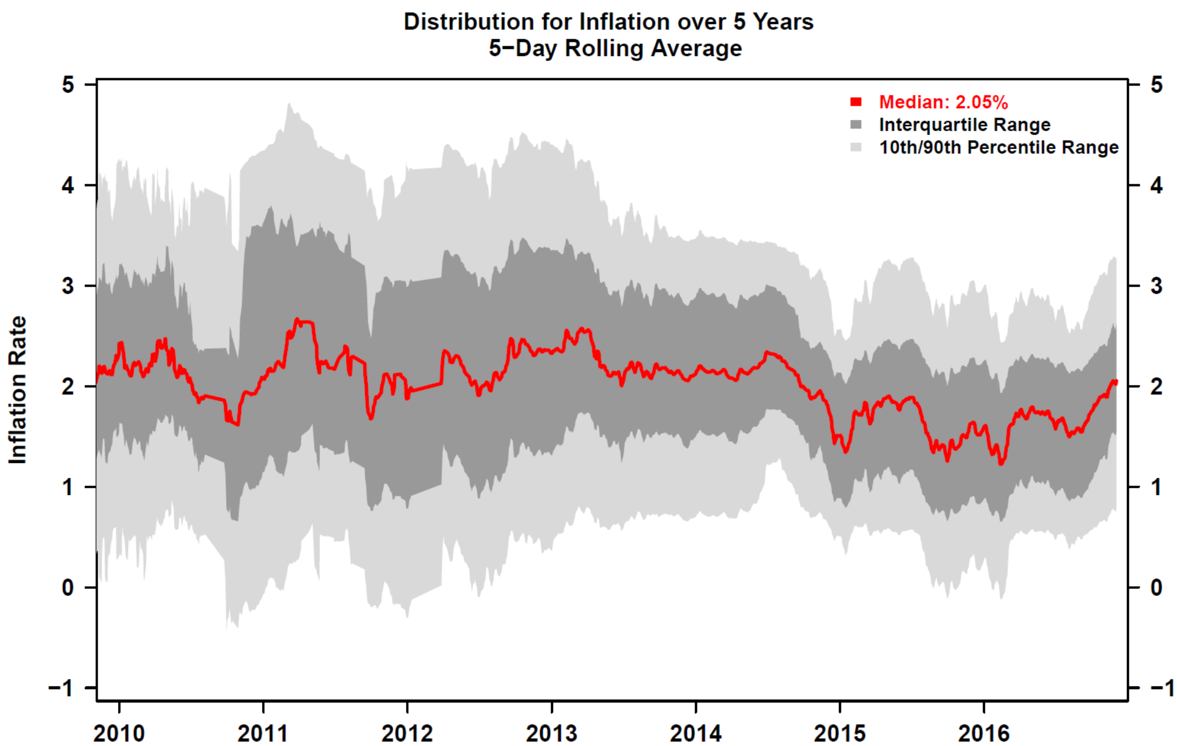
Minneapolis Options Report – December 2nd

Median inflation expectations rose for all inflation tenors over the two week period. MPD skew for the 3-month LIBOR tenor registered it largest increase in 12 months as median LIBOR expectations rose in unison. The S&P 500 gained 1% while the 20 banks and 11 insurance firms we follow outperformed the broader market, posting respective average returns of 2.7% and 1.2%. The dollar was stronger against the yen; the dollar catalogued its largest single-month gains against the yen in November. WTI crude jumped by 8%, and its MPD standard deviation fell by -3.6 percentage points following OPEC's announcement of supply reduction.

Inflation

Market-based inflation expectations derived from caps and floors on the CPI for 1- and 5-year periods increased over the 2-week period by 7.5 and 7 basis points to 2.15% and 2.09 %, respectively. This increase, continuing since September, is best observed in the 5-year tenor (see figure, below).



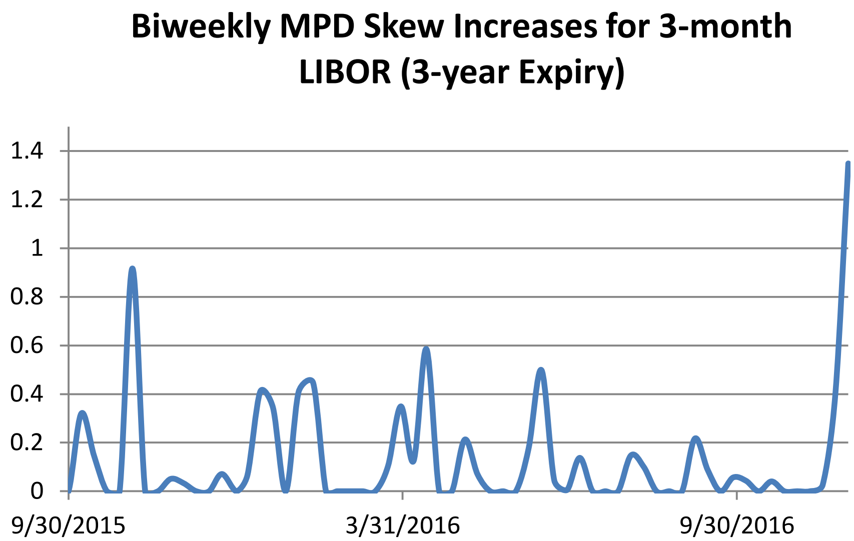
Additional detail:

- The probability of low inflation, defined as the market probability of less than 1% inflation fell for the 1- and 5-year by a respective -1.5 and -1.8 percentage points.

Interest Rate

Spot prices for the Treasuries we follow declined over the two week period, and consequently yields rose. MPD standard deviations rose by a respective 0.17 and 0.26 percentage points for the 5- and 10-year Treasury and currently stand well above the 75th percentile historic ranges. The market probability of a large decline, defined for the 5-year as a -3% or more decline and the 10-year as a -5% or more decline, set new 1-year record as each increase by at least 1 percentage point.

The median expectation of 3m-LIBOR, 3 years out, increased by 13 basis points (bps) and currently stands at 1.7%, a new 12-month high. MPD skew for the 3-year points to investor bias towards higher future LIBOR rates. The increase in skew over the 2-week period represents the largest increase in 12 months (see plot, below).



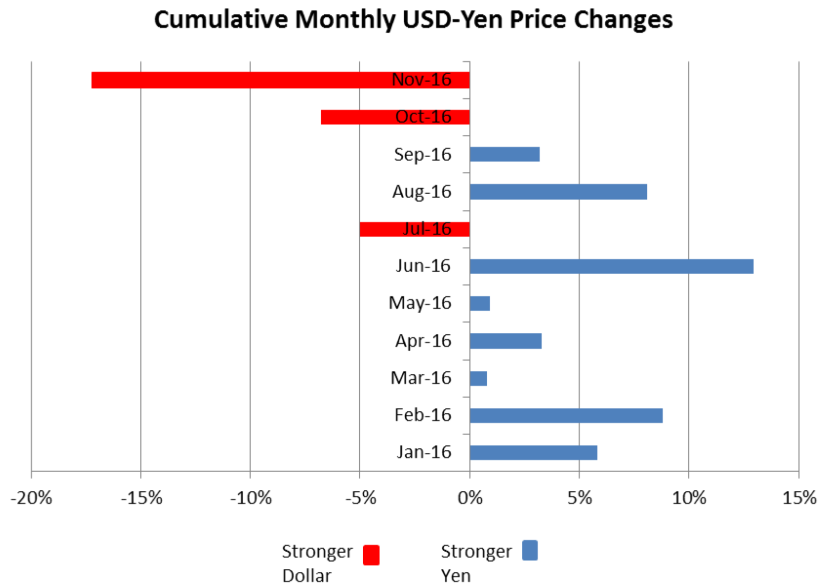
Banks and Insurance Companies
The S&P 500 returned 1% over the past two weeks with average MPD standard deviation changes being flat. The 20 banking firms we follow posted a 2.7% return, outperforming the market. The 11 insurance companies we follow also outperformed the broader market, returning 1.2%.

Additional details:

- Changes in MPD standard deviation for banks and insurance firms tracked the S&P 500 and were largely flat on average.

Other Markets

- The iShares US Real Estate Index outperformed the S&P 500, posting a 1.1% return. MPD standard deviation decreased by -0.4 percentage points.
- The dollar was stronger against the yen. MPD skew for the USD-Yen pair rose 1.9 percentage points to its highest point in 12 months. The drop in USD-Yen spots for the month of November, 2016 represents the largest decrease in 12 months (see plot, below)



- Gold and silver posted declines of -4.3% and -3.2% over the two week period. Gold's MPD skew fell by -0.3 and suggests that bias exists towards lower gold prices in the future.
- WTI crude jumped by 8% on news that OPEC will begin reducing supply. Its MPD standard deviation decreased by -3.6 percentage points, indicating that investor uncertainty has fallen for the commodity.
- Agricultural crops posted mixed returns, with wheat falling by -3% and soybeans rising by 4.7%. MPD standard deviation of soybeans inched higher by 0.7 percentage points.
- Cattle posted a return of 2.9%; MPD standard deviation rose by 0.5 percentage points.

Inflation MPD Statistics as of November 30, 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	**2.15%**	0.075%	2.23 / 0.97; Oct19 / Feb11	−0.15 … 2.23; 2.15; last 47 months
MPD Std Dev	**1%**	−0.0082%	2.75 / 0.99; Apr06 / Oct26	0.83 … 2.75; 1; last 47 months
MPD Skew	**−1.37**	−0.074	1.8 / −1.44; Apr06 / Oct19	−1.44 … 2.5; −1.37; last 47 months
Market Prob of Less Than 1% Inflation	**14.65%**	−1.5%	51.06 / 13.51; Feb11 / Oct19	11.88 … 85.35; 14.65; last 47 months
Market Prob of More Than 3% Inflation	**17.71%**	1.9%	19.42 / 1.58; Oct19 / Feb11	0.23 … 26.16; 17.71; last 47 months
Inflation (5−Year Expiry)				
Median	**2.09%**	0.07%	2.09 / 1.23; Nov30 / Feb11	1.23 … 2.6; 2.09; last 47 months
MPD Std Dev	**1.01%**	0.00066%	1.21 / 0.99; Dec02 / Aug31	0.91 … 1.64; 1.01; last 47 months
MPD Skew	**−0.22**	−0.028	0.74 / −0.22; Dec31 / Nov30	−0.22 … 0.78; −0.22; last 47 months
Market Prob of Less Than 1% Inflation	**12.88%**	−1.8%	40.14 / 12.88; Feb11 / Nov30	7.13 … 40.14; 12.88; last 47 months
Market Prob of More Than 3% Inflation	**17.44%**	2.2%	17.44 / 4.66; Nov30 / Feb11	4.66 … 37.04; 17.44; last 47 months

Medium−to−Long Bond Price MPD Statistics as of November 30, 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	**117.82**	−0.6%	122.32 / 117.82; Jul06, Nov30	117.82 (latest 117.82) – 122.32; last 26 months
MPD Std Dev	**1.95%**	0.17%	1.96 / 1.3; Jan21, Oct26	1.3 (latest 1.95) – 2.3; last 26 months
MPD Skew	**−0.53**	−0.077	0.19 / −0.53; Feb18, Nov30	−0.54 (latest −0.53) – 0.36; last 26 months
Market Prob of −3% or More Decline	**6.51%**	1%	6.51 / 1.84; Nov30, Oct26	1.84 (latest 6.51) – 8.74; last 26 months
Volume	**60788**	32%	335039 / 0	1678 (latest 60788) – 377550; last 26 months
10 Year Treasury (3−Month Expiry)				
Spot	**124.52**	−1%	133.67 / 124.52; Jul06, Nov30	122.97 (latest 124.52) – 133.67; last 37 months
MPD Std Dev	**3.22%**	0.26%	3.28 / 2.14; Jan21, Oct26	2.14 (latest 3.22) – 3.8; last 37 months
MPD Skew	**−0.26**	−0.037	0.21 / −0.26; Jun15, Nov30	−0.75 (latest −0.26) – 0.31; last 37 months
Market Prob of −5% or More Decline	**6.45%**	1.3%	6.45 / 1.54; Nov30, Oct26	1.54 (latest 6.45) – 8.48; last 37 months
Volume	**176936**	40%	1143418 / 0	5226 (latest 176936) – 118509; last 37 months

Short Interest Rates MPD Statistics as of November 30, 2016

3 Month LIBOR (3−Year Expiry)

Indicator	Latest	2−Week Change	1−Year Trend with min/max points	Long−Term Range with median, IQR, and max/min
Median	1.7%	0.13%	1.7 (Nov30) / 0.77 (Feb11)	0.72 – 1.85; 1.7; last 47 months
MPD Std Dev	1.38%	0.19%	1.38 (Nov30) / 0.98 (Jul06)	0.69 – 2.17; 1.38; last 47 months
MPD Skew	2.36	1.3	2.36 (Nov30) / 0.58 (Nov09)	0.4 – 7.06; 2.36; last 47 months
Market Prob of Less Than 0.5% LIBOR	16.38%	−1.1%	37.56 (Feb11) / 14.23 (Dec23)	9.79 – 38.02; 16.38; last 47 months
Market Prob of More Than 1% + Spot	36.6%	−1.4%	50.06 (Dec31) / 13.93 (Jul06)	13.93 – 67.85; 36.6; last 47 months

3 Month LIBOR (5−Year Expiry)

Indicator	Latest	2−Week Change	1−Year Trend with min/max points	Long−Term Range with median, IQR, and max/min
Median	1.37%	−0.025%	2.16 (Feb03) / 0.83 (Jul06)	0.83 – 2.99; 1.37; last 45 months
MPD Std Dev	2.23%	0.64%	2.23 (Nov30) / 1.31 (Jul06)	1.31 – 2.85; 2.23; last 45 months
MPD Skew	2.64	1.3	2.64 (Nov30) / 0.2 (Feb03)	0.2 – 3.88; 2.64; last 45 months
Market Prob of Less Than 1% LIBOR	39.49%	3.2%	56.28 (Jul06) / 19.19 (Feb03)	17.66 – 56.28; 39.49; last 45 months
Market Prob of More Than 2% + Spot	29.45%	4.2%	42.02 (Feb11) / 0.2 (Feb03)	0.2 – 60.53; 29.45; last 45 months

Source: Bloomberg

Equity Index MPD Statistics as of November 30, 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	**2198.81**	1%	2204.72 (Nov23); 1851.86 (Feb11)	1418.1 – 2198.81 – 2204.72; last 47 months
MPD Std Dev	**11.16%**	−0.21%	17 (Feb11); 10.31 (Jul20)	8.87 – 11.16 – 17; last 47 months
MPD Skew	**−1.16**	0.2	−1.16 (Nov30); −1.74 (Mar03)	−1.74 – −1.16 – −0.86; last 47 months
Market Prob of −20% or More Decline	**5.88%**	−0.57%	12.52 (Feb11); 4.74 (Jul13)	3.65 – 5.88 – 12.52; last 47 months
Volume	**52248**	−45%	203231; 0	13428 – 52248 – 309308; last 47 months
S&P 500 (12−Month Expiry)				
Spot	**2198.81**	1%	2204.72 (Nov23); 1851.86 (Feb11)	1418.1 – 2198.81 – 2204.72; last 47 months
MPD Std Dev	**17.48%**	−0.084%	23.52 (Jan21); 16.2 (Aug10)	10.5 – 17.48 – 23.52; last 47 months
MPD Skew	**−1.27**	0.088	−1.27 (Nov30); −1.78 (Mar03)	−1.78 – −1.27 – −0.98; last 47 months
Market Prob of −20% or More Decline	**12.51%**	−0.13%	17.37 (Jan21); 9.5 (Jul13)	5.51 – 12.51 – 17.37; last 47 months
Volume	**43626**	−3.7%	105728; 0	4874 – 43626 – 123271; last 47 months
iShares US Real Estate Index (3−Month Expiry)				
Spot	**74.85**	1.1%	84.23 (Aug10); 67.26 (Feb11)	61.63 – 74.85 – 84.23; last 47 months
MPD Std Dev	**9.7%**	−0.42%	11.7 (Jan21); 6.52 (Jul20)	4.77 – 9.7 – 11.83; last 47 months
MPD Skew	**−0.85**	0.035	−0.47 (Aug10); −1.36 (Mar03)	−2.09 – −0.85 – −0.35; last 47 months
Market Prob of −10% or More Decline	**15.44%**	−1.5%	18.66 (Feb11); 7.17 (Jul20)	3.43 – 15.44 – 20.5; last 47 months
Volume	**15535**	250%	98246; 0	32 – 15535 – 141443; last 47 months

Source: FactSet

Exchange Rate MPD Statistics as of November 30, 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	**1.06**	−0.93%	1.15 May04; 1.06 Dec02	1.05 – 1.39; 1.06; last 47 months
MPD Std Dev	**8.76%**	3%	8.76 Nov30; 3.74 Aug10	2.4 – 8.76; 8.76; last 47 months
MPD Skew	**−0.06**	0.15	0.16 Feb04; −0.6 Jun15	−0.6 – 0.2; −0.06; last 47 months
Market Prob of −10% or More Decline	**11.08%**	6.6%	11.08 Nov30; 0.63 Aug10	0.02 – 11.08; 11.08; last 47 months
Volume	**80329**	−2.5%	110627; 0	5162 – 110627; 80329; last 47 months
Dollar−Pound Futures (3−Month Expiry)				
Spot	**125.1**	0.51%	151.65 Dec09; 122.1 Oct12	122.1 – 171.39; 125.1; last 47 months
MPD Std Dev	**5.58%**	0.55%	9.66 Jun15; 3.77 Dec16	2.36 – 9.66; 5.58; last 47 months
MPD Skew	**−0.14**	−0.035	0 Aug31; −1.09 Jun22	−1.09 – 0.1; −0.14; last 47 months
Market Prob of −10% or More Decline	**3.85%**	1%	14.78 Jun15; 0.96 Dec16	0.01 – 14.78; 3.85; last 47 months
Volume	**10879**	−49%	32199; 0	992 – 38626; 10879; last 47 months
Dollar−Yen Futures (3−Month Expiry)				
Spot	**87.53**	−4.5%	99.92 Aug17; 81.41 Dec02	80.11 – 119.75; 87.53; last 47 months
MPD Std Dev	**8.22%**	1.9%	8.22 Nov30; 4.13 Dec24	2.76 – 8.83; 8.22; last 47 months
MPD Skew	**0.07**	−0.18	0.46 Jun22; −0.05 May25	−0.44 – 0.46; 0.07; last 47 months
Market Prob of −10% or More Decline	**9.77%**	4.8%	9.77 Nov30; 0.82 Jan01	0.02 – 11.17; 9.77; last 47 months
Volume	**33984**	−20%	61215; 0	1611 – 61215; 33984; last 47 months

Sources: Chicago Mercantile Exchange, Bloomberg

Metal and Energy Commodity MPD Statistics as of November 30, 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	**1175.94**	−4.3%	1374.09 (Jul06) / 1054.83 (Dec02)	1054.83 – 1175.94 – 1700.9, last 47 months
MPD Std Dev	**11.73%**	0.54%	14.59 (Feb25) / 10.41 (Sep28)	9.39 – 11.73 – 17.09, last 47 months
MPD Skew	**−0.39**	−0.29	0.39 (Nov02) / −0.39 (Nov30)	−0.71 – −0.39 – 0.39, last 47 months
Market Prob of −20% or More Decline	**5.4%**	0.96%	8.69 (Feb25) / 2.99 (Sep28)	2.39 – 5.4 – 11.76, last 47 months
Volume	**6258**	−62%	28912 / 0	378 – 6258 – 41740, last 47 months
Silver (6−Month Expiry)				
Spot	**16.53**	−3.2%	20.58 (Jul13) / 13.82 (Jan01)	13.82 – 16.53 – 32.41, last 47 months
MPD Std Dev	**18.16%**	−0.38%	21.99 (Jul06) / 17.33 (Oct26)	13.16 – 18.16 – 24.59, last 47 months
MPD Skew	**−0.08**	−0.16	0.48 (Jul13) / −0.31 (Jan01)	−0.63 – −0.08 – 0.48, last 47 months
Market Prob of −20% or More Decline	**14.01%**	−0.84%	19.11 (Jul06) / 11.99 (Jan01)	6.54 – 14.01 – 20.85, last 47 months
Volume	**1881**	89%	10785 / 0	37 – 1881 – 20231, last 47 months
West Texas Intermediate Crude (6−Month Expiry)				
Spot	**52.4**	7.9%	53.56 (Oct19) / 32.5 (Jan21)	32.5 – 52.4 – 102.41, last 47 months
MPD Std Dev	**25.32%**	−3.6%	39.37 (Feb18) / 23.83 (Oct19)	10.25 – 25.32 – 39.37, last 47 months
MPD Skew	**−0.57**	−0.092	−0.25 (Dec16) / −0.6 (Oct12)	−0.81 – −0.57 – −0.1, last 47 months
Market Prob of −20% or More Decline	**21.51%**	−3.3%	31.89 (Feb11) / 19.9 (Oct05)	3.65 – 21.51 – 31.89, last 47 months
Volume	**2173**	−24%	121098 / 0	165 – 2173 – 132335, last 47 months

Agricultural Crop Commodity MPD Statistics as of November 30, 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
Corn (6−Month Expiry)										
Spot	355.54	0.65%	439.62	315.44	Jun15	Aug31	315.44	355.54	724	last 47 months
MPD Std Dev	13.83%	−0.075%	22.76	12.41	Jun15	Dec16	12.41	13.83	22.76	last 47 months
MPD Skew	0.12	−0.0011	0.7	0.09	Apr13	Nov09	−0.19	0.12	0.7	last 47 months
Market Prob of −20% or More Decline	7.66%	−0.35%	21.96	4.96	Jun15	Dec16	4.96	7.66	21.96	last 47 months
Volume	7322	2.7%	315800	0			4050	7322	377209	last 47 months
Soybeans (6−Month Expiry)										
Spot	1048.47	4.7%	1159.12	868.87	Jun08	Dec16	864.89	1048.47	1456.5	last 47 months
MPD Std Dev	13.39%	0.66%	23.86	10.21	Jul13	Feb25	10.21	13.39	23.86	last 47 months
MPD Skew	0.1	−0.051	0.89	−0.16	May11	Aug31	−0.5	0.1	0.89	last 47 months
Market Prob of −20% or More Decline	7.14%	1%	17.39	2.96	Jul13	Feb25	2.96	7.14	17.39	last 47 months
Volume	14911	240%	80482	0			294	14911	240059	last 47 months
Wheat (6−Month Expiry)										
Spot	414.96	−2.9%	548.3	388.16	Jun08	Aug31	388.16	414.96	821.25	last 47 months
MPD Std Dev	15.45%	−0.099%	21.98	15.14	Apr20	Sep21	12.95	15.45	22.31	last 47 months
MPD Skew	0.46	−0.11	0.74	0.38	Jun29	Sep21	0.01	0.46	0.74	last 47 months
Market Prob of −20% or More Decline	9.7%	−0.15%	20.35	9.03	Apr20	Oct26	5.67	9.7	20.71	last 47 months
Volume	1587	79%	83594	0			179	1587	83594	last 47 months

Sources: Chicago Mercantile Exchange, Bloomberg

Agricultural Livestock Commodity MPD Statistics as of November 30, 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	**111.75**	2.9%	127.78 / 98.31; Jan01, Oct19	98.31 – 170.32; 111.75; last 40 months
MPD Std Dev	**13.49%**	0.52%	15.35 / 9.55; Sep28, Mar17	3.6 – 15.35; 13.49; last 40 months
MPD Skew	**−0.64**	−0.13	−0.12 / −0.9; Oct19, Mar23	−0.94 – −0.12; −0.64; last 40 months
Market Prob of −5% or More Decline	**30.9%**	−0.85%	38.78 / 24.21; Oct19, Mar17	8.46 – 38.78; 30.9; last 40 months
Volume	**11214**	10%	18901 / 0	1263 – 33850; 11214; last 40 months
Hogs (6−Month Expiry)				
Spot	**61.5**	−0.081%	81.22 / 51.28; Mar17, Sep28	51.28 – 94.48; 61.5; last 25 months
MPD Std Dev	**17.55%**	−0.17%	24.26 / 13; Sep28, Mar30	13 – 24.26; 17.55; last 25 months
MPD Skew	**−0.78**	0.21	−0.28 / −0.99; Dec24, Nov16	−0.99 – 0.17; −0.78; last 25 months
Market Prob of −20% or More Decline	**13.13%**	−0.22%	21.98 / 7.18; Sep28, Mar30	7.18 – 21.98; 13.13; last 25 months
Volume	**3050**	6.2%	10974 / 0	53 – 16073; 3050; last 25 months

Bank MPD Statistics as of November 30, 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			
			Max	Min	Max date	Min date	Min	Median	Max	Period
American Express	**11.48%**	0.71%	15.87	8.2	Sep14	Sep07	7.82	11.48	15.87	last 47 months
Bank of America	**14.07%**	−0.87%	21.78	11.39	Feb11	Aug17	9.68	14.07	21.78	last 47 months
BB&T	**10.77%**	−0.93%	16.69	9.09	Feb11	Oct26	7.29	10.77	16.69	last 47 months
Barclays	**15.28%**	−0.67%	31.05	14.24	Jun29	Mar03	10.93	15.28	31.05	last 47 months
Bank of NY Mellon	**11.88%**	−0.2%	17.63	10.13	Feb11	Oct26	7.13	11.88	17.63	last 47 months
Citigroup	**13.13%**	−1.3%	20.73	11.38	Feb11	Oct26	8.52	13.13	20.73	last 47 months
Capital One	**14.05%**	−0.089%	19.11	10.88	Jan21	Oct26	7.72	14.05	19.11	last 47 months
Credit Suisse	**17.12%**	0.23%	31.32	15.47	Aug24	Jan01	9.84	17.12	31.32	last 47 months
Deutsche Bank	**23%**	−0.31%	30.45	15.64	Jul06	Dec24	11.33	23	30.45	last 41 months
Fifth Third	**14%**	0.058%	19.87	11.62	Feb18	Aug17	8.21	14	19.87	last 47 months
Goldman Sachs	**11.74%**	−1.5%	18.62	8.8	Feb11	Sep07	8.23	11.74	18.62	last 47 months
JP Morgan	**11.07%**	−1.3%	16.5	9.02	Feb11	Oct19	7.41	11.07	16.5	last 47 months
Keycorp	**14.75%**	−0.17%	18.8	11.79	Apr13	Oct26	8.98	14.75	18.8	last 47 months
Morgan Stanley	**13.41%**	−1.5%	22.74	10.87	Feb11	Sep07	8.97	13.41	22.74	last 47 months
PNC Financial	**11.14%**	−0.84%	15	9.59	Feb11	Apr20	7.45	11.14	15	last 47 months
Regions Financial	**15.76%**	−1.3%	21.74	11.55	Feb11	Aug31	10.09	15.76	21.74	last 46 months
SunTrust	**11.93%**	−1.6%	19.05	11.22	Feb18	Aug24	7.82	11.93	19.05	last 47 months
State Street	**12.87%**	−0.24%	18.49	11.83	Jan21	Dec02	8.81	12.87	18.49	last 47 months
UBS	**13.36%**		19.02	8.7	Mar06	Sep24	8.7	13.36	24.21	last 25 months
US Bancorp	**9.22%**	−0.79%	14.43	7.74	Feb11	Oct26	6.58	9.22	14.54	last 47 months
Wells Fargo	**10.85%**	−1.6%	17.68	7.86	Sep14	Sep07	7.16	10.85	17.68	last 47 months

Source: FactSet

Bank MPD Statistics as of November 30, 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	−0.67	−0.0099	−0.21 (Sep14); −0.99 (Sep21)	−0.99; −0.67; −0.21; last 47 months
Bank of America	−0.36	0.14	−0.05 (Jan01); −0.83 (Feb18)	−0.99; −0.36; −0.02; last 47 months
BB&T	−1.21	0.28	−0.68 (Jan28); −1.76 (Sep14)	−1.76; −1.21; −0.22; last 47 months
Barclays	−0.29	−0.31	0.6 (Dec09); −1.88 (May25)	−2.51; −0.29; 1.94; last 47 months
Bank of NY Mellon	−0.84	0.014	−0.47 (Dec02); −1.35 (Nov09)	−1.39; −0.84; 0.32; last 47 months
Citigroup	−0.59	0.23	−0.52 (Jul27); −1.04 (Feb25)	−1.17; −0.59; −0.23; last 47 months
Capital One	−0.6	0.21	−0.59 (Jul27); −1.2 (Mar03)	−1.2; −0.6; −0.16; last 47 months
Credit Suisse	−0.03	0.046	0.68 (Jan14); −2.76 (Aug24)	−2.76; −0.03; 1.81; last 47 months
Deutsche Bank	−0.42	0.18	0.41 (Dec02); −1.52 (Oct12)	−1.52; −0.42; 0.41; last 41 months
Fifth Third	−0.42	0.34	0.25 (Jan28); −1.69 (Dec24)	−1.69; −0.42; 2.19; last 47 months
Goldman Sachs	−0.49	−0.049	−0.15 (Sep14); −0.99 (Sep28)	−1.09; −0.49; −0.15; last 47 months
JP Morgan	−0.66	0.11	−0.62 (Jan14); −1.22 (Sep21)	−1.22; −0.66; −0.33; last 47 months
Keycorp	−0.44	0.3	0.34 (Jan28); −1.79 (May18)	−1.79; −0.44; 0.34; last 47 months
Morgan Stanley	−0.48	0.054	−0.33 (Sep14); −1.07 (Oct19)	−1.12; −0.48; −0.25; last 47 months
PNC Financial	−0.79	0.25	−0.42 (Jan28); −1.41 (Jul13)	−1.84; −0.79; −0.39; last 47 months
Regions Financial	−0.33	0.082	−0.03 (Mar10); −1.6 (Aug03)	−1.94; −0.33; 0.68; last 46 months
SunTrust	−0.51	0.24	−0.21 (Feb11); −1.27 (Jan01)	−1.27; −0.51; −0.21; last 47 months
State Street	−0.87	0.053	−0.19 (Jan14); −1.42 (Aug31)	−2.31; −0.87; −0.13; last 47 months
UBS	−0.04		0.91 (Dec31); −1.72 (Nov26)	−3.36; −0.04; 0.91; last 25 months
US Bancorp	−0.77	0.17	−0.57 (Jan28); −1.34 (Aug31)	−1.55; −0.77; −0.2; last 47 months
Wells Fargo	−0.34	0.16	−0.06 (Sep14); −1.1 (Mar03)	−1.3; −0.34; −0.06; last 47 months

Source: FactSet

Bank MPD Statistics as of November 30, 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	**5.22%**	0.88%	10.35 Feb11; 1.85 Sep07	1.53 – 5.22 – 10.35; last 47 months
Bank of America	**8.35%**	−1.3%	17.74 Feb11; 4.75 Aug17	3.13 – 8.35 – 17.74; last 47 months
BB&T	**5.09%**	−0.73%	12.22 Feb11; 3.18 Jul27	1.68 – 5.09 – 12.22; last 47 months
Barclays	**10.68%**	−0.53%	28.98 Feb11; 7.47 Mar03	2.33 – 10.68 – 28.98; last 47 months
Bank of NY Mellon	**6.9%**	0.6%	15.17 Feb11; 4.19 Oct26	1.12 – 6.9 – 15.17; last 47 months
Citigroup	**7.58%**	−1.4%	16.5 Feb11; 4.99 Jul27	1.93 – 7.58 – 16.5; last 47 months
Capital One	**9.04%**	−0.41%	15.15 Feb11; 4.94 Oct26	1.64 – 9.04 – 15.15; last 47 months
Credit Suisse	**12.08%**	−0.57%	34.48 Feb11; 5.13 Aug24	2.87 – 12.08 – 34.48; last 47 months
Deutsche Bank	**14.02%**	−1.7%	23.37 Jan21; 11.34 Dec24	4.99 – 14.02 – 23.37; last 41 months
Fifth Third	**7.75%**	−0.24%	17.06 Feb11; 5.41 Aug17	0.99 – 7.75 – 17.06; last 47 months
Goldman Sachs	**5.31%**	−1.4%	13.1 Feb11; 2.2 Sep07	1.79 – 5.31 – 13.1; last 47 months
JP Morgan	**5.37%**	−1.3%	11.65 Feb11; 3.02 Jul20	1.31 – 5.37 – 11.65; last 47 months
Keycorp	**9.43%**	−0.11%	16.35 Feb11; 5.6 Jun01	1.92 – 9.43 – 16.35; last 47 months
Morgan Stanley	**7.18%**	−1.1%	18.01 Feb11; 3.71 Sep07	2.57 – 7.18 – 18.01; last 47 months
PNC Financial	**5.2%**	−1.4%	10.55 Feb11; 3.78 Sep21	1.43 – 5.2 – 10.55; last 47 months
Regions Financial	**10.89%**	−1.6%	20.23 Feb11; 4.72 Aug31	3.34 – 10.89 – 20.23; last 46 months
SunTrust	**5.69%**	−1.9%	15.8 Feb11; 5.28 Aug31	1.73 – 5.69 – 15.8; last 47 months
State Street	**7.47%**	0.66%	15.74 Jan21; 6.03 Jan01	2.26 – 7.47 – 15.74; last 47 months
UBS	**7.28%**		18.15 Mar06; 1.53 Dec31	1.53 – 7.28 – 18.15; last 25 months
US Bancorp	**3.4%**	−0.99%	9.69 Feb25; 1.78 Oct26	0.74 – 3.4 – 9.69; last 47 months
Wells Fargo	**4.39%**	−1%	9.93 Jan21; 1.58 Sep07	1.3 – 4.39 – 9.93; last 47 months

Source: FactSet

Bank MPD Statistics as of November 30, 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 with median, IQR, and max/min (min)	Long−Term Range (latest)	Long−Term Range (max)	Period
American Express	7846	59%	15162	0	532	7846	32713	last 47 months
Bank of America	165475	40%	187673	0	7419	165475	195347	last 47 months
BB&T	5138	230%	5986	0	126	5138	6490	last 47 months
Barclays	857	−43%	18909	0	8	857	18909	last 47 months
Bank of NY Mellon	99	−91%	33235	0	44	99	33235	last 47 months
Citigroup	7471	−74%	90561	0	1810	7471	140439	last 47 months
Capital One	8654	240%	9096	0	136	8654	16299	last 47 months
Credit Suisse	800	−84%	31577	0	1	800	31577	last 47 months
Deutsche Bank	11042	−19%	99132	0	76	11042	99132	last 41 months
Fifth Third	2360	170%	6123	0	24	2360	19127	last 47 months
Goldman Sachs	35310	−14%	40920	0	612	35310	40920	last 47 months
JP Morgan	5373	−79%	55464	0	951	5373	132116	last 47 months
Keycorp	1325	−65%	5129	0	44	1325	27404	last 47 months
Morgan Stanley	18236	−34%	32733	0	327	18236	69872	last 47 months
PNC Financial	1105	−55%	4932	0	42	1105	4932	last 47 months
Regions Financial	9183	−81%	47587	0	20	9183	47940	last 46 months
SunTrust	3054	−28%	11023	0	61	3054	13788	last 47 months
State Street	416	29%	2700	0	19	416	5339	last 47 months
UBS	124		2034	0	23	124	2766	last 25 months
US Bancorp	10662	−68%	33496	0	52	10662	33496	last 47 months
Wells Fargo	45938	300%	80746	0	950	45938	121351	last 47 months

Source: FactSet

Insurance Company MPD Statistics as of November 30, 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	**9.33%**	0.27%	13.6 Feb11 8.18 Jun08	7.11 9.33 13.91 last 47 months
AIG	**9.14%**	−0.77%	18.95 Feb11 8.3 Sep07	8.3 9.14 18.95 last 47 months
Allstate	**8.8%**	−0.29%	13.18 Jan21 7 Aug24	5.83 8.8 13.18 last 47 months
Ameriprise	**13.49%**	−2.1%	18.71 Feb11 11.85 Dec02	8.98 13.49 18.71 last 47 months
Chubb	**8.2%**	−0.66%	12.49 Feb11 6.13 Dec24	5.96 8.2 24.08 last 47 months
Hartford Financial	**11.69%**	−0.17%	18.69 Jan21 10.39 Sep07	8.35 11.69 18.69 last 47 months
Lincoln National	**15.01%**	−0.73%	22.48 Feb11 12.82 Dec02	8.98 15.01 22.48 last 47 months
Met Life	**14.11%**	−0.57%	19.33 Feb11 11.72 Jan01	9.4 14.11 19.33 last 47 months
Principal Financial	**12.71%**	3.7%	18.94 Feb18 8.97 Nov16	8.02 12.71 23.83 last 47 months
Progressive	**14.93%**	3.9%	14.93 Nov30 8.44 Aug10	5.79 14.93 14.93 last 46 months
Prudential	**13.21%**	−0.68%	18.54 Jan21 12.39 Sep28	10.09 13.21 18.54 last 47 months

Insurance Company MPD Statistics as of November 30, 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	**−0.87**	−0.81	−0.06	−1.25	Nov16	Sep07	−1.31	−0.87	−0.06	last 47 months
AIG	**−0.4**	0.36	−0.32	−1.14	Sep14	Feb04	−1.16	−0.4	−0.23	last 47 months
Allstate	**−0.92**	−0.025	−0.59	−1.39	May04	Sep07	−1.5	−0.92	−0.12	last 47 months
Ameriprise	**−0.21**	0.38	−0.21	−1.47	Nov30	Oct05	−4.03	−0.21	−0.11	last 47 months
Chubb	**−0.64**	0.33	−0.38	−1.65	Jan07	Aug31	−1.65	−0.64	0.09	last 47 months
Hartford Financial	**−0.57**	0.27	−0.16	−1.55	Jul27	Feb11	−1.67	−0.57	−0.09	last 47 months
Lincoln National	**−0.79**	0.12	−0.33	−1.07	Apr06	May04	−1.15	−0.79	0.15	last 47 months
Met Life	**−0.37**	0.19	−0.37	−1.24	Nov30	Jun01	−1.24	−0.37	−0.23	last 47 months
Principal Financial	**−1.3**	−0.37	0.13	−2.73	Dec24	Oct19	−2.95	−1.3	0.42	last 47 months
Progressive	**−0.59**	0.29	0.38	−1.35	Nov02	Jul13	−3.54	−0.59	0.42	last 46 months
Prudential	**−0.59**	0.24	−0.47	−1.2	Jan14	May18	−1.2	−0.59	−0.33	last 47 months

Insurance Company MPD Statistics as of November 30, 2016

Indicator	Latest	2−Week Change	1−Year Trend with min/max points		Long−Term Range with median, IQR, and max/min			
			Max	Min	Min	Latest	Max	Period
Market Probability of −20% or More Decline (3−Month Expiry)								
Aflac	**3.49%**	1.6%	8.5 (Feb11)	1.9 (Nov16)	1.37	3.49	10.03	last 47 months
AIG	**2.42%**	−0.87%	14.57 (Feb11)	2.04 (Aug17)	2.04	2.42	14.57	last 47 months
Allstate	**2.8%**	−0.28%	7.91 (Jan21)	1.65 (Aug10)	0.56	2.8	7.91	last 47 months
Ameriprise	**9.1%**	−3.3%	16.29 (Feb04)	6.22 (Oct26)	2.4	9.1	16.29	last 47 months
Chubb	**2.12%**	−0.9%	7.44 (Jan21)	1.16 (Dec24)	0.55	2.12	12.5	last 47 months
Hartford Financial	**5.85%**	−1.2%	12.03 (Feb11)	4.58 (Jul27)	2.19	5.85	14.19	last 47 months
Lincoln National	**9.59%**	−0.87%	17.85 (Feb11)	7.42 (Jun01)	2.26	9.59	17.85	last 47 months
Met Life	**9.21%**	−1.1%	16.75 (Feb11)	6.12 (Dec24)	3.26	9.21	16.75	last 47 months
Principal Financial	**6.76%**	4.1%	16.1 (Jan21)	2.64 (Nov16)	0.43	6.76	20.44	last 47 months
Progressive	**10.64%**	5%	10.64 (Nov30)	2.44 (Mar30)	0	10.64	10.64	last 46 months
Prudential	**7.96%**	−1.5%	15.1 (Feb11)	6.67 (Jan01)	3.99	7.96	15.1	last 47 months

Insurance Company MPD Statistics as of November 30, 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	**549**	−28%	9135 / 0	549; 68 – 22718; last 47 months
AIG	**6127**	−45%	44233 / 0	6127; 110 – 103998; last 47 months
Allstate	**1935**	−46%	3608 / 0	1935; 63 – 5708; last 47 months
Ameriprise	**55**	−97%	1973 / 0	55; 5 – 1973; last 47 months
Chubb	**883**	75%	6138 / 0	883; 3 – 9027; last 47 months
Hartford Financial	**690**	20%	2769 / 0	690; 16 – 14934; last 47 months
Lincoln National	**1000**	−44%	4145 / 0	1000; 51 – 8403; last 47 months
Met Life	**5985**	−64%	22250 / 0	5985; 319 – 74100; last 47 months
Principal Financial	**99**	−89%	1102 / 0	99; 2 – 1102; last 47 months
Progressive	**66**	57%	1798 / 0	66; 0 – 3415; last 46 months
Prudential	**1212**	−13%	14512 / 0	1212; 222 – 17185; last 47 months