



Putting it All Together (third in a three-part series)

Investors have traditionally constructed portfolios using an approach that starts with asset allocation and ends with manager selection.

For example, an investor first determines allocations to US stocks and bonds, and then considers the level of international diversification. The next step might be to decide on the split between actively and passively managed assets within each asset class. Finally, the investor might consider an allocation to alternative investments. In each case, the asset allocation decision is followed by a search for managers within that asset class. Liabilities, if considered at all, have played a minor role. The results from this traditional approach have not been satisfactory – after several years of declining equity markets and interest rates, many plans are in trouble.

Our *Active Alpha Investing* series proposes a new way for institutional investors to think about constructing portfolios using an extension of the basic principles of modern portfolio theory. The key concepts of this approach are that investors should:

- Consider assets relative to liabilities and define all risk and return assumptions in these terms
- Separate interest rate, market, and active risks
- Develop a risk budget that balances the market risk premium and the expected return (alpha) from active risk
- Create an optimal balance between these sources of return based on your views of expected returns for each source of risk
- Take more active risk

By implementing this approach, investors will avoid unproductive risks such as unhedged interest rate exposure in their liabilities. In addition, investors can generate alpha independent of their strategic asset allocation decision. The result? In our view, more efficient allocations to sources of active risk based on an investor's confidence in a manager's ability to generate risk-adjusted performance with minimal capital outlay and cost.

Implications for Institutional Investors

While *Active Alpha Investing* can improve the risk-adjusted returns of a portfolio, three practical issues need to be addressed: *the role of risk management, a firm's organizational structure and governance.*

Role of Risk Management

Enhanced risk management is the core of *Active Alpha Investing*. Quite frankly, rules of thumb in risk management that have been used in the past simply have not worked. Isolating and separately managing the interest rate, market, and active risk in a plan requires a higher degree of sophistication in risk management and the use of modern risk management tools than have been used traditionally. While concerns about the use of derivatives have limited their application in some plans, our view is that derivatives are modern tools of risk management. Plans that have the appropriate infrastructure and controls should use derivatives to better manage their interest rate and market risks, as well as to potentially increase their returns.

Risk management currently plays two significant roles in institutional investing. First, it is essential in creating a risk budget – a plan for the efficient sourcing of returns and the elimination of unintended risks. Second, risk management is critical in the implementation of that plan through the monitoring and management of the risk budget as well as the monitoring of underlying managers.

The practical implementation of these theories is not always intuitive. Investors know that, in theory, an optimal frontier of risk and return exists and that an asset allocation exercise should help guide you to that frontier. Unfortunately, for most investors, the inner workings of that calculation are opaque.

In fact, the condition for being on the optimal risk/return frontier is simple and intuitive. All positions in the portfolio should deliver an expected excess return equally proportional to their marginal contribution to portfolio risk. If this ratio is not the same for all positions, it is possible to allocate funds from a position with a lower ratio to one with a higher ratio. We believe that such a process will improve the portfolio's expected return while leaving the portfolio's risk unchanged.

A risk budget is simply a conceptual device for trying to measure total risk to a plan and the marginal contributions to portfolio risk of each component. These contributions can be compared to the expected return assumptions. If the ratios of expected returns to marginal contributions to risk are out of line, opportunities for improvement become more obvious. If an asset class has a high contribution to risk, and the expected

return does not justify it, you should lower the allocation. If there is a manager who contributes high expected return and relatively little risk, the opposite is true – you should increase the allocation. There may be many practical constraints that prevent changes from being implemented, but at least the desirable directions for change are clarified.

In practice, we believe there are two ways that most pension plans should make changes:

1. *Hedge your interest rate risk.* The interest rate risk of the liabilities contributes considerably to the volatility of the plan surplus. This risk has a negative expected return and does not compensate for the risk contribution.
2. *Increase your active risk.* Unlike interest rate risk, active risk contributes very little to overall fund risk. On the other hand, if you can find managers with positive expected returns net of fees, increases in the active risk component can contribute significantly to a plan's expected return.

Risk monitoring should enable investors to identify and correct problems in their portfolios before they become significant. In most cases, this monitoring is fairly simple if the appropriate data is available. If daily returns for the liquid portion of the portfolio are available, tracking errors, correlations and total risk for those components can be calculated regularly and compared to the risk budget.

For example, suppose that an investor develops a risk budget under the assumption that a specific manager can deliver 500 bps of active risk. The investment policy is designed, and capital allocated, on the assumption that the manager can deliver a budgeted amount of active return with risk at the targeted level. Now, let's suppose that the investor monitors the manager's actual active risk level and discovers that the active risk the manager has achieved is significantly lower than the targeted level. Clearly, the investor now faces a decision: should he leave the portfolio alone or should he take corrective action?

How the investor answers this question depends on his assessment of why the achieved and targeted active risk levels differ. For example, if market conditions temporarily changed and many managers experienced a decline in active risk, the investor might feel inclined to leave the portfolio unchanged. A different situation arises, however, if upon further investigation, the investor feels that there has been a change in a manager's process and the investor no longer has confidence that the manager will be able to consistently achieve the targeted return level. In this case, the investor may well consider changing managers.

In addition to monitoring, risk management is also critically important for optimal fund implementation strategies. Risk management oversight is key to successful utilization of deriva-

tives, which provide the means to efficiently and flexibly shape the allocation of market and interest rate risks in a portfolio. We have found that it is effective to centralize the monitoring of asset allocation rebalancing, portable alpha management, and interest rate hedging in a risk management function, with execution through a completion manager.

Organizational Structure

Active Alpha Investing also has implications for organizational structure. Organizations should be flexible enough to enable investors to most effectively analyze and manage sources of risk. By separating alpha and beta, investors can better analyze each source of risk. Consider four sources of active equity risk: traditional long-only managers, hedge funds specializing in long/short strategies, market-neutral hedge funds and private equity managers. In three of the four cases, the total return has both equity market exposure and active risk. It is important to understand how much of each is included in each strategy in order to size the allocations appropriately.

Investors would typically consider the traditional long-only manager as part of the strategic equity exposure and view the two hedge fund strategies and the private equity strategy as part of the allocation to alternative investments. Investors typically focus on the capital allocated to the broad categories of equities and alternatives. Such a categorization is misleading, however, because all four strategies have active risk sourced in the equity markets, and three of the four contain an exposure to the equity market itself.

If investors want to control both their strategic allocations to market exposure and their active risk allocations, they are forced to consider a new question. What factors create confidence that particular sources of active risk will achieve a specific target active return? In this example, investors must consider whether the active returns from the two hedge fund strategies, the traditional long-only strategies and private equity will be able to achieve targeted returns. All four strategies are charging active management fees based on their attempts to provide active equity risk. However, there are big distinctions in terms of constraints, liquidity and transparency of the process. In order to facilitate monitoring and comparisons of these strategies, investors may want to group all of these active equity strategies organizationally under the same umbrella.

Other active strategies can be analyzed in the same way. The key questions directing organizational structure are:

- What skill sets are required to analyze each source of active risk?
- Are there synergies between these skill sets and other sources of active risk?

“Active risks need to be budgeted and monitored in a way that encourages their ability to create value. Taking too little active risk should be just as concerning as taking too much.”

Governance

It's no coincidence that plans' risk allocations have evolved to their current state. The unproductive interest rate exposures of the liabilities have persisted because they have not been monitored. The tactical asset allocation and rebalancing risks similarly expand in plans where no one has been held accountable. On the other hand, active risks have dwindled, as plan sponsors have focused on underperforming managers. From an investment manager's perspective, once they are given a mandate, particularly with fixed fees, the risk of significant underperformance and resulting loss of the assignment, outweighs the potential benefit of strong outperformance. With these incentives, it is not surprising that many managers diminish their active risk.

To avoid these pitfalls, individuals should be clearly assigned the responsibility for monitoring all risks. Unproductive and unintended risks need to be efficiently eliminated. The most important step is simply to quantify these risks and ensure someone is held accountable for their management. Market risks should be sourced as cheaply as possible and rebalanced to the strategic benchmark when the actual positions drift too far. Again, the key issues are monitoring and accountability.

Traditionally, most plan staff effort has been focused on choosing and monitoring underlying active managers. The result

has been unsatisfactory, not so much in terms of poor performance, as in terms of too little active risk being taken. Active risks need to be budgeted and monitored in a way that encourages their ability to create value. Taking too little active risk should be just as concerning as taking too much. This applies not only to underlying managers, but to the plan staff as well. Board oversight should focus on the big risks to the plan, interest rate exposures and market risk, rather than on the management of the active risk.

Today's market environment is challenging for investors. Some have even argued that investors should rewrite the rulebook. Given lower interest rates and lower expected equity returns going forward, many plan sponsors face the difficult task of hitting return targets established in the 1990s. In our view, the only way to increase expected total returns is to add alpha to the market risk premia created by traditional portfolio allocations. *Active Alpha Investing*, an extension of modern portfolio theory, is one solution. Simply stated, we believe investors should explicitly balance market and active risk, consider risk and return relative to liabilities, rather than in asset-only terms, and assess the implications these decisions will have on both risk management and organizational structure. With the framework provided in this series, investors should have a solid start for generating additional alpha in their portfolios.

Modern Investment Management: An Equilibrium Approach

A more complete discussion of the Active Alpha Investing principles discussed in this article series can be found in *Modern Investment Management: An Equilibrium Approach*, a new book by Bob Litterman and the Quantitative Resources Group at Goldman Sachs Asset Management. In this book, the authors discuss how to use an equilibrium approach to structure a portfolio that can maximize returns within a limited risk budget. By taking more active risk, we believe it is possible to achieve excess returns in various market environments.



The entire Active Alpha Investing series is available at activealpha.gs.com.

Article 1: **A New Paradigm for Today's Challenges** – Learn the value of taking more active risk

Article 2: **All Alphas are Not Created Equal** – Understand how to find and evaluate alpha sources

Article 3: **Putting it All Together** – Learn how to implement solutions in your organization

