

Given Matarin's expertise in forecasting stock returns using multi-factor models, we are often asked our opinions regarding "factor indexes," which have become widely available through ETFs. Factor indexes are constructed statistically to hold stocks which represent prevalent stock risk and return characteristics in a purer form. For example, the MSCI family of factor indexes offers exposure to systematic factors such as Quality, Value, Size, Dividend Yield, Volatility, and Momentum. All of these factors are among the broad group which Matarin's investment team has used over time as tools in either return forecasting or risk management. The perspective that has been gained from our history of investing in "factors" is that there is a substantial amount of benefit to be gained from the ongoing active management of 1) factor design, 2) factor weighting and timing, and 3) ongoing portfolio construction. A simple "buy and hold" strategy of factor index ETFs would leave a lot of this opportunity on the table, and introduce some unintended risks.

Factor Design The characteristics represented by factor indexes are by definition not unique. They are chosen because they are "systematic risk" factors. By contrast, investors should look for active managers of multi-factor portfolios to express some uniqueness in the indicators that they are using in their forecast. There is much value to be added in the eloquent expression of investment ideas through the language of factors, but eloquence demands care and creativity. Value can also be added by varying the emphasis on different factors for different stocks. Many of these factors make more sense and have more effectiveness in being applied to certain types of stocks rather than others. Finally, to the extent that a manager may be using factors like Quality, Value or Momentum, investors should look for differentiation in the way in which these common factors are being defined and applied. Differentiation will mitigate the risk of exposure to "crowded" trades, and the risk that the information in popular indicators is already being too heavily discounted in the market.

Factor Weighting To the extent that the group of factors commonly represented in investible factor indexes may each offer positive returns over the long run, the return *pattern* offered by each of them is very different, and none of them should be expected to work all the time. Therefore, the weighting and timing of the factors in any portfolio will offer the opportunity to increase return and lower risk. There are several things to consider in this regard, including:

Cyclical Some of these factors are cyclical in their ability to add value, and the persistence of returns varies quite a bit among them. It is beneficial to try to underweight factors during periods of loss, but this requires some care. What is *not* beneficial is to put a high weight on the factors that have worked the best recently – this is despite the fact that emotional biases would lead many investors to buy factor indexes that have been working well because it is so tempting to invest in what has done well and often so frightening to do the opposite.

Contribution to Risk Some of these factors are much more volatile, and therefore may merit a lower weight to achieve an equivalent risk contribution. Furthermore, the relative riskiness of each of the factors is always changing.

Factor Correlations Some of these factors are correlated with one another, and any highly correlated factors merit lower individual weights on their similar sources of information, lest the same basic input be double counted.

Cost of Turnover Some of these factors have high turnover, with more quickly changing information content, and will lead to more transaction costs as the result of frequent trading. Such trading costs should be subtracted from expected returns.

The aforementioned considerations are themselves shifting through time, even as their relationships to one another are shifting. This level of complexity in relationships would be difficult to robustly manage in a passive structure.

Ongoing Portfolio Construction Even after an ideal mix of factor weights in a portfolio has been determined, additional considerations will remain. For example, say we've found an ideal weighting of investments in Value, Momentum and Quality factor indexes. However, after putting these together, upon further inspection we may now find that within the mix we have outsized or undersized exposures to certain sectors or industries. Or perhaps in buying the Quality index we find that we have gained additional exposure to many value stocks, which moves us away from the desired exposure to the Value factor in our predetermined ideal mix. Looking deeper, we would likely find that this mix of investments will have as yet unconsidered exposures to additional factors like size, beta, macroeconomic risks, and so on.

On the other hand, when we are actively managing portfolio construction, in addition to basic targeting of factor exposures we can get a broader and deeper look at what is really being invested in. We can build the total portfolio in a way that takes all of these related considerations into account holistically. This is one of the many ways in which we strive to add value for our clients at Matarin.