The Damped Spring Report

"Shifts in growth, inflation, risk premium and positioning all lead to opportunies in markets"

10/16/2019

Synthesis

Distributions – fundamental and implied. By and large nothing has changed from last month's synthesis. Once again, the global markets have moved to higher stock prices and higher bond yields as a combination of factors including, Phase One détente deal, Brexit optimism, and low expectations for 3Q earnings getting met or exceeded, have driven market-based growth expectations higher. We believe markets are overly optimistic on growth and remain bearish equities and bullish bonds globally. We will once again outline our view in the later sections of the report, but the headline is "Nothing New."

Given the lack of change in outlook, it pays to step back and look at a few interesting lessons from history. It's October and our minds shift to stock market crashes. We have some thoughts.

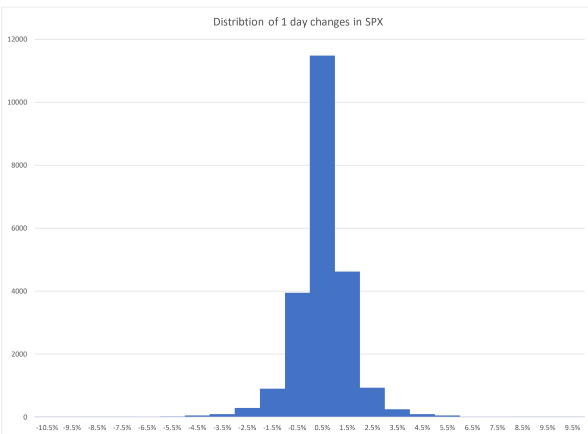
- It is quite rare for markets to crash or melt up but at first glance the odds are relatively symmetric and slightly fat tailed in the long back history. This observation surprises most who assume the untested conventional wisdom that "big market moves are more frequent and larger to the downside than the upside"
- At second glance, many of the big up moves happened after a large down move or during an otherwise volatile period. For that reason, some skew does make sense and conventional wisdom is not entirely wrong.
- However, adjusting for the post-crash bounces the argument supporting heavily skewed expected distributions is weak at best and more importantly is grossly mispriced by options markets.
- There are sensible risk premium and flow related reasons for this mispricing but by and large the risk premiums available are juicy and can be harvested by traditional long only portfolios. But these pools rarely if ever take advantage of this excess beta.
- However, The fundamental distribution may be quite skewed to the downside as the economic and risk asset upside is likely capped given the willingness of trade war participants to risk economic damage to achieve trade war leverage and the likelihood that modest trade resolution will slow or pause central bank easing. The downside may be steeper than normal as central

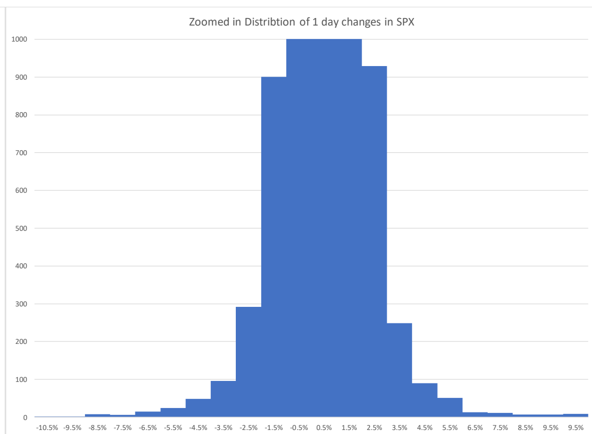
banks have limited ammunition and fiscal stimulus is highly unlikely without a crisis

- The distribution of historic returns is not as severe as what is priced into options markets but given a distribution driven by the above fundamentals, perhaps, current pricing may not be so bad after all.
- The DSMP adds TY and RX call spread to the recommendations taking bond risk to max

Historic Distributions

The long history of the US stock market provides some interesting data regarding volatility and skew. The depths in which this data can be analyzed is virtually endless and complex. We at Damped Spring have spent our careers in the weeds of this work. Let's focus on the forest.





Over 22,800 trading days the SPX has a remarkably symmetric distribution. This on face is inconsistent with both market pricing of skew and conventional wisdom. Essentially looked at as independent events the distribution says that a greater than 4.5% one day move is about equally likely in either direction. Down in the weeds it can be shown that current market pricing of the implied volatility surface of SPX options suggests expectations of a large down move to be 8-12 times more likely than a large up move.

Let's examine the forest a touch closer.

	Number of Occurences				
		Surprise	Volatile Period		
	Total	Total	Total	Bounce	Ex -Bounce
SPX Down more than 4.5%	35	13	22	1	21
SPX Up more than 4.5%	33	5	28	9	19
Ratio of Down/Up	1.06	2.60			1.11

68 out of 22,800 trading days had returns larger than 4.5% up or down. That is roughly twice what one would expect in a normal distribution so fat tails have been

realized over the last 90 years. Breaking down the events notice that big moves occur with no recent prior big move about 2.6x more often to the downside suggesting a modest skewed distribution. During volatile periods namely 1929-1934, 1937-1941, 1987, and 2008-2009 while big moves to the upside were more common, they were often a bounce from a recent large selloff. That also suggests skewed distributions.

Making those corrections doesn't justify the extreme pricing in options markets. A distribution can be inferred from the entire implied volatility surface at any particular maturity. The current distribution implies a 7x greater probability of a large down move vs a large up move.

Why is the options market priced in this way?

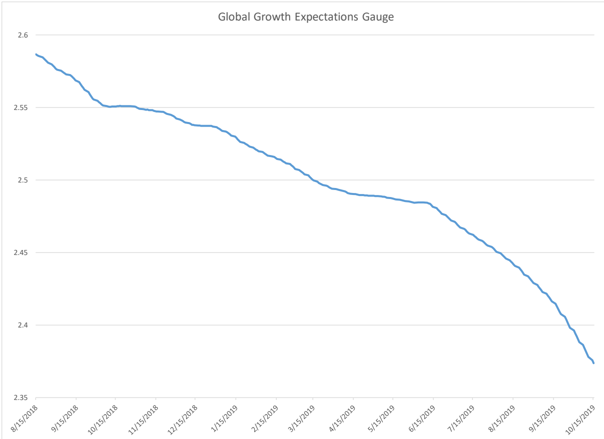
Purchasing a put allows a long only investor to offload downside risk. The investor may want to protect catastrophic risk. Some portion of the risk premium and investor collects from holding unhedged long positions in risky assets is catastrophic risk. Clearly a portion of the risk premium that the investor collects must be transferred to the provider of the catastrophic risk. The investor retains a portion of the risk premium and the proportion of the risk depends on the supply of the catastrophic risk. Based on the above it is likely that investor forfeit a good portion of their risk via put catastrophic put buying. Yet there remains and excess of demand for this protection vs supply.

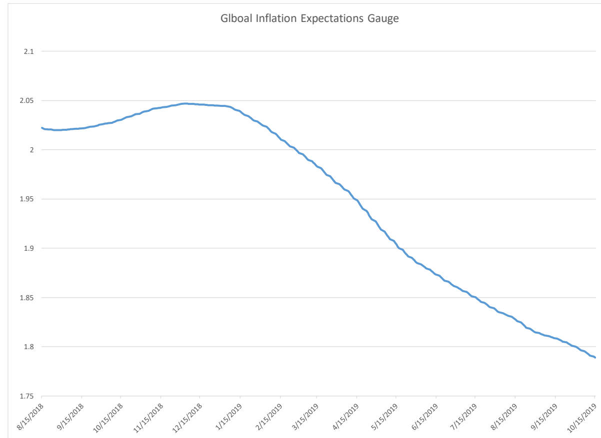
Given the size of the global risk asset market and the natural desire to avoid catastrophic risk it should come as no surprise that the pools of capital offering protection require very high prices. However, while we do not expect investor behavior to change, we always recommend investors with long only mandates to replace long equities with an unlevered short OTM put long OTM call position. This position retains all the risk premium collection that they had originally and collects the excess premium paid by those who more myopically hedge long equites. We don't expect many meaningful investor pools to adopt our view, but our readers should always have any core long equity position expressed this way.

Fundamental Drivers

After a little wiggle around month end, the global market reacted to Phase 1, Brexit, beats of low earnings expectations and moved decidedly back to higher growth expectations. US equities which are down slightly over the last 30 days have underperformed other DM markets which are up slightly. The bond market however has continued to move back to higher yields about 10bp for the biggest moves. Once again, the question market participants need to ask is whether growth expectations can continue to improve without any meaningful improvement in the data?

Our gauges of growth and inflation expectations have not shown any strength at all in fact have continued to accelerate weaker





Reviewing the various nations willingness to stimulate via fiscal spending

- China is actively stimulating
- Japan may as early as 10/22 shoot on of its three arrows in its economy's foot by instituting the sales tax (perhaps they won't)
- US is 100% in gridlock for the next year
- Europe is willing to respond to a crisis but without a crisis there will be no fiscal stimulus
- Anything is possible in the Brexit saga but won't move the needle for global growth
- Our expectation for the trade war continues to be at best a nothing deal like Phase 1 (if it even happens) portends or more likely continued uncertainty to outright disengagement through 2020.

As for monetary policy the decision to use brute force to ease the stress in the repo market seems sensible. We believe that Global Levered bond holders have felt this stress and part of the selloff across the curve has been the result of this stress. To the extent that the FED keeps buying bills we suspect the longer-term bond selling lately may reverse.

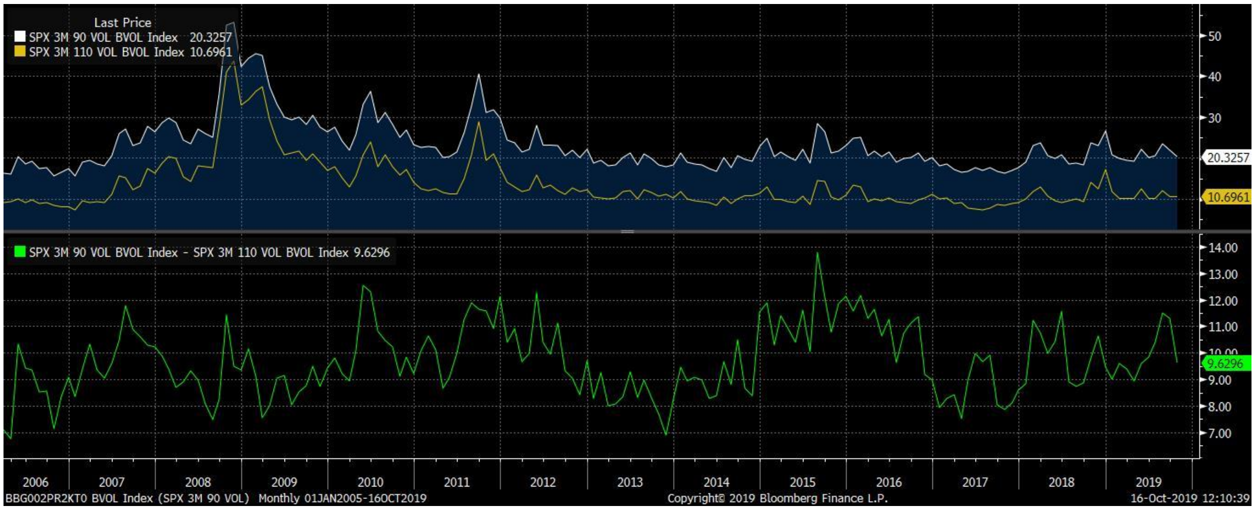
Stepping back however the distribution of future outcomes for growth are heavily tilted to weaker growth. Upside capped by presidential willingness to negotiate when markets and economy allow. With the Fed unwilling to ease if trade somehow surprises. Downside uncontained by the global central banks inability to stimulate using existing tools.

Damped Spring Volatility Model

Skew is mispriced systematically but how about today

Frankly the skew priced into markets is not reflecting anything unusual at all. While it is impossible to say that skew is cheap as it is most certainly rich it is just average rich for the past thirteen years.

Skew as a difference

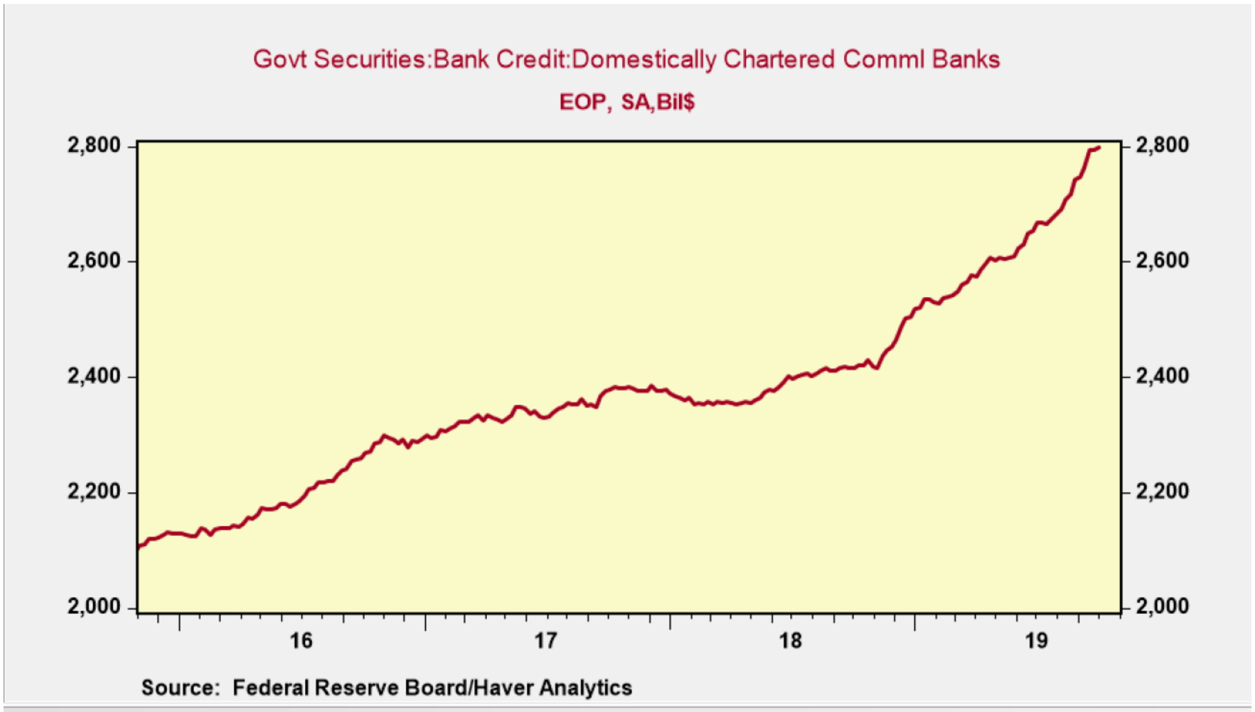


And as a ratio

Why this is interesting is that it does not reflect the fundamentals in place.

Flow and Positioning

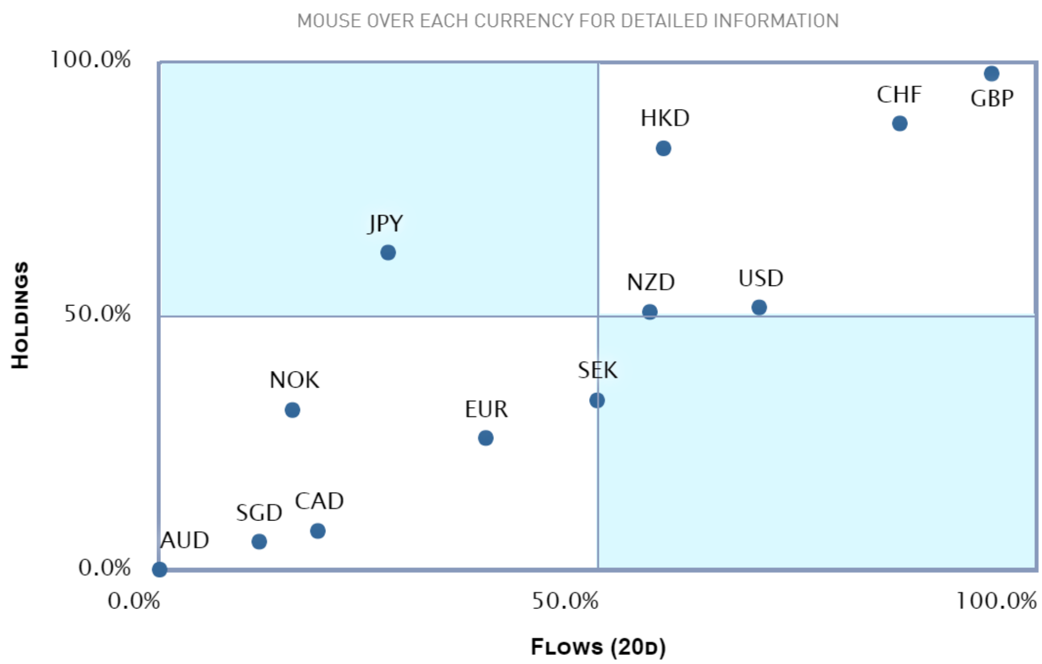
Despite Repo funding stress US Banks bought Bonds and Mortgages and with stress level coming down due to Fed action we expect the steep curve to be quite attractive



Global Asset Managers have once again bought bonds and have plenty of capacity

Currency markets are becoming more interesting

Developed Markets - Flows and Holdings



Blue quadrants indicate potential unwinds of overweights (upper-left) or underweights (bottom-right).

The Brexit enthusiasm has generated a huge inflow to near max position size. Perhaps the GBP is vulnerable to weakness. The AUD on the other hand is now oversold and under-owned.

Current Model Portfolio performance and recommendations

Adding Calls Spreads on TY and RX to go max long bonds

	Assumed Portfolio size	100,000,000					
	LTD P/L	8,874,401					
	Total Returm	8.87%					
	Today's Date	10/16/2019		Portfolio Created		4/15/2019	

Date	Position	Entry Price	Amount	Worst case loss	MTM	P/L	Open/Closed
9/3/2019	SX5E Dec 3200/3000 Put Spread	31	3226	1,000,000	5	(838,710)	Open
9/3/2019	SPX Ded 2700/2500 Put Spread	29.2	342	1,000,000	22	(246,575)	Open
9/18/2109	GCZ9 Dec 1500/1450 Put Spread	18.3	-315	1,000,000	21	(85,174)	Open
9/18/2109	TY Dec 129.5/128.5 Put Spread	0.390625	-1641	1,000,000	0.3125	128,205	Open
9/18/2019	RX Dec 173/172 Put Spread	0.37	-1587	1,000,000	0.62	(396,825)	Open
10/16/2019	TY Dec 131/132 Call Spread	0.21875	4571	1,000,000	0.21875	-	Open
10/16/2019	RX Dec 172/173 Call Spread	0.38	2632	1,000,000	0.38	-	Open