Insights

FTSE Russell

Combining Factors

Asset owners and asset managers are increasingly interested in so-called “smart beta” indexes, a category that includes factor and alternatively weighted indexes. In a series of four FTSE Russell *Insights*, we explore the concept of factors in depth. We examine the differences between factor indexes and other types of smart beta index, illustrate how factor exposure is embedded in an index and suggest how factors can be combined.

In this *Insights*, the fourth of the series, we explore the latter topic: how best to combine factors.

Rising demand to combine smart beta strategies

According to the 2015 FTSE Russell Smart Beta survey, combining factors is a topic of increasing interest to a broad range of investors. Responses to the survey, which came from 214 asset owners around the globe, with estimated collective assets under management of over U.S.$2 trillion, revealed:

- 70% of respondents with a current allocation to smart beta, a broad category that includes factor index-based approaches, are using two or more smart beta strategies;
- 47% of respondents, including both current users and non-users of smart beta strategies, have evaluated or are currently evaluating multi-factor combinations;
- The average number of smart beta strategies evaluated by respondents, including both current users and non-users of smart beta strategies, is four;

- Amongst those respondents who evaluated more than one smart beta strategy, the most commonly stated objective (given by more than half the respondents) was to gain understanding of how the strategies worked in combination.

Diversification by factor

In common with the traditional approach to asset allocation, a basic motivation for combining factors is to achieve diversification benefits.

In the same way as different asset classes have distinct risk and return characteristics, the returns accruing to different equity factors can also be seen as distinct, varying according to the economic cycle and market environment.

For example, the value factor is typically considered to exhibit a pro-cyclical performance, performing strongly during periods of strong economic growth and higher risk appetite. In contrast, the performance of quality is typically countercyclical. Combining factors therefore offers the potential benefit of diversification.

Combining factors using indexes

There are different ways of combining factors. A simple approach is to average stock weights across a number of single factor indexes – a composite index approach. A variant of this approach is to use a composite of the target factors to create a factor index – a composite factor approach.

While these approaches work well for factors that are positively correlated, if factors are negatively correlated an averaging or a composite approach may dilute the exposure to the desired factors.

An alternative approach to combining factors in order to achieve exposure to multiple factors within an index is to “tilt” the starting index repeatedly, each time towards one of the desired factors. In other words, index weights are first tilted towards the first factor of interest, then towards a second factor of interest, and so on. The multiple tilt procedure allows the index designer to retain exposure to all the desired factors.

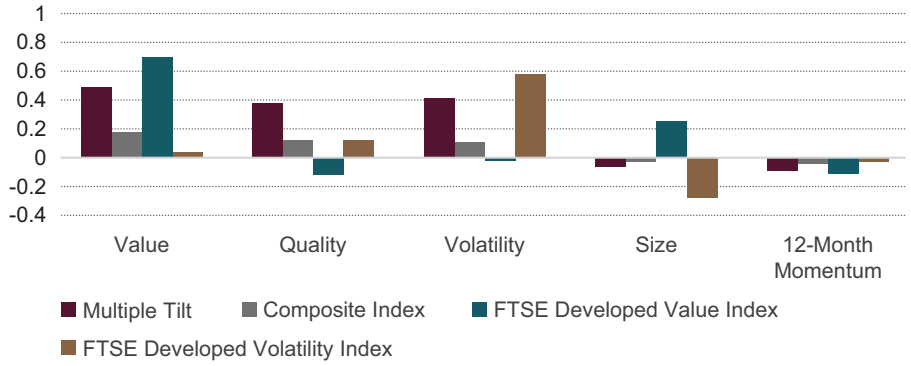
In the chart below, we illustrate the difference between the composite index approach and the multiple tilt approach by examining the levels of factor exposure when three factors (value, quality and volatility) are combined.

By comparison with the target factor exposure of each of the single factor indexes (e.g., the value factor exposure of the value factor index), the exposure of the composite index (shown by the orange bar) is much reduced. By contrast, the multiple tilt approach (the red bar) preserves much of the factor exposure of the three factors being combined.

The dilution of the factor exposure of a composite factor index is a consequence of the tendency of value and quality factors to be negatively correlated.

The size and momentum factor exposures of the three single factor indexes, the composite index and the multiple tilt approach are also shown for purposes of comparison.

Factor Exposure: FTSE Developed Active Factor Exposure: Single Factor Indexes and Multiple Tilt Approach



Source: FTSE Russell. Data as at August 2015. Averages taken between September 2001 and July 2015. Factor exposure is the monthly average exposure as detailed in Section 2.1. Past performance is no guarantee of future results. Please see the disclaimer for important legal information.

Starting portfolios and factor overlays

A holistic approach should be taken to combining factors, rather than approaching each individual factor separately. As the above example demonstrated, using an averaging or composite approach may result in a weaker exposure to all target factors.

The importance of efficient factor capture becomes apparent when one considers that factor preferences and objectives may be subject to change. Consider a policy change resulting in a desire to add a quality dimension to an existing value objective, possibly prompted by a decline in risk appetite.

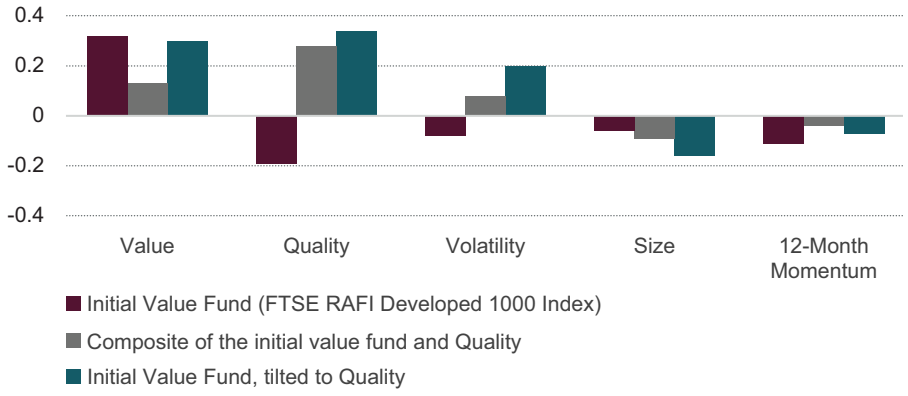
Simply combining an existing value factor index (or a fundamental index) with a quality factor index (i.e., reallocating a portion of the portfolio's value allocation to quality) is likely to result in limited exposure to both factors. If the risk forecast turns out to be correct, the weak levels of quality exposure will provide limited downside protection. Conversely, a return to more normal levels of risk appetite will meet with limited reward as a consequence of the limited value exposure.

The sequential tilt approach provides a possible index solution. A factor tilt can be applied to any index, not just to the capitalisation-weighted index. For example, a quality tilt may be applied to an existing fundamental index or to a value factor index to achieve quality factor overlay. The difference between the starting index and the tilted index (called the delta or completion portfolio) contains the information required to overlay or achieve the new factor objective.

The chart below examines this operation. Suppose a provider runs a fund tracking the FTSE RAFI Developed 1000 Index. The initial value exposure of the FTSE RAFI Developed 1000 Index is around 0.3 (standard deviations above the average stock). A composite of the FTSE RAFI Developed 1000 Index and a quality factor index results in a comparable increase in quality exposure to that achieved by the tilt approach. However, the orange bar highlights that the tilt approach also maintains the existing levels of value exposure, in contrast to a composite approach.

To achieve such an outcome in practice, a fund needs only to add an allocation to quality, i.e., to overlay the difference or completion portfolio that captures the differences between the initial value fund and the tilted index.

Factor Exposure: Value Index, Value/Quality Composite Index and Value Index tilted towards Quality



Source: FTSE Russell, data as at July 31 2015. March 2007 – July 2015. Factor exposure is the monthly average exposure. *Past performance is no guarantee of future results. Please see the disclaimer for important legal disclosures.*

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FTSE Russell is focused on applying the highest industry standards in index design and governance, employing transparent rules-based methodology informed by independent committees of leading market participants. FTSE Russell fully embraces the IOSCO Principles and its Statement of Compliance has received independent assurance. Index innovation is driven by client needs and customer partnerships, allowing FTSE Russell to continually enhance the breadth, depth and reach of its offering.

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