The Convexity Maven

A Commentary by Harley Bassman

March 29, 2022

"Square Pegs"

Cognitive dissonance is often defined as simultaneously holding conflicting or inconsistent thoughts, attitudes, and beliefs.

It is a signpost of the mature mind to accomplish this feat without first securing a membership at the local dispensary.

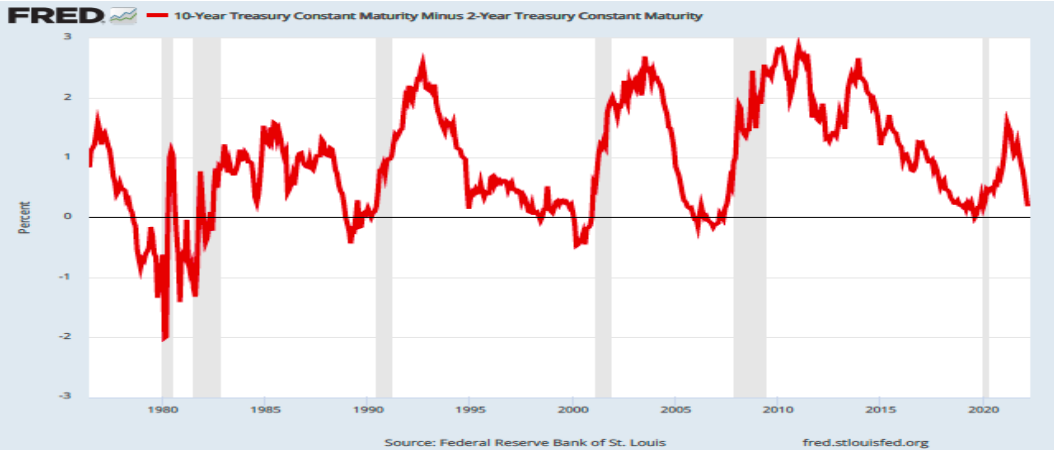
Just as I cannot avert my eyes from a crash site, I similarly marvel at the opposing positions offered at the same time by our political class, with unreserved sincerity.

In contrast, the governors of the Federal Reserve Bank (the FED) instill confidence in our financial system by projecting certainty. Thus, the FED's stress must be palpable as they presently try to jam the square peg of inflation into the round hole of a bond market signaling a recession.

Dr. Cam Harvey was a recent guest on our monthly "Keeping It Simple" webinar. Dr. Harvey secured his PhD (at UChicago, of course) with a dissertation highlighting the relationship between the Yield Curve and economic recessions.

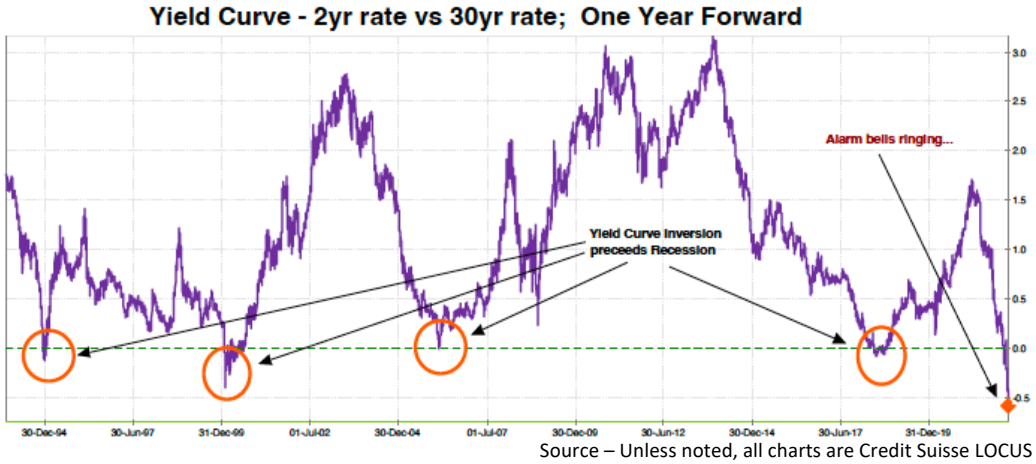
As a reminder, the Yield Curve is the graphical representation of interest rates between three-months and thirty-years, which usually tends to slope upwards to reflect the greater risk inherent with longer-term bonds.

The -fettelite line- spread between the two-year rate and the ten-year rate is one of the most popular relationships. As shown below, this spread turns slightly negative about 14 months before each of the -grey shading- recessions.



Detailed in *"Dangerous Curves Ahead"* – February 15, 2022, while Forward interest rates are not a prediction, they do provide useful information.

The -charoite line- illustrates how Yield Curve inversion has preceded prior recessions. Today, the one-year forward thirty-year rate is 68 basis points below the forward two-year rate; a level not seen in more than thirty years.



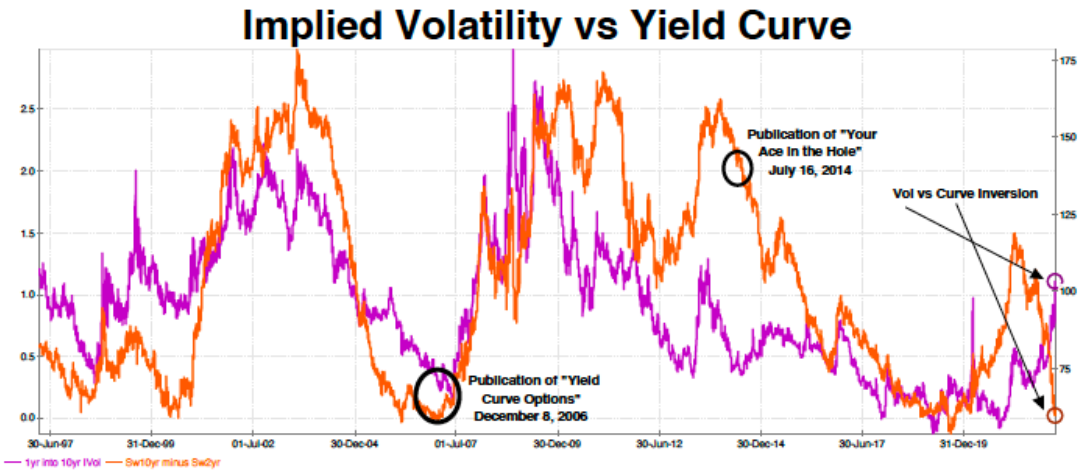
Source – Unless noted, all charts are Credit Suisse LOCUS

Most anomalous, and perhaps ominous, is that the one-year forward Yield Curve is fully inverted, where each longer rate is lower than the prior shorter rate.

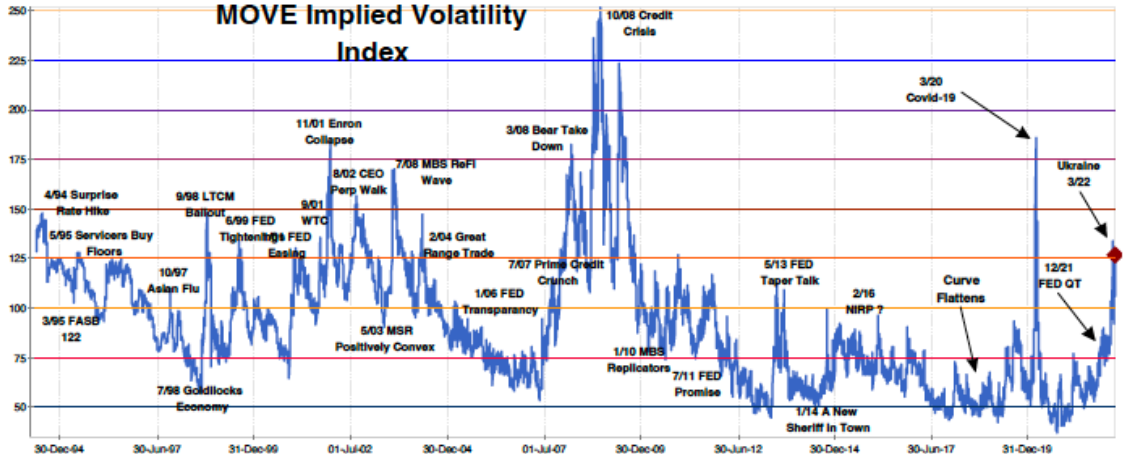
One year Forward Yield Curve

1-year	2-year	3-year	5-year	7-year	10-year	20-year	30-year
3.22%	3.09%	2.93%	2.75%	2.67%	2.62%	2.56%	2.41%

Just as the -vinciennite line- Yield Curve has a clear relationship with the economy, it has also been well-correlated with -lepidolite line- Implied Volatility. Yet since my last Commentary, both have continued to move orthogonally.



For a sense of scale, the -linarite line- MOVE Index recently touched 141, a level visited only twice since 2002 - during the pandemic and the Great Financial Crisis (GFC).

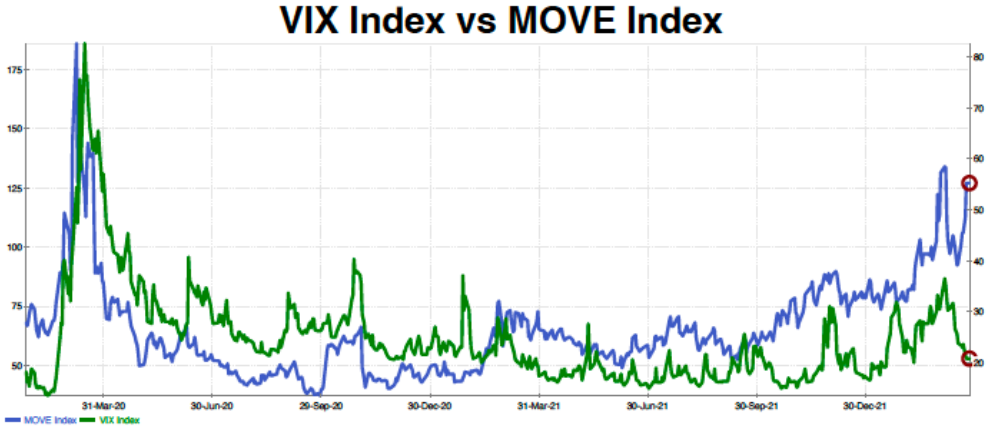


Regular readers know my mantra: "It is never different this time"

Fine…let's stipulate that the bond market has sniffed out a recession with a summer 2023 due date.

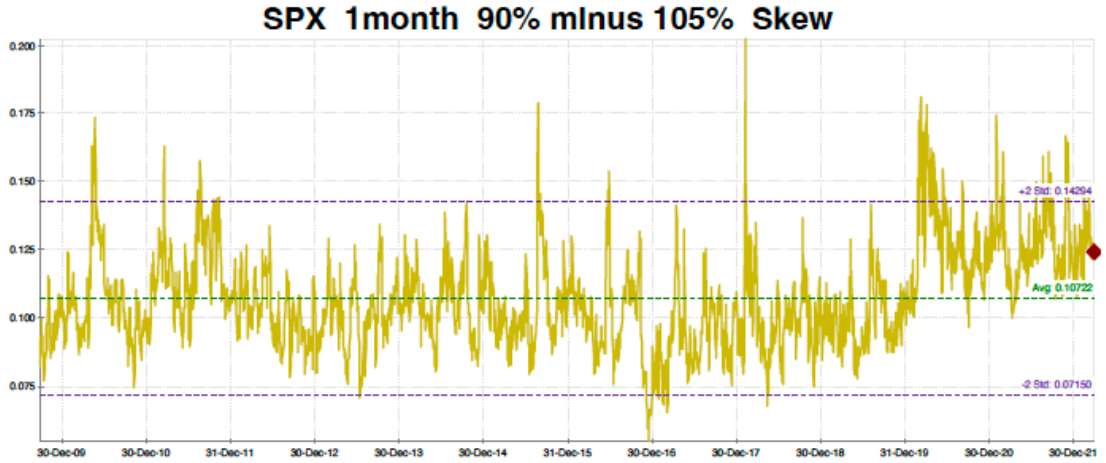
This begs two questions: Why has the Equity market bounced hard from its lows to only 4.9% under its at-time high; and why has the Equity options market not presaged a recession ?

While the -vivianite line- MOVE Index for bonds continues to elevate, the more famous -olivine line- VIX Index for equities is at 20, near its forever average.



This chart could seem strange, but I will add the caveat that interest rates have been moving violently over the past month, while stocks have calmed down with a two-week actual Volatility of only 18.

The "wrong price" is the -sandstone line- Skew, which is the difference between the Implied Volatility of an out-of-the-money put versus a call.



For clarity, assume the S&P 500 (SPX) is at 4500, so a 90% put would have a strike of 4050, or 10% below the market. Similarly, a 105% call would have a strike price of 4725, or 5% above the market.

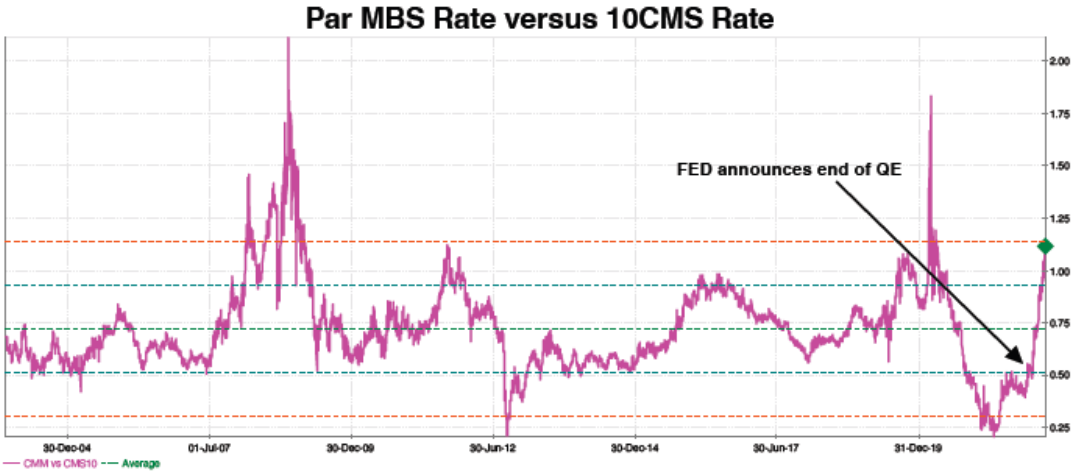
Measured here, the Implied Volatility of the call option is subtracted from that of the put option; a simple difference equation.

Notable here is a Skew well off the highs; in fact, it is below the average Skew since the pandemic jumped the entire Skew profile.

The flashing signal of a recession should expand Skews, not contract them.

A market sector that is acting rationally is Mortgage bonds. As a reminder, the -feldspar line- is the yield spread between an MBS bond priced at par (100-00) and the ten-year interest rate. This is my best measure of MBS value.

As shown, the "forever" average is about 74bp, versus a current level 111bp.



With the MOVE near 130, and the Yield Curve in flux, this level is not crazy cheap, but I will say MBS are a better "buy" than a "sell". This is why Mortgage REITs (mREITs) have bounced off their recent lows.

Let me add a comment about mREITs, Closed-end Funds (CEFs), Business Development Companies (BDCs) and Master Limited Partnerships (MLPs).

The greatest risk for these leveraged investments is their funding cost, which is linked to the FED Funds rate. Presently, the market is pricing a peak FED rate of 2.75% to be reached in June 2023, essentially when the Yield Curve projected recession should start. To the extent this is true, you can dip your toe; but if the FED has a lot more to do, these investments will be reducing their payouts.

Macro Comments

Not to kick the "inflation is transitory" trolls when they are down, but I think we can finally agree that there is palpable CPI inflation. Moreover, I think most will agree that a continuation of at least 4% is baked in the cake, if only because:

1) Owner's Equivalent Rent (OER), one third of CPI, lags six-to-nine-months behind Shiller's housing price index. (Up 19% last year.)
2) The cost of energy (as an input) has yet to flow through to the many goods that require fossil carbon. (Up 54% YTD.)

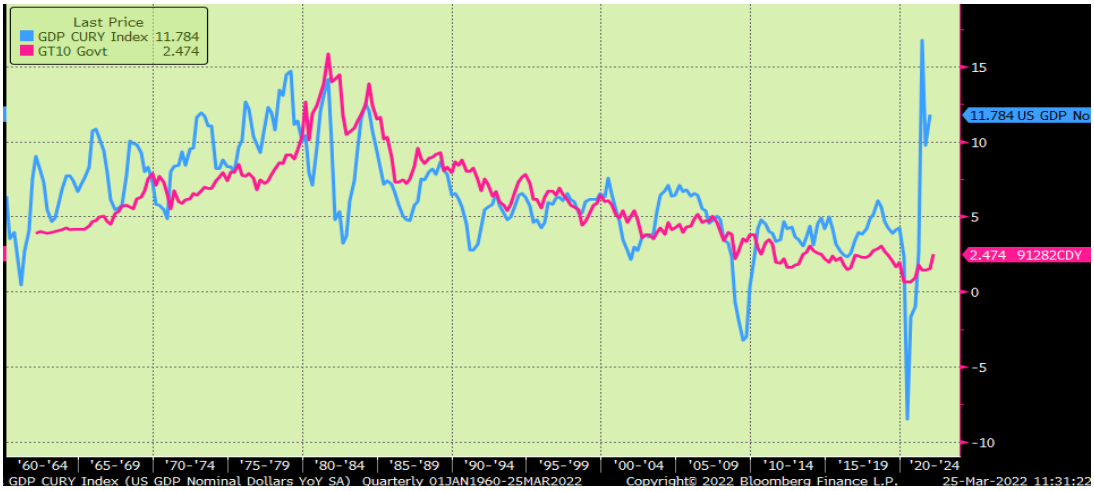
The "recession is coming" pundits argue that CPI inflation exceeding wage inflation will dampen consumer demand and rapidly reduce real GDP. This seems to be what the Yield Curve is contemplating.

But since stocks are priced in "nominal" terms, not "real" terms, they can still increase in such an environment. I would not be surprised, therefore, if "real" GDP comes in flat to negative, but "nominal" GDP (real plus inflation) runs north of 5%.

This is where the rubber meets the road for long-term interest rates; and why one should not be so sanguine about longer-term rate risk.

The old rule was that -aventurine line- ten-year rates follow -azurite line- nominal GDP; and there is an entire MBA course offering fundamental support for this concept. Larry Summers has opined that the FED has stumbled into "stagflation", where real growth is close to zero, yet inflation remains elevated.

If this is the case, the UST 10yrs should have no problem kissing the 3.25% high reached in October 2018 when nominal GDP last nudged over 5.0%.

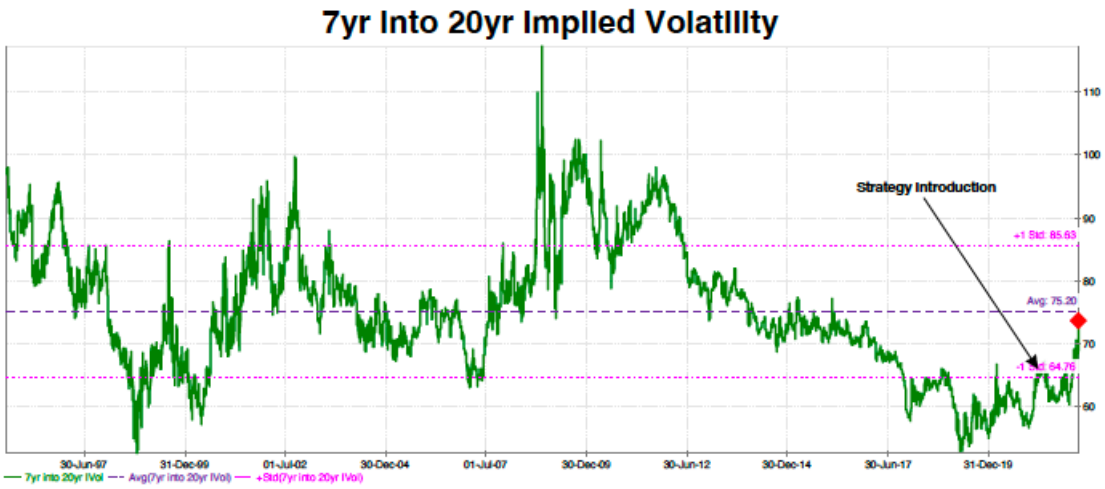


Investment Idea

My Commentary, "*Fire Insurance – Revisited*", February 1, 2022, detailed the historical performance of an Interest Rate Hedge Strategy which at the time cost about $40. With long-term interest rates up about 50bps, the Strategy is now valued at about $50, in line with our **modeled** projections.

This Strategy is still a relatively inexpensive insurance policy against higher rates.

While the MOVE Index is reaching nose-bleed levels, the -prehnite line- Implied Volatility for long-dated options is still below its thirty-year average.



Updated modeled profile

The table below is a **Modeled** profile of how the Strategy could perform, contingent upon a few important assumptions (*), as rates vary. **This is not a prediction**, but rather a modeled pricing projection using a $50 initial price.

-50bp	Unchanged	+50bp	+100bp	+150bp	+200bp	+250bp	+300bp
$41.31	$50.00	$62.61	$79.94	$102.66	$131.16	$165.48	$205.35
$39.18	$47.38	$59.65	$76.96	$100.10	$129.52	$165.27	$206.99

The -aero line- is an "instant" snapshot as rates vary and Implied Volatility is held constant
The -begonia line- is the Strategy, **one years hence**, with Implied Volatility held constant

Note: The Strategy will likely move less than modeled +/-50bp since Implied Volatility will move; locally IVol will move inversely to rates as skew transitions. However, Implied Volatility will almost certainly expand if (1) rates rise significantly, or if the (2) Yield Curve steepens.

Concluding thoughts…

As I have noted (often) since the implementation of Quantitative Easing (QE), over the course of 5000 years of human history, there is no record of the Sovereign printing the coin of the realm (shiny rocks or fiat currency) at a faster pace than the growth of the real economy without inflation. [UChicago – QED]

While the timing can be imperfect, the conclusion is a certainty.

A Central Bank can create inflation if they try hard enough, and let's be clear, there has been massive inflation over the past decade in financial assets which has widened wealth disparity and fed our disruptive politics.

The FED **printed** a 'haystack' of money, which finally met the 'match' of excessive Fiscal spending and set ablaze a CPI fire storm.

For whatever the reason, the FED missed the offramp for QE and ZIRP (Zero Interest Rate Policy) last year; and is now praying to not repeat 1987.

Long-term US rates at ~2.50% are not consistent with ~5% inflation unless the FED invokes Yield Curve Control (YCC). More bothersome is that the SPX at 4575 (and VIX at 20) is not sustainable if an inflation cooling recession harkens.

An inverted Yield Curve never ends well, and option prices are way too low for a FED backed into a corner while the Russians are testing their nukes.

The FED is talking tough, but it is unclear if they have the nerve to pull out their hammer and jam the square peg into the round hole; too often that breaks the entire toy.

Short convexity is always found lurking near the scene of the crime. What I can advise for sure is to cover in any explicit or implicit option shorts. Better still, seek ways to add positive convexity to your portfolio.

Remember: For most investments, sizing is more important than entry level.

Harley S. Bassman
March 29, 2022

Follow me on Twitter: **@ConvexityMaven**

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

"I'm looking for a hedge against my hedge funds."

Robert Mankoff – The New Yorke

(*) Assumptions for a Modeled Performance Profile

Any (modeled) projected performance profile requires a few assumptions, and there is myriad more for long-dated options. As a 35-year Wall Street professional, I am well-aware of how to slant a profile with "tricks"; but I believe the assumptions used here are both reasonable and conservative.

1) Excluded are all fees, commissions, and transaction costs.
2) I assume the initial portfolio ratio is fixed, with no adjustments.
3) I use Wall Street standard (Bloomberg) instant "parallel shifts".
4) All prices calculated on Bloomberg SWPM or BC1.
5) I assume "roll down" for USTs.
6) I use mid-market pricing for all risk vectors.
7) Excluded is the interest income of the UST allocation.
8) I assume the spread between US Treasuries constant versus Swap rates.
9) I hold Implied Volatility flat in the base case at 82nv.
10) Implied Volatility for the "1yr hence" case rides the current term surface, presently 5yr options are about 2nv higher than 6yr options.
11) I assume no slippage in managing the Strategy over time.
12) I assume a "buy and hold" from issuance.