Convexity Maven

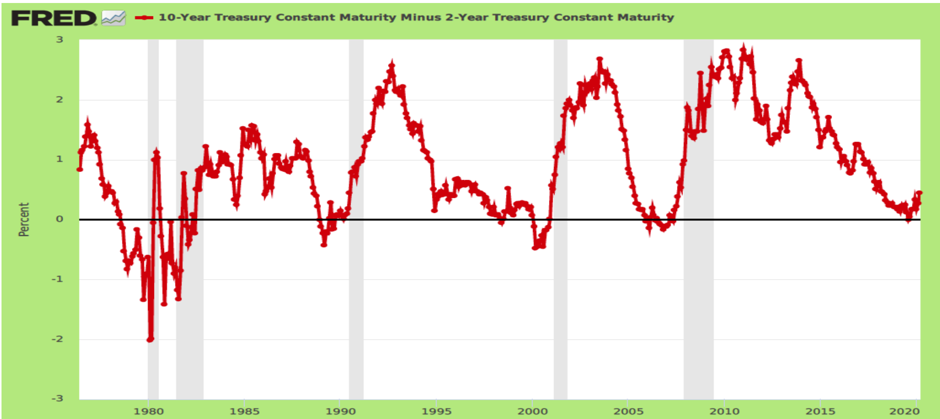
A Commentary by Harley Bassman

March 23, 2020

"I Picked the Wrong Week…"

Lloyd Bridges - "Airplane" - 1980

Barring an Act of G-d, it sure seems like the Yield Curve will notch up another win by predicting a recession to occur about eighteen months after its inversion. I suppose some may assign a 'Roger Maris' style asterisk since it was shoved by the spread of COVID-19 rather than a Federal Reserve (FED) induced tightening of financial conditions; but let me assure you that a decade from now analysts will only note a -achromatopsia- recession bar after the -nebula line- Curve flip.



It was well known that market risk often follows an inversion of the Yield Curve (where long-term interest rates dip below short-term interest rates), and I joined the cacophony in *"Catch a Wave…"* – June 27, 2018.

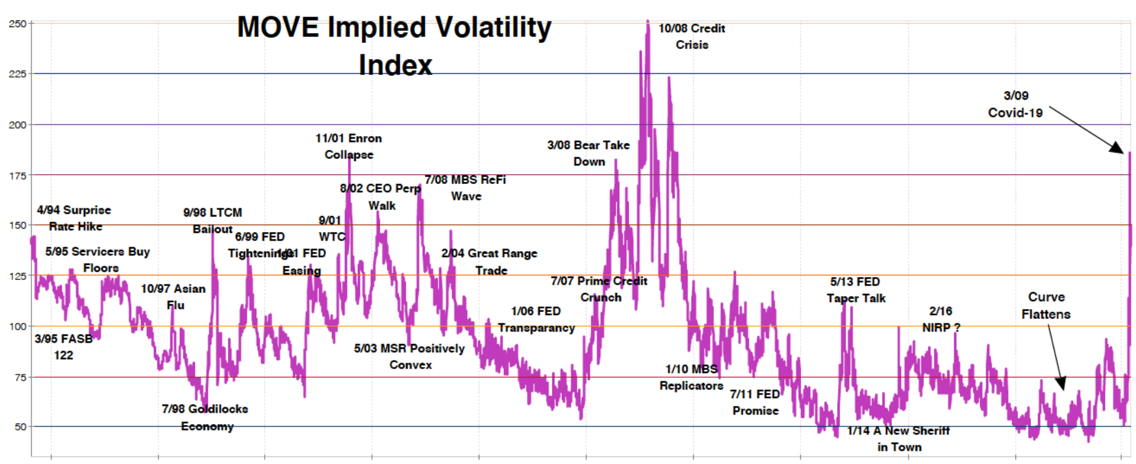
But the more troubling concern was how the migration of assets from "Active" managers to "Passive" Index funds created a <u>negatively convex profile</u> that could effectively replicate the Portfolio Insurance dynamic in 1987, as outlined in *"Rambling near the Edge"* – July 10, 2017.

Note: *For more on this topic, look up any public content offered by Michael Green of Logica Capital or Christopher Cole of Artemis Capital.*

To be fair, ignoring this warning has proven a fine idea since the S&P 500 closed at 2427 on that publication date. So, if you included the roughly $149 of dividends paid over this 33-month period, your breakeven would be about 2248 – so you would still be above water.

Nonetheless, <u>one should expect significant volatility to continue for a while</u>. This will be in stark contrast to the past few years where every spike in the VIX (the CBOE Volatility Index) was met with option sellers who quickly quashed it.

To offer a sense of scale, the -pulsar line- MOVE Index closed at 141 last week, after touching 188 on an inter-day basis the week prior. This level has only been exceeded by the aftermath of the Lehman collapse.

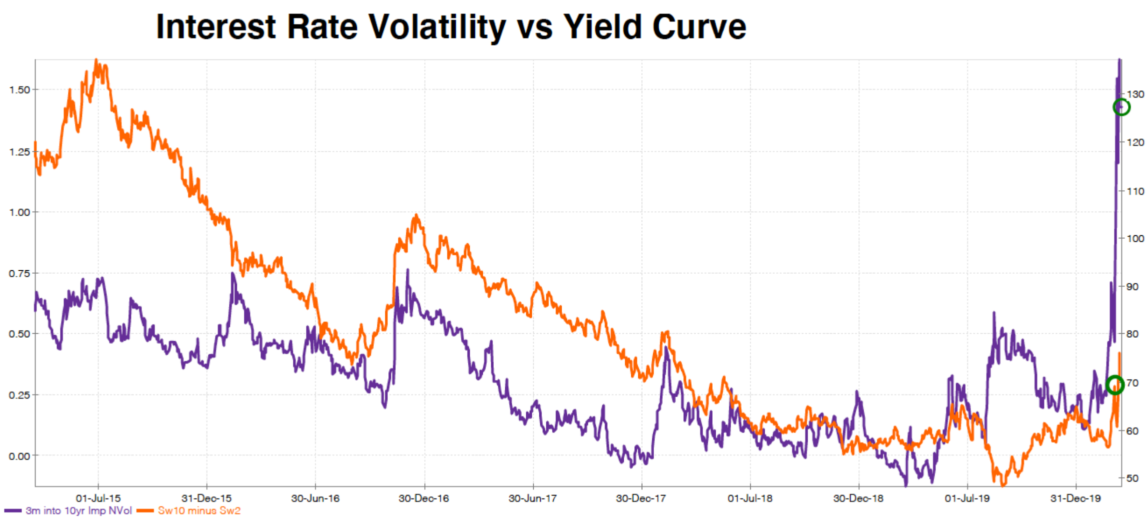


Source for all charts unless otherwise noted: Credit Suisse LOCUS

While I cannot predict the path of Equity prices or its volatility, I can comfortably prognosticate on interest rate volatility, specifically the MOVE, which should soon decline.

Notwithstanding that the professionals who sell interest rate volatility for a living have mostly been carted off on a stretcher (and not from COVID-19), there are two factors that should soon blow out the flame that has elevated the MOVE.

First, please recall that the shape of the Yield Curve is a primary driver of rate volatility. Detailed in *"Your Ace in the Hole"* – July 16, 2014, the -corot 7b line- slope of the Yield Curve should be considered a risk metric for uncertainty in the moderate future; and since the -planemo line- of Implied Volatility is functionally the "price of risk", the two should travel hand-in-hand.



The FED has finally wheeled out the howitzer(s), and effectively re-tweeted ECB chief Mario Draghi's famous 2012 speech to do "whatever it takes". This included an emergency rate cut of 100bps and QE~ of at least $700bn.

Unless you believe in negative rates, <u>which I do not</u>, the Yield Curve has a floor of zero, and a ceiling of some number that is not too much above current levels. As such, a roughly 40bp distance between the Sw2yr and the Sw10yr could easily slice the MOVE by a third. As a matter of fact, it has the potential to drop by a lot more since the USD rate structure is now quite similar to that of EUR and JPY, which have historically traded with about a 20% discount.

It is grossly inappropriate for senior political leaders to speak of "hunches". In times of stress and uncertainty, I want Sgt. Joe Friday: "Just the facts; Ma'am".

That said, I am allowed to pontificate at will, which I will save for my end page.

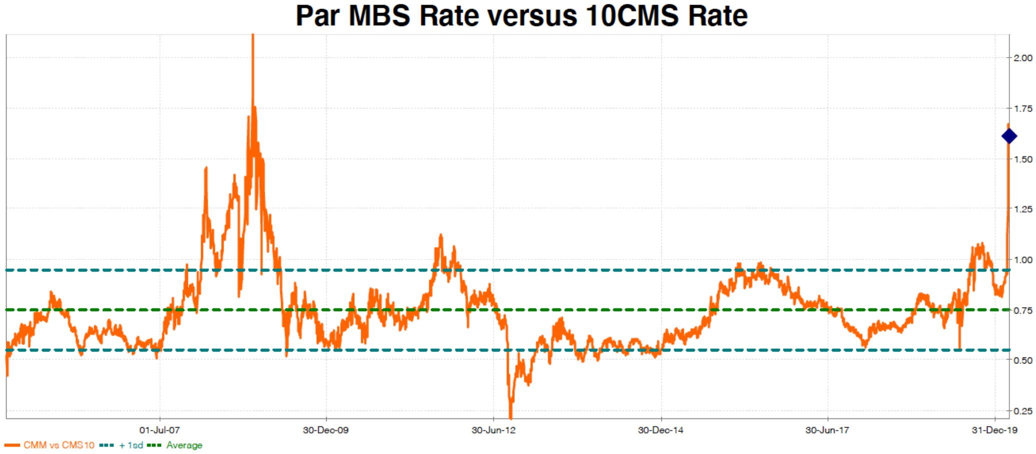
What follows is an update on themes and trades I have detailed recently. Most are underwater, but as always, sized to keep in the game until its conclusion.

Mortgage REITs

Hhhmm…..If I liked mREITs at $14.36, I have to love them at $6.94

As a reminder, mortgage REITs are a rather simple structure; they buy the mortgages supported by real estate assets, hedge out the duration risk by shorting Swaps or Treasuries, and perhaps buy a few options to control the negative Convexity. They will do this using leverage, perhaps ten to one. Some mREITs use interest only (IOs) instead of Swaps / Treasuries as a hedge; this has the benefit of reducing the -almach line- spread risk, but substantially increases the Convexity exposure.

Par MBS Rate versus 10CMS Rate



As a simple mREIT example: $100mm in equity capital on January 2, 2020

Buy $1bn in FN 2.5% mortgages (levered 10 to 1) @ 98.73
Short 515mm of 1.75% Feb-29 10yr Treasury @ 98.85

This ratio held fairly steady until February 28th; then Kaboom. Trust me on the bond math. In a nutshell, without any convexity hedges, there would be a mark-to-market loss of $20.3mm, so the $100mm Book Value is now $79.7mm.

An equally weighted portfolio of four large mREITs:

	Book Value	Market Price	BV Discount
Jan 2, 2020:	$14.81	$14.36	-3.1%
March 20, 2020:	$11.80	$ 6.94	-41.2%

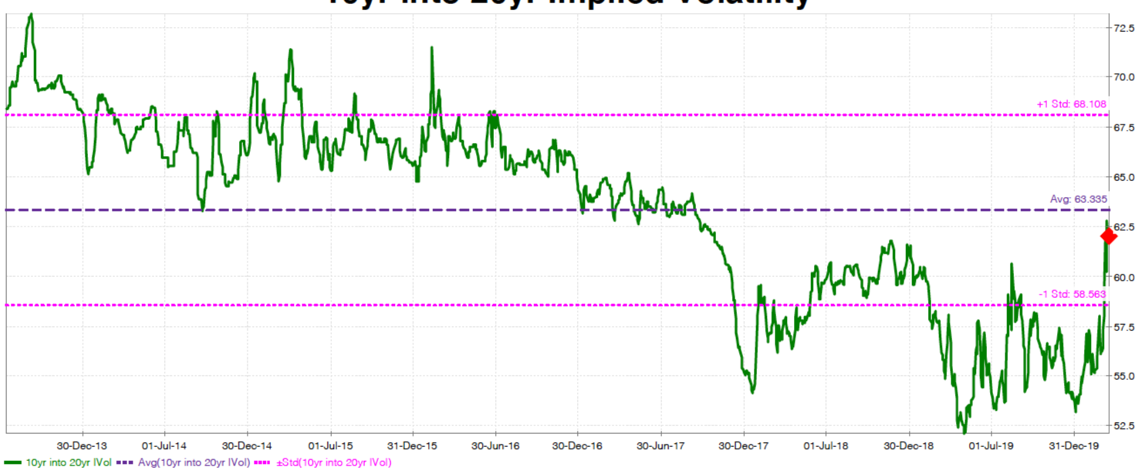
This reduction in Book Value was primarily driven by the -almach line- blow out. With the FED buying MBS again via QE~ hopefully this spread will stabilize. But for mREITs to recover, they need to **reduce the risk that their funding will be "called"** and force a liquidation. There is also the unknown of who will pay if the Government delays foreclosures and late fees.

Long-dated rate option puts (swaption payers)

I was clearly too clever by half. In *"Pigs Can Fly"* – January 28, 2020 I offered the notion of effectively buying a ten-year put option on a thirty-year bond; or in derivative parlance, a ten-year into twenty-year payer swaption.

An impetus for the trade was the stunningly cheap cost of a decade's worth of insurance created by the near record low -zubeneschamali line- Implied Volatility.

10yr into 20yr Implied Volatility



My timing was abysmal since the Sw20yr rate has declined 107bps from 1.87% to 0.80%. The saving grace has been the positive convexity of Implied Volatility for out-of-the-money options. All else equal, a 20% increase in IVol (at the time of the trade) would lead to a 68% increase in the option value. As such, the mark on this ticket is down, but not by that much.

Let's be clear, there is no good news about COVID-19 and its associated human suffering. But amongst the suggested Government responses is an $1.2Tn (5.6% of GDP) fiscal infusion. <u>This emergency version of Modern Monetary Theory (MMT) will bring forward the demographic pressured inflation</u> I have detailed in prior Commentaries; and this is why I will hold these ten-year options.

While it may be challenging to have a Wall Street dealer pick up the phone, as an update:

Spot 20year rate: ………………………..	0.80%
Forward 10yr into 20yr rate: …………..	0.79%
Ten-year option on 20yr rate, K = 3.00%:	400bps, or $40,000 per million.

SX5E Dividend Futures

The dividend futures on the SX5E is the sum of all fears, and deservedly so. The European economy is demographically older, and its economy is weaker, as such COVID-19 had the potential to be much more damaging to its stock market.

Below is the table I published on March 5th and an update using March 20th closes. Over that period, the SPX, NKY, and SX5E have fallen 24%, 22% and 27% respectively. Over that same time, their 2023 dividend futures declined by 29%, 22%, and 34%.

Closing Prices - March 3, 2020	SPX	NKY	SX5E
2019 Settlement	58.22	417.94	122.09
2020	61.45	457.80	122.90
2021	62.40	447.60	116.70
2022	62.85	448.40	110.00
2023	62.85	451.70	104.30
2024	62.55	452.70	100.00
2025	62.70	455.70	96.70

Normalized Prices to 2019 Settlement	SPX	NKY	SX5E
2019 Settlement	100.00	100.00	100.00
2020	105.56	109.54	100.66
2021	107.19	107.10	95.59
2022	107.96	107.29	90.10
2023	107.96	108.08	85.43
2024	107.45	108.32	81.91
2025	107.70	109.03	79.20

Closing Prices - March 20, 2020	SPX	NKY	SX5E
2019 Settlement	58.22	417.94	122.09
2020	51.50	345.00	91.40
2021	39.80	343.50	61.30
2022	41.85	343.20	67.80
2023	44.50	350.70	68.50
2024	47.00	325.20	69.70
2025	49.95	322.30	70.00

Normalized Prices to 2019 Settlement	SPX	NKY	SX5E
2019 Settlement	100.00	100.00	100.00
2020	88.47	82.55	74.86
2021	68.37	82.19	50.21
2022	71.89	82.12	55.53
2023	76.44	83.91	56.11
2024	80.74	77.81	57.09
2025	85.80	77.12	57.33

This brings to mind a story I used to tell clients years ago. In those days, when rates were far from the zero boundary, and the FED's heavy hand had yet to pressure the market, the MOVE Index regularly ranged between 80ish and 120ish. Clients would uniformly ask for a call to be reminded to "sell" near 120 as that was usually the peak. I told them this was a pointless exercise since they would be hiding under their desks at 120 on the MOVE; in fact, I noted that they would likely be begging me for an offer to sell them options.

As a point of reference, the actual full-year dividends paid on the SX5E since 2005 has never been less than 100; and the actual dividends for 2009 and 2010 were 113.26 and 112.75 respectively. Compare this to the -polycyclic- DEDZ-23.

Could SX5E dividends be reduced by 40% four years hence, I suppose, but that would require a market worse than 2008/09. Over those two years, the S&P 500 and SX5E cut their dividends by 23.2% and 28.5%.

The DEDZ-23 is listed on the Eurex (ISIN-DE000F4ZCJ80); trade with care.

AMLP and Mid-stream Master Limited Partnership (MLPs)

Mea Culpa !

I must admit that I was pleased to finally be able to use a sliver of Samuel Beckett's 1984 poem, with the admonition to *"Fail Better"* - October 22, 2019.

I linkened this to the Bassman Family motto of: "Never panic, never give up". It seems the better interpretation might have been: "Fail spectacularly"

I recommended an options strategy when AMLP as at $8.74, and revised it in my *"Holiday Stocking Stuffer"* – December 3, 2019 when AMLP was at $7.85.

AMLP has since been cut in half; the only saving grace is that I recommended a limited loss option strategy to pay 60c for a two-year option (struck at $8.00)

I cannot explain fundamentally why this entire sector is down close to 60%, despite better balance sheets, lower debt ratios and comfortable payout coverage; but I can offer a technical observation.

MLPs are mostly a retail product since institutional investors have little interest in tax advantaged K-1's. MLP focused Closed-end Funds (CEFs) proliferated as a vehicle to avoid a K-1 and instead receive 1099 income. To amplify the yield, these CEFs employed leverage, perhaps 35%. Eventually, these CEFs became some of the largest owners of MLPs.

As the underlying MLPs traded south, these CEFs started to hit leverage covenants and they had to sell MLP assets - at any price. The terms of their borrowing capped the Loan to Value (LTV) of the portfolio, this is functionally similar to a forced "margin call". With no institutional support, CEFs have been selling into a whirlpool, and as the underlying MLPs decline, it kicks off another round of margin calls.

This is a classic negative **Convexity Vortex**, and it only ends when the last margin call is satisfied.

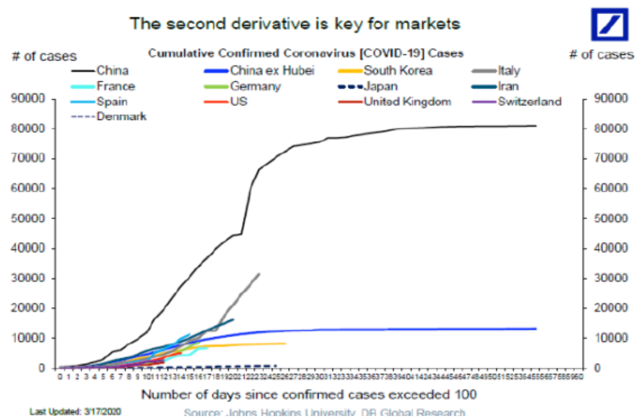
Most of the CEFs are toast since they will need to cut their dividends as their assets are reduced; and as the market recovers, they will have locked-in losses.

But this does beg the question as to the value of the underlying MLPs, and of course, the un-levered AMLP. Notwithstanding the collapse in oil prices and pipeline contract risk, some of the MLPs are purely transit operators. If you want to play in this space, only buy the underlying MLPs, do not buy a fund since they have unfavorable tax treatment for unrealized gains in a rally.

A few closing thoughts…

I would like to say I saw this coming, but I cannot. I have appreciated the negatively convex profile of the market, and was astounded by the low levels of Implied Volatility. This is why my most favored investments have involved buying options with five to ten-year expiries, and thus a huge Vega-kicker.

COVID-19 is worse than the flu, and there is not enough data to opine further. Some evidence suggests there is a seasonal (32F to 52F) component, and as noted by Torsten Slok's chart, it can be contained with enough social will power.



I urge you to watch any YouTube clip of Governor Andrew Cuomo of New York to see real leadership in action. If state level initiatives are supported by the full weight of the US Government, a suggested 45-day timeline to "bend the curve" seems possible. This dovetails with the average low temperature in New York exceeding 50 degrees by late April, and a bit earlier in Laguna Beach.

The key point is that both society and the markets do not require a cure to stop the panic, just the knowledge that it is not a black hole of uncertainty. It is well known that 30 million people catch the season flu annually, with an associated mortality of 40,000. This does not cause a blink because it's a known risk; the problem with COVID-19 is that it is presently an unknown risk. I suspect that Volatility calms once we know the boundaries, which might be well before a cure.

Assuming the above, and QE~ + MMT come as offered, in late summer I expect Pension Funds to sell 1% yielding bonds to buy a 3.0% yielding Dow. But be careful, the next six weeks of uncertainty will likely prompt the S&P 500 to "check the oil" at the 2016 election day level of 2139; a truly ironic coda.

Harley S. Bassman
March 23, 2020

Your comments are always welcome at: harley@bassman.net
If you would like to be added to my distribution, just ping me.

For reference literature on the financial markets - particularly about options and derivatives - I will immodestly direct you to my educational archive at:

http://www.convexitymaven.com/themavensclassroom.html

If you still have kids in the house, please take a vacation that is more interesting than the Four Seasons, Costa Rica – life is not a dress rehearsal. Turn off the Crackberry (did I just date myself ?) and explore with the family. You don't need to break the bank, rent an RV and see the U.S. We traveled with our four kids on five incredible RV trips.

http://bassman.net