RESEARCH SPOTLIGHT

DEPLOYING MULTI-FACTOR INDEX ALLOCATIONS IN INSTITUTIONAL PORTFOLIOS

This paper introduces a new framework for institutional investors, enabling them to replicate a multi-factor index via a passive investment mandate. We call this a multi-factor index allocation, which combines select MSCI factor indexes into a custom mix created by the investor. Tradeoffs inherent in choosing between pure factor exposures versus investability also are discussed.

This paper builds on research in "Foundations of Factor Investing," which discusses six factors that historically have earned a premium over long time periods, represent exposure to systematic sources of risk and have strong theoretical foundations.

KEY FINDINGS

- Factor index allocations can be seen as active management implemented through passive replication. Each allocation can be customized for each institution's objectives and constraints.
- Multi-factor indexes have historically demonstrated the benefits of diversification, transparency, cost-efficiency through reduced turnover and flexibility.
- Diversification across factors has historically shown lower volatility, higher Sharpe Ratios, lower tracking errors and less regime dependency across business cycles.
- Combining factors in a multi-factor index may reduce turnover costs through the "natural crossing" of index constituents.

MULTI-FACTOR INDEXES: A NEW APPROACH FOR INSTITUTIONAL MANDATES

In this paper, we introduce a new framework for institutional investors who want to replicate a multi-factor index as part of a passive investment mandate. We call this a multi-factor index allocation, which combines select factor indexes into single mixes that are created by the investor. Multi-factor indexes have historically demonstrated four key benefits: diversification, transparency, cost-efficiency via reduced turnover and flexibility.

Our research shows that combining factors helped offset the cyclicality in single factor performance. When factor indexes are combined into a single multi-factor index, diversification across factors has historically provided these results:

- Lower volatility and higher Sharpe Ratio
- Higher information ratios and lower tracking errors
- Less regime dependency over business cycles

IMPORTANT STEPS IN DEPLOYING FACTOR ALLOCATIONS

Factor index allocations have the potential to change the landscape of mandate structures by offering a new way to achieve exposure to systematic factors that could be captured only through active mandates in the past. This index-based factor investing can be viewed as active management implemented through passive replication, allowing factor allocations to be tailored for each institution.

The first step requires assessment of factor investing in the institution's strategy. Two main dimensions are institutional objectives and constraints. For example, investors seeking to enhance risk-adjusted returns may choose a dynamic allocation (higher return and risk), a defensive allocation (moderate return and lower risk) or a balanced allocation in between.

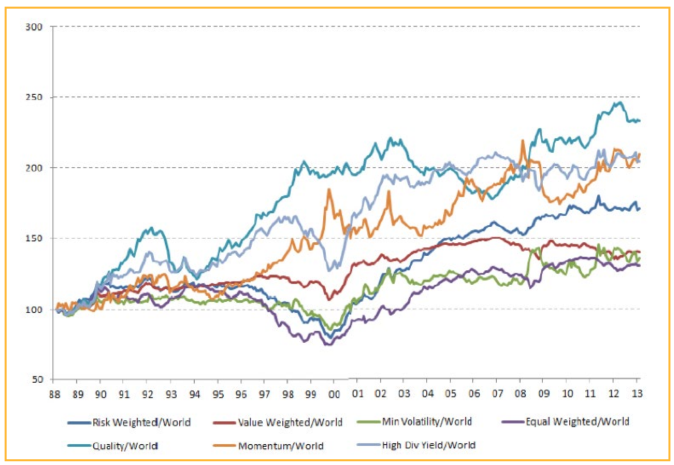
After establishing its objectives, the institution identifies factors to support its goals. The criteria for combining indexes depend on the institution's view of the tradeoff between investability and factor exposure, which is tied to performance.

In the implementation phase, there can be significant turnover reduction when combining factors in a multi-factor index. The "natural crossing" of index constituents may reduce turnover costs, provided that the allocation is structured around a single passive mandate (or multiple mandates replicating the same index). Since there are index alternatives with varying levels of exposure versus investability, the appropriate index implementation depends on the institution's unique objectives and constraints.

CORRELATIONS MATTER WHEN SELECTING FACTORS

Since factor returns have historically been cyclical, factor selection decisions should acknowledge the correlations between factors, which impacts portfolio risk. Exhibit 1 shows the cumulative returns relative to the MSCI World Index. Each of these factor indexes has undergone multiple years of underperformance, but their performance has not been identical.

EXHIBIT 1: ALL SYSTEMATIC FACTORS ARE CYCLICAL (CUMULATIVE RELATIVE RETURNS, JUNE 1988 TO JUNE 2013)



We find that factors performed differently during various phases of the business cycle. Some factors such as Value, Momentum, and Size have historically been pro-cyclical, performing well when growth, inflation and interest rates are rising. Quality and Low Volatility have historically been defensive, performing well when the macro environment was weak. Investors may seek factors that perform well under different types of market cycles to diversify risk. Diversification across factors has historically led to:

- Lower volatility and higher Sharpe Ratios
- Higher information ratios and lower tracking errors
- Less regime dependency over business cycles

INVESTOR CRITERIA FOR COMBINING FACTOR INDEXES

When choosing an appropriate factor combination, an investor's key criteria are risk, correlations with other factors and performance in different business cycles, as shown in Exhibit 2.

Other criteria that influence factor selection include sources of return as well as return patterns. For example, an institution may prefer income to capital appreciation or prefer factors that imply higher yields. In addition, an institution may be particularly sensitive to the possibility of a prolonged drawdown and seek factors that are less likely to go through longer periods of underperformance.

MULTI-FACTOR INDEX ALLOCATIONS: EXAMPLES

The right blend of factors will depend on the institution's preferences for various aspects of performance (return, risk, correlations, etc.), investability and factor exposure, which in turn reflects the institution's objectives and constraints. Actual use cases can be helpful in understanding how institutions have actually addressed these issues in adopting multi-factor index combinations.

In the first example, we focus on a strategic or long-term static allocation that is designed to be well diversified. Factor indexes in this example are the MSCI Value (25%), MSCI Momentum (25%), MSCI Risk Weighted (25%) and MSCI Quality(25%) Indexes. The four factors are implemented as a single composite multi-factor index that is rebalanced semi-annually. The index allocation is executed as a passive internal mandate. The result of combining the four indexes is a balanced portfolio which exhibited return enhancement at lower risk levels than the market historically.

EXHIBIT 2: CONSIDERATIONS FOR COMBINING FACTOR INDEXES

Factor	Historical Risk	Historical Correlation	Historical Business Cycle
Value	Comparable to market	Low with Momentum and Quality	Pro-cyclical
Momentum	Comparable to market	Low with Value, Yield and Quality	Pro-cyclical
Low Size	Higher than market	Low with Min Volatality, Yield and Quality	Pro-cyclical
Quality	Lower than market	Low with Value, Size, Yield and Momentum	Defensive
Low Volatility	Lower than market	Low with Value and Momentum	Defensive
Yield	Lower than market	Low with Size, Quality and Momentum	Defensive

The second example focuses on an allocation that provides lower absolute volatility with higher yield. The desire to "de-risk" is driven by the institution's projections of a bearish, low growth market. At the same time, the institution seeks to achieve higher yields while de-risking. This allocation is implemented as a passive external mandate on a multi-factor index combining Low Volatility via the MSCI Minimum Volatility Indexes (50%) and Yield via the MSCI High Dividend Yield Indexes (50%).The result of combining a high yield factor index with a low volatility index is a portfolio which historically exhibited substantial risk-adjusted return enhancement.

CONCLUSION

Deploying factor allocations based on MSCI factor indexes involves three steps by the institution: 1) assess the role of factor investing in its strategy; 2) identify which factors are appropriate for its portfolio and which factors to combine; and 3) implement the factor-driven index allocation. Factor allocations will vary by institution, depending on the objectives and constraints of each investor. Because systematic factors respond to macroeconomic forces, factor indexes may underperform the market for extended periods. However, many of these factors respond differently to macroeconomic trends, proving historically to have low correlations and potentially strong diversification effects. Through a set of realistic examples, this paper demonstrates how combining factor indexes in a "Multi-Factor Index" may capture diversification effects, along with lower turnover costs due to internal crossing of index constituents.

If you'd like to read more about any of these subjects, please visit msci.com/resources/research_papers for the full version of this research paper.

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