
PNC Financial	−1	−0.083	−0.42	Jan28	−1.84	Oct28	−1.84	−1	−0.39	last 48 months
Regions Financial	−0.61	0.13	0.36	Aug26	−1.2	May20	−1.94	−0.61	0.68	last 47 months
SunTrust	−0.37	0.54	−0.21	Feb11	−1.27	Jan01	−1.27	−0.37	−0.21	last 48 months
State Street	−0.86	−0.26	−0.19	Jan14	−1.23	Aug26	−2.31	−0.86	−0.13	last 48 months
UBS	−0.04		0.91	Dec31	−1.72	Nov26	−3.36	−0.04	0.97	last 33 months
US Bancorp	−0.63	0.27	−0.39	Aug19	−1.55	Nov04	−1.55	−0.63	−0.2	last 48 months
Wells Fargo	−1.03	−0.052	−0.56	May20	−1.3	Sep02	−1.34	−1.03	−0.42	last 48 months

Source: FactSet

Bank MPD Statistics as of April 13, 2016

Indicator	Latest	2−Week Change	1−Year Trend with min/max points				Long−Term Range with median, IQR, and max/min			
			Max	Min	Max date	Min date	Min	Latest	Max	Period
Market Probability of −20% or More Decline (3−Month Expiry)										
American Express	**5.27%**	−0.95%	10.35	2.19	Feb11	May20	1.53	5.27	10.63	last 48 months
Bank of America	**9.12%**	−0.85%	17.74	3.14	Feb11	Jun24	3.13	9.12	20.24	last 48 months
BB&T	**4.64%**	−1.2%	12.22	1.82	Feb11	Jul22	1.68	4.64	12.46	last 48 months
Barclays	**14.89%**	−1.1%	28.98	6.3	Feb11	Apr29	2.33	14.89	30.94	last 48 months
Bank of NY Mellon	**4.79%**	−2.6%	15.17	1.12	Feb11	Jun24	1.12	4.79	15.17	last 48 months
Citigroup	**8.24%**	−0.051%	16.5	2.32	Feb11	Apr29	1.93	8.24	19.83	last 48 months
Capital One	**6.5%**	−0.89%	15.15	2.37	Feb11	Jun24	1.64	6.5	15.78	last 48 months
Credit Suisse	**10.76%**	−6.5%	34.48	5.22	Feb11	Jul29	2.87	10.76	34.48	last 48 months
Deutsche Bank	**15.17%**	−3.2%	23.37	10.06	Jan21	Apr22	4.99	15.17	24.73	last 42 months
Fifth Third	**8.26%**	0.37%	17.06	2.45	Feb11	Apr29	0.99	8.26	17.06	last 48 months
Goldman Sachs	**6.89%**	−0.25%	13.1	2.18	Feb11	May27	1.79	6.89	13.83	last 48 months
JP Morgan	**3.95%**	−1.3%	11.65	2.08	Feb11	Apr29	1.31	3.95	14.98	last 48 months
Keycorp	**12%**	2.2%	16.35	2.32	Feb11	Apr15	1.92	12	16.35	last 48 months
Morgan Stanley	**10.19%**	−0.42%	18.01	2.57	Feb11	May27	2.57	10.19	20.56	last 48 months
PNC Financial	**5.39%**	0.25%	10.55	1.67	Feb11	Jun24	1.43	5.39	11.88	last 48 months
Regions Financial	**12.24%**	1.4%	20.23	3.34	Feb11	May27	3.34	12.24	20.23	last 47 months
SunTrust	**8.95%**	−0.71%	15.8	2.53	Feb11	May20	1.73	8.95	19.3	last 48 months
State Street	**8.78%**	0.073%	15.74	2.96	Jan21	Jun24	2.26	8.78	15.74	last 48 months
UBS	**7.28%**		18.15	1.53	Mar06	Dec31	1.53	7.28	19.1	last 33 months
US Bancorp	**3.45%**	−0.3%	9.69	1.39	Feb25	Jul15	0.74	3.45	10.65	last 48 months
Wells Fargo	**4.56%**	−0.24%	9.93	1.55	Jan21	Aug05	1.3	4.56	11.59	last 48 months

Source: FactSet

Bank MPD Statistics as of April 13, 2016

Volume (3−Month Expiry)

Indicator	Latest	2−Week Change	1−Year Trend with min/max points (max)	1−Year Trend (min)	Long−Term Range (min)	Long−Term Range (marker)	Long−Term Range (max)	Period
American Express	2694	24%	32713	0	623	2694	32713	last 48 months
Bank of America	41964	−70%	187673	0	7419	41964	244509	last 48 months
BB&T	816	−52%	6459	0	126	816	6490	last 48 months
Barclays	469	−79%	7859	0	8	469	11011	last 48 months
Bank of NY Mellon	1689	400%	22171	0	44	1689	22171	last 48 months
Citigroup	22604	−12%	57016	0	1104	22604	140439	last 48 months
Capital One	1614	120%	7596	0	136	1614	16299	last 48 months
Credit Suisse	1260	−5.9%	12477	0	0	1260	15145	last 48 months
Deutsche Bank	10181	80%	38235	0	76	10181	38235	last 42 months
Fifth Third	381	−87%	7607	0	28	381	19127	last 48 months
Goldman Sachs	5661	140%	19311	0	296	5661	28030	last 48 months
JP Morgan	28874	110%	132116	0	943	28874	132116	last 48 months
Keycorp	1448	−43%	3099	0	44	1448	76270	last 48 months
Morgan Stanley	4833	−61%	36166	0	327	4833	69872	last 48 months
PNC Financial	860	−6.8%	4932	0	42	860	5757	last 48 months
Regions Financial	1163	−41%	4832	0	20	1163	47940	last 47 months
SunTrust	1060	130%	3345	0	61	1060	13788	last 48 months
State Street	174	−81%	961	0	19	174	5339	last 48 months
UBS	124		2034	0	6	124	6502	last 33 months
US Bancorp	1517	−75%	9927	0	52	1517	29142	last 48 months
Wells Fargo	14890	150%	55478	0	950	14890	121351	last 48 months

Long−Term Range: with median, IQR, and max/min

Source: FactSet

Insurance Company MPD Statistics as of April 13, 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	**8.65%**	−0.28%	13.6 Feb11; 7.11 May20	7.11; 8.65; 20.04; last 48 months
AIG	**11.22%**	−0.24%	18.95 Feb11; 9.01 Jun24	8.7; 11.22; 22.49; last 48 months
Allstate	**9.29%**	0.22%	13.18 Jan21; 6.73 May20	5.83; 9.29; 13.46; last 48 months
Ameriprise	**13.66%**	0.31%	18.71 Feb11; 9.76 Jul29	8.98; 13.66; 19.72; last 48 months
Chubb	**9.44%**	0.64%	24.08 Aug19; 6.13 Dec24	5.96; 9.44; 24.08; last 48 months
Hartford Financial	**11.58%**	0.23%	18.69 Jan21; 8.35 Jun24	8.35; 11.58; 24.35; last 48 months
Lincoln National	**15.65%**	−2.2%	22.48 Feb11; 8.98 May27	8.98; 15.65; 24.62; last 48 months
Met Life	**12.89%**	−0.53%	19.33 Feb11; 9.4 Apr15	9.4; 12.89; 23.13; last 48 months
Principal Financial	**14.65%**	−0.77%	18.94 Feb18; 8.26 May20	8.02; 14.65; 23.83; last 48 months
Progressive	**9.94%**	1.2%	13.49 Sep23; 5.79 Jun24	5.79; 9.94; 19.73; last 47 months
Prudential	**13.81%**	−0.66%	18.54 Jan21; 10.09 Jun24	10.09; 13.81; 20.74; last 48 months

Insurance Company MPD Statistics as of April 13, 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	**−1.14**	−0.21	−0.24 Sep09; −1.31 Oct28	−1.31; −1.14; −0.24; last 48 months
AIG	**−1.09**	−0.38	−0.47 Jun24; −1.16 Oct14	−1.16; −1.09; −0.23; last 48 months
Allstate	**−0.96**	−0.11	−0.16 Oct14; −1.25 Feb25	−1.5; −0.96; −0.12; last 48 months
Ameriprise	**−0.69**	0.056	−0.32 Jan07; −1.1 Jan21	−4.03; −0.69; −0.11; last 48 months
Chubb	**−1.11**	−0.44	0.09 Aug19; −1.42 Sep02	−1.56; −1.11; 0.09; last 48 months
Hartford Financial	**−1.34**	−0.58	−0.09 Jul22; −1.67 Nov04	−1.67; −1.34; −0.09; last 48 months
Lincoln National	**−0.77**	−0.047	−0.07 Aug05; −1.15 Aug26	−1.15; −0.77; 0.15; last 48 months
Met Life	**−0.64**	0.2	−0.51 Oct14; −1.03 Feb18	−1.15; −0.64; −0.23; last 48 months
Principal Financial	**−0.94**	−0.032	0.42 Oct21; −1.79 Aug05	−2.95; −0.94; 0.42; last 48 months
Progressive	**−0.75**	−0.089	0.24 Jul22; −2.03 Jun10	−3.54; −0.75; 0.42; last 47 months
Prudential	**−0.91**	−0.14	−0.33 Apr22; −1.04 Nov18	−1.44; −0.91; −0.33; last 48 months

Source: FactSet

Insurance Company MPD Statistics as of April 13, 2016

Indicator	Latest	2−Week Change	1−Year Trend with min/max points				Long−Term Range with median, IQR, and max/min			
			Max	Max date	Min	Min date	Min	Latest	Max	Period
Market Probability of −20% or More Decline (3−Month Expiry)										
Aflac	**3.26%**	0.24%	8.5	Feb11	1.37	Jun24	1.37	3.26	14.69	last 48 months
AIG	**6.24%**	0.97%	14.57	Feb11	2.51	Jun24	2.44	6.24	17.45	last 48 months
Allstate	**3.72%**	0.43%	7.91	Jan21	1.01	May20	0.56	3.72	8.12	last 48 months
Ameriprise	**8.65%**	0.59%	16.29	Feb04	3.68	Jul22	2.4	8.65	17.52	last 48 months
Chubb	**4.08%**	1.5%	12.5	Aug19	0.88	May13	0.55	4.08	12.5	last 48 months
Hartford Financial	**6.19%**	0.25%	12.03	Feb11	2.61	Apr15	2.19	6.19	22.23	last 48 months
Lincoln National	**10.95%**	−3.4%	17.85	Feb11	2.26	May27	2.26	10.95	22.05	last 48 months
Met Life	**7.34%**	−0.53%	16.75	Feb11	3.26	Apr15	3.26	7.34	18.59	last 48 months
Principal Financial	**10.51%**	−0.29%	17.72	Sep09	2.22	May06	0.43	10.51	20.44	last 48 months
Progressive	**3.79%**	1.3%	9.41	Feb11	0.15	Jun24	0	3.79	16.08	last 47 months
Prudential	**8.65%**	−0.81%	15.1	Feb11	4.02	Jun24	3.99	8.65	17.82	last 48 months

Source: FactSet

Insurance Company MPD Statistics as of April 13, 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	**3027**	−1.1%	13168 / 0	88 · 3027 · 22718 (last 48 months)
AIG	**973**	−92%	44233 / 0	110 · 973 · 103998 (last 48 months)
Allstate	**362**	170%	4626 / 0	63 · 362 · 10621 (last 48 months)
Ameriprise	**102**	5.2%	1035 / 0	5 · 102 · 1114 (last 48 months)
Chubb	**472**	−57%	3292 / 0	3 · 472 · 9027 (last 48 months)
Hartford Financial	**193**	−68%	9444 / 0	16 · 193 · 37285 (last 48 months)
Lincoln National	**1392**	300%	4145 / 0	51 · 1392 · 8403 (last 48 months)
Met Life	**2868**	−23%	20912 / 0	319 · 2868 · 161416 (last 48 months)
Principal Financial	**100**	4.2%	610 / 0	2 · 100 · 2956 (last 48 months)
Progressive	**286**	−51%	2216 / 0	0 · 286 · 3415 (last 47 months)
Prudential	**2127**	−85%	17185 / 0	222 · 2127 · 17185 (last 48 months)

Source: FactSet