# Convexity Maven

*A Commentary by Harley Bassman*

**October 18, 2017**

## "Other People's Money"

Contrary to what this snarky title might imply, and unlike my usual institutionally focused missives, this Commentary deals mostly with how to more efficiently manage portfolios that have fewer than three commas. As such, to protect myself from a pair of striped pajamas, let me make clear that this is neither an invitation nor a solicitation, but rather a grammatically correct expression of my personal opinions, i.e., not advice. Values used to support this examination reflect data available on or about September 1st. Further disclosures follow at the bottom. Now, with that out of the way, let's continue.

The Great Financial Crisis (GFC) crushed financial stocks, some deservedly so; others were just caught in the flush. While excessive leverage and bad management sunk Citibank and BankAmerica 98% and 95% respectively from their highs, the storm also reduced Goldman Sachs and Wells Fargo equity by 80%, and even the gem JPMorgan saw its shares reduced by 70%. I had always wanted to catch one of these falling knives, but Rule #1 for investing, diversification, precluded such an allocation as I was attached to various financial

firms. With this shackle released a few months ago, and a serendipitous (and related) liquidity event, I now had the chance to consider such opportunities.

It soon became clear that the most convex way to invest in financials was to buy Citibank (C) common shares. It is true that Citibank owns the most regrettable quote uttered in connection to the GFC: "But as long as the music is playing, you've got to get up and dance." [The runner up belongs to Goldman Sachs: (We are) "doing G-d's work."] Nonetheless, it is now fully nine years past Lehman's collapse and the unintended consequence of much needed (re)regulation is that we now have an oligopoly in commercial and consumer finance. These institutions now more closely resemble a regulated utility rather than a gun slinging hedge fund.

While this does not guarantee success, it does offer a soft floor near their Tangible Book Value (TBV); a number that is quite meaningful for financial entities whose most valuable assets tend to be found on Bloomberg rather than on Linked-In.

And unlike the other "too big to fail" members of this club, Citibank alone could be purchased near its TBV.

| | Sep 1, Mkt Price | June '17 TBV | Ratio |
|---|---|---|---|
| **Wells Fargo** | $51.07 | $27.92 | 182.9% |
| **JPMorgan** | $91.17 | $50.74 | 179.7% |
| **Morgan Stanley** | $46.19 | $33.24 | 139.0% |
| **BankAmerica** | $23.89 | $17.38 | 137.5% |
| **Goldman Sachs** | $225.88 | $183.89 | 122.8% |
| **Citibank** | $68.03 | $67.16 | 101.3% |

Before I become entangled in the reasonable debate about whether this particular stock is a sound investment, let me please refocus your attention to the main point of this Commentary, the decision process as to how best make such a purchase.

The standard manner to buy a stock is straight up for cash. While this method does capture all of the upside if C joins its peer group who trade near 140% of TBV, the cost is that one only earns the dividend of 1.88% ($1.28 on a $68.03 price). This is slightly below the yield on a UST Five-year note, and well below what one could earn on other mid-horizon (two to five years) and somewhat volatile investments.

For investors willing to own a moderately risky portfolio with drawdowns greater than 6% (a common risk metric for RV hedge funds), your "cost of capital" (what I might consider one's "opportunity cost") is surely greater than this 1.88% static yield. I tend to target a "risky" cost of capital as what one can earn on solid AA municipal bonds, large premier Income Funds, or an extremely well diversified set of low-leverage Closed End Funds; a ballpark pre-tax yield of at least 5.0%.

Let's be clear, this is not a cost of capital for AAA-rated, ultra-liquid investments; nor is it a proper target for long lock-up, deep drawdown or non-transparent investments, but rather the space that lies in between.

Faced with such an inefficient use of capital for a pure cash purchase, an alternate course might be to borrow the funds via a typical Margin Account. Notwithstanding that there are Federal Reserve borrowing limitations, the more bothersome concern is the cost. For while the Federal Reserve has pegged overnight interest rates at about 1.25%, many of the larger full-service investment platforms lend at a substantially higher rate (5% to 6%). Even some of the discount brokers charge rates with a solid 4%-handle.

And similar to airline tickets and hotel reservations, the advertised interest rate sometimes does not fully reflect the effective cost of borrowing these funds. For individual tax filers, the investment interest expense can at times not be fully realized since Schedule-A deductions could be limited. (Of course, do not rely upon this comment, please consult a tax professional.)

The bottom line here is that unless you are a qualified institutional investor, your cost of borrowing for an asset-secured investment can exceed what Putin's Russia pays for US Dollars.

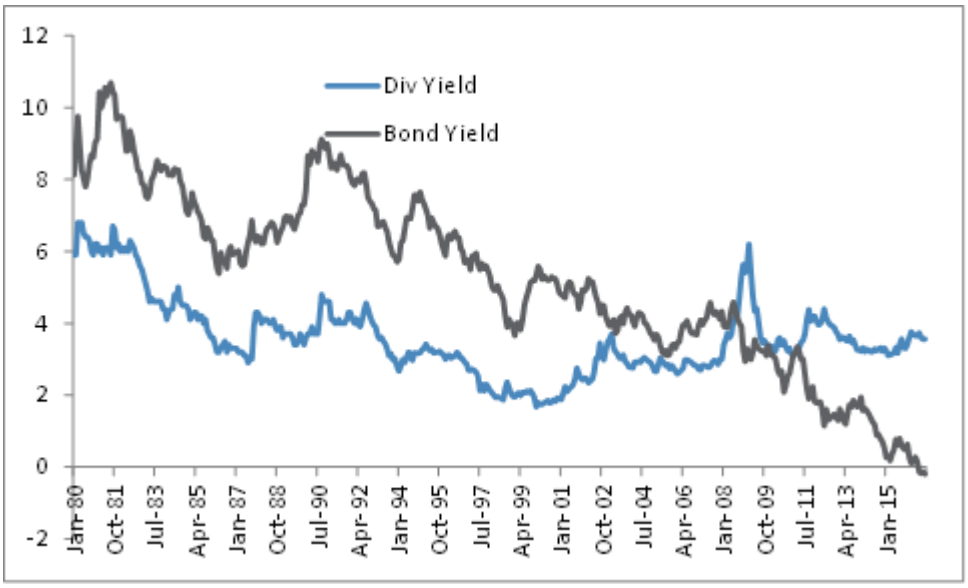
Thus, the notion to borrow money from "other people" at interest rates available to only the choicest of investment professionals via the listed options market.

Recall that vanilla options are priced via five inputs: spot asset price (S), time to expiry (T), interest rate (I), strike (K) and volatility (V). The first three inputs (S+T+I) create the arbitrage-free forward price, while the V describes the distribution of possible asset paths around this forward level. The probability weighted present value of the paths that exceed the K is the value of the option.

Most option commentary will focus upon Implied Volatility as the divining metric and value-added component to the investment process; this is a shame since the massive course financial repression served to the markets by the major Western Central Banks is a much more interesting consideration.

Until the GFC activated the Central Banks to reduce interest rates to nearly zero, it was common for the risk-free cost of borrowing to exceed the dividend yield of Index Equities. This made sense in broad strokes since the "residual claim" of equity ownership can be considered a call option on a business with the strike price being the value of its debt. As a call option is positively convex (unlimited upside versus a defined downside), one would expect to pay a time value (theta) of some sort – the negative carry. When Central Banks pressured interest rates below the yield of a stock, they effectively created a positive carry call option.

In the chart below, note the large spread between the –byzantine line- for the dividend yield of the SX5E and the –glaucous line- of its associated funding rate. The upshot of this inversion of rates is that the forward price for many financial assets is now lower than the spot price, a static positive carry in Wall Street parlance, which lends itself to a panoply of investment constructions. (See page three of this year's *"2017 Model Portfolio"* – December 2, 2016)



Source: JPMorgan

This insight should clear up any doubts as to why Global Equity markets are all nearing forever highs. It should also make one appreciate the flaw in Shiller's CAPE model since he takes no consideration of interest rates, but I will save that discussion for a later commentary.

Back at the ranch, let's focus upon the "I" in the option formula. The S, T, and K are all transparent, and let's skip the V for now. So, the curiosity is which interest rate should one use: That of the buyer, or the seller, or perhaps the financial institution that holds your position.

Similar to the newly formed oligopoly of banks, there is an oligopoly of market makers for listed options as only a few firms control the majority of trading. Computers execute much of the non-institutional trading in options, and these machines offer narrow bid/ask spreads to encourage greater volume. After all, a few pennies many times over can be more profitable than a few dollars on scant trades.

So as to reduce the possibility of adverse selection, the interest rate tends to reflect the borrowing cost of these large market makers, which is close to Libor (similar to that of the largest institutional participants). Now there are exceptions to this as special funding rates can apply to high demand or non-lendable securities, but in general, one can assume Libor +/- 25bp.

Now let's consider a more efficient manner to gain exposure to C. At the start of September, one-year Libor was priced near 1.70%, or slightly below Citibank's static dividend of 1.88%. Thus, the forward price to the January 18, 2019 option expiry was roughly 20 cents lower at 67.83. One could consider the TBV as a "soft floor" over a longer horizon, so selling (short) the K = 65 put is not an act of wild speculation. The option premium from this put sale will cover most of the cost of buying the K = 70 call option. This pair is almost costless because: 1) the forward price almost splits between the strikes, and 2) the strike skew is such that the put option has an implied volatility about one percentage point greater than the call option. (I told you we would come back to the "V")

This package, known as a "risk reversal", has a 90%-delta; so its performance will be nearly identical to a regular cash trade. The difference here is that I have effectively locked up a sixteen-month borrowing cost of 1.70% and will only need to post initial collateral of about 20%, which can include a variety of marginable securities (and of course, cash). One important caution, if C declines materially, you will need to post addition maintenance margin.

We have now gained almost complete exposure to C without a cash outlay; and we have the flexibility to decide how to allocate this conserved cash (now or at a later date) to assets that yield more than 1.70%.

Let's not play games, this strategy is not for widows and orphans; rather it is a manner for non-institutional investors to borrow at financially repressed interest rates and employ leverage in a manner similar to professionals.

The process in which you allocate your preserved cash should adhere to a thoughtful portfolio construction; and in the case of Citibank, I like interest sensitive assets such as those described earlier. Over the medium-term, I would expect C to vibrate somewhat inversely to rates. Improving GDP and Inflation with its associated FED rate hikes should benefit C, while recession driven rate

reductions and credit costs would not be helpful for its stock price. A diversified portfolio of mid-term interest rate focused investments should move in a contrary direction.

I will admit that this does have the rough outline of Risk Parity, an investment strategy I did not speak kindly of in my last Commentary ("*Rambling Near the Edge*" - July 10, 2017); but the difference here is that I am suggesting the use of leverage between interest rate sensitive assets as opposed to rate versus equity.

I will note that I would have preferred a pair options with a more distant expiry, but this was the longest maturity available with reasonable liquidity. The reason is that embedded in a long-dated option is a powerful "interest rate kicker" if the FED tightens. If rates rise and C rallies, the "I" increases and the Dividend Yield declines (assuming an unchanged payout and a higher stock price). This jumps the forward price higher relative to the spot. Since the "I" can rise more than it can decline (assuming a zero-boundary), this adds additional convexity to the strategy.

Finally, the entire premise of this strategy is that you want to own the underlying asset, and are willing (and able) to buy the asset at the strike price. So, to be clear, this is not a short-term trading strategy; but rather a superior investment execution.

Your comments are always welcome at harley@bassman.net

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