FEDERAL RESERVE BANK OF MINNEAPOLIS

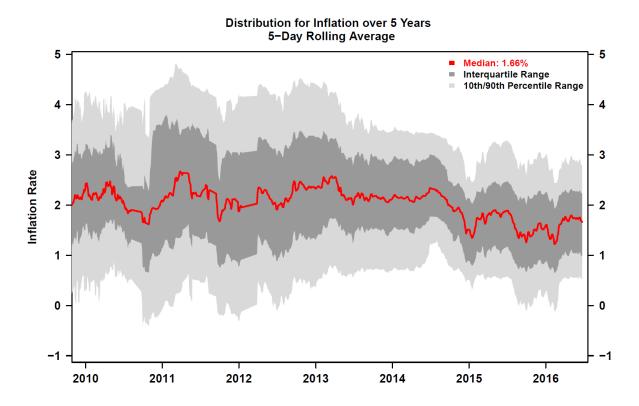
BANKING AND POLICY STUDIES

Minneapolis Options Report – June 24rd

Median inflation expectations fell for all inflation tenors over the two-week period. The S&P 500 returned -1.6%, outperforming the average banking and insurance firms we follow, which posted respective returns of -4.4% and -2.4%. The currency pairs we follow experienced large swings with the dollar strengthening against the pound, and the euro and yen strengthening against the dollar. The currency movements were likely exacerbated by the referendum on Britain's E.U. membership. MPD standard deviation jumped by 7.1 percentage points for BCS, an FBO based in London. Agricultural crops and livestock registered large declines.

Inflation

Market-based inflation expectations, derived from caps and floors on the CPI for 1-, 2-, and 5-year periods, increased over the two-week period to 2.05%, 1.8% and 1.64%, respectively. This rise is best observed in the 5-year tenor (see figure, below).



Additional detail:

• The market probability of more than 3% inflation over the next year fell by -1.4 percentage points for the 1-year tenor, after having set a new 1-year high on June 8, 2016.

Interest Rates

Spot prices for the 5- and 10-year Treasuries increased over the two week reporting period, each setting a new 1-year high. As a result, yields fell. MPD skew increased for both tenors. In particular, MPD skew for the 10-year tenor set a new high at 0.19, signaling bias towards higher treasury prices in the future. The 3-year out and 5-year-out LIBOR tenors were mixed with the 3-year tenor falling by -4.6 bps and the

5-year expiry increasing by 1.6 bps. Changes in MPD statistics during this time were flat for both LIBOR tenors.

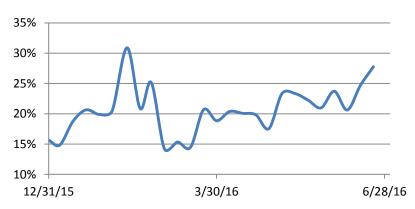
Banks and Insurance Companies

The S&P 500 returned -1.6% over the past two weeks. The MPD standard deviation increased by 0.82 percentage points on average for the 6- and 12-month tenors. The 19 banking firms we follow underperformed the market, registering an average return of -4.4%; MPD standard deviation for all banks we follow rose. The 11 insurance companies we follow returned -2.4%, on average, and most posted higher MPD standard deviation as well.

Additional details:

• BCS experience a 7.1 percentage point increase in its MPD standard deviation, suggesting an increase in investor uncertainty surrounding the institution. The looming referendum on Britain's membership in the E.U. was a likely contributor. Notably, this metric has trended higher for the bank since March, 2016. The increase of 7.1% represents the one of the larger increases for BCS and its MPD standard deviation is nearing the historic level set in February 2016.

MPD Standard Deviation for BCS

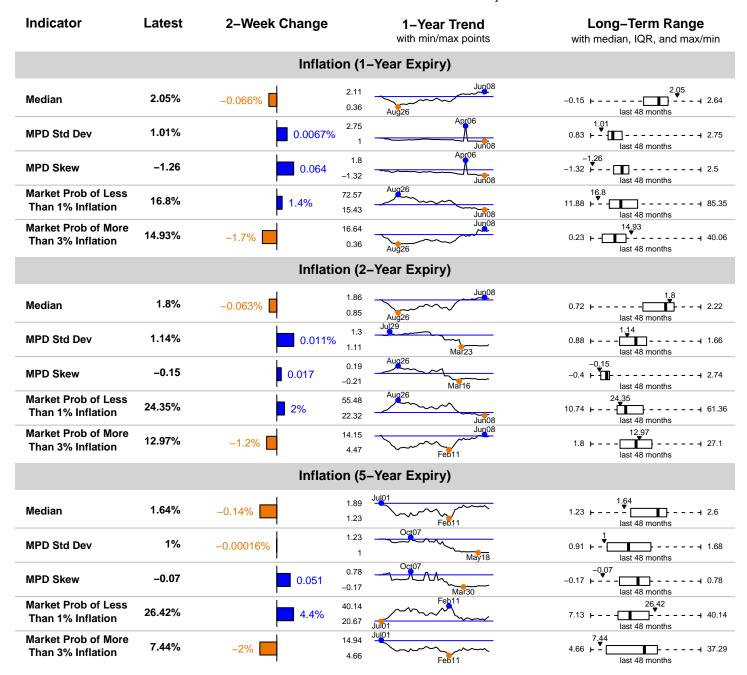


• PFG and AIG experienced the largest increases in MPD standard deviation for insurers we follow, posting gains of 3.7 and 2.5 percentage points respectively. MPD standard deviation had fallen steadily for PFG since February 18, 2016.

Other Markets

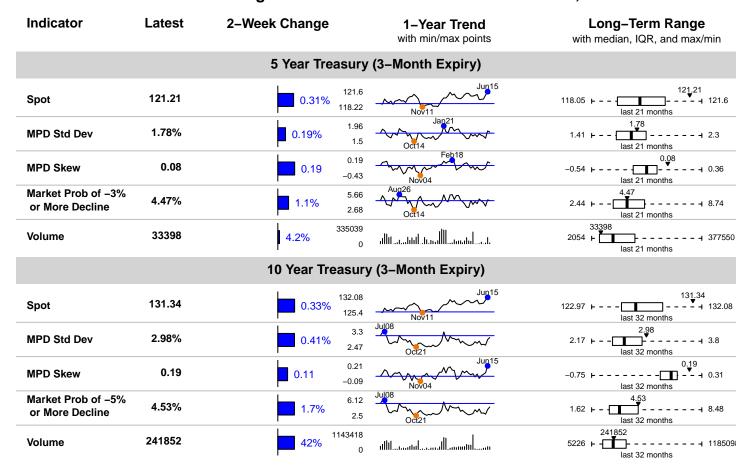
- Currency rates recorded large movements. The dollar was stronger against the euro. The pound and yen were stronger against the dollar with spots rising by 1.3% and 2.4%, respectively. MPD skew for the USD-Yen pair jumped by 0.14, setting a new 4-year high. This new level indicates that investors are biased towards a comparatively stronger yen in the future.
- Silver spots registered a 2% return. Investor uncertainty, as measured by MPD standard deviation, rose slightly to 20.6%, near its 75th percentile of observations over the past 4-years.
- WTI crude fell by -3.9% over the 2-week period. MPD standard deviation increased over the same time frame by 2.5 percentage points, signaling an increase in investor uncertainty.
- Agricultural crops spots plummeted over the two-week period, posting an average loss of -6.9%.
 While corn and wheat experienced declines in MPD standard deviation, the metric for soybeans rose slightly and set a new 1-year high.
- Agricultural livestock lost -3.0% on average. MPD standard deviation increase for both cattle and hogs by 1.3 and 1.4 percentage points.

Inflation MPD Statistics as of June 22, 2016

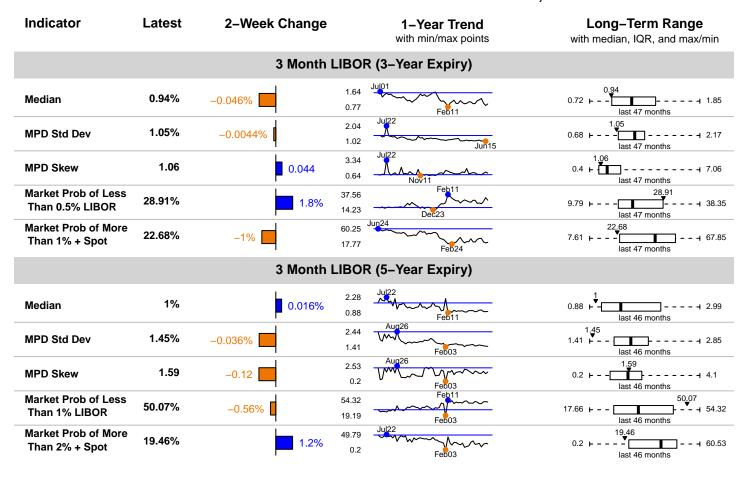


Source: Bloomberg Page 1 of 16

Medium-to-Long Bond Price MPD Statistics as of June 22, 2016

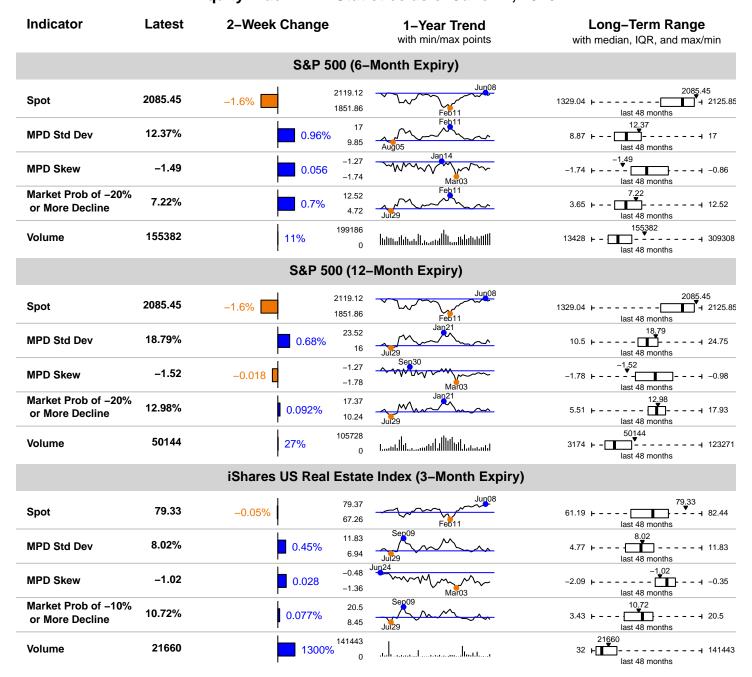


Short Interest Rates MPD Statistics as of June 22, 2016



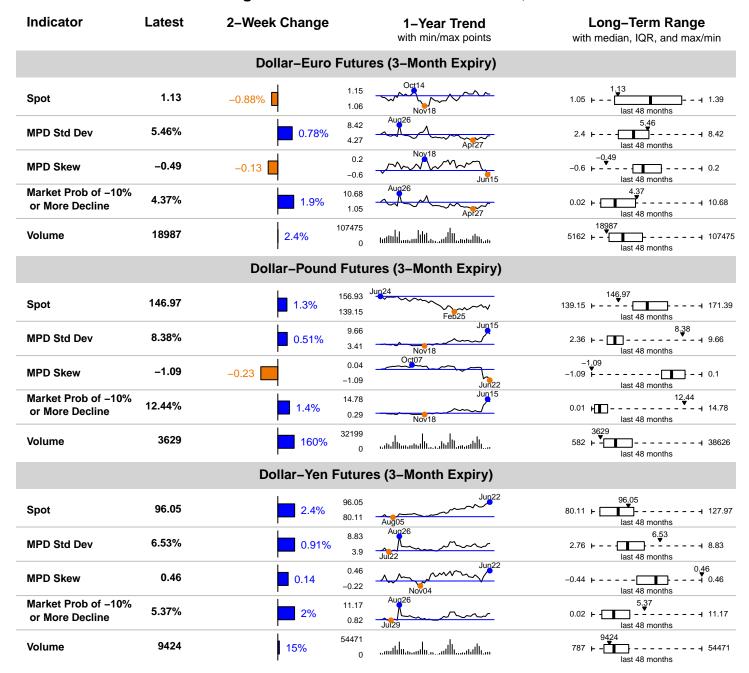
Source: Bloomberg Page 3 of 16

Equity Index MPD Statistics as of June 22, 2016

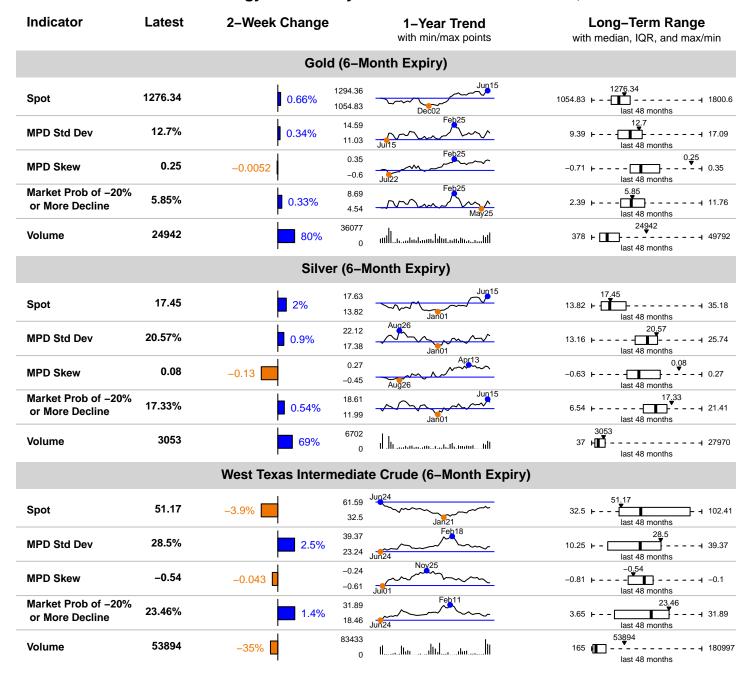


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Exchange Rate MPD Statistics as of June 22, 2016



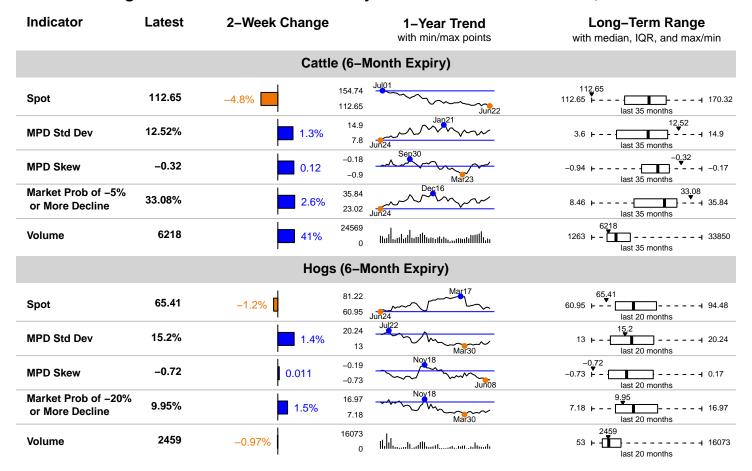
Metal and Energy Commodity MPD Statistics as of June 22, 2016



Agricultural Crop Commodity MPD Statistics as of June 22, 2016

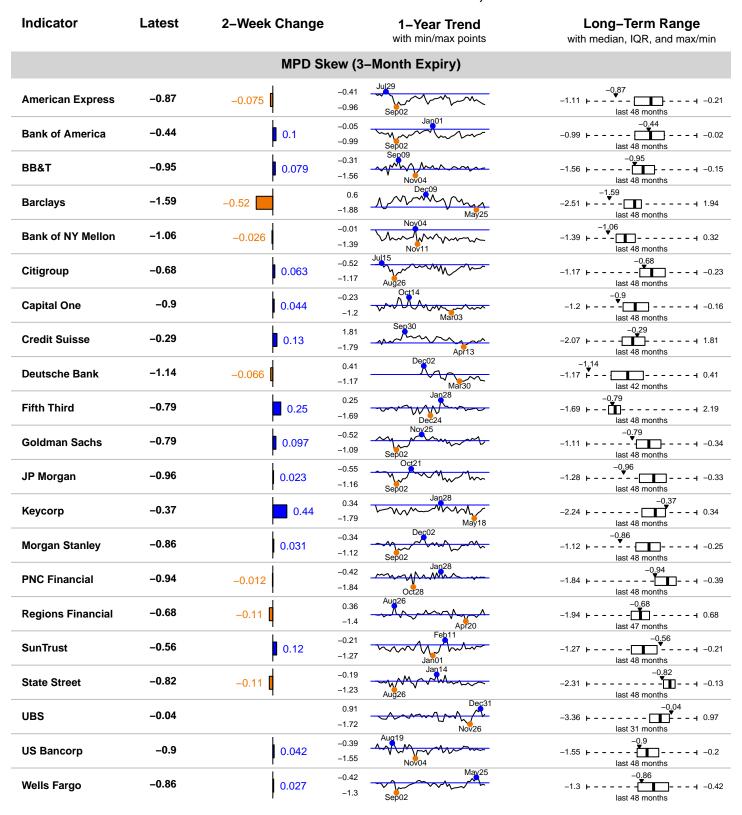


Agricultural Livestock Commodity MPD Statistics as of June 22, 2016

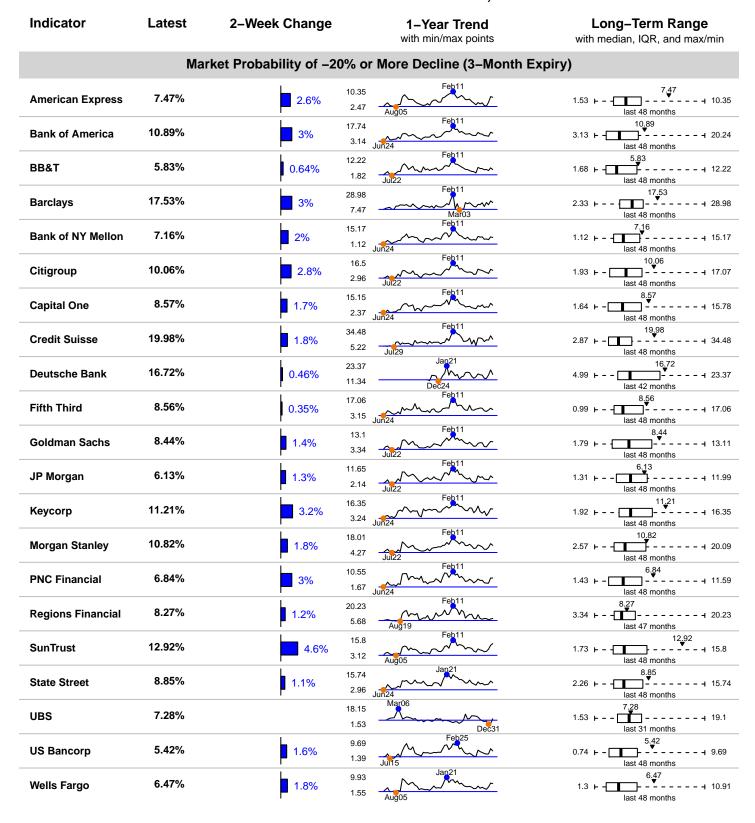


Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min	
MPD Standard Deviation (3-Month Expiry)					
American Express	12.59%	2.3% 15.64 8.82	Jun24	12,59 7.82 + last 48 months	
Bank of America	16.18%	2.5% 21.78 9.86	Jun24	16.18 9.68 F - 16.18 9.68 F - 23.34 last 48 months	
ВВ&Т	11.7%	1.3% 16.69 7.54	Jul22	11.7 7.29 F - 16.69 last 48 months	
Barclays	27.77%	7.1% 30.89 13.43	Jun24	27,77 10.93 F 30.89 last 48 months	
Bank of NY Mellon	12.64%	1.4% 17.63 7.13	Jul 22	12.64 7.13 + Iast 48 months	
Citigroup	15.29%	2.4% 20.73 9.18	Jul 22	15.29 8.52 ⊢ - □ □ 23.67 last 48 months	
Capital One	14.14%	1.7% ^{19.11}	Jun24	14.14 7.72 F - 19.11 last 48 months	
Credit Suisse	22.47%	1.7% 30.72 11.94	- V - V ~~~	22,47 9.84 F - 1 30.72 last 48 months	
Deutsche Bank	23.75%	1.7% 29.56 15.64	<i>γ</i> \ <i>\\\\</i>	23.75 11.33 F - 129.56 last 42 months	
Fifth Third	14.21%	0.12% 19.87 9.36	.~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	14.21 8.21 + - 13.87 last 48 months	
Goldman Sachs	13.55%	1.3% 18.62	Feb11	13.55 8.23 F - 13.62 last 48 months	
JP Morgan	11.64%	1.3%	Feb11	11.64 7.41 + last 48 months	
Keycorp	15.15%	2.2% 18.8 9.92	Apr13	15.15 8.98 ⊢ 18.8 last 48 months	
Morgan Stanley	15.52%	1.5% 22.74 10.15	$\sim \sim $	15,52 8.97 F - 15,52 last 48 months	
PNC Financial	12.11%	2.5% 15 7.58	. / ~~~~	7.45 + 12,11 7.45 + - 15 last 48 months	
Regions Financial	14.59%	1.2% 21.74 11.88	/M., M - N -	14.59 10.09 F 3.79 last 47 months	
SunTrust	15.5%	2.6% 19.05 8.96	Feb18	15.5 7.82 + last 48 months	
State Street	14.34%	1.4% 18.49 9.24	Jan21	14.34 8.81 + 18.49 last 48 months	
UBS	13.36%	19.02 8.7	Mar06	13,36 8.7 + 13 1 24.21 last 31 months	
US Bancorp	10.82%	1.5% 14.54 6.99	Sep09	10.82 6.58 + - 1.54 last 48 months	
Wells Fargo	11.58%	1.6% 14.79	Aug26	11.58 7.16 F - 15.6 last 48 months	

Source: FactSet Page 9 of 16



Source: FactSet Page 10 of 16



Source: FactSet Page 11 of 16

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	2653	47%	32713 0		2653 623 + 1 32713 last 48 months	
Bank of America	110963	81%	187673 0	taaahuuaahilhidudhilliidaaniit	110963 7419 + - 110963 last 48 months	
BB&T	1779	-34%	6459 0		1779 126 + 1779 last 48 months	
Barclays	1203	29009	7859 % 0		1203 8 H□	
Bank of NY Mellon	2296	630%	33235 0		2296 44 ¶	
Citigroup	27432	130%	57016 0	Alaanaan ahududhaati	27432 1104 + 1 140439 last 48 months	
Capital One	2712	41%	9096 0		2712 136 H 16299 last 48 months	
Credit Suisse	11441	720%	17099 0	L	11441 0 (
Deutsche Bank	6854	89%	38235 0	allhandnada	6854 76 H	
Fifth Third	709	-32%	6257 0	naadataaaddinadaadaan	709 28 411 19127 last 48 months	
Goldman Sachs	20203	870%	20203 0		20203 296 F 28030 last 48 months	
JP Morgan	28109	150%	132116 0	tl	28109 943 ⊢	
Keycorp	710	-71%	5129 0	taasaastisaatsautillisiaalidusula	710 44 👖 1 27404 last 48 months	
Morgan Stanley	1698	-5.6%	36166 0	dubudita.utt.lattrataut	1698 327 	
PNC Financial	2656	200%	4932 0	naahanalaanaalaahul	2656 42 F Ilast 48 months	
Regions Financial	4754	520%	4832 0	naadultaaliandinidindiadd	4754 20 4 47940 last 47 months	
SunTrust	514	180%	5155 0	عماليا المسابلة عمارا المسابلة	514 61 HI D 13788 last 48 months	
State Street	632	76%	1667 0	natiathna a anathnathnathnathnathn	632 19 H	
UBS	124		2034 0	. H.H. marabitutaana aasa	124 6 + 1 6502 last 31 months	
US Bancorp	3999	1400%	9927 0	alamanat amalilaminatalami	3999 52 H∏ 1 29142 last 48 months	
Wells Fargo	12357	110%	55478 0	lliitiitiliitaauttaautta	12357 950 - ∭ 1 121351 last 48 months	

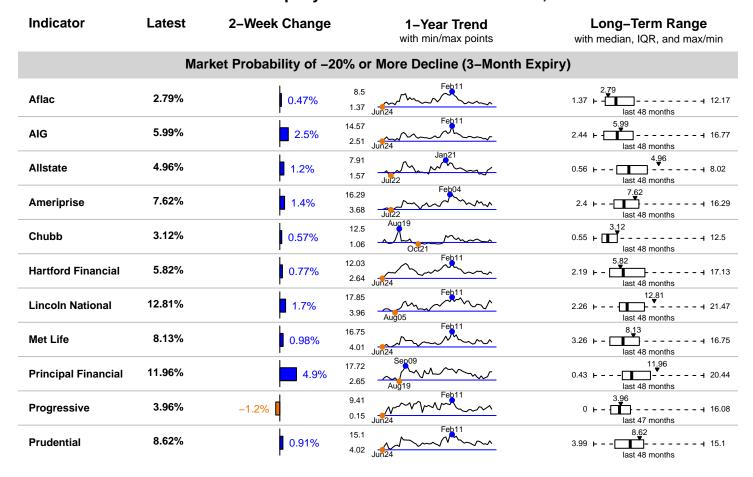
Source: FactSet Page 12 of 16

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	8.86%	0.68%	13.6 Feb11 7.24 Jun24	8.86 7.11 F - 17.26 last 48 months	
AIG	12.04%	2.5%	9.01 Jun 24 Feb 11	12.04 8.7 F - 20.65 last 48 months	
Allstate	10.05%	0.94%	13.18 Jan21 7.65 Jun01	10,05 5.83 + 13.18 last 48 months	
Ameriprise	13.04%	1.1%	18.71 Feb.11 9.76 Jul29	13.04 8.98 + 13.04 last 48 months	
Chubb	9.02%	1%	24.08 Aug19 6.13 Dec24	9.02 5.96 + 111 24.08 last 48 months	
Hartford Financial	11.25%	0.62%	18.69 Jan21 8.35 Jun24	8.35 + - 11.25 last 48 months	
Lincoln National	15.76%	0.36%	22.48 Feb11 10.68 Jun24	15.76 8.98 + 1 22.48 last 48 months	
Met Life	13.55%	1.1%	19.33 Feb11 10.04 Jun24	13.55 9.4 + - 13.55 last 48 months	
Principal Financial	15.97%	3.7%	9.12 Aug 19 Feb 18	15.97 8.02 + 15.97 last 48 months	
Progressive	9.92%	-0.9%	13.49 Sep23 5.79 Jun24	9.92 5.79 + 10 19.73 last 47 months	
Prudential	13.9%	1.1%	18.54 10.09 Jun24	13.9 10.09 F 18.54 last 48 months	

Source: FactSet Page 13 of 16

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	-1.2	-0.27 - 0.27 - 1.3	1 Oct28	-1.31 +		
AIG	-0.77	0.069 -0.4	6 Oct14	-0.77 -1.16 +		
Allstate	-1.07	0.012 -0.1 -1.2	5 Feb25	-1.07 -1.5 +		
Ameriprise	-1.04	-0.28 - 0.3	1 Jan21	-1.04 -4.03 ⊢ 		
Chubb	-1.36	-0.19 O.0	2 Sep02	-1.36 -1.56 + 0.09 last 48 months		
Hartford Financial	-0.63	0.048 -0.0 -1.6	7 Nov04	-0.63 -1.67 +		
Lincoln National	-0.49	0.3	5 Aug26	-0.49 -1.15 + last 48 months		
Met Life	-1.01	-0.047 -0.5 -1.2	4 Jun01	-1.24 +		
Principal Financial	-1.2	-1.3 O.4		-2.95 + 1.2 last 48 months		
Progressive	-0.88	-0.078 0.2 -1.8	3 Oct28	-3.54 ⊢ 0.42 last 47 months		
Prudential	-0.87	-0.081 -0.4 -1.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-0.87 -1.44 ⊢ ▼		

Source: FactSet Page 14 of 16



Source: FactSet Page 15 of 16

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	9135	1200%	13168 0	Ladar Almantonhanal	9135 88 ⊢		
AIG	7557	-54%	44233 0	utarahahadiadadukaadb	7557 110 н П – – – – – – – – 1 103998 last 48 months		
Allstate	283	110%	3478 0	Itallm.adaabuua.a.l	283 63 411 10621 last 48 months		
Ameriprise	153	43%	1035 0	natt.linnataatmatath.linnataar	153 5 F 1 11114 last 48 months		
Chubb	1145	2200%	3292 0	ltlumillimitalisi	1145 3 ¶		
Hartford Financial	869	-40%	9444		869 16 - 11		
Lincoln National	259	140%	4145 0	lilua.ttaula.ath.aa	259 51 40 4 8403 last 48 months		
Met Life	3699	-27%	20912	aran.t.tral.randlinmaharah	3699 319 ∰ 161416 last 48 months		
Principal Financial	23	-51%	610 0	anadadaman humban dha	23 2 1 1 2956 last 48 months		
Progressive	673	110%	2216 0	ton stalot anathamatanta otaa	673 0 (□		
Prudential	4709	240%	14512 0	taasataanalaatahnanlahlanaaat	4709 222 F		

Source: FactSet Page 16 of 16