#### FEDERAL RESERVE BANK OF MINNEAPOLIS

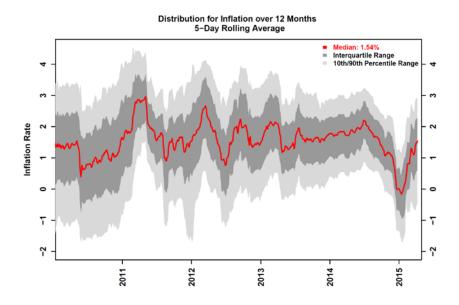
BANKING AND POLICY STUDIES

# Minneapolis Options Report – April 10<sup>th</sup>

Inflation expectations have resumed their climb begun in early 2015. Both long and short interest rates continue to decline. MPD skews on treasury prices suggest some shifts in market sentiment toward higher rates on the 5-year treasury and lower rates on the 10-year treasury. The dollar has resumed strengthening against the euro and yen, and the market-implied probability of dollar strengthening against the pound has increased to levels not seen since late-2011. The banks that we follow outperformed the S&P 500's two-week gain, on average, and investor uncertainty, as measured by MPD standard deviations, decreased. Lean hog priced dropped, and an already negative MPD skew declined even further, suggesting a high degree of bias towards lower future prices in this market.

#### Inflation

Market-based inflation expectations derived from caps and floors on the CPI for 1-, 2-, and 5-year periods have resumed their climb begun in early 2015. This increase is particularly evident in 1-year out expectations (see figure below).



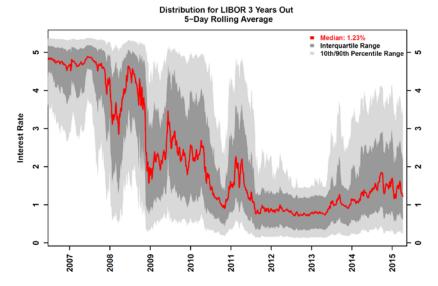
#### Additional detail:

- Median expectations for inflation from market-based probability distributions (MPDs) have increased over the past two weeks. They now sit at 1.54%, 1.67%, and 1.82% for the 1-, 2-, and 5-year tenors, respectively.
- MPD standard deviations continue to climb across tenors, indicating increasing investor uncertainty. They are above their 4-year medians in the 1- and 2-year tenors.
- MPD skew on the 5-year tenor has turned slightly positive, denoting a small market-implied bias toward higher inflation rates over this time frame.

#### Interest Rates

Prices on 5- and 10-year treasuries have continued to increase (+0.4% for both maturities), and yields have dropped. MPD standard deviations continue to fall, suggesting decreases in investor uncertainty around rates at the longer end of the curve. Median short-term interest rate expectations, as derived from caps and floors on three month LIBOR, have also continued to fall. The 3-year tenor fell -5 bps over the

past two weeks to 1.26% (see figure below for 5-day rolling average), and the 5-year tenor fell -15 bps to 1.32%.



#### Additional detail:

- MPD skew on 5-year treasury prices turned negative over the last two weeks, suggesting slight
  investor bias toward higher yields at this point in the yield curve (treasury prices move inversely
  to yields).
- MPD skew on 10-year treasury prices remain slightly positive, suggesting bias towards lower yields.

#### Banks and Insurance Companies

Over the past two weeks, the S&P 500 gained 1%, while price changes in the bank (17) company stocks we follow outperformed (1.5%) and the insurance (11) companies slightly underperformed (0.8%). Three European banks we follow, BCS, CS, and DB, continued to outperform the domestic firms. (Data for the fourth, UBS, was unavailable this reporting cycle.) In line with the S&P 500, investor uncertainty surrounding the bank and insurance companies has slightly decreased, as measured by decreases in MPD standard deviations of -0.2% and -0.4%, respectively.

#### Additional details:

- The MPD standard deviation of FITB decreased by -1.4% to 9.2% over the past two weeks, suggesting a substantial decrease in market-implied uncertainty.
- The MPD skew for RF dropped dramatically from -0.51 to -1.01 over the past two weeks, suggesting heightened investor bias towards future decline in prices. This coincides with market reports of large increases in short interest on RF stock.

#### Other Markets

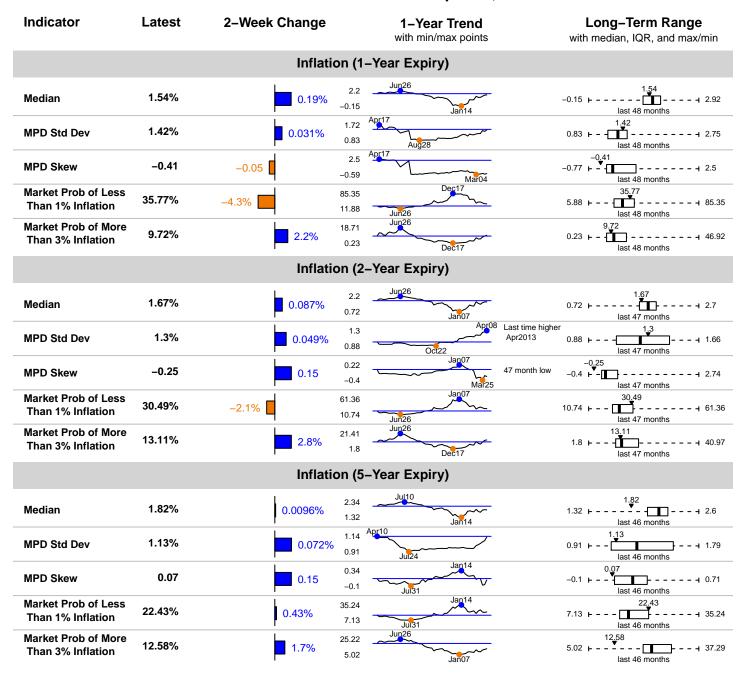
- The MPD skews derived from 6- and 12-month-out options on the S&P 500 index have become more negative and are approaching 4-year lows, suggesting strong market-implied bias towards lower future prices.
- The iShares U.S. Real Estate Index gained 0.5% over the last two weeks and its skew became more negative. Despite this, current levels of skew are implying some of the weakest biases towards future price declines seen in the last 4 years.
- The dollar strengthened against the euro and yen, and remained flat against the pound. The probabilities of a large change (+/- 10%) derived from the Pound-USD MPD have risen to levels not seen since late-2011 (see figure below). In particular, the probability of a 10% stronger dollar relative to the pound has increased over the past two months to its current level of 6.6%.

# Probability of a Large Change 0 11/23/2011 8/2/2012 4/12/2013 12/21/2013 8/31/2014

- Decrease <= -10% [stronger \$] Increase >= 10% [weaker \$]
- Spot prices for gold and silver remain near 4-year lows with silver dropping by 3.2% over the last two weeks. Decreases in their MPD standard deviations suggest reduced investor uncertainty.
- The spot price of WTI crude oil gained back 1.8%, but the MPD skew remains highly negative. This indicates a continued bias towards lower future prices of WTI crude.
- Agricultural commodity spot prices were mixed, but lean hog prices dropped by -6.8% to a 6-month low of \$0.7086 per pound. The associated MPD standard deviations is high and the MPD skew is negative and at a 6-month low, suggesting a high degree of uncertainty and bias towards lower future prices (see figure below).

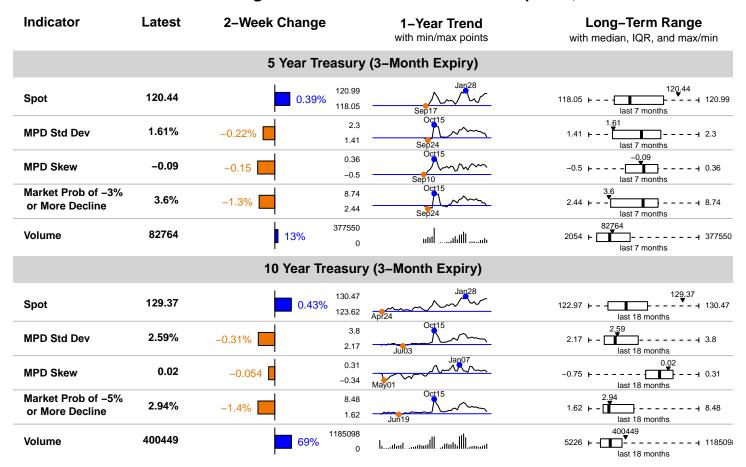
Indicator	Latest	2-Week Change	1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min		
Hogs (6-Month Expiry)						
Spot	70.86	-6.8%	.48 Nov19 6 month low	70.86 70.16 F Sast 6 months		
MPD Std Dev	16.98%	-1.6%	.61 Mar <sup>25</sup> 6 month high	16,98 13.88 <b> 1</b> 18.61 last 6 months		
MPD Skew	-0.44	-0.24	.17 Jan21 6 month low	-0.44 -0.44 0.17		

#### Inflation MPD Statistics as of April 08, 2015

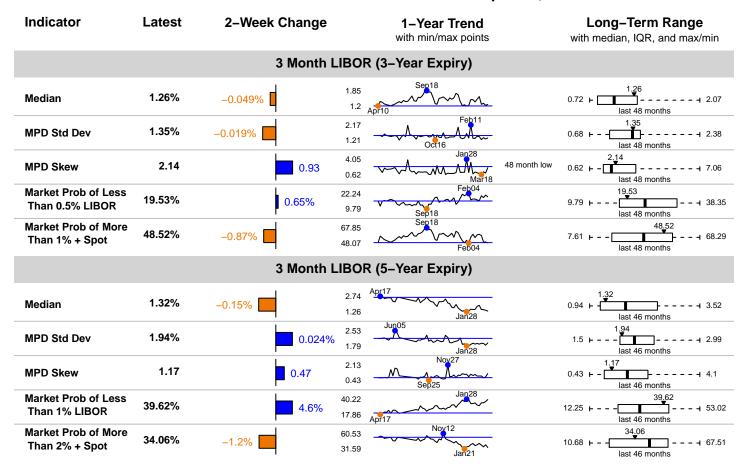


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# Medium-to-Long Bond Price MPD Statistics as of April 08, 2015

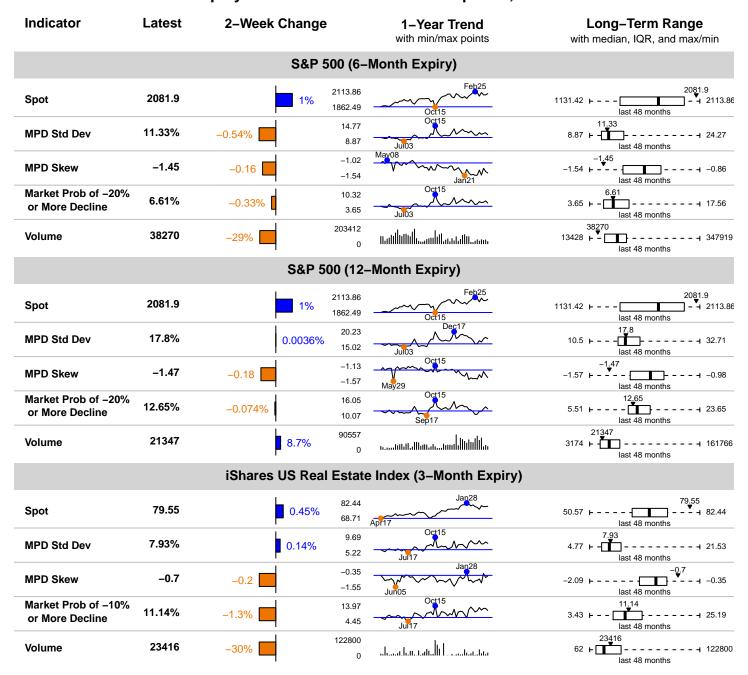


# Short Interest Rates MPD Statistics as of April 08, 2015



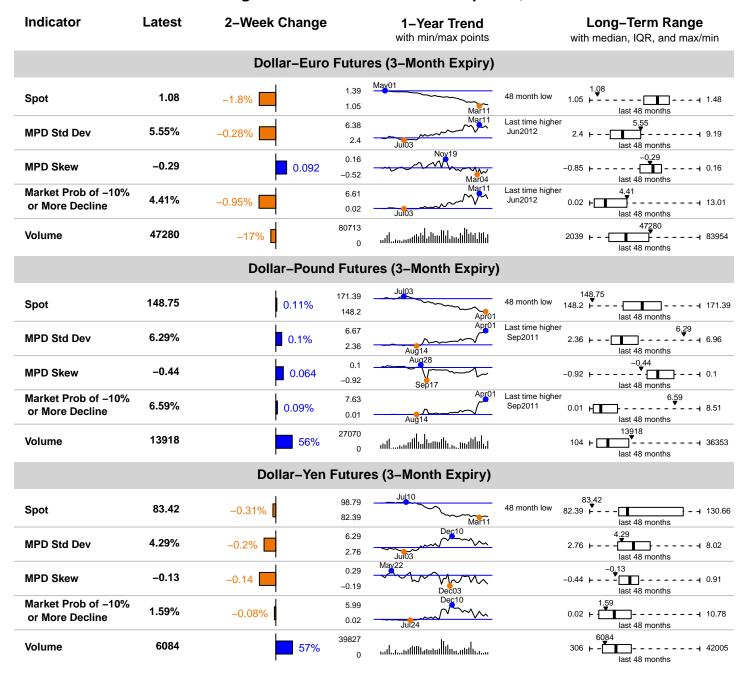
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### Equity Index MPD Statistics as of April 08, 2015



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#### Exchange Rate MPD Statistics as of April 08, 2015



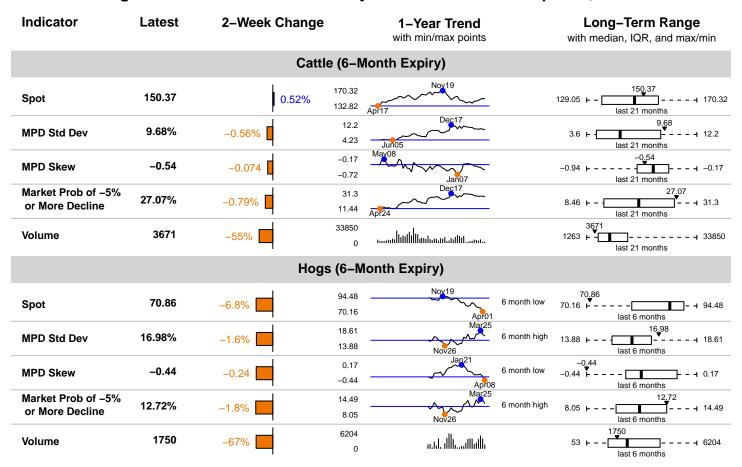
#### Metal and Energy Commodity MPD Statistics as of April 08, 2015

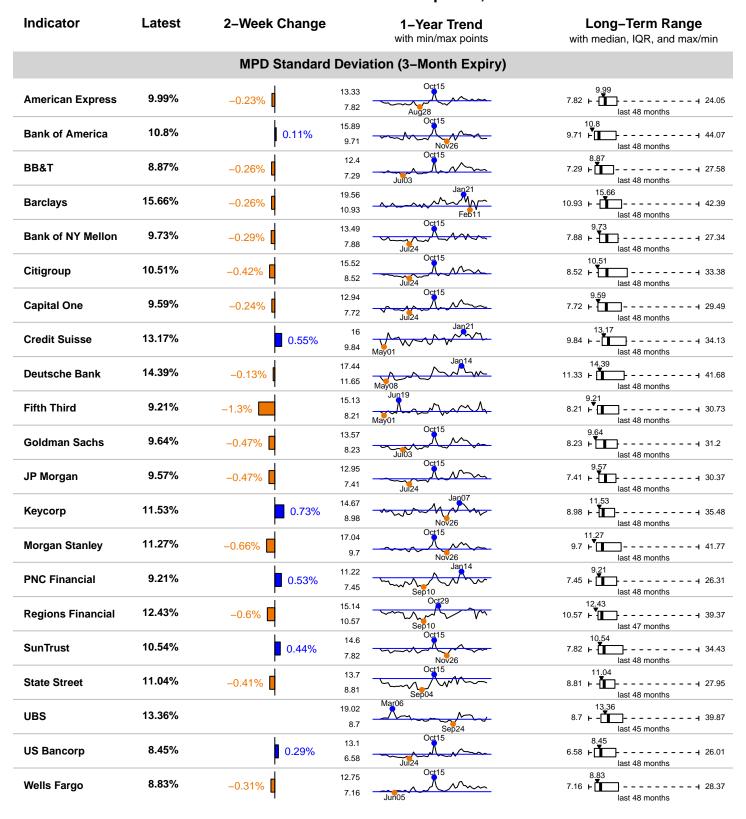


### Agricultural Crop Commodity MPD Statistics as of April 08, 2015

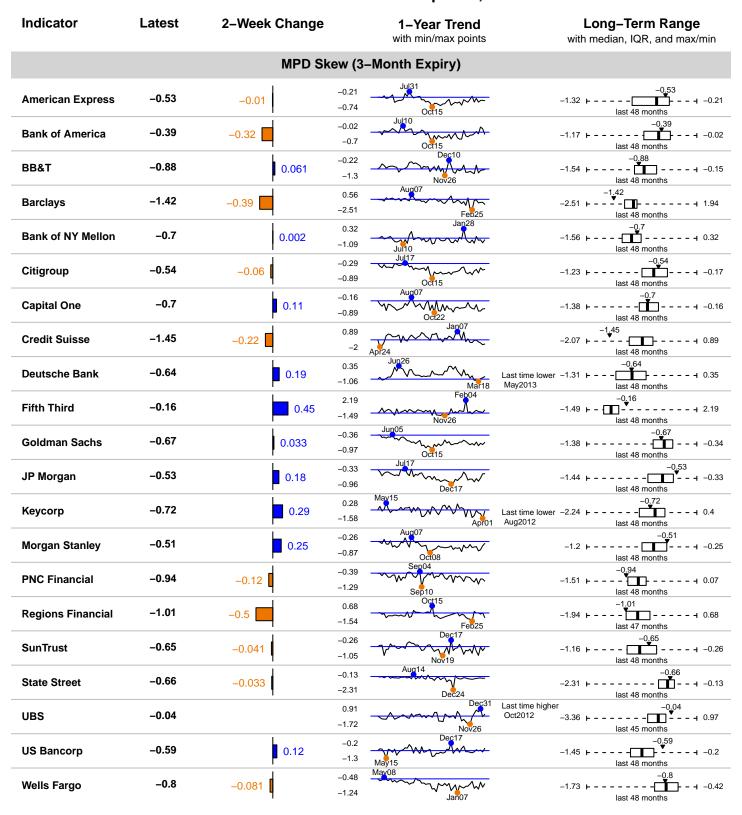


# Agricultural Livestock Commodity MPD Statistics as of April 08, 2015

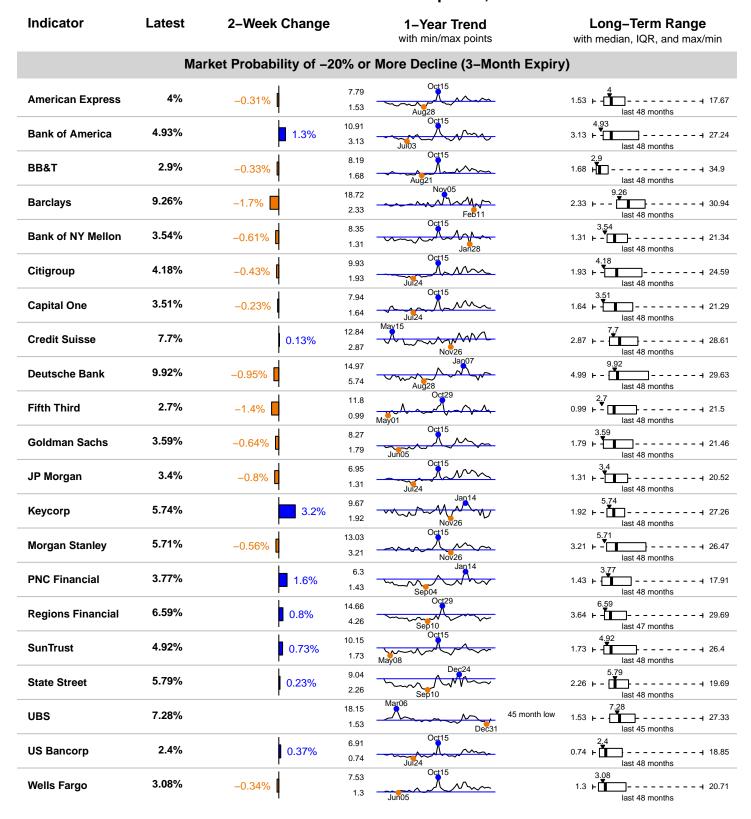




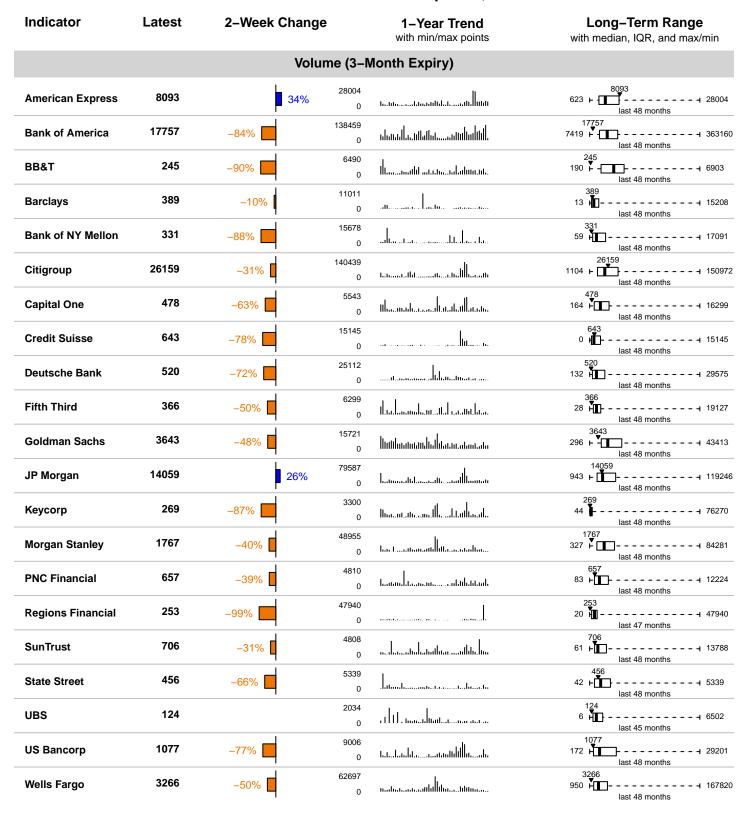
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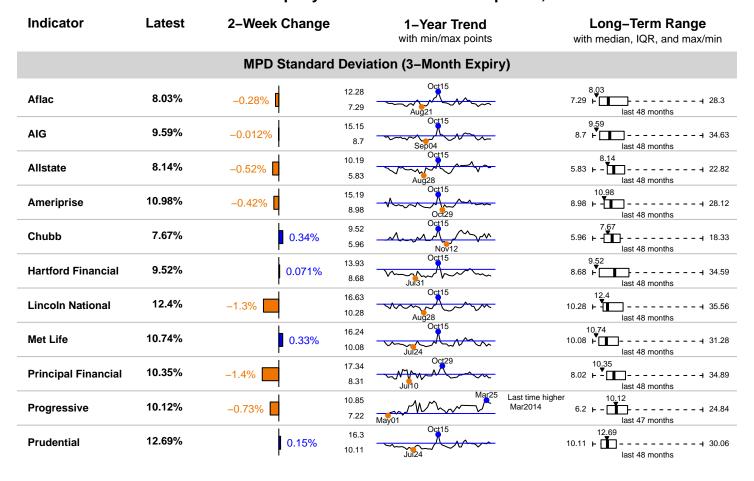
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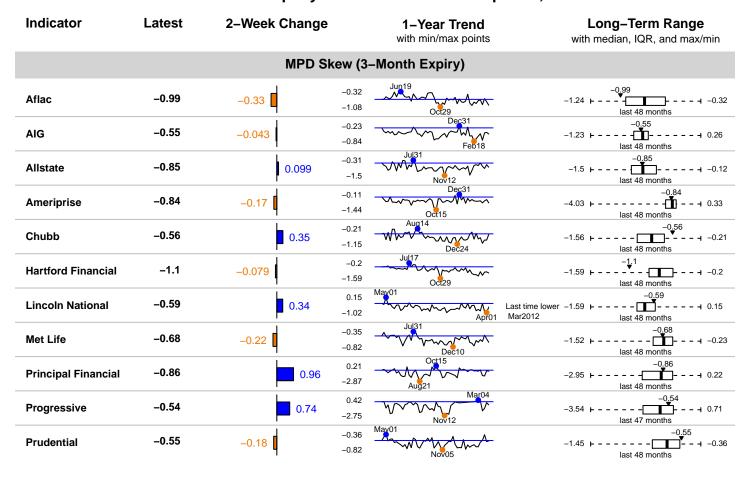
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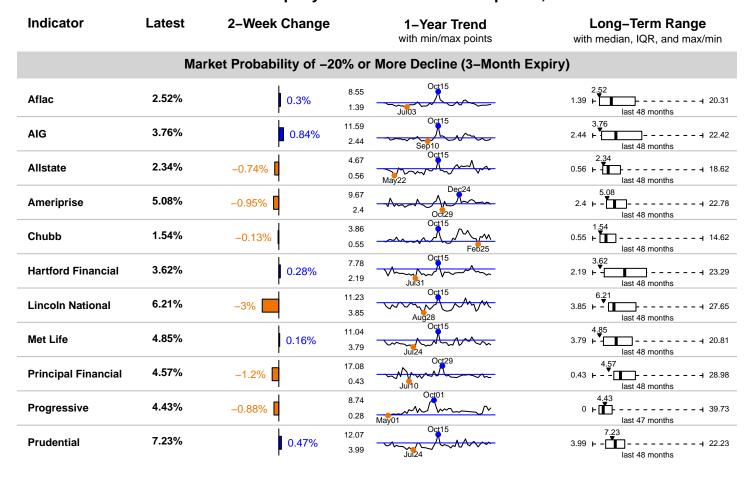
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Indicator	Latest	2-Week Change		1-Year Trend with min/max points	Long-Term Range with median, IQR, and max/min		
Volume (3-Month Expiry)							
Aflac	405	-87%	13324 0		405 405 <b>- 1</b> 1 22718 last 48 months		
AIG	4926	-54%	69392 0	. thuttant.liu	4926 432 <b>+ 1</b> 103998 last 48 months		
Allstate	1461	330%	2913 0	nahumaadaa.aandal.a.aa.antaat	1461 63 <b>(</b>		
Ameriprise	206	17%	1071 0	danalatanathdataa.aa	206 5 F 1114 last 48 months		
Chubb	59	-34%	9027		59 11 1 11114 last 48 months		
Hartford Financial	2852	460%	9199 0	Hamadia de la company	2852 65   1		
Lincoln National	54	<b>−62%</b>	8403 0	lata	54 51 4 1 10682 last 48 months		
Met Life	1004	<b>−73%</b>	29248 0		1004 319 <b>1</b> 1 1 161416 last 48 months		
Principal Financial	152	17%	545 0	فالتلامين المامية المامية المامية	152 2 ∰ 3846 last 48 months		
Progressive	0	-100%	773 0		0 1 4283 last 47 months		
Prudential	1170	-76% <b>[</b>	13225 0	tanlalati tualicaanininia	1170 222 F		

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