

SENIOR CONSULTANT

The Voice of the Investment Management Consultant

Core/Satellite Portfolio Construction

Mark Chamberlain and Jay Jordan

Ever wonder what the difference is between the investment counsel provided to large institutions and individuals? Barclays Global Investors has been offering its institutional clients around the world a highly disciplined philosophy of managing risk, return and cost. This philosophy called *Total Performance Management* has made Barclays the largest asset management firm in the world. Central to this total management philosophy is their *Core/Satellite Investment Strategy* which is useful for all investors, whether institutions or individuals. We have asked Mark Chamberlain and Jay Jordan of Barclays to explain their Core/Satellite strategy to the end that you and your clients might benefit from a proven portfolio construction methodology that makes good use of both active and passive investments. – Stephen C. Winks, Publisher

Core/Satellite portfolio construction reconciles the seemingly irreconcilable debate between the respective benefits of index and active management. Core/Satellite provides the framework that enables asset allocation models to be implemented with more purity – and potentially less cost – than those devoted 100% to active management. Even so, Core/Satellite leaves room for active money managers to add value.

Simply put, Core/Satellite blends index and active strategies to achieve more consistent tracking to asset class benchmarks. Index investments form the core components while actively managed investments constitute the satellites. In the institutional arena, index benchmarks have long been used when constructing asset allocation policy. And many – if not most – large pension plans utilize the Core/Satellite framework to implement a more efficient asset allocation policy. An efficient blending of the core and the satellite is driven by what is known as the *Active Manager Risk Budget* – how much Active Manager Risk you are willing to assume after implementing the desired asset allocation.

Market Risk vs. Active Manager Risk

Active Manager Risk differs from "Market Risk." Market Risk is associated with the risk of the market going down and is often referred to as "Total Return Risk." Active Manager Risk, on the other hand, is the risk of the active manager underperforming their benchmark – both on market downswings and upswings. That is, an active money manager attempts to outperform their benchmark on a relative basis, more positively on the upswing or less negatively on the downswing.

Whereas total return risk is measured by the standard deviation of a manager's total returns, Active Manager Risk – relative to a benchmark – is represented by tracking error, which is the standard deviation of the manager's alpha (excess return) to a benchmark. Typically, a manager's tracking error is greater than their alpha over the same long-term period. This reflects the fact that in order to beat their benchmark a manager must own a set of securities that differs from the benchmark. Choosing to overweight certain sectors is one way a manager may attempt to outperform. Another is to build a portfolio of 50 stocks in the attempt to outperform a benchmark index containing 500 or more. In both the short and long term, these decisions are not always going to prove

correct. If you can find managers who are always right, then there is potentially no need for you to budget for Active Manager Risk. However, if you seek to contain the risk of the manager being wrong over any time period, then Active Manager Risk Budgeting through Core/Satellite construction is an idea worth considering.

Active Manager Risk Budgeting

When setting the Active Manager Risk Budget, it's important to consider the active manager's investment style and relative return objectives. If the manager aims to beat the benchmark by a lot, it's intuitive that they must differ from the benchmark index by more than the manager who aims to outperform by only a little. They may also be striving to beat their benchmark index after accounting for all fees and costs associated with managing and trading the portfolio, and this raises an additional hurdle requiring further differentiation from the benchmark.

**SIMPLY PUT,
CORE/SATELLITE
BLENDS INDEX AND
ACTIVE STRATEGIES TO
ACHIEVE MORE
CONSISTENT TRACKING
TO ASSET CLASS
BENCHMARKS**

[Graphic omitted]

Because the average equity fund has an expense ratio of 1.5%, and has additional costs associated with trading and market impact, a built-in hurdle of over 2% per year exists that many managers must clear, simply to break even with a low-cost index fund. Beating the benchmark by more than 2% a year without owning a set of securities that is significantly different from the benchmark – either in terms of sector or individual securities – is extremely difficult.

If the focus of modern portfolio theory is to implement and achieve efficient risk/return objectives, then Active Manager Risk represents a potential threat to successfully delivering an optimal result.

Implementing Asset Allocation Policy

Asset allocation theory suggests a portfolio construction based on diverse asset classes in the attempt to reduce market risk. The number of classes typically ranges from three to seven, including large cap, small cap, fixed income and international. Each of these mandates is then defined by a representative benchmark index. For example, a large cap U.S. equity mandate could be represented by either the S&P 500 index or the Russell 1000 index, a small cap U.S. equity mandate by the S&P 600 or the Russell 2000, and so on. Further, managers (or funds) hired to fulfill distinct style mandates would be benchmarked to style indexes such as Russell 1000 Growth or S&P 500/BARRA Growth.

Although one could reduce cost and avoid style drift by investing in the index and that corresponds to the benchmark, many clients select active managers in an attempt to beat the benchmark. The key concept to remember is that to seek active return – to beat the benchmark – one must necessarily accept Active Manager Risk. Only an index fund avoids taking on significant Active Manager Risk; yet an index fund will neither earn (nor lose) active return. Identifying in advance those active managers who can consistently provide an optimal balance between risk, return and cost is often a difficult task at best and, as such, poses risk to achieving a consistently optimal asset allocation result. Core/Satellite attempts to resolve this dilemma.

Importantly, Core/Satellite portfolio construction originates from, and thus complements, the asset allocation model. The implementation of the Core/Satellite structure occurs after an asset allocation study that optimizes resources among classes. Within these parameters, Core/Satellite allocates to both active and passive managers – potentially within each of the mandates. Large cap might be given a risk budget of 2, while small cap might be budgeted at 8. No matter the risk budget, the purpose of Core/Satellite is to manage Active Manager Risk while not completely forgoing the opportunity for seeking alpha.

Not surprisingly then, when implementing a Core/Satellite structure, the decision-making dynamics are remarkably similar to those of traditional asset allocation. The primary task is to identify the level of risk that is appropriate to the investor – to set the Active Manager Risk Budget. One can budget a pre-fee level of Active Manager Risk approximating zero – the approximate risk involved in a well-managed index fund before fees – or as high as that represented by the investment manager candidate's expected tracking error (and would assume an all-active allocation to that manager). Typically the risk budget chooses a place between the two. Turn up the "risk dial" for more Active Manager Risk, devoting more resources to the satellite active manager; turn it down to reduce Active Manager Risk, devoting more resources to the core index.

The Core/Satellite Hypothetical Tool

Not only does Core/Satellite portfolio construction quiet the debate between index and active, Core/Satellite transforms the relationship between you and your client. No longer will your proposal rest on the proper selection of the "best" manager (who may not be the best or even close to the best one year or three years from now). Instead, your dialogue will revolve around setting the risk budget and fine-tuning the risk dial as a trade-off between active return and Active Manager Risk.

Figure 1 on the next page serve as a heuristic for illustrating a reduction of the risk of active managers underperforming their benchmarks. The graph on the left illustrates combining an index fund with an active manager that has a hypothetical 2.5% alpha and

a 5.5% tracking error. By blending the index with the active manager, the total tracking error is reduced to 2% (the target active risk budget). The graph on the right illustrates the hypothetical manager, but this time a 4% tracking error is targeted. This higher risk budget results in a greater percentage of the total assets to be allocated to the active manager. The tool that produced these graphs is called the "Core/Satellite Hypothetical Illustrator" and is available to financial advisors at www.iShares.com in the "Tools" section of the web site.

The Core/Satellite Hypothetical Tool assists you in this discussion with your client. It allows you to conduct a series of "what-ifs," prompting you to input criteria - alpha, tracking error, risk budget, etc. - and then outputs a proposal you can utilize with your clients to discuss managing Active Manager Risk and setting Active Manager Risk Budgets. Business Development Officers at Barclays Global Investors Services stand willing and able to help you learn how to utilize this innovative and unique calculator. ■

Glossary

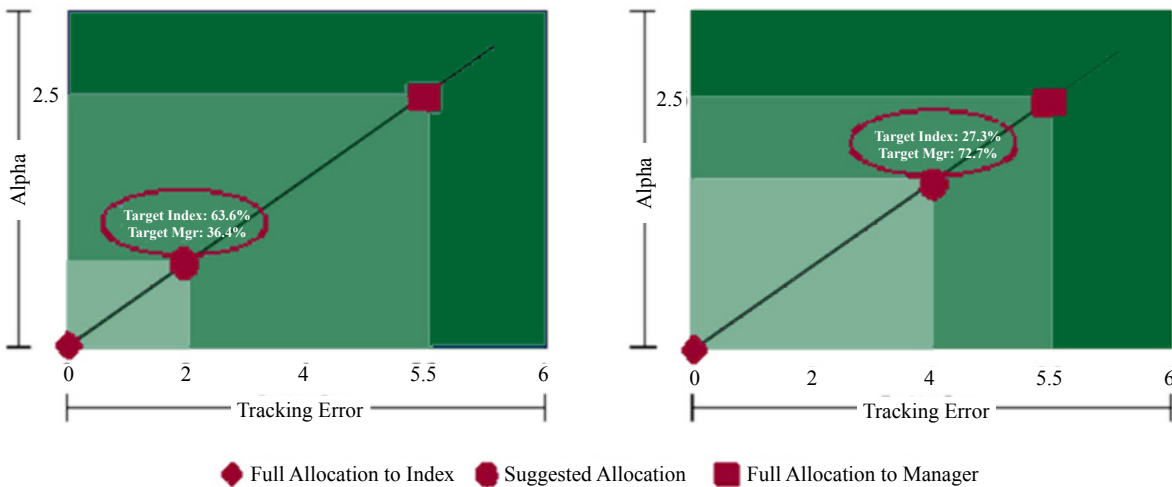
Core/Satellite Hypothetical Tool: The Core/Satellite Tool allows you to hypothetically illustrate a trade-off between alpha and tracking error to a benchmark index. Intuitively, active managers can potentially achieve higher alpha with higher levels of tracking error since higher tracking errors reflect the fact that the manager's portfolio is increasingly different than the benchmark. However, client tolerance for tracking error varies based on their individual tolerance for underperforming a benchmark over the near- or long-term. The Core/Satellite Tool serves as a calculator for illustrating a hypothetical portfolio that blends indexes with active managers to achieve a lower tracking error than that produced by an allocation entirely to the active manager. There are three key inputs for the Core/Satellite Tool: Alpha, Tracking Error and Active Manager Risk Budget.

Alpha: The manager's return relative to the return of a benchmark. For example, consider a manager with a Russell 1000 Value benchmark. If the manager returned 7% when the Russell 1000 Value returned 6%, the alpha would be 1%. However, alpha can be both positive and

[Graphic omitted]

Figure 1.
The Core/Satellite Hypothetical Tool At Work

Amount Invested: \$100,000
 Target Index: Russell 1000 Value Index
 Target Actively Managed Fund: XYZ Large Value Equity
 Tracking Error: 5.5%
 Alpha: 2.5%



Graphics are hypothetical and for illustrative purposes only. Not indicative of any investment. Past performance is no guarantee of future results.

negative (outperformance and underperformance). Because past alpha is no guarantee of future alpha, the Core/Satellite Tool allows prudent financial advisors to formulate a hypothetical alpha based on their interpretation of future marketplace and manager attributes. However, for the purposes of the Core/Satellite Tool, alpha does not determine the outcome of allocation – it only serves to illustrate the intuitive trade-off between Active Manager Risk and active return. The tool is driven by a client's tolerance for tracking error.

Tracking Error: Tracking error in terms of an active manager's return to a benchmark is often called Active Manager Risk and expresses how much tracking error a manager of a portfolio risks while attempting to add alpha over and above an investor's benchmark. In this context, tracking error can be quantified as the standard deviation of a manager's alpha to a benchmark. For example, if a manager's benchmark is the Russell 2000 Growth, and the tracking error of their alpha to that benchmark

is 5.5%, that would statistically represent that two-third of the time their alpha falls within a range of +5.5% and -5.5%, while one-sixth of the time, their positive alpha would be greater than +5.5% and one-sixth of the time their negative alpha would be less than -5.5% (assuming a statistical normal distribution). This signifies that the client will experience negative tracking error of -5.5% or more, one out of every six years. Although the client's tolerance for negative alpha in any year is an important consideration in determining a risk budget, their tolerance for this one in six year negative event is especially important. Some clients, such as pension plan fiduciaries, often tolerate little to no tracking error in the portfolios for which they serve as trustees.

Active Manager Risk Budget: A subjective, customized goal established to attempt to quantify and/or reduce the amount of Active Manager Risk that the investor is comfortable assuming. Clients with a low tolerance for Active Manager Risk will tend to allocate more

of their assets to index portfolios to achieve low tracking error. Clients who are impervious to tracking error tend to allocate 100% to active managers. Risk budgeting is a process that combines both index and active portfolios to reach a middle ground. As a portfolio structure, it is often used to facilitate the use of active managers who have high alpha-generating potential but high tracking error. By injecting an indexed component as a complement to the active manager, the financial advisor is able to deliver a blended portfolio that meets a client's tolerance for tracking error risk while at the same time enabling the use of the potentially high alpha manager. For example, to constrain the tracking error of an active manager from 10% to 5%, the tool will allocate to a hypothetical portfolio that is 50% actively managed and 50% indexed. As with historical alpha, past tracking error is no guarantee of future tracking error. However, historical tracking error can serve as a guide for setting the Active Manager Risk budget and could be adjusted by the finan-

cial advisor when using the tool to allow for interpretation of market and manager conditions.

Disclosure

It is important to note that iShares is a registered trademark of Barclays Global Investors, N.A. iShares is not FDIC-insured, has no bank guarantee and may lose value. iShares are distributed by SEI Investments Distribution

Co. Barclays Global Fund Advisors (BGFA) serves as an advisor to iShares. Barclays Global Investors Services (BGIS) assists in the marketing of iShares. BGFA and BGIS are subsidiaries of Barclays Global Investors, N.A., none of which is affiliated with SEI. For more information on the Core/Satellite hypothetical tool and Exchange Traded Funds (iShares), call 1-800-iSHARES (1-800-474-2737).

Notes

SENIOR CONSULTANT

THE VOICE OF THE INVESTMENT
MANAGEMENT CONSULTANT

James P. Owen
Co-Founder
Stephen C. Winks
Co-Founder, Publisher & Editor-in-Chief
Sydney LeBlanc
Consulting Editor
Mamie Woo McNeal
Production Editor
Eddie Bryant
Marketing Consultant



Advisory Board

Jerry Bott
Merrill Lynch
John Brock
Brock-Hazzard/First Union Securities
Dick Charlton
New England Pension Consultants
Bob Cluck
Canterbury Capital
Harold Evensky
Evensky Brown & Katz
Jeff Frum
Wells Fargo
Rich Gleason
Salomon Smith Barney
Kathleen E. Hegenbart
Salomon Smith Barney
Brian Hunter
Prudential Securities
Greg Hunter
Alex Brown
Bill Johnson
CapTrust
John Kelsey
Salomon Smith Barney
Keith Phillips
Morgan Stanley Dean Witter
Bob Rowe
Morgan Stanley Dean Witter
Dick Smith
Capstone Investment Group
Jim Yanni
Yanni Partners

SENIOR CONSULTANT

1457 Crystal Springs Lane
Richmond, Virginia 23231
Ph 804-795-1642 ■ Fax 804-795-7703
WWW.SRCONSULTANT.COM