



Active Management: Our Approach

Over the past few years, we have increased the use of low cost investment strategies which attempt to track, rather than beat, a market index (commonly called “passive” strategies).

1) most global financial markets are extremely efficient and it is therefore very difficult to consistently beat a broad market index;

2) the high cost of actively managed products makes it even less likely that an investor will beat the market over time; and

3) despite (1) and (2), there is 100% certainty that some active managers will beat their index, but it is very difficult to identify them until after the fact.

This Perspectives, the first in a new semi-annual series, will provide some further insight into our thinking about the opportunity and risks of hiring active managers.

Jason Thomas, Ph.D., CFA
Chief Investment Officer

Achieve more.

San Francisco

101 Second Street, Suite 1400
San Francisco, CA 94105
T 415.371.7800
F 415.371.7801

Los Angeles

11100 Santa Monica Blvd.,
Suite 600
Los Angeles, CA 90025
T 310.806.4000
F 310.806.4080

DEFINITIONS

Beta The regression coefficient measuring the sensitivity of a portfolio's returns to the market's returns. Also used more loosely to refer to the portion of a portfolio's return that is explained by the market risk exposures of the portfolio.

Alpha The portion of the return that is not explained by the market risk exposures of the portfolio. This is only equal to the active return if the beta of the portfolio is 1 (i.e., the portfolio is not over- or under-exposed to the market).

Active return, simple

active return The sum of the alpha plus any additional return resulting from the portfolio being over- or under-weight the market (i.e., $\beta \neq 1$).

Active risk, simple active risk

The standard deviation of the active return.

Information ratio The ratio of active return to active risk. A measure of "bang-for-the-buck," or how much active return we can expect in return for accepting additional active risk. Allows us to compare managers with very different investment styles or in different asset classes.

Index funds, exchange

traded funds Portfolios designed to mimic the performance of a market index, usually at very low cost. Index funds are mutual funds while exchange traded funds are baskets of securities traded as a single security.

Executive Summary

As investors, we hire active managers to generate **active investment returns**, which are different from the broad market or an **index fund** designed to capture that market's return. Doing so requires taking **active risk**, which is separate from the risk of owning the index. Most investors make only a fuzzy distinction between active returns (the simple difference between a manager's return and the benchmark) and **alpha**, the truest measure of a manager's investment skill. By making this distinction clear, and by quantifying it, we can greatly improve our understanding of a manager's past performance and form better expectations for future performance.

Based on the substantial body of academic literature and years of experience researching and selecting investment managers, we have developed the following general guidelines regarding the use of active investment managers:

1. Be clear about what active managers should be hired to do: provide alpha, not levered or de-levered exposure to an index (which, as described below, Aspiriant can directly do easily and at very low cost);
2. Be skeptical when evaluating historical performance, using only data which is statistically significant;
3. Be disciplined in evaluating whether a manager is likely to provide alpha in the future, relying on risk-adjusted statistical measures;
4. The mathematics of optimization suggest that the optimal choice of managers will include a large allocation to index funds, **exchange traded funds**, **tax-managed accounts** and **risk-controlled active funds (enhanced index funds)**. Together, these should represent 60-100% of the total allocation; and
5. Among traditional active managers, prefer skillful lower active risk managers to higher risk, concentrated managers due to their higher **information ratio**.

DEFINITIONS

Tax-managed account Portfolios of (typically equity) securities designed to mimic the pre-tax performance of a market index, but which actively harvests tax losses to increase the after-tax return. Tax loss harvesting usually involves the sale of a security which has fallen in value and the simultaneous purchase of a similar security.

Traditional active management

The typical form of active management most commonly practiced, characterized often by heavy use of security analysis and portfolio weights determined by judgment. Active risk levels (standard deviations) run from around 4% up to as high as 25%, with the norm being around 5 to 6%.

Risk-controlled active managers, enhanced index managers

Significant use of technology to gather data and evaluate insights about individual securities, with advanced processes to form these insights into optimal portfolios having minimal uncompensated risks. Tend to have low active risk levels, 1 to 3% or so.

Considering Active Management

We work hard to evaluate the variety of investment vehicles available to our clients in each market and invest in the best strategies we can identify. Though clients often focus on the U.S. equity market, we search the entire world for investment opportunities in developed and emerging markets, equities and fixed income, private real estate and equity, and market neutral hedge funds. Often, these strategies involve passive exposure to a broad market, but occasionally they will involve active managers who research and select securities, build a portfolio, and hopefully add an incremental return over their benchmark. For example, we invest in Warren Buffett's Berkshire Hathaway, expecting that he will outperform the U.S. large cap value equity market over time.

When we (increasingly rarely) hire an active manager, it is to generate a particular type of active return, called "alpha," and not just to "beat the market." (The difference is explained below.) We do this knowing that in their efforts to do so they will generate active risk. Active return and risk are the key metrics describing the performance of active managers, and hiring an active manager requires a trade-off between the two. We will only hire active managers if the information ratio (the ratio of active return to active risk) justifies the increased risk (relative to a market benchmark) and the higher fees. For reasons explained below, just knowing that a manager has beaten a benchmark, even by a significant margin over a relatively long time period, is not enough to expect future outperformance.

Active managers should be hired to deliver alpha and should be penalized for their active risk. Investors should only pay (high) active fees for active return, not market return. Few investors make a clear distinction between a manager's alpha and the market exposure delivered by that manager. For example, an "active" manager who used leverage (borrowed money) to buy \$2 of an S&P index fund for every \$1 we invested would have terrific outperformance in good years and stunning underperformance in bad years. Let's call this manager "Growth." Since we expect the S&P to rise over time, the Growth manager would beat the S&P over time (by more than 8% annually over the last three years and by almost 10% annually over the past 10 years!), but at the cost of significantly higher risk. This Growth manager might call that long-term outperformance "alpha," but we would counter that any outperformance which is entirely dependent on the market's return should correctly be called "**beta**." Since we can (and frequently do) achieve this type of leverage at very little cost for our clients by using margin, we should not have clients pay incremental fees to active managers for this strategy. This may be an extreme example, but almost all active strategies, in all asset classes, involve some mixture of pure active management with merely over or under-weighting the market (e.g., in equity portfolios,

buying stocks with high earnings growth expectations and therefore higher beta). By making this distinction clear, and by quantifying it with analytical software, we can greatly improve our understanding of a manager's past performance and form better expectations for future performance.

“Conceptually, active managers are trying to find other investor's mistakes.”

WHAT IS ACTIVE MANAGEMENT?

After explaining when and why we might choose active management, we should take a step back and consider the nature of active management and its implications. The basic proposition is that active managers try to beat the results of an asset-class or style benchmark, using securities that are part of that class but are selected and held in weights different from the benchmark. How should we choose such managers? Does more active risk mean more active return? Can this inherently be successful, on average?

Conceptually, active managers are trying to find other investor's mistakes. They use as much information as possible and their expertise to value each security in their universe, searching for securities which sell in the market for less than they believe is the intrinsic value. Over time, they expect, other investors will realize that the security should be valued more highly and the price will rise. Active managers select a portfolio of such securities, often ensuring that the portfolio has aggregate characteristics, which are somewhat similar to the benchmark. If the active manager has chosen well, the portfolio will outperform its benchmark, not due to the performance of the market in general, but to the correction of mispricings of the securities.

In practice, the process is rarely systematic. The traditional active manager typically does not evaluate every security using all available information. Most managers have a relatively small team of analysts and portfolio managers who focus on a small section of the total opportunity set. By comparing the current and expected future prices, active managers could generate a forecast for the excess return to each security. They could then control the myriad of risks in their portfolio by using statistical tools to select and weight each security in the best way possible, using each security's expected excess return and its contribution to risk. In this case, “best” means the highest expected information ratio¹. Most traditional active managers use rather subjective rules of thumb and judgment in determining position sizes, rather than rigorous mathematical optimization and risk control. In the end, portfolios are often left unintentionally exposed to a host of risks which are beyond the control of the investment manager or even the issuing companies themselves. As unintended risk builds, the information ratio falls with alpha decreasing and risk increasing. The lack of a systematic research

¹Information ratio is defined here, as in the box on page 2, as the ratio of active return to active risk. However, because active managers are using forecasts, we use the term “expected” to indicate that we are using forecasted active return and risk.

and portfolio construction process makes a difficult task much harder. Therefore, **risk-controlled active managers**, often using computers to assist in selecting securities and building portfolios, generally have higher information ratios than their more traditional peers.

“**The lack of a systematic research and portfolio construction process makes a difficult task much harder.**”

Just as active managers choose securities, we as managers of our clients' portfolios, choose active investment managers or some alternative. We should only hire active managers if we think that *our* skill in identifying *their* skill is sufficient. Thus, happy outcomes from active management require two correct decisions, by the active manager selecting securities, and by us selecting the active manager.

COMPENSATED AND UNCOMPENSATED RISK

A little more depth on alpha and beta

To really understand the way in which investment managers can add value, we must understand how to divide total risk and return into two parts. Beginning in 1964, William Sharpe (1990 Nobel laureate and one of my professors at Stanford) laid the foundation for how we understand and decompose total returns on portfolios. His work showed that the total return on any portfolio (note the emphasis on “any”) can be decomposed into a part that is due to the return on the market (usually expressed in terms of a benchmark), which he called beta, and an idiosyncratic part that is uncorrelated to the market, which he called alpha. So in much the same way that the appreciation of your home will be due in part to appreciation in the broad local real estate market and in part to the specific characteristics of the home (number of bedrooms, pool, etc.), the return to a portfolio holding stocks that are in the S&P 500, for example, will be due to both the appreciation in the broad U.S. stock market as a whole and to the characteristics of those individual stocks.

“**...fully diversified market risk must be rewarded with a return higher than cash over time. Active risk, in contrast, cannot be rewarded on average, since all active managers are competing against each other in the zero-sum search for active returns..**”

Why is this important? As you have consistently heard from Aspiriant, capital markets must function so that the expected return on the overall (diversified) equity market must be higher, over time, than that on fixed-income investments. As a result, fully diversified market risk (such as one takes by buying an index fund) must be rewarded with a return higher than cash over time. Active risk (trying to beat the index), in contrast, cannot be rewarded on average, since all active managers are competing against each other in the zero-sum search for active returns. Of course, particular active managers will beat the market (sometimes by a large margin), but they are doing so at the expense of the others, either through luck or through special skill. Active managers (and other market participants) in aggregate are the market, so they must earn the return on the market — minus fees, transaction costs and other expenses, which can be substantial.

“Positive *realized* alphas might well occur simply through luck, but positive *expected* alphas require special skill, sufficient to beat many of the rest of the very skillful investors in the market.”

We know that benchmark returns can be achieved very inexpensively through index funds or exchange traded funds, which provide an expected return over cash (the “risk premium”) without requiring skill. But positive expected *alpha* is hard to achieve. A manager must add realized returns over and above the returns of these beta exposures (and above the cash return from a zero-beta exposure) to generate pure alpha. These pure alphas result from manager deviations from the contents of a benchmark through investment decisions. Positive *realized* alphas might well occur simply through luck, but positive *expected* alphas require special skill, sufficient to beat many of the rest of the very skillful investors in the market.

We hope it is clear that the simple difference between a benchmark return and a manager’s return, should not be called alpha and is not necessarily an indication of investment skill. The valuable and important return added by a manager isn’t the total return the manager delivers, but only that part of the return that is beyond what could be delivered through an index fund (or more precisely, some combination of long and short investments in one or more index funds).

EVALUATING ACTIVE MANAGEMENT

So far we have concluded that active managers face a very difficult task, should only be rewarded for a portion of their outperformance (the alpha), and, further, cannot possibly be successful as a group. Does this mean that investors should only index, shunning active managers entirely? Not necessarily. As long as a market is not completely efficient (and we believe that none are) and as long as there are native differences in human intelligence and skill levels (of course there are), some managers will outperform through real skill, not just by virtue of random variation. Under these conditions, the notion that there can be an “expected alpha” makes sense. It is important to note that while market inefficiency is a necessary condition for “good” active managers to exist, it is not a sufficient condition—skill is also required.

“...performance track records do not, by themselves, distinguish between luck and skill.”

While past performance should not be ignored, we must remember that performance track records do not, by themselves, distinguish between luck and skill. Two managers, one lucky and the other truly skillful, can have the same track record. This can even be true over fairly long time horizons.

With that in mind, what should be our criteria for determining whether an active manager has skill, and therefore expected positive alpha? Unfortunately, there is no easy answer. We might reasonably assign a positive expected alpha to a manager whose historical alpha was positive and statistically significant (see side bar). We might also perform a qualitative assessment - preferring to see an investment team which has worked

A SHORT DIGRESSION ON STATISTICS

We use the t-statistic to test whether a manager's alpha is statistically significant— whether we can conclude with reasonable confidence that any given alpha, positive or negative, was achieved through skill rather than luck. From a statistical perspective, there is general agreement (with only minor quibbles) that if a manager's alpha over the period studied is more than two standard deviations away from that of the benchmark (that is, if its t-statistic is greater than two), we can say the manager has a “statistically significant” alpha. This simply means that there is a very high probability (roughly 95% if alphas are normally distributed) that the manager's alpha is not simple random variation.

We interpret a statistically significant alpha as evidence of skill rather than luck. If a manager's historic alpha is not statistically significant in this way (high t-statistic), the data cannot confidently distinguish the alpha from random noise and the returns should therefore not be a part of the decision process. We would have to base our alpha expectation for that manager on a more qualitative analysis. On the other hand, if a manager has achieved statistically significant alpha, then it is fair to include past performance among other inputs when evaluating the manager. But we still do not just extrapolate it into the future without thought. In sum, a high t-statistic does not by itself prove skill, but a low t-statistic indicates that the performance record shows no statistical evidence of skill. It may be there, but we cannot quantify it.

together for a long time, with a well-articulated philosophy and investment process. Sophisticated institutional investors and their consultants use a combination of quantitative and qualitative approaches, despite the lack of conclusive evidence that either past performance or a particular qualitative characteristic is predictive of future performance. Our approach to choosing active managers in any asset class begins by recognizing the limitations of our own manager selection skill and therefore focuses only on situations where we can find a successful investment team (exhibiting characteristics we think will support continued success) with a sustainable source of alpha, ideally supported by a high t-statistic. By demanding that the deck be stacked in our favor with respect to both the investment manager and the market inefficiency exploited by the strategy, we hope to maximize the probability that our decision to employ active management will be profitable.

“I WANT MORE ALPHA!”

Many investors rely heavily on the magnitude of recent past performance in selecting managers and are therefore often biased toward traditional active management, with its high degree of active risk. They do so because they equate greater active risk with greater active return. Such investors often express disdain for index funds or risk-controlled active strategies, and a preference for concentrated, high-risk active strategies. When faced with an index or enhanced index strategy, they often say “But I want higher returns!” Having properly learned that taking some risk is necessary to achieve return, they fail to distinguish between market (or beta) risk, which is in fact rewarded with a higher expected return, and active risk, which is only rewarded if employed by a skillful active manager. Active risk, without corresponding skill, does not necessarily lead to additional return.

The mathematics of optimization dictate that the best portfolio of managers, at the appropriate level of active risk, will primarily be constructed from index funds and good low-risk active managers in preference to higher-risk managers. In part due to the constraints often imposed on short-selling², high-active-risk portfolios tend to have lower information ratios than low-active-risk portfolios at the same level of manager skill. Long-short investment strategies can make the most use of a manager's skill, and therefore have a higher expected alpha than long-only strategies. More on this in a future Investment Perspectives. Once we have selected the

²When short sales are prohibited (most mutual funds), the manager can reduce the weight of an unattractive security only to zero. This limit is not terribly important for securities with large benchmark weights (i.e., the largest capitalization stocks in a large-cap stocks index) but is quite restrictive for securities that have smaller benchmark weights. In the extreme, securities with little or no weight in the benchmark cannot receive any measurable negative active weight no matter how pessimistic the manager is about their future returns. When the manager's ability to express a positive or negative view on any security is limited, the expected alpha is reduced.

portfolio of managers with the highest expected information ratio, we will have the highest level of expected return possible for any chosen level of expected risk.

CONCLUSION

Investors should not hire active managers simply to generate high returns. What investors really want, or should want, from investment managers is more alpha with less risk. The conventional framework within which decisions to hire active managers are made — historical performance relative to a benchmark — are not clearly focused on the investor's goal of adding risk-adjusted net return to the portfolio. Over the long run, we will be most successful as investment managers for our clients if we give as much attention to risk as we do to return. By only choosing active investment managers with high expected information ratios, as opposed to those who have merely produced large historical outperformance, we maximize the probability that we will outperform benchmarks on a sustainable basis.

This document is provided solely for the informational purposes of our clients and is not intended to be an offer or solicitation, or the basis for any contract to purchase or sell any security or other instrument, or for Aspiriant to enter into or arrange any type of transaction as a consequence of any information contained herein. This document is not an advertisement and is not intended for public use or additional distribution and should not be relied upon solely as the basis for constructing a portfolio or for the purchase or sale of individual securities, whether or not facilitated by Aspiriant.

Opinions expressed are our present opinions only, reflecting prevailing market conditions, and are subject to change. In preparing this presentation, we may have drawn upon a wide range of sources and therefore the analysis should not be deemed original or proprietary. We have relied upon and assumed, without independent verification, the accuracy and completeness of all information available from public sources. Past performance is not necessarily an indication of future performance. All investments may lose value over time.