



The Ultimate Income Portfolio Revisited

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Rising interest rates will be unkind to income-generating assets and the investors who depend on them in retirement. My ultimate-income portfolio (UIP) provides a solution to this problem. It has reliably produced high income and low volatility with respect to the stock market, and its performance is likely to continue, even if rates rise further.

In July 2010, I introduced a novel approach to building an income portfolio. My goal was to construct a portfolio with the maximum level of income at any individual investor's appropriate risk level. In each of the following two years, I examined its performance and modified the portfolio for the next year. This article, the fourth in this series, starts with a brief summary of the approach, followed by an analysis of its performance over the past year, and concludes with a new iteration of the portfolio for the coming year and a summary of lessons learned so far.

In my approach to constructing the UIP, summarized [here](#), I start with analyzing the universe of income-producing assets to determine the portfolios with the highest yield for a given level of risk (defined as volatility). This creates an efficient frontier of yield versus risk and incorporates the value of diversifying across asset classes. I then analyze the value of selling call options against taking positions for which options are actively traded. Because there no options are traded on mutual funds, the portfolios are made up of stocks, exchange-traded funds (ETFs), real-estate investment trusts (REITs) and master-limited partnerships (MLPs).

This approach focuses on elements of portfolio design that are directly observable and stable over time. Yield is observable and persistent. Risk is also directly observable when options are traded on an asset. Implied volatility, based on the prices of options, is the market's consensus estimate for future risk. The income that is derived from selling covered calls is also directly measurable. By contrast, total return is not stable over time, and estimates of total return are more uncertain than estimates of income. No matter how good our models are, the expected total return from a portfolio is not directly observable, because the equity risk premium is not observable.

Observable measures are superior to unobservable ones because they lower the risk of estimating future returns. As I have [discussed](#), income investing is attractive because estimates of future income are more accurate than those of total returns.

Lower estimation risk does not reduce other sources of portfolio risk, nor does my strategy imply that an income portfolio will outperform over any timeframe. We would not have expected that an income strategy would shine on a total return basis during 2013, when the S&P 500 increased 16% on a price

basis. Nor has it. On the other hand, as I will explain in the next section, my UIP provided the projected level of income and volatility.

Review of last year's portfolio

Last year's portfolio, published on Sept. 4, 2012, was primarily allocated to high-yield bonds (20%), telecom stocks (18%), MLPs (23%), Treasury bonds (15%) and utilities (12%). Two additional holdings were an 8% allocation to a closed-end fund (EOD) and a 4% allocation to Astrazeneca, a major pharmaceutical company.

Ultimate Income Portfolio in at the start of September of 2012

Name	Ticker	Current Yield	Percentage of Funds
iShares IBOXX High Yield Bond Fund	HYG	6.9%	20%
Wells Fargo Global Dividend Opportunity	EOD	13.6%	8%
France Telecom	FTE	11.8%	5%
Duke	DUK	4.6%	6%
Con Ed	ED	3.9%	6%
Boardwalk Pipeline Partners	BWP	7.9%	6%
Windstream	WIN	10.3%	5%
Astrazeneca	AZN	6.0%	4%
Centurylink	CTL	6.9%	4%
Frontier Communications	FTR	8.6%	4%
Kinder Morgan	KMP	6.0%	4%
Enterprise Products Partners	EPD	4.8%	4%
Calumet Specialty Products	CLMT	8.6%	5%
Navios Maritime Partners	NMM	12.5%	4%
Vanguard Extended Duration Treasury	EDV	2.9%	5%
iShares Barclays 1-3 Year Treasury	SHY	0.5%	10%

In my analysis, I determined that it was attractive to sell call options against most of these holdings. The yield of this portfolio was 6.98% when published. At the end of August 2013, the yield was 6.76%.

The total return of this portfolio for the 12-month period from September 2012 through August 2013 was 1.02%. The price declines in a number of these assets offset the substantial income stream. The past year was bad for telecoms, with France Telecom (which changed its ticker from FTE to ORAN during the year) declining 20.2% (including dividends), CenturyLink (CTL) declining 15.6% and cutting its dividend and FTR eking out a return of 2.4%, along with cutting its dividend. Utilities and high-yield bonds have been essentially flat. The only strong-performing asset class in the portfolio over this period was MLPs, with CLMT and EPD both returning more than 16%.

Along with the price gains and income from the portfolio, there was also the income from selling call options against these holdings. For the options that have expired already, this income is fully realized. For the options that expire in January 2014, not all of the income is realized. Adjusting for options that will not expire until January 2014, the realized option yield over the past year was 1.6%.

Covered-call options sold against September 2012 portfolio

Name	Ticker	Current Price	Strike Price	Expiration Date	Bid for Call Option	Annualized Yield from Call Premium
iShares IBOXX High Yield Bond Fund	HYG	\$92.15	\$93.00	03/16/13	\$0.30	0.59%
Wells Fargo Global Dividend Opportunity	EOD	\$8.26				
France Telecom	FTE	\$14.02	\$15.00	02/16/13	\$0.35	5.27%
Duke	DUK	\$65.47	\$70.00	01/18/14	\$2.30	2.52%
Con Ed	ED	\$61.43	\$65.00	01/18/14	\$2.10	2.45%
Boardwalk Pipeline Partners	BWP	\$26.88	\$30.00	03/16/13	\$0.15	1.01%
Windstream	WIN	\$9.73	\$10.00	01/18/14	\$0.54	3.98%
Astrazeneca	AZN	\$47.28	\$50.00	01/18/14	\$2.50	3.79%
Centurylink	CTL	\$42.26	\$45.00	01/18/14	\$1.70	2.88%
Frontier Communications	FTR	\$4.63	\$5.00	01/18/14	\$0.30	4.65%
Kinder Morgan	KMP	\$81.84	\$85.00	01/18/14	\$2.52	2.21%
Enterprise Products Partners	EPD	\$52.79	\$55.00	01/18/14	\$2.00	2.72%
Calumet Specialty Products	CLMT	\$27.60	\$30.00	02/16/13	\$0.50	3.82%
Navios Maritime Partners	NMM	\$14.18	\$15.00	03/16/13	\$0.45	5.76%
Vanguard Extended Duration Treasury	EDV	\$127.05				
iShares Barclays 1-3 Year Treasury	SHY	\$84.45				

The aggregate total return for the UIP since the last update to this portfolio in September 2012 was 3.2%, which is the sum of a -4.77% price return, realized income distributions of 6.32% and option income of 1.6% realized to date. These return totals are based on the prices at the time the article was written last year — not the prices on the date that the article was published or the prices on the last day of August 2013. Using those dates will produce slightly different results.

The results from the UIP over the last year were lower than expected, considering the S&P 500 has returned an impressive 18.5% over the 12-month period through August 2013. But the S&P 500 and other equity indices are not appropriate benchmarks for this portfolio. The UIP was projected to have a risk level that is 60% of the S&P 500's risk level, so a 60%/40% (S&P 500/AGG) is a better return benchmark. This 60/40 portfolio had a 9.7% return over the 12-month period through August 2013.

A key distinction between a generic stock/bond portfolio like the 60/40 and the UIP is that the performance of the 60/40 is determined by the return of the S&P 500. The 60/40 portfolio has an r-squared of 98% with respect to the S&P 500. The r-squared of the UIP with respect to the S&P 500 is 60%. In other words, there will be a high level of tracking error between the UIP and the equity markets.

Summary results for the UIP by year since inception are provided in the appendix.

The UIP for 2014

As in the past, my goal in designing the UIP this year is to have 60% of the risk of the S&P 500, a high yield and at least a modest positive correlation to 10-year Treasury yield. The implied volatility of at-the-money put options, which is the best estimate of expected volatility for the equity market, is 16% for SPY for options expiring in March of 2014. The trailing three-year volatility for SPY was 13.17%, so the near-term outlook is for increased volatility into next year.

Starting with a broad palette of income-generating assets, I ran optimizations to determine a portfolio with the target properties. The optimal portfolio that met the desired criteria is shown below.

Ultimate Income Portfolio for 2013-2014

Name	Ticker	Weight	Yield
iShares Short-Term Bond	SHY	15.0%	0.3%
iShares High Yield Bond	HYG	10.5%	6.5%
iShares S&P U.S. Preferred Stock	PFF	10.0%	5.8%
iShares Corporate Bond	LQD	9.0%	3.9%
Windstream Holdings	WIN	5.0%	11.8%
SPDR S&P International Dividend	DWX	5.0%	6.8%
Wells Fargo Global Dividend	EOD	5.0%	11.6%
Calumet Specialty Product Partners	CLMT	5.0%	9.2%
Kinder Morgan Energy Partners	KMP	5.0%	6.6%
Seadrill	SDRL	5.0%	7.8%
iShares Mortgage REIT	REM	5.0%	15.3%
Boardwalk Pipeline Partners	BWP	5.0%	7.2%
Vanguard Extended Duration Bond	EDV	5.0%	3.8%
National Grid PLC	NGG	5.0%	5.4%
Frontier Communications	FTR	3.0%	9.2%
Wisdom Tree Global Real Estate	DRW	2.5%	11.1%

This portfolio has a weighted average yield of 6.5% and a trailing three-year volatility of 8%, which was 61% of the volatility of the S&P 500 over this period. When I simulate this portfolio in my Monte Carlo analysis tool, Quantext Portfolio Planner (QPP), and assume 16% volatility for the S&P 500 (to match

the implied volatility in put options expiring in March 2014), the expected volatility for this portfolio is 11%, which is 69% of the expected volatility of the S&P 500.

The projected volatility is higher relative to that of the S&P 500 than the trailing volatility (69% vs. 60%). I compared these volatilities for the individual funds, partnerships and stocks that make up this portfolio. For most of these, the longest-dated options expire around March 2014.

Historical, expected, and option implied volatility

Name	3 Year Volatility	Expected Volatility	Option Implied Volatility
iShares High Yield Bond	8.7%	10.6%	14.9%
iShares Corporate Bond	5.9%	7.2%	10.7%
iShares Short-Term Bond	0.6%	0.7%	2.1%
Vanguard Extended Duration Bond	24.6%	30.0%	NA
Wells Fargo Global Dividend	14.8%	18.0%	NA
iShares S&P U.S. Preferred Stock	7.5%	9.1%	17.3%
Wisdom Tree Global Real Estate	20.4%	24.9%	NA
SPDR S&P International Dividend	20.5%	20.9%	22.6%
Boardwalk Pipeline Partners	18.4%	22.4%	21.8%
Calumet Specialty Product Partners	31.0%	37.8%	31.3%
iShares Mortgage REIT	15.2%	18.5%	21.1%
Windstream Holdings	23.5%	28.7%	24.8%
Frontier Communications	26.3%	32.1%	28.4%
National Grid PLC	13.8%	16.8%	13.3%
Kinder Morgan Energy Partners	15.1%	18.4%	19.8%
Seadrill	29.7%	36.1%	21.8%

My biggest concern is that the simulated volatility is substantially lower than the option implied volatility for high-yield bonds, preferred stocks and corporate bonds. The options market projects markedly higher volatility than the model for these key income-generating asset classes. As a result, I limited the allocations to preferred shares and high-yield bonds. Without this constraint, the optimized portfolio would have substantially higher allocations to both of these asset classes.

The disagreements between implied and future volatility notwithstanding, the volatilities for the portfolio match very closely. There is an 89% correlation between the simulated and the implied volatilities for the holdings that have options on them. This is due to continuity in volatility between the past and future, as evidenced by the observation that the correlation between three-year trailing volatility and implied volatility is also 89%.

The final step in constructing the portfolio is to determine how much additional income can be derived from selling call options. I selected option strike prices just above the current prices of the assets in the portfolio, in order to maximize income. For several of the holdings, there are no options. I have also ignored options on short-term bonds because their prices are too low to be worth the trouble.

Option premiums from selling covered calls

Name	Price	Call Expiration	Call Strike	Bid Price	Effective Yield
iShares High Yield Bond	\$91.06	Mar-14	\$92.00	\$0.88	0.96%
iShares Corporate Bond	\$111.38	Mar-14	\$112.00	\$1.20	1.07%
iShares Short-Term Bond	\$84.20				
Vanguard Extended Duration Bond	\$92.17				
Wells Fargo Global Dividend	\$7.22				
iShares S&P U.S. Preferred Stock	\$37.70	Apr-14	\$38.00	\$0.55	1.45%
Wisdom Tree Global Real Estate	\$27.60				
SPDR S&P International Dividend	\$46.34	Mar-14	\$47.00	\$1.00	2.13%
Boardwalk Pipeline Partners	\$29.70	Mar-14	\$30.00	\$0.90	3.00%
Calumet Specialty Product Partners	\$29.83	Feb-14	\$30.00	\$1.55	5.17%
iShares Mortgage REIT	\$12.26	Apr-14	\$13.00	\$0.05	0.38%
Windstream Holdings	\$8.48	Feb-14	\$9.00	\$0.15	1.67%
Frontier Communications	\$4.35	Feb-14	\$4.50	\$0.15	3.33%
National Grid PLC	\$58.47	Mar-14	\$60.00	\$1.10	1.83%
Kinder Morgan Energy Partners	\$79.75	Mar-14	\$80.00	\$3.15	3.94%
Seadrill	\$46.76	Apr-14	\$47.00	\$2.10	4.47%
Portfolio Weighted Yield			1.59%		

An option's effective yield is its offer price divided by the current price of the fund or stock. Selling these call options provides an additional 1.59% in income for the portfolio. All of these options expire by April 2014. At that time, an investor would sell additional call options on the holdings for the balance of the year. To be conservative, I have not estimated the additional income that would be derived from

those options.

When the 6.5% yield and additional 1.6% in call income are combined, the total portfolio yield is 8.1% with a trailing 3-year volatility of 60% of the S&P 500's volatility and a projected volatility that is 69% of the S&P 500's. This portfolio's returns have a 15.9% correlation with 10-year Treasury bond yield, which makes it nearly interest-rate neutral. QPP generates an expected total return for this portfolio of 8.6%. The expected return for the UIP comes from the yield and the call option premium, which is precisely the goal of the approach. The expected total return for the S&P 500 is assumed to be 8.3% per year (the baseline setting for QPP), and the volatility for the S&P 500 is set to 16% to match the option-implied volatility. All other expected returns and risks are generated by the model.

The year ahead

The stock market has surged in the past year, and investors have dumped fixed-income assets and many income-oriented asset classes. While this resulted in a disappointing total return for income strategies, the result is that one can build high-income portfolios at low levels of risk. For investors who are in the accumulation phase of their careers, this is of considerable benefit. For investors who are drawing income, the slight decline in the market value of portfolios like the UIP is of little concern. They can live on the income. While it is emotionally reassuring to see the market value of one's portfolio rise, this is not the goal of a portfolio designed to provide the maximum possible level of income.

Over the four years that I have been tracking this strategy, we have seen interest rates at historically low levels, with bond yields making life harder for investors relying on income generated by their portfolios. As the UIP has demonstrated, however, a properly designed portfolio provided income levels comparable to the expected total return of equities (on the order of 8% per year) with considerably less risk than that of the S&P 500. The conventional wisdom is that income-oriented asset classes will decline as interest rates rise, so a portfolio that yields 8% per year is very compelling.

Appendix: Expected and realized risk and yield by year for the UIP

In the table below, I have summarized the projected risk, return and yield for the UIP for each year along with the subsequent results over the next 12 months. I have included the 2013 UIP's projected performance as well.

Performance statistics

Expected Yield When Constructed	Realized Total Return (12 months)	Realized Total Yield (12 months)	Projected Volatility	Realized Volatility	
2010 UIP	9.70%	14.80%	9.70%	21.00%	8.00%
2011 UIP	8.70%	10.50%	9.30%	15.20%	9.30%
2012 UIP	9.00%	2.17%	7.92%	14.90%	9.24%
2013 UIP	8.07%	n/a	n/a	10.98%	n/a

These results tell an interesting story. The realized yields (including income from call option premia) were very close to the original projected yields. The largest difference was in the last 12 months, with realized yield at 7.92% and expected yield at 9.00%. The realized volatilities have been consistently and substantially lower than projected volatilities due to the decline in market volatility over this four-year period.

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