Alpha, Beta, and Now... Gamma

By David Blanchett and Paul Kaplan *Mon, Sep 24, 2012*

A new paper from two Morningstar researchers focuses on the value of making smart decisions in five aspects of retirement income planning. An excerpt of the paper is reprinted here.

When it comes to generating retirement income, investors arguably spend the most time and effort on selecting 'good' investment funds/managers—the so-called alpha decision—as well as the asset allocation, or beta, decision.

However, alpha and beta are just two elements of a myriad of important financial planning decisions, many of which can have a far more significant impact on retirement income.

We introduce a new concept called "Gamma" designed to quantify the additional expected retirement income achieved by an individual investor from making more intelligent financial planning decisions.

Gamma will vary for different types of investors, but in this article we focus on five fundamental financial planning decisions/techniques:

- A total wealth framework to determine the optimal asset allocation
- A dynamic withdrawal strategy
- Incorporating guaranteed income products (i.e., annuities)
- Tax-efficient decisions
- Liability-relative asset allocation optimization

We estimate a retiree can expect to generate 29% more income on a "utility-adjusted" basis using a Gamma-efficient retirement income strategy when compared to our base scenario, which assumes a 4% constant real withdrawal and a 20% equity allocation portfolio.

This additional income is equivalent to an annual arithmetic return increase of +1.82% (i.e., Gamma equivalent alpha), which represents a significant improvement in portfolio efficiency for a retiree.

Unlike traditional alpha, which can be hard to predict, we find that Gamma (and Gamma equivalent alpha) can be achieved by anyone following an efficient financial planning strategy.

Alpha and beta: Defining value

The notions of beta and alpha (in particular alpha) have long fascinated financial advisors and their clients. "Alpha" allows a financial advisor to demonstrate (and potentially quantify) the excess returns generated, which can help justify fees. In contrast, beta (systematic risk exposures) helps explain the risk factors of a portfolio to the market, i.e., the asset allocation.

Quantifying beta

The importance of the asset allocation decision (the beta decision) has been one of the most controversial and emotional subjects of the past 25 years. The firestorm began with Brinson, Hood, and Beebower (1986), which finds that the variance of a portfolio's asset allocation, or policy return, explained 93.6% of the variation in the 91 large U.S. pension plans tested. Brinson, Singer, and Beebower (1996) confirm the results in the original paper, but found a slightly lower number, 91.5%.

While the results of the Brinson studies became an accepted and often misinterpreted "truth," other researchers were more circumspect. In an important but little noticed paper, Hensel, Ezra, and Ilkiw (1991), points out that a naïve portfolio must be chosen as a baseline in order to evaluate the importance of asset allocation policy. They point out that in the Brinson studies the baseline portfolio is 100% cash so that these studies are demonstrating the self-evident fact that investing in risky assets produces volatile returns. Janke (1997) caused a great deal of debate with an article titled "The Asset Allocation Hoax."

In our view, the debate was nearly settled by Ibbotson and Kaplan (2000), which concluded that "while asset allocation explains about 90% of the variability of a fund's returns over time, it explains only about 40% of the variation of returns across funds." The settling of the debate and the proper interpretation of the "40% of the variation of returns across funds" was finally provided by Xiong, Ibbotson, Idzorek, and Chen (2010), who found that after controlling for interaction effects, about three-quarters of a typical fund's variation in time-series returns comes from general market movement, with the remaining portion split roughly evenly between the specific asset allocation and active management. For an excellent summary of the asset allocation debate, we recommend Ibbotson (2010) and Idzorek (2010).

Quantifying alpha

The concept of alpha is far more difficult to quantify. Sharpe (1992) concludes that style and size explain 80%-90% of mutual fund returns, while stock selection explains only 10%-20%. There have been numerous active versus passive studies, the majority of which suggest that alpha (when correctly measured) likely does not exist after taking fees into account. Therefore, if a financial advisor's value proposition is focused on the notion of "adding alpha" and he or she is not able to generate alpha (which should hold in aggregate), has the advisor still added value? The answer to this question depends on a variety of factors, but primarily the scope of the relationship with the client.

Beyond beta and alpha

If an advisor is paid solely to manage a portfolio of assets, and does nothing else, i.e., offers no additional advice regarding anything other than the investment of the client assets, the concepts of alpha and beta should be relatively good measures of the value of the advisor. However, in more complex engagements, in particular as it relates when providing financial planning services to clients, value can- not be defined in such simple returns as alpha and beta, since the objective of an individual investor is typically to achieve a goal, and that goal is most likely saving for retirement.

It may be that a financial advisor generates significant negative alpha for a client (i.e., invests the client's money in very expensive mutual funds that underperform), but still provides other valuable services that enable a client to achieve his or her goals. While this financial advisor may have failed from a pure alpha

perspective, the underlying goal was accomplished. This is akin to losing a battle but winning the war.

Individual investors invest to achieve goals (typically an inflation-adjusted standard of living), and doing the things that help an investor achieve those goals (i.e., adding Gamma) is a different type of value than can be attributed to alpha or beta alone, and is in many ways more valuable. Therefore, asset-only metrics are an incomplete means of measuring retirement strategy performance.

Gamma factors

In this paper, we examine the potential value, or Gamma, that can be obtained from making "intelligent" financial planning decisions during retirement. A retiree faces a number of risks during retirement, some of which are unique to retirement planning and are not concerns during accumulation. We will explore five different Gamma factors:

1. Total wealth asset allocation. Using human capital in conjunction with the market portfolio to determine the optimal equity allocation. Most techniques used to determine the asset allocation for a client are relatively subjective and focus primarily on risk preference (i.e., an investor's aversion to risk) and ignore risk capacity (i.e., an investor's ability to assume risk). In practice, however, we believe asset allocation should be based on a combination of risk preference and risk capacity, although primarily risk capacity. We determine an investor's risk capacity by evaluating his or her total wealth, which is a combination of human capital (an investor's future potential savings) and financial capital. We can then either use the market portfolio as the target aggregate asset allocation for each investor (as suggested by the Capital Asset Pricing Mode) or build an investor-specific asset allocation that incorporates an investor's risk preferences. In both approaches, the financial assets are invested, subject to certain constraints, in order to achieve an optimal asset allocation that takes both human and financial capital into account.

2. Dynamic withdrawal strategy. The majority of retirement research has focused on static withdrawal strategies where the annual withdrawal during retirement is based on the initial account balance at retirement, increased annually for inflation. For example, a "4% Withdrawal Rate" would really mean a retiree can take a 4% withdrawal of the initial portfolio value and continue withdrawing that amount each year, adjusted for inflation. If the initial portfolio value was $1 million and the withdrawal rate was 4%, the retiree would be expected to generate $40,000 in the first year. If inflation during the first year was 3%, the actual cash flow amount in year two (in nominal terms) would be $41,200. Under this approach, the withdraw amount is based entirely on the initial income target, and is not updated based on market performance or expected investor longevity. The approach we use in this paper, originally introduced by Blanchett, Kowara, and Chen (2012), determines the annual withdrawal amount annually based on the ongoing likelihood of portfolio survivability and mortality experience.

3. Annuity allocation. Outliving one's savings is perhaps the greatest risk for retirees. For example, a study by Allianz Life noted that the greatest fear among retirees is not death (39%) but rather outliving one's resources (61%) (See Bhojwani [2011]). Annuities allow a retiree to hedge away this risk and can therefore improve the overall efficiency of a retiree's portfolio. The contribution of an annuity within a total port- folio framework, (benefit, risk, and cost) must be considered before determining the appropriate amount and annuity type.

4. Asset location and withdrawal sourcing. Tax-efficient investing for a retiree can be thought of in terms of both "asset location" and intelligent withdrawal sequencing from accounts that differ in tax status. Asset location is typically defined as placing (or locating) assets in the most tax-efficient account type. For example, it generally makes sense to place less tax-efficient assets (i.e. those where the majority of total return comes from coupons/dividends taxed as ordinary income), such as bonds, in retirement accounts (e.g., IRAs or 401ks) and more tax-efficient assets (i.e. those where the majority of total return comes from capital gains taxed a rate less than ordinary income), such as stocks, in taxable accounts. When thinking about withdrawal sequencing, it typically makes sense to withdrawal monies from taxable accounts first and more tax- efficient accounts (e.g., IRAs or 401ks) later.

5. Liability-relative optimization. Asset allocation methodologies commonly ignore the funding risks, like inflation and currency, associated with an investor's goals. By incorporating the liability into the portfolio optimization process it is possible to build portfolios that can better hedge the risks faced by a retiree. While these "liability-driven" portfolios may appear to be less efficient asset allocations when viewed from an asset-only perspective, we find they are actually more efficient when it comes to achieving a sustainable retirement income.

For a copy of the entire Blanchett-Kaplan paper, click here.