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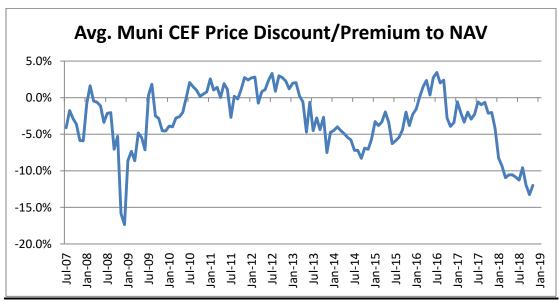
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Investment Newsletter – December 2018

This newsletter starts with some comments on recent market volatility and the impact on our closed-end fund fixed income strategies. Following that is the update of the performance of the Long Term Income strategy as of September 2018 which was deferred because of the length of part 3 of the retirement planning series published in September. Next is an update on the performance for the Quantitative Equity Investment strategy. We'll conclude with my big picture comments about investment strategy variations.

Market Volatility Brings Bargains for Shoppers

On August 31st the yield on the 10-year U.S. Treasury bond was 2.86% - up from 2.40% at the end of 2017. That, in itself, is a big move. Then the yield rose another .29% to 3.15% at October 31st. Rising yields are the flip side of dropping bond prices. This rapid move put a big scare into the smaller investors who buy closed end funds. They reacted by dumping everything – selling at bigger and bigger discounts to underlying bond values in their desperation to get out. Later I'll cover the effects on the high yield funds in our Long Term income strategy. For now, let's look at how this impacted California Municipal Bond closed end funds (CEFs). Here's a graph of the average discount on eight funds we track.

Avg. Muni CEF Price Discount/Premium to NAV

The graph on the prior page shows month-end average discounts since July 2007. The average discount over this period is just 2.9%. Keep in mind that these are investment grade bonds backed by various government agencies throughout California. There is very little risk of default here, yet we see that these investors panic anyway – accepting prices as low as 17% below asset values during the financial crisis. This year is the first time since 2008 that we've seen discounts this large in the Municipal bond funds! These were already cheap at the start of the year. The average discount reached 13.3% on 10/31/18. That is an astounding bargain for anyone with available funds. Such deals usually last no more than a month or two. Since then prices have risen a bit; as of 12/6/18, the average discount is still 12.0%. I don't think we can count on seeing average discounts larger than 13% in the near term (but I cannot rule it out either). In short this is still a buying opportunity if you can hold the positions until the discounts normalize.

Long Term Income Portfolio Strategy and Performance

The year ended 9/30/2018 produced a .5% loss which is significantly less than the long run average returns of 7.96% for the Long Term Income strategy. In September 2017, at the 8th anniversary of the Long Term Income strategy, this newsletter reported the 2nd year in a row of above average returns for the strategy. As will be discussed further below, the variables driving the value of these securities (and thus the mark-to-market portion of returns) tend to move in a range over cycles of investor sentiment. This tends to create alternating periods of high and low returns and therefore a long run perspective is important for evaluating the portfolio performance.

Berkeley Investment Advisors uses several different strategy portfolios to manage client assets. The Long Term Income portfolio focuses on taxable intermediate to long term maturity bonds. Longer maturity bonds provide higher interest rates (yields) than shorter maturity bonds and are more sensitive to changes in interest rates. A bond's interest rate sensitivity risk, known as its duration, tells us how big a change in price we can expect when interest rates change. The duration of the portfolio is currently at 4.5 but it was 4.1 last year. If we hold a bond with duration of 5 when rates went up 1% we would expect the bond's price to decline by 5%.

Besides interest rate risk, there is also default risk in this portfolio. Bonds with higher probabilities of default (relative to other corporate bonds) compensate investors with higher interest payments – hence they are called "high yield" bonds. High yield bond default risk is like stock market risk - it is correlated with the performance of the economy. At the portfolio level we diversify away individual company default risk by diversifying across a large number of issuers. This insures that the extra premiums earned won't be lost due to a few companies defaulting. Our strategy is to accept market correlated credit risks to earn those extra returns.

The extra return on high yield bonds over the interest rate paid by the U.S. treasury is called a credit spread – it is the compensation that investors demand for taking credit risks. These spreads change according to investors' risk preferences – i.e. how much they need to get paid for taking credit risk changes according to market mood just like stocks. Therefore by accepting default risk we also accept
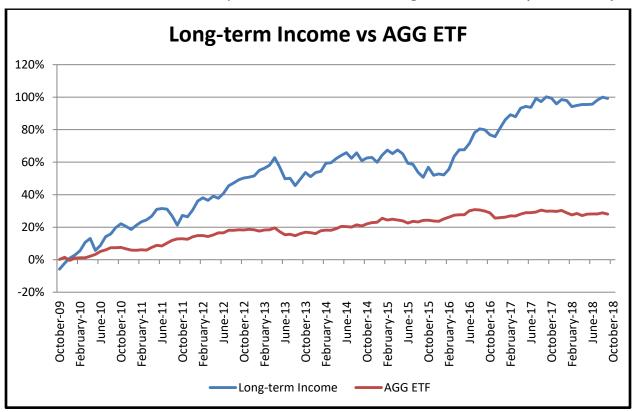
credit spread "pricing risk" and we must endure fluctuations in our portfolio value that correspond to changes in the market mood - risk seeking or risk aversion– but at roughly half the level of stock market moves.

We earn incremental yield by buying closed-end funds (CEFs). These securities can be bought at discounts to the underlying bond values (and occasionally sold at a premium). These funds also enhance returns through embedded leverage. Using these securities means we must endure more price volatility in down markets because most retail investors want to sell more at lows. Current market conditions are providing about 1.6% higher yield on our portfolio than if we held the underlying bonds directly. Now that I've described the strategy and its sources of risk, we'll go over the returns for it and a comparison index.

The Long Term Income portfolio is diversified across virtually all sectors of the fixed income market, including government bonds and mortgage backed securities. A good comparison index is the Barclays U.S. Aggregate Bond Index as represented by the iShares Core Total U.S. Bond Market exchange traded fund (ticker AGG). This is meant to represent the total overall U.S. bond market.

Although we first created this portfolio in February 2008, it was not continuously invested until September 2009. Therefore we cannot calculate performance further back than the last nine years. The graph and table below show total returns including price and interest payments in comparison to the bond index mentioned above, as implemented in the exchange traded fund (ticker AGG).

Our portfolio returns calculated here are based on a particular client's account and have been reduced by annual fees of 1.25% which would apply to new accounts above $500,000 but below $1 million.

Returns by Year			
Year Ended	Long Term Income	AGG Bond Index	Difference
9/30/2010	19.8%	7.4%	12.4%
9/30/2011	1.2%	5.0%	-3.8%
9/30/2012	23.1%	5.0%	18.1%
9/30/2013	0.2%	-2.0%	2.3%
9/30/2014	7.6%	3.9%	3.7%
9/30/2015	-6.4%	2.7%	-9.1%
9/30/2016	19.4%	5.0%	14.4%
9/30/2017	11.3%	-0.1%	11.4%
9/30/2018	-0.5%	-1.3%	0.9%
Compounded Total	99.2%	28.1%	71.1%

Total return over nine years is 99.2% - an annualized compound rate of return of 7.96%. The table above makes it clear that the strategy exhibits significant volatility in returns but over the long run the results are quite good. This variation in yearly returns is driven mostly by changes in the market value of securities which I refer to as the "mark-to-market return". Long run returns, however, are driven mainly by the interest payments from the securities as the gyrations in market valuations tend to cancel each other out over a period of years.

For the year ended 9/30/2018 the interest rate on 10-year treasury bonds has increased from 2.33% to 3.05%. I estimate that this interest rate rise reduced the market value of the portfolio by around 2.95% compared to last year (4.1 duration times the .72% interest rate increase).
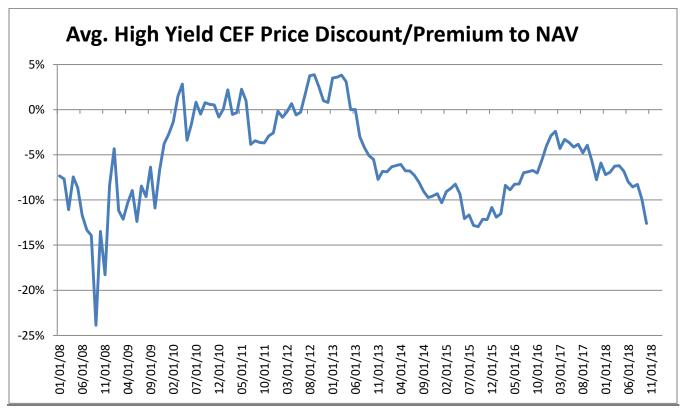
Now, let's go a bit deeper to look at an even more significant source of the mark-to-market volatility we observe here. The portfolio's price returns (i.e. not counting interest payments) are impacted by changes in CEF prices relative to the underlying bonds. To determine the impact we can look at monthly prices and net asset values (NAVs) for some representative CEF holdings. NAV represents the value of underlying bonds inside the closed end funds and the difference between price and NAV is the discount that funds trade at relative to value.

To get an idea of how much CEF discounts can vary, I pulled data on a group of seven CEFs with data available back to the beginning of 2008. These CEFs are included in both the Long Term Income portfolio and the Short Term Income Portfolio. The chart on the next page shows the average discount for these seven CEFs at the end of each month. Because October had such an extreme move in the discount, I've included this on the chart even though this is past the 9/30/18 anniversary we are analyzing here. **The chart shows that discounts last bottomed at 13% in September 2015 and then climbed back to 5.8% as of 9/30/17. This "tailwind" resulted in 2 year returns of greater than 30%.** Conversely in the year ended 9/30/18 discounts again widened back to 9.9% creating a substantial 4.1% "headwind" and contributing to the mark-to-market loss over the year.

The chart shows that discounts greater than 10% are unusual. Over time these discounts tend to revert towards the mean, but the short term impact on

mark-to-market account values can be disconcerting. When investing in this strategy it is important to keep in mind that the long term returns for which we are investing come primarily from dividends and so I urge you to focus on these cash flows in deciding if you can fund your retirement rather than the emotional rollercoaster that we see in short term fluctuations in discounts and spreads.

Avg. High Yield CEF Price Discount/Premium to NAV

In October the discount widened further to 12.6% - which is within .4% of the low we saw in the last down cycle in 2015. The last time these discounts exceeded 13% was a period of five months at the height of the financial crisis in 2008 when retail investor panic was widespread. As of 12/6/18 the average discount is at 11.6%. While a recession could drive these discounts lower still, we cannot count on that; now is a relatively good time to be a buyer.

Credit risk spreads actually dropped .28% over the year which provided a slight benefit on a mark-to-market basis for the underlying bond net asset values (NAVs). This left credit spreads at historically low levels at 9/30/18 but these have since reverted back up by .94% in October and November so that they are now back in a more normal range. This implies a rather large mark to market loss for high yield bonds (and our fund NAVs) over the last two months. The silver lining is it also implies better yields going forward.

If we think of fixed income returns as a spring that tends to revert to a neutral state, then it seems that bond values are roughly neutral but that closed end funds discounts have pushed the spring down to a compressed level. This situation is unlikely to persist in the long run. The market goes through cycles of risk seeking and risk aversion whose timing is unpredictable. These cycles drive shorter term returns in stocks and bonds. But in the longer term, returns are fairly

predictable and thus we can use this fact to ignore short term volatility in pursuing our long term strategy.

As of 12/7/18, the yield on the Long Term Income Portfolio is 8.2% (before fees). This seems to be a good return for the risks.

Quantitative Investment Strategy Results

Five years ago, we implemented a quantitative strategy on a test basis. The goal for this strategy is to outperform passive strategies across various market environments. This is not a risk managed strategy, so it would likely under-perform our existing Long Term Value strategy in a down market. Assuming we allocate some portion of equity exposure to this strategy, it could serve to reduce the variation in our returns relative to the market in up-markets.

Because our goal with this strategy is to reduce volatility of our return variance versus the market, the portfolio is designed so that industry weightings are approximately in line with the overall market's industry weightings. We did not, however, put any constraint on the size of the companies chosen for the portfolio. Given that larger capitalization stocks are more efficiently priced in the market, we expected the portfolio to be weighted more towards small and mid-cap stocks. In fact the portfolio varied in composition widely from month to month, but on average it has been 41% large capitalization, 24% mid-cap, and 35% small capitalization.

Over the long run smaller capitalization companies tend to outperform larger companies in generating returns for investors. The last five years has been unusual in that this has been reversed: larger capitalization companies have done much better relative to smaller ones than we should expect going forward. Therefore, we would like to isolate this effect in evaluating the Quant Portfolio. This is important because we are really interested in how it would perform over the long run, not just in the late years of a bull market. If the strategy can outperform a blended benchmark with similar capitalization composition, that is likely to be a good indicator of long-run relative performance. The chart below plots the cumulative returns of the Quantitative Investment Strategy compared to the S&P 500 and a "Multi-Cap Blend" benchmark. The Multi-Cap Blend is a weighted average of large, medium, and small capitalization market indices[1] where the weights are equal to the average capitalization weightings of the Quantitative strategy over the five years. The returns in this chart are from a "watch portfolio" rather than an actual account but they have been adjusted assuming a fee of 1.25% which would apply for accounts between $500,000 and $1 million.

The chart shows that for the first four years, the return (after fees) for the Quantitative Strategy outperformed the annual return on the S&P 500 by 0.17% and it outperformed the Multi-Cap Blend benchmark by 1.31% annually. Its total return over the first four years was 59.7%.This a very good result. Over this period, the tracking error is within a small range and the strategy produced a nice spread over the comparable blended index return.
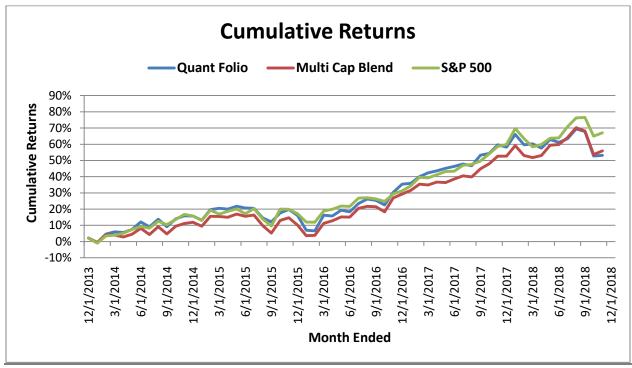
Over the last year, however, the performance has dramatically dropped off. The strategy lost 4.1% over the 12 months ended 11/30/2018 compared to a gain

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[1] Large was S&P 500, mid-cap was S&P Midcap 400, small was Russell 2000

of 5.3% for the S&P 500 and 2.2% for the multi-cap blended benchmark.   Given the quantitative nature of this strategy it is difficult to identify what factors may have led to this dramatic change in performance. The most likely explanation is simply the change in the market environment last year. Volatility increased significantly and there were many reversals. By this I mean certain types of stocks were oscillating between being in favor and out of favor. The quantitative strategy has as one of its components a momentum following factor. Because this portfolio is rebalanced monthly, such an on and off market could lead to weighting towards stocks that went up and then suffering the reversal of fortune.

The net result is that over the full 5 years, this Quantitative Equity strategy produced an annualized return of 8.9% compared to 9.4% for the Multi-Cap Blend benchmark and 10.9% for the S&P 500.

The Big Picture on Strategy Performance Variations

Any investment strategy that differs from its relevant benchmarks will inevitably suffer through periods of poor performance relative to those benchmarks. This is the nature of investing. If we think about the nature of humans who make actual dollar commitments to strategies we can conclude that good performance attracts money in the short run which drives prices up and eventually leads to lower returns for a period as things move back towards equilibrium. Likewise under-performance reduces a strategy's popularity and the resulting lower security prices contain the seeds of the next period's out-performance. This cycle implies that if we find a strategy that provides good returns over multiple cycles, we just need the patience and emotional strength to stick to our plan when things don't look so good.

If we don't, we are doomed to hop from strategy to strategy just as each nears its period of underperformance, thus guaranteeing a bad long term result for us even when we are choosing among strategies where each strategy by itself performs great over the long run.

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