WILLIS INVESTMENT COUNSEL
Principled Investing

November 8, 2016

TARGETED RATE OF RETURN AND ASSET ALLOCATION IN A LOW RETURN WORLD

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PURPOSE OF MEMO

The purpose of this memo is risk management in a possible continued low interest rate world. Risk management requires us to think about a realistic rate of return target in conjunction with current economic and market conditions, current valuation levels, and the level of interest rates. Revisiting investment policies and targeted returns is especially important for those who prefer less portfolio volatility than the broad stock market. We conclude inflation plus 4.00% may be unrealistic, especially if a "traditional" equity allocation of only 60 – 70% is preferred.

HISTORICAL SETTING

Thinking about asset allocation, desired stability of portfolio values, and growth to offset inflation is a forward-looking exercise. We have no choice but to make some judgements about a range of possible portfolio returns. Thinking about a range of returns and outcomes is fundamental to risk management. This memo shares some of WIC's thinking on what it takes to achieve **an inflation + 4.00% return target** (i.e., 6.00% nominal if inflation is 2.00%).

Because of current market conditions, especially historically low interest rates, achieving the level of returns of the last 30 years could be very difficult to do. This has become one of the most challenging problems throughout portfolio management. One should not simply look at the last 30 years and extrapolate future returns. Lower returns may very well be in the offing.

We believe a targeted return of inflation plus 4.00% may be incongruent with a preference for relatively stable portfolio values. Herein, we explain why we believe returns going forward could be meaningfully lower than historical averages, and why many targeted returns need to be revisited to reflect that possibility. This thought process is fundamental to risk management.

[1] It is fairly common in the institutional portfolio management world, including for endowment and foundation funds, to find a targeted return for diversified portfolios of inflation plus 4.00 – 5.00%. *Bloomberg*, Suzanne Woolley, 10/26/16 reviewing *Research Affiliates* study entitled Capital Market Expectations.

BOND RETURNS – could provide only a 2.50% return +/-

Mathematically, bond prices rise when interest rates fall. Beginning around 1981, interest rates have steadily declined causing bond prices to rise. We have been in a 30 year bull market in bonds driven by falling interest rates; and driven by persistently falling inflation rates. Over the next 5-10 years, it is almost impossible for bonds to provide the level of returns they have over the last 30 years. Bond returns are essentially the sum of the current yield (driven by the level of interest rates) and price change (driven by the change in interest rates); and to a lesser extent the change in credit spreads. While no one can predict the direction or magnitude of change with interest rates, we can think about three possible interest rate paths over the next 3 – 5 years:

Rates decline – The current yield-to-maturity for good quality, investment-grade bonds is approximately 2.50%; that 2.50% yield, plus a modest increase in bond prices, might produce an annual bond return of approximately **3.00%.**

Rates change little – Starting with that same 2.50% yield, and assuming no change in bond prices (given no change in rates), bond returns might approach **2.50%.**

Rates rise modestly – Reflecting the gradually rising rate environment expected by the Federal Reserve, and again starting with a 2.50% yield, plus a potential decline in bond prices (with rising rates), partially offset by gradually rising yields, bond returns could average approximately **2.25%.**

We could attempt to put probabilities on the above interest rate paths and possible outcomes and develop an expected values analysis; but to keep this conceptual, let's just assume bond returns will average only **2.50%** over the next few years.

STOCK RETURNS – could provide only a 4.00 – 6.00% return, far less than historical averages

Part of risk management is accepting how difficult it is to reliably forecast equity market returns. Nonetheless, we have to make judgements and assign some probabilities to potential outcomes (even if intuitively). Conceptually, over time, stock returns are a function of current dividend yields, growth in earnings, and the PE multiple applied to those earnings. While it is not this mechanical, precise, or formulistic, we can think about possible future equity returns with this formula: [2]

*Equity returns = today's dividend yield + expected earnings growth + change in PE multiple**

**PE multiple* is stock price / company's earnings; it is a multiple of earnings; a valuation metric

[2] This is *The John Bogle Expected Return Formula;* it was recently reviewed on September 13, 2016 by Ben Carlson at www.awealthofcommonsense.com. Also see interview with Bogle about this formula at http://beta.morningstar.com/videos/772785/Bogle-Forecasts-Low-Stock-and-Bond-Market-Returns.

For example, today's dividend yield on the S&P 500 is about 2.00%. Therefore:

- If there is zero earnings growth over the next several years, and no change in the PE multiple, then stock returns might only average ~**2.00%,** which would only be the dividend yield (no price component return).

- If earnings growth is 2.00%, and there is no change in the current PE multiple, stock returns could average ~**4.00%** (2.00% from the dividend + 2.00% from earnings growth).

- If there is 2.00% annual earnings growth, and the market's expectation for growth increases along with a generally positive assessment of the investment landscape, then the PE multiple might increase a bit from its current generous level thereby driving potential total returns above 4.00% -- maybe to **5.00 – 6.00%.**

- If there is 5.00% annual earnings growth, and the market's expectation for growth increases along with a generally positive assessment of the investment landscape (maybe stable to low interest rates or a more pro-business White House) then the PE multiple might increase further driving potential total returns to approximately **8.00%** (2.00 + 5.00 + 1.00).

The next page posits how the first three scenarios might be overly-conservative.

Digging a little deeper, it's instructive to think about how each of the fundamental elements that drive stock returns might develop in the coming years.

Elements of future stock returns. For ease of reference, the basic equation that helps frame potential stock market returns is *Equity returns = today's dividend yield + expected earnings growth + change in PE multiple.*

The dividend yield is relatively observable and knowable. Today, it is ~2.00%.

Earnings growth is largely a function of demographics, the worker base, productivity of those workers, operating margins, and how much of corporate profitability is consumed by taxes. Knowing this is overly-simplistic, and purposefully trying to be conservative with this risk management exercise, we offer these observations:

- Demographics are now a headwind. The global working population is expected to grow slower than in decades past. There are likely to be fewer workers and that could mean "fewer widgets produced", depending on productivity. At the margin, this does not appear to be a positive earnings driver we can rely on.
- Productivity has been a key driver in years past (rising worker output per worker input). It is a mystery to many economists how with all the advances in technology the rate of productivity has been *slowing*. While we are not ready to conclude this is a secular change, at the moment we cannot put it down as a reliable earnings growth driver.

- Operating margins are cyclical and usually mean revert. It is classic economics - high margins attract competition. Today, operating margins are at, or near, a cyclical peak. Therefore, we cannot look to ever higher margins from this point in the cycle as a reliable driver of earnings growth (but see next page). Until we go through the next inevitable cycle, this is a headwind to future earnings growth.
- Tax rates. It is certainly possible tax rates could be reduced with a Trump administration. Given the voter base, chronic budget deficits, and a growing populism, we are not going to count on lower taxes being a sustainable driver of higher profits.

Earnings growth conclusion. It is noteworthy that the central banks of developed economies are struggling to stimulate their economies - below average GDP growth continues to be pervasive. For the foreseeable future, and for risk management purposes, we find it challenging to make a strong case for sustained earnings growth much greater than 3.00 – 5.00% (but see next page).

The PE multiple is a significant determinant. Over the last 30 years, an expanding PE multiple was a significant driver of strong stock returns. PE multiples tend to increase when interest rates decrease. That falling interest rate PE tailwind is no longer present.

The PE multiple is a nebulous amalgam of (i) extrapolation of current trends, (ii) crowd psychology, (iii) expected future growth rates of earnings, (iv) interest rates, and (v) inflation. The PE multiple is inherently cyclical because the five points just listed are inherently cyclical. Currently, the PE multiple is relatively "high", at least generous. Therefore, for this risk management exercise, we do not want to count on further PE expansion to drive stock returns.

CONCLUSION

If bonds indeed provide only a 2.00 – 3.00% return over the next 5-10 years, and stocks only provide 4.00 – 6.00%, then a "conservative" mixture of 50% stocks/50% bonds might only generate an annualized return of approximately **3.00 – 4.50%.** Following the same theme:

- An asset allocation of 60% stocks/40% bonds might generate an annualized return of ~ **3.20 - 4.80%**
- An asset allocation of 70% stocks/30% bonds might generate an annualized return of ~ **3.40 - 5.10%**
- An asset allocation of 80% stocks/20% bonds might generate an annualized return of ~ **3.60 - 5.40%**
- An asset allocation of 90% stocks/10% bonds might generate an annualized return of ~ **3.80 - 5.70%**

All of these stock/bond mixtures **suggest a nominal portfolio return less than 5.75%**. To aim for a return > 5.00%, a higher than "normal" stock allocation is indicated.

This rate of return math is challenging. A 5.00% nominal return, minus 1.00% inflation, generates a 4.00% real return. If one anticipates 2.00% inflation, then it will take a 6.00% nominal return to generate a 4.00% real return. The above range of asset allocation mixtures, and the tables on the following pages, indicate why the rate of return math is challenging, and why a "higher than normal" equity allocation appears necessary. It is important to think long and hard whether that "higher than normal" equity allocation is appropriate.

Where could we be wrong? Where could we be too conservative? Some possibilities follow:

- Market history is full of examples that valuation (PEs) can continue to expand much longer than reason would indicate (an example of the futility of market timing).
- Market history is likewise full of examples that "past-due corrections" don't occur when one thinks they should (another reason why market timing is almost futile).
- Like Europe and Japan, the U.S. benchmark 10-year U.S. Treasury yield could fall, driving bond returns higher than we outline above; lower interest rates can translate into higher PE multiples, driving stock prices higher than we expect.
- Productivity can languish and then surge; productivity could again become a driver thereby increasing operating margins and earnings growth.
- Emerging markets could contribute more to global demand than anticipated.
- Companies have a way of adapting to changing conditions. The above earnings growth assumptions are low compared to long-term averages of approximately 6.50 – 7.90%.[3]
- The Trump Administration could cause increased optimism and *animal spirits*.

Risk is an important part of this analysis. One way to think about risk here is to resist a simple extrapolation of historical returns and think about the consequences of unexpected outcomes. The purpose of the portfolio, obligations the portfolio is relied on for, the consequences of the portfolio being unable to satisfy those obligations in an unexpected down market, all have to be considered when one is evaluating increasing the equity allocation to increase the odds of attaining a targeted return.

PORTFOLIO RATE OF RETURN (ROR) TABLES

The tables that follow provide a rough guide of what a stock/bond portfolio rate of return (ROR) might be assuming a range of annualized bond returns (across the top of the table), and a range of annualized stock returns (down the left side of the table). The intersection of a given bond and stock return, using the weights in the table's title, provides an estimate of nominal total portfolio return. For example, for a 50% stock/50% bond portfolio, where a 3.00% bond return is assumed in conjunction with a 6.00% stock return, **the total portfolio estimated return is 4.50%.** The red font indicates those nominal (pre-inflation) returns less than 4.50%. [4]

Allocation: 50% Stocks / 50% Bonds						
		Bond ROR				
		1.0%	2.0%	3.0%	4.0%	5.0%
Stock ROR	0.0%	0.5%	1.0%	1.5%	2.0%	2.5%
	2.0%	1.5%	2.0%	2.5%	3.0%	3.5%
	4.0%	2.5%	3.0%	3.5%	4.0%	4.5%
	6.0%	3.5%	4.0%	4.5%	5.0%	5.5%
	8.0%	4.5%	5.0%	5.5%	6.0%	6.5%

[3] Referring to New York University earnings growth data since 1960, the growth rate has averaged 6.50-7.90%. See www.damodaran.com .Therefore, for balance, one could argue even in a slow-GDP-growth-world earnings growth could still average 4.50-5.50%.

[4] See 4.61% estimated 10 year return derived from Research Affiliates cite on page 7.

Allocation: 60% Stocks / 40% Bonds						
		Bond ROR				
		1.0%	2.0%	3.0%	4.0%	5.0%
Stock ROR	0.0%	0.4%	0.8%	1.2%	1.6%	2.0%
	2.0%	1.6%	2.0%	2.4%	2.8%	3.2%
	4.0%	2.8%	3.2%	3.6%	4.0%	4.4%
	6.0%	4.0%	4.4%	4.8%	5.2%	5.6%
	8.0%	5.2%	5.6%	6.0%	6.4%	6.8%

Allocation: 70% Stocks / 30% Bonds						
		Bond ROR				
		1.0%	2.0%	3.0%	4.0%	5.0%
Stock ROR	0.0%	0.3%	0.6%	0.9%	1.2%	1.5%
	2.0%	1.7%	2.0%	2.3%	2.6%	2.9%
	4.0%	3.1%	3.4%	3.7%	4.0%	4.3%
	6.0%	4.5%	4.8%	5.1%	5.4%	5.7%
	8.0%	5.9%	6.2%	6.5%	6.8%	7.1%

Allocation: 80% Stocks / 20% Bonds						
		Bond ROR				
		1.0%	2.0%	3.0%	4.0%	5.0%
Stock ROR	0.0%	0.2%	0.4%	0.6%	0.8%	1.0%
	2.0%	1.8%	2.0%	2.2%	2.4%	2.6%
	4.0%	3.4%	3.6%	3.8%	4.0%	4.2%
	6.0%	5.0%	5.2%	5.4%	5.6%	5.8%
	8.0%	6.6%	6.8%	7.0%	7.2%	7.4%

Allocation: 90% Stocks / 10% Bonds						
		Bond ROR				
		1.0%	2.0%	3.0%	4.0%	5.0%
Stock ROR	0.0%	0.1%	0.2%	0.3%	0.4%	0.5%
	2.0%	1.9%	2.0%	2.1%	2.2%	2.3%
	4.0%	3.7%	3.8%	3.9%	4.0%	4.1%
	6.0%	5.5%	5.6%	5.7%	5.8%	5.9%
	8.0%	7.3%	7.4%	7.5%	7.6%	7.7%

Compare the foregoing rates of returns to Research Affiliates' expected returns for the next ten years developed at www.researchaffiliates.com/en_us/asset-allocation.html, along with their *Capital Markets Expectations* paper. Research Affiliates expect annualized *real* returns over the next ten years to average only:

- 1.10% for the S&P 500
- 5.80% for international stocks (EAFE)
- 0.50% for the U.S. bond index (Barclays Aggregate)
- 7.30% for emerging markets

Average annualized real returns over the next ten years.

Looking at a fairly common and relatively conservative mixture of 40% S&P 500, 30% EAFE, 10% emerging markets, and 20% bonds, the suggested Research Affiliates' 10-year average annualized *real* return is 3.01%. Adding their 1.60% inflation assumption to 3.01% provides the expected ***nominal* return of only 4.61%.**

Developing realistic investment policies, estimating a realistic rate of return target, and designing portfolios to reach the targeted return becomes even more challenging when one considers we increasingly live in a world where (i) inter-related global commerce exposes the U.S. to economic and geopolitical shocks originating elsewhere, (ii) the temptation to take on inappropriate and misunderstood risk to increase returns is hard to resist, (iii) money-market funds and bank CDs provide near-zero yields, (iv) living to 90-95 is becoming unremarkable, and (v) income taxes will likely continue to take a substantial bite out of portfolio returns and retirement income. Therefore, risk management must take on more and more importance. Part of that risk management is thinking about the consequences of unexpected outcomes and resisting simple extrapolation of history.

For more commentary, we invite you to visit our website at www.wicinvest.com.

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