

The True Impact of Asset Allocation on Returns

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Full article, "Does Asset Allocation Policy Explain 40, 90, or 100 Percent of Performance?" by Roger G. Ibbotson and Paul D. Kaplan, printed in the *Financial Analysts Journal*, January/February 2000

Universal Misunderstanding

From the marketing materials of mutual fund companies and financial planning firms to the mouths of academics and financial representatives, there is a universal misunderstanding of the relationship between asset allocation and performance. The specific claims vary, but financial professionals generally assert that asset allocation is the most important determinant of returns, accounting for more than 90 percent of performance.

This assertion stems from studies by Brinson et al. (1986, 1991), that state, "...investment policy dominates investment strategy (market timing and security selection), explaining on average 93.6 percent of the variation in total plan return." This conclusion has caused a great deal of confusion in both the academic and financial communities. In fact, a survey by Nuttall & Nuttall (1998) demonstrates that out of 50 writers who quoted Brinson, only one quoted him correctly. Approximately 37 writers misinterpreted Brinson's work as an answer to the question, "What percent of total return is explained by asset allocation policy?" and five writers misconstrued the Brinson conclusion as an answer to the question, "What is the impact of choosing one asset allocation over another?"

Nuttall & Nuttall Survey Results	Percent of writers who misinterpret the Brinson work as an answer to the relationship between asset allocation and return level. For example: “One study suggests that more than 91 percent of a portfolio’s return is attributable to its mix of asset classes. In this study, individual stock selection and market timing together accounted for less than seven percent of a diversified portfolio’s return.” Vanguard Group	75%
	Percent of writers who misinterpret the Brinson work as an answer to the impact of choosing one asset allocation policy over another. For example: “A widely cited study of pension plan managers shows that 91.5 percent of the difference between one portfolio’s performance and another’s is explained by asset allocation.” Fidelity Investments	10%
	Other misquotations.	13%
	Percent of writers who accurately quoted Brinson (only one correct interpretation).	2%

Brinson's conclusion has been universally misinterpreted and it's time to set the record straight. This paper will clarify the Brinson studies, detail criticisms of the studies, explain the link between asset allocation and investment returns, and explore the implications for individual investors.

What the Brinson Studies Explain

According to the well-known studies by Brinson et al., more than 90 percent of the *variability* of a portfolio's performance over time is due to asset allocation. Brinson is measuring the relationship between the movement of a portfolio and the movement of the overall market. He finds that more than 90 percent of the movement of one's portfolio from quarter to quarter is due to market movement of the asset classes in which the portfolio is invested.

As mentioned above, these findings have been largely misinterpreted. They have also been criticized.

Criticism

Hansel, Ezra, and Ilkiw (1991) argue that the Brinson results are not informative because bull and bear markets explain most of the variation in returns. In other words, "a rising tide raises all boats." William Jahnke (1997), however, asserts that the Brinson results are irrelevant because Brinson does not ask the right question. Jahnke believes that a more appropriate question would be one that probes the difference in returns between funds. Stevens, Surz, and Wimer (1999) also argue that Brinson is asking the wrong question, but they feel the most relevant question pertains to the relationship between asset allocation and returns, not volatility.

The Asset Allocation Debate	Hansel, Ezra, and Ilkiw: Brinson result not informative since bull and bear markets explain most of variation.
	Jahnke: Brinson studies irrelevant. Need to compare return differences between funds.
	Stevens, Surz, and Wimer: Brinson studies should have asked how much of the return level comes from asset allocation.

In the following paragraphs we will attempt to answer these questions.

Data Sources and Methodology

To help answer the questions above, we look at ten years of monthly returns on 94 balanced mutual funds and five years of quarterly returns on 58 pension funds. The 94 funds are all of the balanced funds in the Morningstar universe that have at least ten years of data ending March 31, 1998. Policy weights for each fund were estimated using returns-based style analysis over the entire 120-month period.

The same type of analysis was performed on quarterly returns of 58 pension funds over the five-year period 1993-1997. However, rather than using estimated policy weights and the same asset class benchmarks for all funds, the actual policy weights and asset class benchmarks of the pension funds were used. In each quarter, the policy weights were known in advance of the realized returns.

Impact of Asset Allocation on Return Differences Between Funds

We answer this question by running a cross-sectional regression of entire-period compound annual fund returns on entire-period compound annual policy returns. For the mutual funds studied, 40 percent of the return difference from one fund to another is explained by policy differences, while for the pension fund

sample the result is 35 percent. Thus, about 40 percent of the return variation between two funds is explained by policy. So, if one portfolio returns *five percent* more than another, then on average about *two percent* of the difference (40 percent of five percent) is explained by the different asset allocation, while the remaining *three percent* difference (60 percent of five percent) is explained by security selection, timing, and fee differences between the funds.

Impact of Asset Allocation on Return Level

To answer this question, we divide the compound annualized asset allocation policy return by the compound annualized portfolio return over a given time period. In other words, we create a portfolio of benchmark asset classes that matches a balanced fund’s asset allocation policy. Then, we divide the return of the benchmark portfolio by the fund’s return. We find that, on average, the policy benchmarks match the actual portfolios, so the ratio is 1.0, or 100 percent. Policy benchmarks match the actual portfolios because, if one averages the universe of funds, one gets the index—on average, active management does not provide a return greater than the index. So, about 100 percent of the return amount, overall, is explained by asset allocation policy.

Measures of Performance	Percent of <i>variability</i> of returns across time explained by asset allocation policy.	90%
	Percent of variation <i>between</i> funds explained by differences in asset allocation policy.	40%
	Percent of return <i>amount</i> explained by asset allocation policy.	100%

Implications for an Individual Investor

In this study, we looked at the impact of asset allocation policy on balanced mutual funds and pension funds. We can extrapolate from the study that for the long-term individual investor who maintains a consistent asset allocation and leans toward index funds, asset allocation determines about 100 percent of

performance—regardless of whether one is measuring *return variability across time*, *return variation between funds*, or *return amount*.

This study has particular significance for individuals using 401(k) plans to save for retirement. A study of year-end 1998 data by the Employee Benefit Research Institute and the Investment Company Institute (ICI) found that approximately 75 percent of 401(k) investors had not changed their equity allocations in the previous two years. And, a June 2000 study by the ICI found that almost half of 401(k) participants expected their 401(k) plan assets to be their primary source of income in retirement. 401(k) investors exhibit long-term, passive investment behavior when managing the bulk of their retirement nest egg. For this group, asset allocation is the dominant determinant of returns on their most vital assets.

In summary, the impact of asset allocation on returns depends on an individual's investing style. For the long-term, passive investor, the asset allocation decision is by far the most important. For the short-term investor who trades more frequently, invests in individual securities, and practices market timing, asset allocation has less of an impact on returns. The impact of asset allocation on performance is directly correlated with investment style.

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