Improving on the Ultimate Income Portfolio

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The Ultimate Income Portfolio, which was published in this newsletter July 6 of last year, has delivered the risk-adjusted returns that I projected. Here's a detailed look at how last year's portfolio performed and several ways it can be improved in today's environment.

The thesis of the original article was that it was possible to build a portfolio with almost a 10% annual yield at a risk level that many investors would deem acceptable. My approach to creating an income-oriented portfolio was unusual and got considerable attention, thanks in part to a discussion by well-known columnist and advisor Scott Burns.

My proposition is that the best way to build an income portfolio is to optimize yield versus risk. Yield is directly observable. Risk is not as easy to see, but it is observable too. We can estimate the risk associated with any investment by looking at the costs of options on that investment. With the emergence of options on exchange-traded funds (ETFs), we can measure the risks of entire asset classes very easily in this way.

This approach to building an income portfolio is compelling, because it is hard to argue with the meaningfulness of either option-implied risk or yield. Alternatively, one could construct a portfolio based on expected total return, but that requires assumptions about the future equity-risk premium. Using stocks with consistent histories of paying dividends makes the forecast for future dividends quite straightforward. Realized volatility is reliably predicted by implied volatility. To frame this in a different way, there is considerably more estimation error in expected total return than in either yield or risk.

My 2010 article started by treating all sources of yield on an equal footing. Yield is any payment to the holder of the portfolio. We can get yield from bonds, stock dividends, MLPs, REITs or sales of covered calls. My goal in constructing the ultimate income portfolio is to identify a portfolio that provides the highest total yield at a target level of risk for the holdings in the portfolio. I determine the aggregate portfolio risk by starting with the estimated risk of each portfolio component that is consistent with options prices and then accounting for the correlations between individual investments.

The original ultimate income portfolio had a projected total yield of 9.7%, with a total expected risk level of 21% in annualized volatility — very close to that of TLT, iShares' long-term government bond ETF, which has implied volatility of 21% and was yielding only 3.9% at the time.

Over the last year, I have continued to explore this approach, and its appeal is undiminished. At the one-year anniversary of the original Ultimate Income Portfolio, I

review the performance of the portfolio over the past year and explore the improvements that my ongoing research suggests.

The original portfolio

In my original analysis, I used data available through June 30, 2010. We will start by examining the performance of the original Ultimate Income Portfolio from June 30, 2010 through July 21, 2011 (the date of this writing).

The original portfolio was equally weighted among 10 elements: nine individual stocks and one high-yield bond fund. In my original analysis, I explored whether an allocation to nominal bonds could add yield at the target risk level, but I projected that nominal bonds would not improve the portfolio.

Original Ultimate Income Portfolio (July 2010)

Name	Ticker	Percentage of Funds
High Yield Bond Fund	COY	10%
Con Ed	ED	10%
Dominion	D	10%
Pinnacle West	PNW	10%
Xcel	XEL	10%
Duke	DUK	10%
Verizon	VZ	10%
AT&T	T	10%
Glaxo	GSK	10%
Bristol Meyers	BMY	10%

Since June 30, 2011, the annualized return (including reinvestment of dividends and income) of this portfolio was 25.2%, compared to 26.9% for the S&P 500. At the time the original article was written, Monte Carlo projections (by Quantext Portfolio Planner, QPP) gave this portfolio an expected return almost identical to that of the S&P 500, so it is notable that the portfolio did, in fact, deliver total return that was very close to that of the S&P 500.

Yield from this portfolio was 6.1% annualized, as projected in the original article. One potential source of risk with regard to the income stream was that the high-yield bond fund could have suffered reduced income due to defaults, but that was not the case. COY has maintained a constant monthly income stream over this period. Another source of risk was that it was possible one or more of these stocks might cut its dividend. I minimized this risk by controlling for the volatility of the stocks, and subsequent research has confirmed that stocks with lower volatility have much lower probabilities of cutting their dividends.

I calculated the value of selling covered call options against the individual stocks in the portfolio, using actual bid prices of the options at the time. The expiration dates for the longest dated options were typically 1 to 1.5 years. If we assume that an income investor would spread the income obtained through the entire life of the options, we can calculate the annualized effective income from selling the options. This comes out to approximately 3.6% per year of the realized income since the article was published. This 3.6% annualized yield matches the original calculation, as it should.

The total income produced by this portfolio has been 9.7% annualized since the original analysis was published — exactly equal to its projected total income.

I chose strike prices for the call options so as to retain some potential price appreciation. The total return for the strategy with the covered calls is an annualized 14.84%, which demonstrates the value of retaining some price appreciation.

The updated income portfolio

In updating the design of the portfolio, there are several new considerations. First, I have replaced the BlackRock High Yield Fund (COY) with the iShares High Yield ETF (HYG), which has a considerably lower expense ratio (0.5% vs. 1.18% for COY). Because HYG is an ETF, it has the additional advantage that we can now sell call options against it.

When I was first developing the yield-versus-risk concept, I was concerned about the unique features of master-limited partnerships (MLPs) and thus excluded this asset class. In particular, MLPs often have high price-to-earnings (P/E) ratios, while income-oriented stocks typically are on the value end of the spectrum and thus have fairly low P/E's. Kinder Morgan (KMP), a large MLP, has a P/E of approximately 35 at the time of this writing, for example, as compared to a P/E of 9.1 for AT&T, 14.3 for Con Ed and 15 for Bristol Myers.

High P/Es, however, are not sufficient reason to exclude MLPs from the income strategy. Kinder Morgan (KMP) and Enterprise Products (EPD) are now included in the portfolio because of the consistency of their historical income streams relative to their risk levels.

I have conducted considerable research into the idea of using an optimizer to maximize yield versus portfolio risk. There are always risks associated with optimizing — most notably that the optimized portfolio will be over-fitted to historical data or to some quirk of the asset allocation model. William Bernstein, in *The Intelligent Asset Allocator*, demonstrates the risks associating with building optimal portfolios. Applying an optimizer to build the highest-return portfolio will result in a portfolio that is substantially overweight in whatever asset has done best in the historical data. Similarly, the risk of using an optimizer in building a high-yield portfolio is that the relative allocations may reflect more about history than the future. But by working with Monte Carlo simulations that match

projected volatility to implied volatility, I have conducted enough tests to convince myself that optimizing make sense for building high-income portfolios.

The new income portfolio is shown below:

Updated Ultimate Income Portfolio – July 2011

Name	Ticker	Percentage of Funds
iShares High Yield	HYG	15%
AT&T	T	10%
Kinder Morgan	KMP	10%
Verizon	VZ	9%
Glaxo	GSK	9%
Bristol Myers	BMY	9%
Duke Energy	DUK	9%
Con Ed	ED	7%
Frontier Communications	FTR	6%
Enterprise Products	EPD	6%
CenturyLink	CTL	5%
Windstream	WIN	5%

This portfolio, like the original, has a yield of 6.1%. The expected volatility of the portfolio is 15.2% (calculated using QPP) as compared to annualized implied put-option volatility of 20% for the S&P 500 and 19% for TLT, the iShares 20+-year Treasury ETF.

As a point of reference, a portfolio that is 75% allocated to the S&P 500 (VFINX) and 25% allocated to an aggregate bond index (VBMFX) has projected volatility of 15.3%. This 75/25 portfolio has a yield of 2.08% and expected total return of 6.6% (as generated by my Monte Carlo simulations). TLT yields considerably less than the income portfolio (4.3%), and the returns provided by TLT are highly sensitive to interest rates. The returns from the income portfolio have a very modest negative correlation to 30-year Treasury yields (-6%), while the returns from TLT have a -97% correlation to 30-year Treasury yields.

The expected return for the income portfolio (generated by QPP) is 7.9% (as compared to my baseline estimate of 8.3% for the S&P 500).

I obtained call option bid prices (i.e., the price at which you could actually sell the options) for all of the portfolio holdings (as of July 21, 2011). I chose the longest-dated options available, which will hold down the transaction costs of rolling the options forward as they expire.

Current Prices for Call Options

Ticker	Current Price	Strike Price of Option	Call Bid	Option Expiration	Annualized Return from Call Sale
HYG	$91.72	$92	$0.55	3/17/2012	0.9%
T	$30.28	$32	$1.29	1/19/2013	2.8%
KMP	$73.22	$75	$2.33	1/19/2013	2.1%
VZ	$37.57	$40	$1.81	1/19/2013	3.1%
GSK	$43.89	$45	$2.80	1/19/2013	4.1%
BMY	$29.56	$30	$2.16	1/19/2013	4.7%
DUK	$19.10	$20	$0.55	1/19/2013	1.9%
ED	$53.96	$55	$2.25	1/19/2013	2.7%
FTR	$7.80	$10	$0.10	1/19/2013	0.8%
EPD	$43.71	$45	$2.05	1/19/2013	3.1%
CTL	$38.27	$40	$1.65	1/19/2013	2.8%
WIN	$12.69	$15	$0.28	1/19/2013	1.5%

If we sell covered calls against the original portfolio, we will add 2.6% in additional annualized yield to the portfolio. In doing so, we will retain some of the upside potential for price appreciation — the range between the current price and the strike price of the option.

The total annualized yield for this portfolio is 8.7% (including call option premia). It is not surprising that the total available yield today is lower than it was a year ago — the market has risen by more than 30% since the end of June 2010. With higher prices, yields from stocks have broadly declined. In addition, the implied volatility of the market as a whole has declined by around 20% since the previous article was published, which reduces the premium income that can be generated by selling covered calls. Given those two factors, it is quite impressive that we can build an updated income portfolio with a total yield as high as 8.7% at this risk level.

Discussion

In the past year, we have seen considerable debate about the advisability of chasing yield — buying stocks and bonds solely on the basis of high yield. The problem with this approach, of course, is that the stocks of ailing companies often have very high yields between the time the price drops and when dividends are ultimately cut. In addition, there should be a one-to-one relationship between yield and risk — higher yield assets are riskier.

While the relationship between risk and yield in an efficient market makes sense, my research suggests that yield and risk often diverge. We can easily track their relationship using the implied volatility of options prices to provide an estimate of risk. When the relationship between yield and risk suggested that high-yield bonds were less risky than

long-term U.S. Treasuries last fall, this seemed absurd to many readers. Today, with the U.S. being threatened with downgrade by ratings agencies, this idea is less radical. In the current market, certain types of yield remain high relative to their associated risk levels. Dividend yields from telecoms, utilities, pharmaceuticals, high-yield bond income and MLP income are disproportionately high, which is why these asset classes are the building blocks of the ultimate income portfolio.

By creating portfolios specifically engineered to provide maximum total yield at specific risk levels, and by ensuring that the projected risk levels are consistent with options prices, we can create high-yield portfolios at targeted risk levels.

In retrospect, it may not seem all that surprising that it was possible to build a portfolio with a 9.7% total yield in mid-2010. The more than 30% rise in the market since then suggests that the market was substantially under-priced at the time. Furthermore, volatility levels were high across the stock market, which in turn provided attractive premia to option sellers. It is, of course, reassuring to see that the original portfolio provided its expected income as well as some additional return from capital appreciation.

Given that the market has risen as much as it has since the previous article was written (with a corresponding reduction in volatility), it is quite impressive that it is still possible to build a portfolio with projected total yield of 8.7% at these risk levels without relying too heavily on high-yield bonds.

The general strategy of maximizing portfolio yield versus risk is conceptually sound and has thus far provided performance that supports the approach. In addition, optimal yield portfolios can be created for risk levels across the spectrum. For income-focused investors, this approach is compelling and will provide substantial income levels at fairly modest levels of portfolio risk.

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