The Myth of Asset Allocation and the Importance of Selection

Contents

Introduction

At GEM we often refer to manager alpha as the "engine" of our outperformance. This is so because, contrary to popular belief, security selection, not asset allocation, is the dominant factor driving relative performance across portfolios. Asset allocation is indeed important in explaining a portfolio's volatility. But over time, it is security selection—and thus manager selection—that separates the wheat from the chaff among institutions. In the following pages, we address the common misunderstanding about asset allocation versus manager selection as the source of portfolio outperformance.

History of a Misunderstanding

Nearly 30 years ago Brinson, Hood, and Beebower ("BHB") published a seminal paper titled "Determinants of Portfolio Performance." The BHB study demonstrated how asset allocation impacts the level and pattern (variability) of a portfolio's return. The authors compared the results of 91 pension funds against a quarterly index of stocks, bonds, and cash. They found that nearly 94% of the *variance* in performance was explained by a simple mix of those three assets. But to this day, those who have not carefully read the BHB paper misconstrue its conclusions about the importance of asset allocation in portfolio performance.

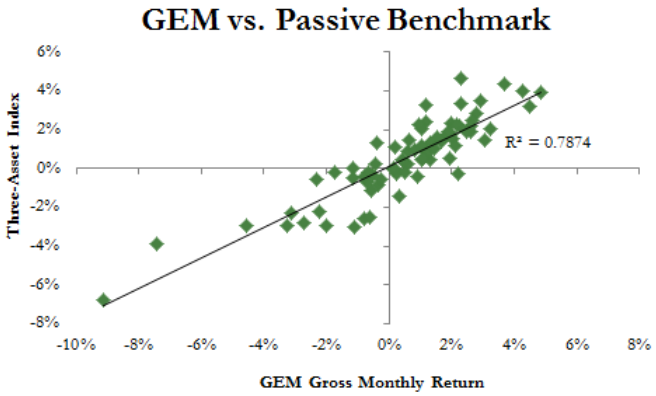
Before continuing, let's examine what it means to explain a substantial amount of the variance in returns. The results of a linear regression produce the commonly used statistic R-squared (R^2), which roughly corresponds to the square of the simple correlation between two variables. So, if a portfolio has a correlation of 0.9 with movements in the S&P 500, a statistician might say that the S&P 500 "explains" roughly 80% of the variance of the portfolio (0.9 x 0.9 = 0.81). Because stocks are the most volatile asset in any institutional portfolio, they drive a substantial portion of the volatility. Note, however, that "variance" and "volatility" are measures of the *pattern* of returns in individual portfolios (or indices, securities); they do not explain the magnitude of differences in returns -- the *relative* returns -- across portfolios. This distinction lies at the heart of GEM's contention that the conventional wisdom is wrong about the import of asset allocation.

If asset allocation explains the preponderance of a portfolio's pattern of return, a related question might be how much of the *level* of return does it explain?. Interestingly, that number actually exceeds 100%. Here's why: In aggregate, investors cannot "beat the market" because, in aggregate, they "are" the market. But to invest in the market, investors incur transactions costs. Thus, investors receive the total return of the market portfolio *less* their costs. Comparing an "aggregate market return minus costs" to cost-free benchmarks will produce the unsurprising result that asset allocation accounts for more than 100% of the returns actually earned.

So far we have considered the importance of asset allocation in explaining the *pattern* of returns (about 90%) and the *level* of returns (about 100%) but have yet to address *relative* returns – the difference in return from one portfolio to the next. A 2000 study by Ibbotson and Kaplan addressed how much asset allocation accounts for *relative* performance among funds. Using a five-asset class framework, the authors nearly replicated the results of previous studies, including BHB, concerning the variation of returns: asset allocation explained about 90% of performance *patterns* and about 100% of the return *level* over time. However, they concluded that asset allocation explained only about 40% of the return *variation among funds*—i.e., the *relative* returns. That is, in explaining why one investment portfolio performed differently from another, asset allocation was much less important than popularly believed.

Why The Performance Pattern Doesn't Matter

As noted above, the variability of any portfolio's most volatile asset (which tends to be equity) is likely to drive the portfolio's return *pattern*. This will be true whether overall results are great or poor. In the 6-1/2 years ended 2013 (i.e. since GEM's inception), a passive portfolio of global stocks, US bonds, and cash has had an R^2 of 79% with GEM's gross performance, or 81% if we exclude private investments, which because of their lagged valuations can reduce observed correlation with public indices.



While GEM's results suggest slightly lower correlation than those of the original Brinson study cited (81% vs. 90%), they are still very high. If a simple and cheap three-asset portfolio can explain about 80% of the variability in our returns, why bother with active management? In a word, "alpha." Over the last 6-1/2 years, GEM's annualized gross performance was 6.4%. The passive three-asset portfolio that "explains" about 80% of the variation in GEM's returns had an annualized return of 0%.

Another way to picture this is to think about how horizon returns converge within asset classes. For the 10 years ended 2012, the return for the S&P 500 was ~7% annualized. The previous 10 years – which didn't include the Global Financial Crisis but did include the Internet bubble – annualized at ~9%. Two percent is a meaningful difference, but not when compared with 5% of alpha. The convergence of returns within asset classes over time also means that the value of an allocation shift cannot be that large. In both of the 10-yr periods, stocks outperformed bonds by about 2% per year, so a 10-point swing in asset allocation would add or detract all of 0.2% to return.

In summary, simple passive portfolios can explain much of the variation, or pattern, in returns over time. The pattern of returns, however, is insufficient to explain the absolute performance of the portfolio – you can replicate the *pattern* and still not come close to the total *return*. Without alpha in the equation, the passive portfolios fall short of actual portfolio returns. Alpha can of course be positive or negative, but it is "un-investable" in that it must be earned (by timing or selection) -- it cannot just be bought passively (like a stock or bond index).

The True Importance of Security Selection

Ibbotson and Kaplan expanded the BHB analysis to include *cross-sectional variation* in results (that is, *relative* returns across active portfolios, controlled for asset allocation). As they noted, "Many people mistakenly thought the Brinson studies answered this question." For the study's mutual fund sample, the 10-year compound annual results of the policy returns explained 40% of the variance in the funds' 10-year compound returns. The remaining 60% was explained by "asset class timing, style within asset classes, security selection, and fees." (Consistent with previous studies, this one also included pension funds and found similar results.)

Brown and Tiu contributed to the research in 2007 and 2010 with a study of over 700 university endowment funds, quantifying the importance of selection in relative performance. Once again, asset allocation was shown to explain the pattern and level of returns with an R^2 of 75%. However, the impact of asset allocation on performance among or *across* funds (relative peer results) was tiny, at about 11%. Security selection explained about 75% of the variation in results across endowments in the sample.

	Time-series R-squared	Cross-sectional R-squared
Asset allocation	74.4	11.1
Market timing	14.6	3.3
Security Selection	8.4	74.7

Summary

Although we are bombarded with the message that "it's all about asset allocation," the fact is, it's not. To be sure, there has been some measure of herding behavior among endowments over the last couple of decades. *Pioneering Portfolio Management* was written almost 15 years ago and "the Yale Model" seems to have become a ubiquitous ambition (albeit not always applied correctly). Over time, endowment portfolios have increased their exposure to alternatives and reduced reliance on publicly traded investments. But, despite ostensibly similar asset allocation approaches, dispersion among institutions remains high. For example, during the most recently available 10-year period, the spread between top and bottom quartile endowments was 1.5% per annum. This difference was particularly meaningful for university endowments, as top-quartile funds exceeded a 5% real return goal by 0.7%, while bottom quartile pools trailed that primary goal by 0.8%.

Whenever the topic of selection versus asset allocation arises, the most common response is that returns over time are all about asset allocation. In one sense, this is true: the pattern and level of portfolio returns are driven by asset allocation. But most institutional investors are concerned with the *relative* returns across institutions, and selection explains the majority of the relative differences. At GEM, manager selection most differentiates us from our peers, and it is the means by which we outperform to our investors' long-term benefit.

References

Brinson, Gary P., Hood, L. Randolph, and Beebower, Gilbert L. "Determinants of Portfolio Performance," Financial Analysts Journal, July-August 1986, pp. 39-44

Brown, Garlappi and C. Tiu, "Asset Allocation and Portfolio Performance: Evidence from University Endowment Funds," Journal of Financial Markets 13 (2): 268-294, 2010

Brown, Garlappi and C. Tiu, "Troves of Academe: Asset Allocation, Risk Budgeting, and Investment Performance of University Endowment Funds," Journal of Financial Markets, 2007

Ibbotson, Roger G., and Paul D. Kaplan, 2000. "Does Asset Allocation Policy Explain 40, 90, or 100 Percent of Performance?" Financial Analysts Journal 56(1): 26-33.

Swensen, D.F. *Pioneering Portfolio Management*. New York: The Free Press; Simon & Schuster, 2000

IMPORTANT NOTES

THESE MATERIALS ARE CONFIDENTIAL AND HAVE BEEN PREPARED SOLELY FOR THE INFORMATION OF THE INTENDED RECIPIENT AND MAY NOT BE REPRODUCED, DISTRIBUTED OR USED FOR ANY OTHER PURPOSE OR SHARED WITH ANYONE IN ANY FORM OR FORMAT. REPRODUCTION OR DISTRIBUTION OF THESE MATERIALS MAY CONSTITUTE A VIOLATION OF FEDERAL OR STATE SECURITIES LAWS AND CERTAIN CONFIDENTIALITY AGREEMENTS TO WHICH THE INTENDED RECIPIENT IS A PARTY.

PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. INDIVIDUAL INVESTOR PERFORMANCE MAY VARY.

This is not an offer to invest or an offer for advisory services; any offers will be made only by means of the Confidential Offering Memorandum. Prospective investors should consult with their own legal, tax and financial advisers as to the consequences of an investment in the GEM Program.

Any opinions expressed herein are based on GEM analysis, assumptions and data interpretations. This compilation is provided to you only in your capacity as a partner or shareholder in a GEM-advised fund and is not for further distribution.

Unless otherwise stated, all GEM-related data presented is an aggregate of GEM-managed funds' data (Funds I, II and III), available as of the date of this report. This information is based on GEM's positions along with information and reports provided to GEM by managers and GEM's analysis thereof, including performance, exposures, and asset allocations. Asset Exposure may represent the holding of an actual investment or a synthetic version thereof. Private investment NAV is cash flow adjusted where current NAV is not yet available.

Market-related data included in charts and graphs is sourced from public, private and internal sources including, but not exclusively: Bloomberg and similar market data sources, central banks, government and international economic data bureaus, private index providers, bond rating agencies, industry trade groups, subscription services, and internal GEM analyses.

Policy Portfolio Weights and Benchmarks

Asset Class	2014 Target	Long-Term Strategic	Range	Benchmark
Global Equity	42%	40%	20-60%	MSCI All Country World Index
Hedge Funds	26%	25%	10-40%	Credit Suisse Hedge Fund Index
Real Assets	22%	25%	10-40%	70% NCREIF/15% MSCI REIT/15% DJUBS Comm. Index
Fixed Income	10%	10%	5-25%	Barclays Treasury Index
Overlays/Portfolio Hedges *(formerly Hedges/Opportunistic)*	0%	0%	0-10%	3 Month LIBOR

Further information is available in the 2013 Investment Policy Statement, available on GEM's website. Policy Portfolio weights and benchmarks prior to 2013 are available upon request.

Definitions and Assumptions

Attribution measures GEM's 'value added' contribution to portfolio performance relative to the Policy Portfolio and is calculated using GEM's total portfolio return net of transaction costs and underlying manager expenses, but gross of GEM's management fees and fund expenses. Asset allocation effect measures the impact of the decision to allocate assets differently from the policy portfolio. Investment selection effect measures the relative performance between GEM's investments and the relevant asset class benchmark. Interaction effect, which has been distributed pro-rata to the asset allocation and investment selection reported, jointly measures the effect of allocation and selection decisions. Any of these factors may be positive or negative. It is important to note that GEM actively manages the portfolio through asset allocation decisions and investment selection decisions, and that interaction is a result of these decisions.

Historical volatility/standard deviation: annualized monthly standard deviation, calculated as sum of the square of the difference between monthly actual returns and average monthly return, multiplied by the square root of 12.

Long-Term Pool ("LTP"): GEM Funds I, II, and III.

Sharpe ratio: calculated as ratio of realized excess return (actual annualized return minus cash return) to annualized monthly standard deviation.

Up Capture and Down Capture (to S&P): Up Capture is the ratio of composite performance to S&P 500 performance during months when S&P 500 is up; Down Capture is the ratio of composite performance to S&P 500 performance during months when S&P 500 is down.