FEDERAL RESERVE BANK OF MINNEAPOLIS

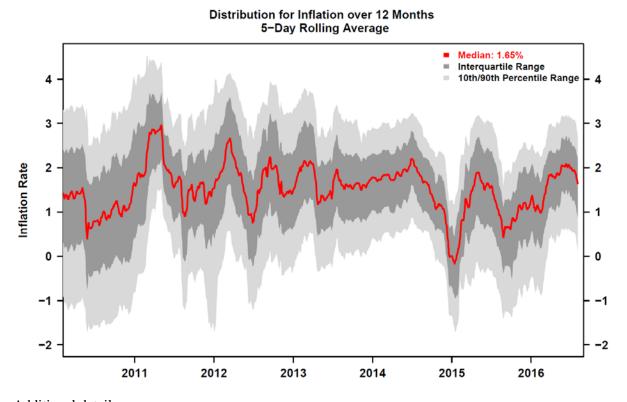
BANKING AND POLICY STUDIES

Minneapolis Options Report – August 5th

Over the past two weeks, market-implied inflation expectations decreased for all tenors. The S&P 500 returned -0.4%, and the 19 banks and 11 insurance firms we follow slightly outperformed the market, each returning 0.1%. Changes in MPD standard deviation and MPD skew were flat for most banks and insurance companies over the two-week reporting period. The dollar was weaker against all currencies we follow. MPD standard deviation for the USD-Pound pairing has fallen back to its pre-Brexit levels. WTI crude spots fell sharply by -8.6% due to continued oversupply concerns. Metals were higher by an average 3%. Agricultural crops were lower, whereas livestock registered gains. Crop spot prices have fallen since June 2016 declining on average by -21%.

Inflation

Market-based inflation expectations, derived from caps and floors on the CPI for 1-, 2- and 5-year periods decreased over the past two weeks across all tenors to 1.67%, 1.55%, and 1.5% respectively. The 1-year tenor, best demonstrates this decrease (see figure below).



Additional detail:

• The probability of low inflation as defined by the market probability of less than 1% inflation has risen, for all tenors, since June 8, 2016. While the metric for the 1-year tenor stands near its historic 4-year median value, the 2- and 5-year probabilities are elevated relative to their respective median values.

Interest Rates

Prices for 5- and 10-year Treasury moved in different directions as the 5-year Treasury moved higher by 0.4% and the 10-year fell slightly by -0.3%. Changes in MPD statistics were flat over the two week

period. MPD skews currently point to neutral bias for both tenors and stand below the 25th percentile for both tenors; MPD skews could move higher and indicate that Treasury yields could fall. The 3- and 5-year LIBOR tenors posted mixed changes, with the 3-year tenor falling slightly by -6.1 bps and the 5-year tenor registering a 4.4 bps increase. Changes in MPD statistics for both LIBOR tenors were flat over the two week period.

Banks and Insurance Companies

The S&P 500 returned -0.4% over the past two weeks with little to no changes in MPD statistics. The market index is slightly lower than its all-time high of 2173. The 19 domestic bank and the 11 insurance company stocks we follow outperformed the index, with both returning 0.1%.

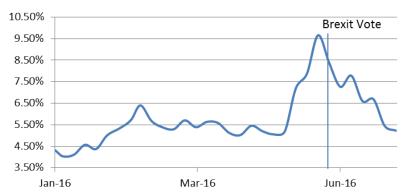
Additional details:

- 10 of the 19 banks (AXP, BBT, BCS, BK, COF, FITB, KEY, MS, STI, STT) we follow reported 2nd quarter earnings. MS and STT posted the largest earnings surprises amongst the group with +26% and +15.4% respectively. BCS registered the most negative surprise, missing analysts' expectations by -24%.
- MPD standard deviation rose higher for JPM and C by 2 percentage points, indicating that
 investor uncertainty surrounding these entities has increased. CS and DB saw declines of nearly
 3 percentage points each for MPD standard deviation. The metrics however remain elevated
 relative to their respective 4-year median values.

Other Markets

- iShares US Real Estate Index underperformed the market, returning -0.2%. MPD standard deviation rose by 2 percentage points over the two week reporting period.
- The dollar was weaker against all currencies we follow. Investor uncertainty as measured by MPD standard deviation fell across all currency pairs. Of note, MPD standard deviation for the USD-Pound pair has nearly returned to its pre-Brexit range (see plot below).

MPD Standard Deviation for USD-Pound Currency Pair

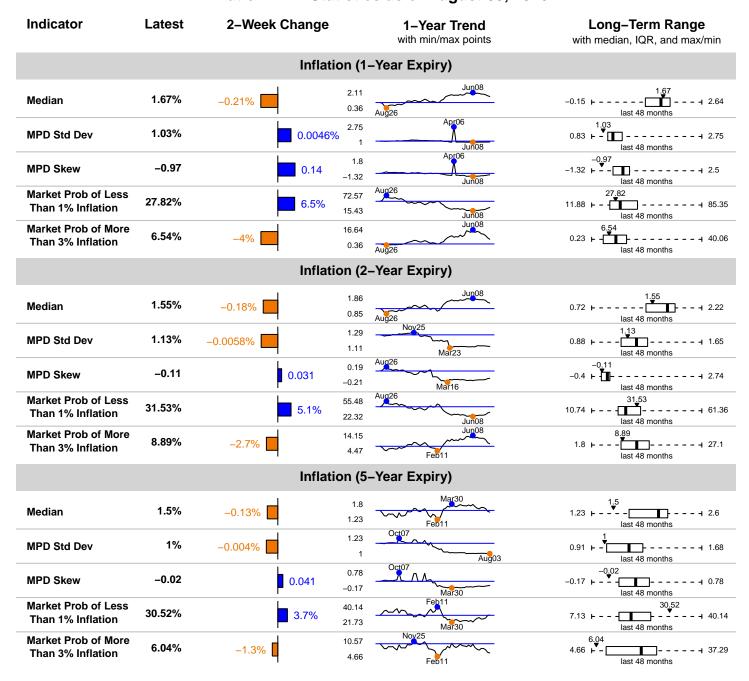


- Spot prices for gold and silver rose by an average of 3.6%, while changes in MPD statistics were flat. MPD skew for gold and silver continue to signal bias towards higher future metal prices in the future.
- WTI crude suffered a large decline of -8.6% due to continued oversupply concerns and Saudi price cuts for the Asian market. MPD standard deviation jumped by 4.2 percentage points signaling that investor uncertainty has risen.
- Agricultural crops were lower with corn returning -2.8% and soybeans returning -7%. Crops have loss -21%, on average, since June 2016. MPD skews remain elevated, however could move lower potentially indicating future losses for crops. MPD standard deviation for soybeans sunk by -7.6 percentage points reversing a steady increase that commenced in March of 2016.

• Agricultural livestock registered gains with cattle returning 4.5% and hogs returning 3.3%. MPD standard deviation fell for cattle by -1 percentage point. The metric remains elevated relative to

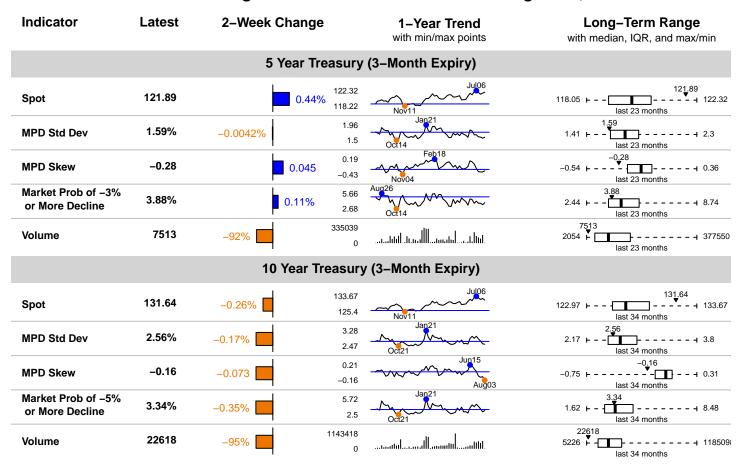
respective historic medians for both cattle and hogs.

Inflation MPD Statistics as of August 03, 2016

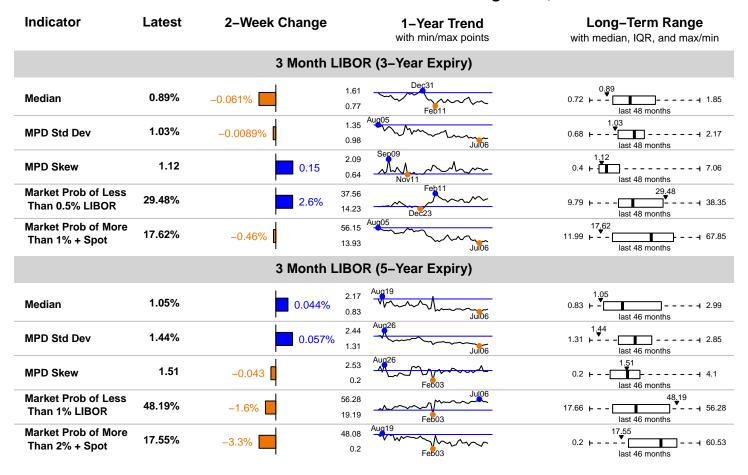


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Medium-to-Long Bond Price MPD Statistics as of August 03, 2016

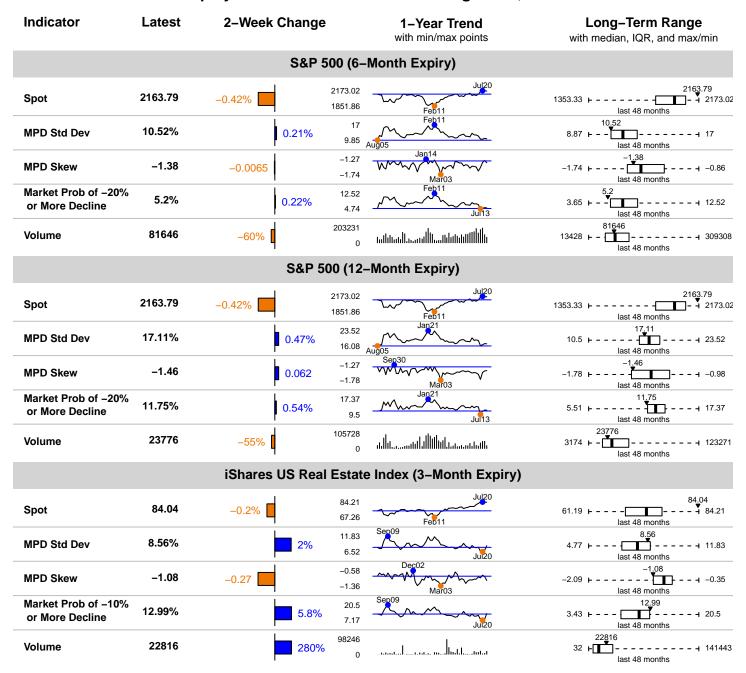


Short Interest Rates MPD Statistics as of August 03, 2016



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Equity Index MPD Statistics as of August 03, 2016

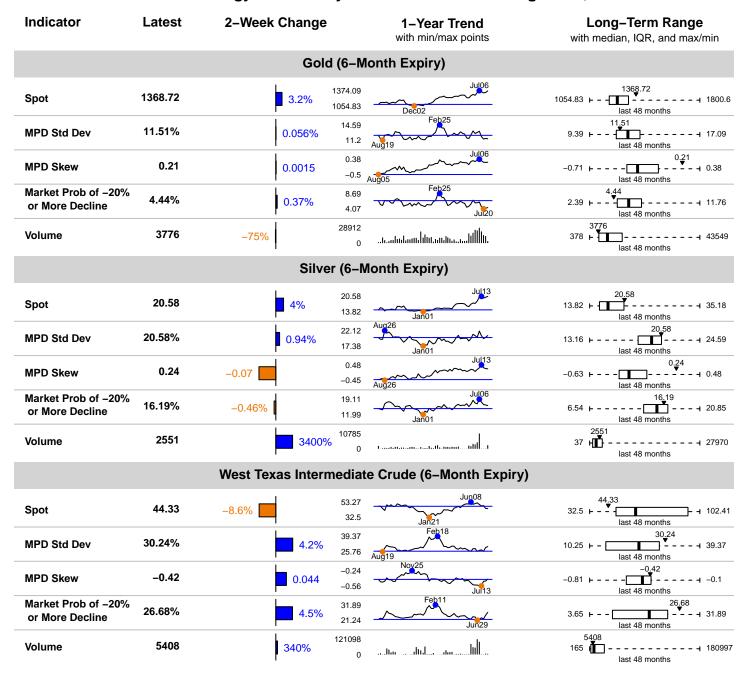


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Exchange Rate MPD Statistics as of August 03, 2016



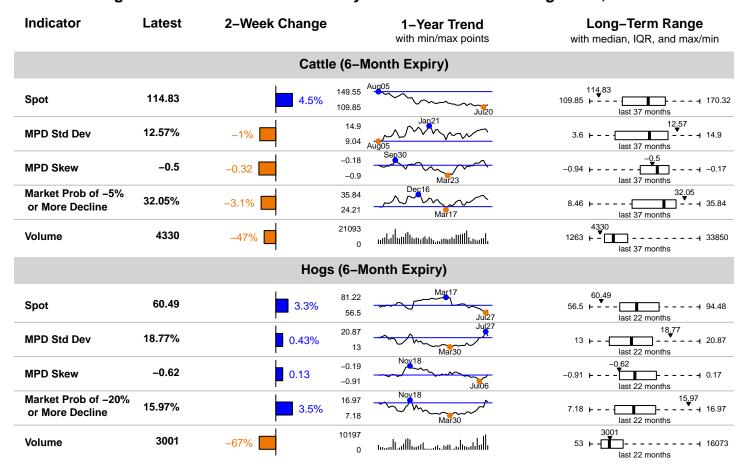
Metal and Energy Commodity MPD Statistics as of August 03, 2016

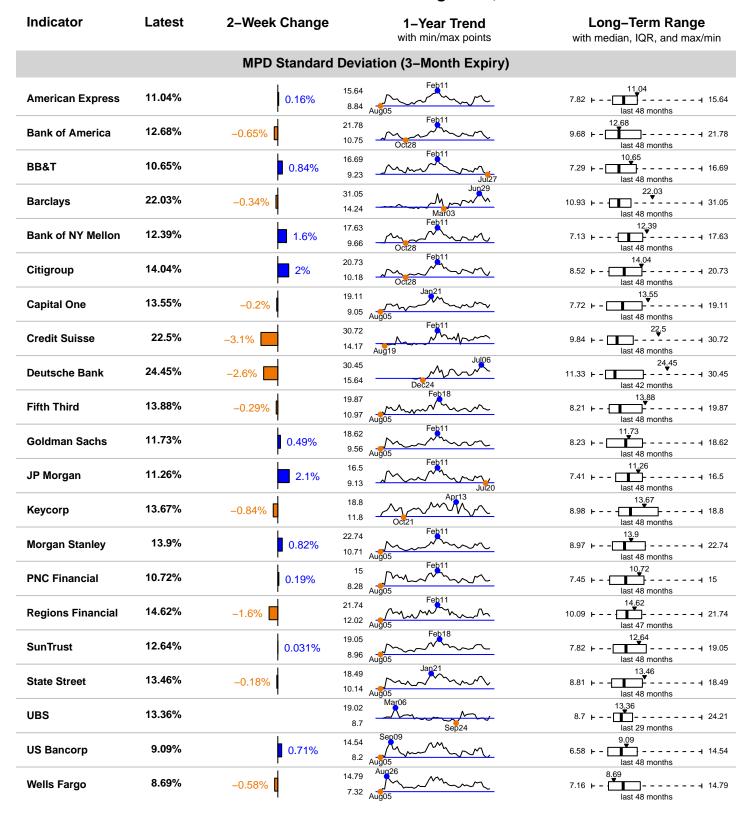


Agricultural Crop Commodity MPD Statistics as of August 03, 2016

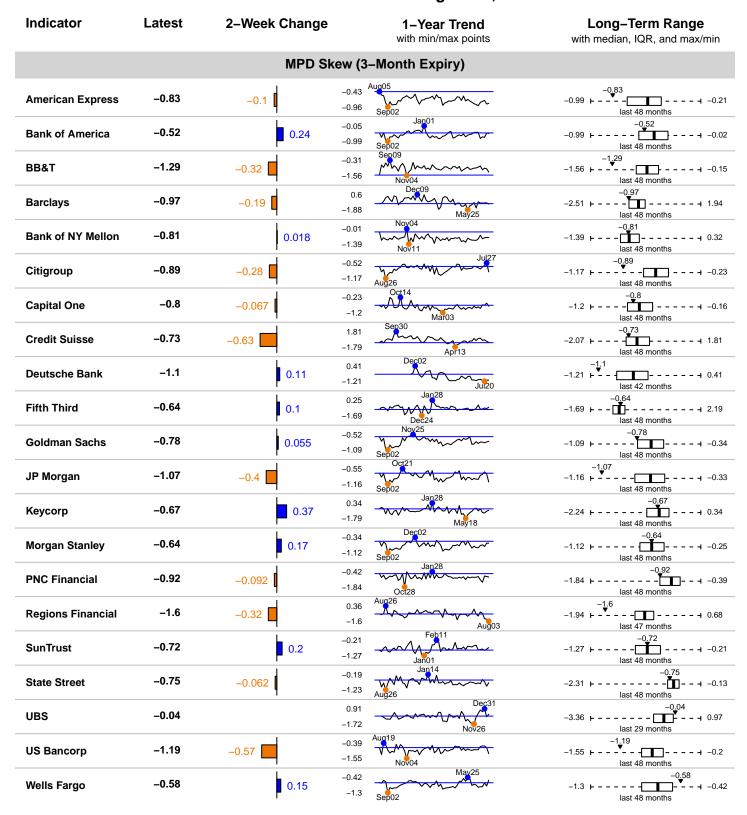


Agricultural Livestock Commodity MPD Statistics as of August 03, 2016

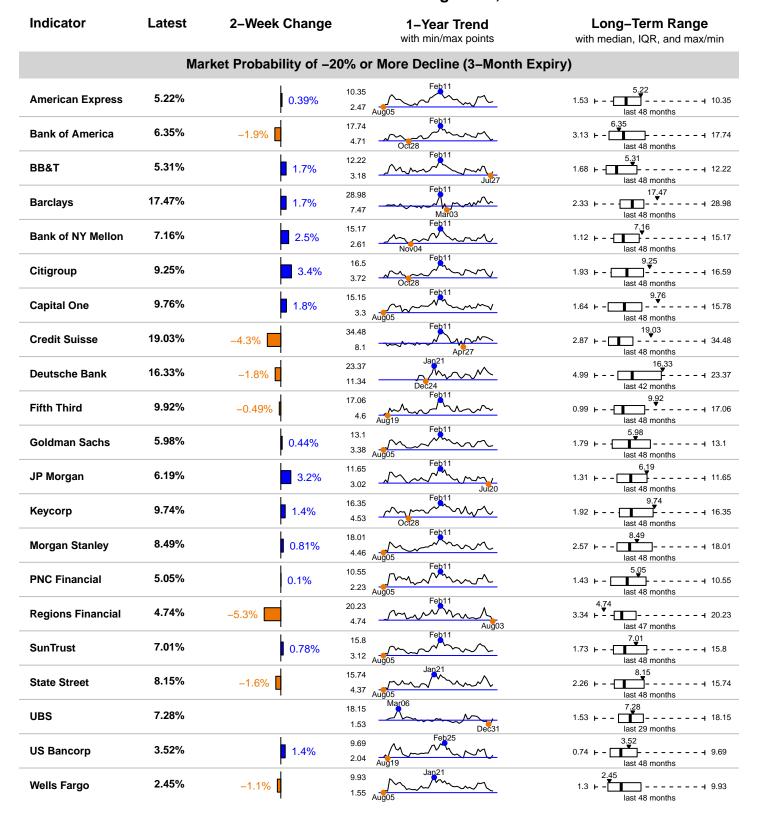




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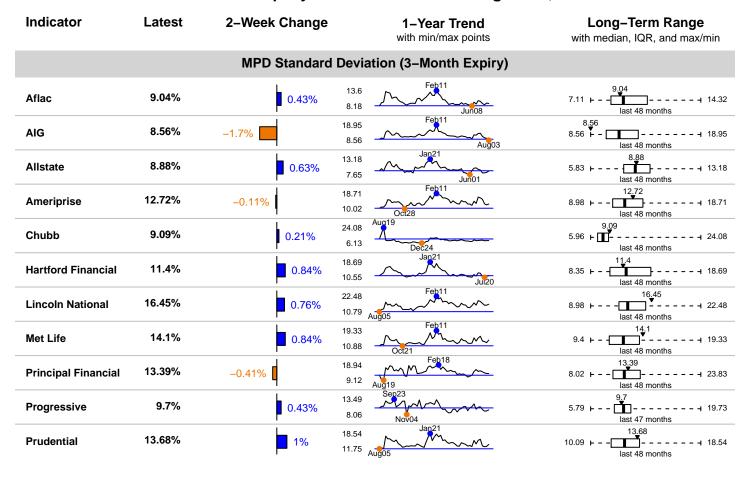
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Indicator	Latest	2-Week Change		1–Year Trend with min/max points	Long-Term Range with median, IQR, and max/min			
Volume (3–Month Expiry)								
American Express	2808	-51% 	22968 0	.lultudhuahu.aa.u.aa.	2808 623 + 1 32713 last 48 months			
Bank of America	98048	-16%	187673 0	.dom.a.dululululudaaanitsii	98048 7419 F - 3 244509 last 48 months			
BB&T	448	-80%	6459 0	aladaradllaanalahduur.	448 126 + 6490 last 48 months			
Barclays	7244	74%	18909 0		7244 8 1 18909 last 48 months			
Bank of NY Mellon	80	-74%	33235 0		80 44 1 33235 last 48 months			
Citigroup	5875	-89%	90561	.aatat.at.uhuduudtadluh.	5875 1104 + 140439 last 48 months			
Capital One	1033	-79% [9096		1033 136 H			
Credit Suisse	572	-97%	17340 0		572 0 (1) 17340 last 48 months			
Deutsche Bank	16313	–66%	47326 0	allianimataini	16313 76 HILL 47326 last 42 months			
Fifth Third	553	7.4%	6257 0	alairalaliitaitiialia	553 28 1 19127 last 48 months			
Goldman Sachs	7017	-30%	20203 0	adhiddhaaddinaanadahda	7017 612 F - 1 28030 last 48 months			
JP Morgan	3949	-89% [132116 0		3949 943 - 1 132116 last 48 months			
Keycorp	3023	460%	5129 0		3023 44 			
Morgan Stanley	4630	-60%	36166 0	ahhaduta athlataranaraan	4630 327 + 69872 last 48 months			
PNC Financial	615	-27%	4932 0	ahanahaanahanhullaa	615 42 ⊢ 1 − − − − − − − − − − − − − − − − − − 			
Regions Financial	60	−94% [4832 0	ahah adambadah dha	60 20 📶 47940 last 47 months			
SunTrust	421	-75%	5155 0		421 61 HD 1 13788 last 48 months			
State Street	1138	540%	2700 0	ما السلامة المسالمة	1138 19 ⊢ 			
UBS	124		2034 0	. 1 1 1 . mar. a hinit. a n. a a.a	23 HT 6502 last 29 months			
US Bancorp	409	-93%	9418 0		409 52 H 1 29142 last 48 months			
Wells Fargo	27394	-31%	55478 0	d. Additidata. addica. andbarald	27394 950 + 121351 last 48 months			

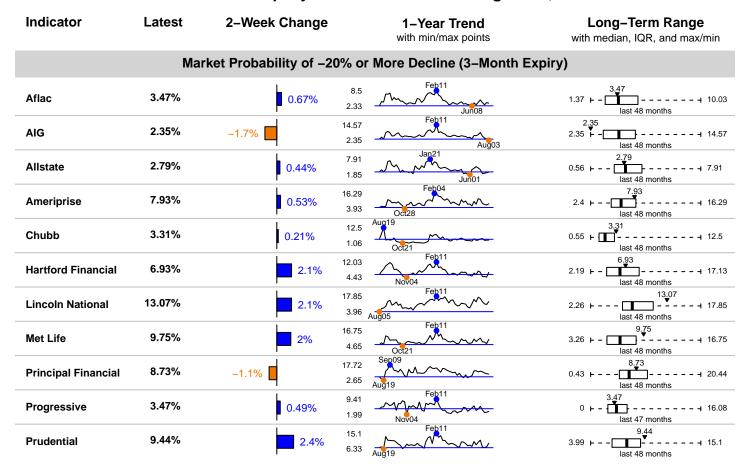
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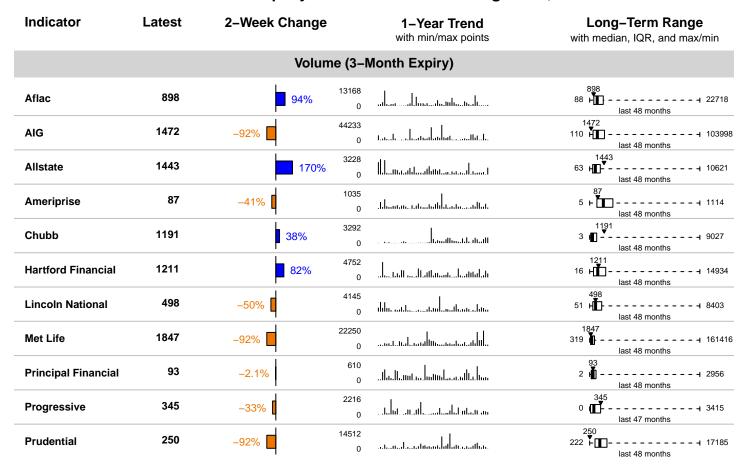
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Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min				
MPD Skew (3-Month Expiry)								
Aflac	-1.15	-0.11 -0.2 -1.3	1/20 -0/MAA.	-1.31 F				
AIG	-0.75	-0.044 -0.11	6 Oct 14	-0.75 -1.16 last 48 months				
Allstate	-0.81	0.04 -0.1	6 Jun 29	-0.81 -1.5 +				
Ameriprise	-0.99	-0.097 - 0.3	2 Jul 13	-0.99 -4.03 ⊢ 				
Chubb	-1.32	-0.3 O.0 -1.5	1. 4. 1. 1. 1.	-1.32 -1.57 				
Hartford Financial	-0.68	0.0016 -0.1	7 Nov04	-0.68 -1.67 + T				
Lincoln National	-0.82	-0.15 -0.0 -1.1	5 Aug26	-0.82 -1.15 ⊢ 1.15 0.15 last 48 months				
Met Life	-1.19	-0.35 -0.5 -1.2	4 Jun01	-1,19 -1.24				
Principal Financial	-0.93	-0.31 O.4	9 Aug05	-2.95 ⊢ 				
Progressive	-0.7	0.13 -0.0 -1.8	3 Oct28	-3.54 ⊢ 				
Prudential	-1.14	-0.47 -0.47 -1.	$\sim \sim $	-1.44 +				

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