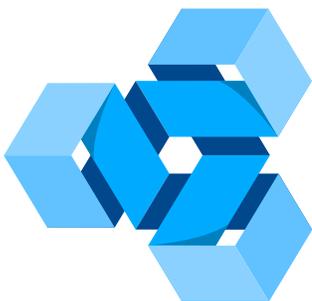




THE IMPORTANCE OF ASSET ALLOCATION vs. SECURITY SELECTION: A PRIMER



Highlights:

- Investment results depend mostly on the market you choose, not the selection of securities within that market.
- For mutual funds and pensions, market returns and asset allocation explain 90% of quarterly fund returns on average. In other words, institutions tend not to deviate materially from their strategic asset allocation.
- Asset allocation explains over 100% of long-term performance for institutions, so the value of active management could not overcome costs and fees. As the research shows institutions don't engage in material tactical bets, it seems most of the performance drag comes from poor manager selection or security bets, along with fees and costs.

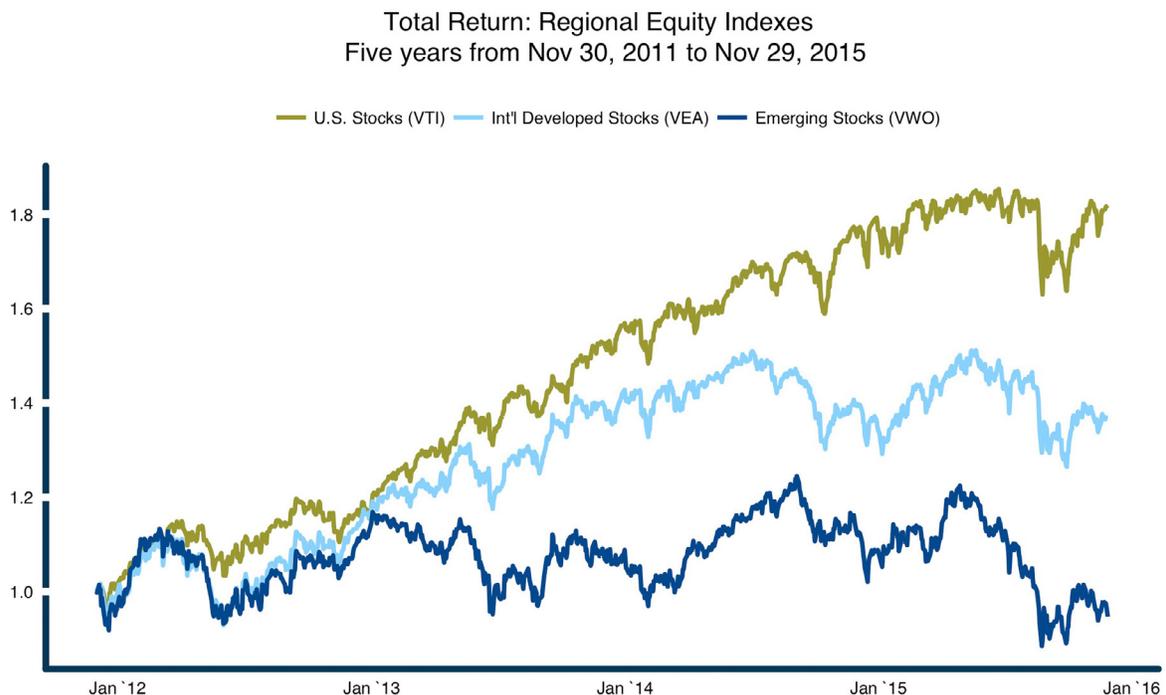
The forest and the trees

By far the greatest source of personal consternation as a professional in markets is investors' obsession with finding the best stocks, or the best stock pickers. The fact that investors pursue this objective at all undermines all meaningful arguments about efficient markets. After all, why on earth would the well informed, rational actors that constitute efficient markets spend all their time on the component of the investment process that is likely to make the least amount of difference to their long-term wealth?

You see, the ability to pick the best securities (for example, individual stocks and bonds) in a chosen market is much less important than one's choice of market itself. Does it matter how well one can choose stocks from a market if that market is dramatically underperforming?

Consider the example of emerging market equities, which underperformed U.S. equities by more than 55% over the 5 years through November 2015. And one need not go so far afield as emerging markets to find other examples with similarly large dispersion. Developed international markets also lagged U.S. stocks by a substantial margin. The Vanguard FTSE Developed Markets (ex-US) ETF (VEA) generated just 20% total return, or 3.7% per year, lagging US stocks by 8.4% annualized (Data source: CSI). Now, consider that the Vanguard US Total Stock Market ETF produced over 14% per year over the past 5 years. What is the likelihood that an investor – even a great investor – who chose stocks from non-US markets over the past five years was able to outperform even a poorly skilled manager selecting from U.S. stocks?

Figure 1. Performance over 5 years ending November 29, 2015



Data source: CSI

To get a sense for the impact of stock picking in the individual markets, let's examine the range of mutual fund outcomes for funds focused on each region. According to Reuters' fund screener, the 95th percentile U.S. equity fund delivered 15.5% annualized over the period, while a 5th percentile fund produced about 8.8%. Meanwhile, active international equity mutual funds' performance ranged from 5.7% to -1.7%. Incredibly, a 95th percentile manager in the emerging markets equity space delivered just 1.7% annualized over the past 5 years, while a 5th percentile fund lost over 7% per year.

Table 1. Performance range of active mutual funds over 5 years ending December 31, 2015

Market	95th %ile	Index	5th %ile
U.S. stocks	15.5%	14.4%	8.8%
Int'l developed stocks	5.7%	3.7%	-1.7%
Emerging stocks	1.7%	-2.7%	-7%

Data source: Reuters

The point is, while most investors, institutions, consultants and advisors spend all their time trying to pick the best stocks, or the best stock-pickers, these decisions mean very little compared to decisions about asset allocation. At the best of times for stock-pickers asset allocation and stock-picking have about the same influence on portfolio outcomes; at the worst of times, asset allocation almost completely determines success or failure. And yet, most investors embrace policy portfolios which explicitly limit deviations from strategic, long-term asset allocation targets. These same institutions then turn around and take large and regular active bets within each asset allocation sleeve by trading stocks, bonds, and managers. To our eye, these investors approach the problem exactly backwards.

The Policy Portfolio Paradigm

It has long been considered prudent investment policy to separate the asset allocation decision from the active investments in portfolios. Typically, asset allocation is expressed as a semi-permanent policy or reference portfolio guided by an advisor, a board, and/or an investment committee. In many cases, this policy allocation is loosely based on intermediate or long-term estimates of excess returns, risks, and correlations across the eligible asset universe. Once the policy strategic asset allocation is struck, the investment staff set about selecting managers within each of the asset class silos with the goal of harvesting alpha from security selection.

This process is motivated by the perception that the opportunity to generate incremental excess returns is much higher in the security selection space than the asset allocation space. After all, Grinold showed how investment fortune favours market breadth, and there are vastly more securities (i.e. stocks and bonds) than there are asset classes (i.e. stock and bond market indexes, commodities, REITs, etc.) to choose from. This (mis)perception informs the relative priority placed on the pursuit of alpha from active security selection relative to active shifts in asset allocation.

Market inefficiencies exist for a variety of reasons, such as asymmetric information, tax frictions, and emotional biases. Perhaps the most economically significant inefficiencies stem from structural constraints imposed on a large segment of investors. We view the structural bias in favour of security selection versus tactical asset allocation among institutional and private investors as an important example of this type of inefficiency.

As such, so long as tactical asset allocation is largely ignored by most investors, active asset allocation represents one of the most economically important sources of excess returns available to investors in public markets.

Shoulders of Giants

Most previous studies on the impact of asset allocation relative to security selection have been performed on pension funds and mutual funds, and explore the degree to which total portfolio variance is explained by deviations from institutions' long-term policy portfolios. The studies we reviewed are structured as attribution analyses, where portfolio returns are disaggregated into returns due to the policy portfolio and active returns, which in most studies are defined as the residual not accounted for by the policy portfolio.

Brinson et al. (1986, 1991) regressed monthly portfolio total returns for pension funds against the monthly returns to each fund's policy portfolio, and determined that the policy portfolio explains approximately 90% of the monthly variance in total returns. Many citations of Brinson's original publications in this field falsely suggest that their analysis makes conclusions about long-term performance attribution. However, Brinson's seminal studies mainly proved that once institutions set a strategic asset allocation, they tend to stick to it with minimal deviation through time.

Ibbotson & Kaplan (2000) recognized the universal misperception around Brinson's analyses and set out to correct it. In their paper, "Does asset allocation explain 40,90, or 100 percent of Performance?" IK address the confusion by attempting to answer these three questions:

1. How much of the variability of returns across time is explained by policy (the question Brinson et. al. asked)? In other words, how much of a fund's ups and downs do its policy benchmarks explain?
2. How much of the variation in returns across funds is explained by differences in policy? In other words, how much of the difference between two funds' performance is a result of their policy differences (with the balance obviously due to active bets, either tactical or security-specific).
3. What portion of the return level is explained by policy return? In other words, what is the ratio of the policy benchmark return to the fund's actual return?

IK analyzed mutual fund data over 10 years through March 31, 1998, and pension data over the 5 years from 1993-97.

How much of the variability of returns across time is explained by policy and the market itself?

To answer question 1) they repeated the analysis from Brinson et al. and confirmed their results showing that policy weights explain 88% of fund returns. IK also provided intercept values from time series regressions corresponding to annualized excess returns to the funds over the policy portfolios. On average, excess returns were negative, but not significantly so.

Table 2. Comparison of Time-Series Regression Studies (extending Brinson et. al.)

Measure R ²	Brinson 1986	Brinson 1991	Mutual Funds	Pension Funds
Mean	93.6%	91.5%	81.4%	88.0%
Median	NA	NA	87.6	90.7
Active Return ^a	Brinson 1986	Brinson 1991	Mutual Funds	Pension Funds
Mean	-1.10	-0.08	-0.27	-0.44
Median	NA	NA	0.00	0.18

NA = not available | a = Active return is expressed as a percentage per year.

Source: Ibbotson & Kaplan (2000)

Importantly, IK made the point that fund returns are mostly attributable to investing in capital markets in general, not from the specific asset allocation policies of each fund. Regressions on the ‘market’, represented by the average policy portfolio, almost completely subsumed regressions on individual policy portfolios, explaining up to 79% of the 81% of returns explained by individual policy portfolios themselves. In fact, 75% of fund returns were explained by U.S. equity returns alone. (Note, IK only analyzed balanced funds for some reason, not pension funds). As a result, IK concluded “...the results of the Brinson et al. studies and our own results ...are a case of a rising tide lifting all boats.”

Table 3. Explaining Mutual Funds’ Time-Series of Returns Using Different ‘Market’ Portfolios

R ²	S&P500	Average Policy	Fund’s Policy
Mean	75.2%	78.8%	81.4%
Median	81.9	85.2	87.6

Source: Ibbotson & Kaplan (2000)

If you accept that market returns are a common variable, and should thus be removed from the attribution analysis, then one is left to wonder what portion of residual returns are explained by differences in policy weights vs. active management. This question is answered, at least for U.S. mutual funds, in “The Equal Importance of Asset Allocation and Active Management” by James X. Xiong, CFA, Roger G. Ibbotson, Thomas M. Idzorek, CFA, and Peng Chen, CFA (2010) (henceforth XIIC).

Table 4. Decomposition of Time-Series Total Return Variations in Terms of Average R2s, May 1999 – April 2009

Average R ²	U.S. Equity Funds	Balanced Funds	International Funds
Market movement	83%	88%	74%
Asset Allocation policy	18	20	19
Active Management	15	10	26
Interaction Effect	-16	-18	-19
Total	100%	100%	100%

Source: “The Equal Importance of Asset Allocation and Active Management” by James X. Xiong, CFA, Roger G. Ibbotson, Thomas M. Idzorek, CFA, and Peng Chen, CFA (2010)

From Table 4. we see that, once common market movement is removed, asset allocation policy and active management explain approximately the same amount of total returns, about 20% each, across the different fund categories. However the asset allocation policy for balanced funds, which mix bonds and stocks, explains about twice as much variance as active management. This is intuitive as differences in strategic exposures to stocks vs. bonds should have a larger impact than differences in exposures across different segments of equity markets. Interestingly, active management was more influential for international funds, probably reflecting time-varying exposures to various non-U.S. equity markets. Of course, these time-varying exposures would reflect asset class bets, i.e. tactical bets across regional equity markets, as well as idiosyncratic stock bets.

How much of the variation in returns across funds is explained by differences in policy?

So far, we have addressed how different variables – market returns, asset allocation policy, and active management – explain quarterly total returns for each fund independently through time. On average across funds, market exposures and asset allocation policy explain about 90% of total returns, while active management explains just 10%. However, this does not really answer the questions that are probably on most investors’ minds. Most investors are probably interested in the answers to the other two questions posed by IK. That is 2) what accounts for the differences in returns across funds, and; 3) what accounts for the difference in long-term performance?

While IK seek to answer 2) in their paper, their results are confounded because they did not control for the impact of the market factor when performing their analysis. XIIC correct for this in their paper, by performing both time-series and cross-sectional regressions on excess returns, which remove the impact of market returns.

Table 5. Decomposition of Time-Series Excess Market Return Variations in Terms of R² Average , May 1999–April 2009

Average R ²	U.S. Equity Funds	Balanced Funds	International Funds
Asset Allocation	48%	36%	49%
Active Management	41	39	45
Interaction Effect	11	25	6
Total	100%	100%	100%

Source: “The Equal Importance of Asset Allocation and Active Management” by James X. Xiong, CFA, Roger G. Ibbotson, Thomas M. Idzorek, CFA, and Peng Chen, CFA (2010)

From Table 5. it’s clear that, within quite reasonable error bounds, the asset allocation policy and active management are equally important in explaining the variation in returns across funds. Again, the active management portion includes both time-varying (tactical) exposures to market variables as well as individual security bets, so some portion of the active variable is also attributable to asset allocation. I have not seen similar research conducted on pensions, but it is likely that results would be similar.

What portion of the *return level* is explained by policy return?

Lastly, IK set out to capture the percentage of total returns to institutions that is explained by asset allocation policy vs. active management. Refreshingly, the math required for this step is simple: it is the ratio of compound annual return experienced by the passive policy portfolio divided by the compound annual return experienced by the fund itself. Obviously, the difference between policy returns and fund returns is driven by tactical asset allocation, manager selection, security selection, fees and expenses. The results in Table 6. suggest that a simple passive investment in the policy portfolio would have delivered equal or better results on average than engaging in active management.

Table 6. Percentage of total return level explained by policy return.

Study	Average %	Median %
Brinson 1986	112	
Brinson 1991	101	
Ibbotson 2000 [Mutual Funds]	104	100
Ibbotson 2000 [Pension Funds]	99	99

Source: Ibbotson and Kaplan (2000)

Ibbotson and Kaplan stated that, on average, asset allocation explained 99% and 104% of long-term returns for pensions and mutual funds respectively. How might we interpret this finding? Recall that the total return to portfolios were decomposed into the total return to the fund's policy portfolio using asset class benchmarks, plus the active return, minus trading frictions. So the results of this study demonstrate that, over the periods studied, the average institution lost 4% of total return to fees, ineffective active management, or poor manager selection.

Combined with the original analysis by Brinson, which makes the strong case that institutions make very few material deviations from policy weights over time, one is left to conclude that the vast majority of the dispersion and performance decay observed by Ibbotson and Kaplan was due to fees and poor active security selection. This is a troubling condemnation of traditional forms of active management in general.

Summary

Most investors miss the forest for the trees by focusing on security selection rather than asset allocation to produce better portfolio outcomes. As a case study, we showed how the best stock pickers in international stock markets could not hope to compete with even the worst stock pickers in domestic U.S. markets over the past five years. Rather, outcomes in equity portfolios were almost completely dominated by geographic effects; individual securities played a much smaller role. Brinson et al., and later Ibbotson and Kaplan demonstrated that for a large universe of institutional investors, asset allocation explained over 90% of quarterly portfolio returns. This analysis mostly highlighted that institutions do not deviate far from policy portfolios. However, it was later revealed that the explanatory power of funds' specific asset allocation was subsumed by exposure to capital markets in general. In fact, 74%-88% of funds' returns were explained by market returns. Once market returns are removed, Xiong et al. determined that asset allocation and active management account for an equal proportion of quarterly returns.

Of course, investors really want to know what portion of the variation in returns across funds, and what portion of total long-term performance, is explained by asset allocation vs. active management. Xiong et al.

demonstrated that asset allocation and security selection are equally responsible for the cross-sectional variation in fund returns. And Ibbotson and Kaplan showed that policy portfolio returns explained over 100% of fund total returns, suggesting that the value of active management did not overcome costs and fees on average. As the original Brinson research showed institutions don't engage in material tactical bets, it seems most of the performance drag comes from poor manager selection or security bets, along with fees and costs.

Conclusion

The studies discussed in this article describe how asset allocation has impacted the actual results of mutual funds and pensions. As such, they are descriptive studies – they only measure how institutions have chosen to use asset allocation and active management to produce different portfolio outcomes. They say nothing about what institutions should do, or what is possible if institutions were to unleash the full potential of markets. Furthermore, the research above suggests that institutions rarely deviate materially from their strategic asset allocation, so the historic experience provides limited insight. These studies cannot help quantify the relative size of the theoretical opportunity to profit from active management were institutions to take on greater active risk.

Our whitepaper, *Tactical Alpha: A Quantitative Case for Active Asset Allocation*, explores studies that attempt to capture the relative opportunity to deliver differentiated performance from asset allocation relative to security selection for unconstrained mandates. We discuss a simulation study by Assoe et al. that measures the range of outcomes across random portfolios selected from asset classes and individual stocks. Then we apply a portfolio x-ray tool, Principal Component Analysis, to determine the theoretical proportion of diverse bets across asset classes vs. individual securities given various correlation assumptions. Finally, we will analyze the empirical number of diverse bets available from a global asset class universe relative to U.S. stocks through time.

At the risk of spoiling the ending, our studies show that – when investors are liberated from arbitrary constraints – the opportunity to produce differentiated performance is much greater from active asset allocation than from active security selection.

Note: This series expands on the concepts discussed in our whitepaper, *Tactical Alpha: A Quantitative Case for Active Asset Allocation*. If you would like to skip ahead by reading the original paper, you can download it [here](#).

See also:

[Tactical Alpha in Theory and Practice Part I](#)

[Tactical Alpha in Theory and Practice Part II](#)



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