

FINANCIAL ENGINEERS AND THE FACTOR BUBBLE

By Jason Hsu, Ph.D., and Vitali Kalesnik, Ph.D.

Is there a factor bubble? Tabulating papers in the top finance journals, nearly 250 factors appear to provide excess returns. In the last few years, researchers have discovered roughly 40 new factors each year (Harvey, Liu, and Zhu, 2014). There were only five factors in the 1990s! No doubt we are witnessing a factor bubble, which is perhaps not surprising given the unprecedented “printing” of diplomas for financial engineers engaged in business schools globally! These financial engineers, whose career trajectory depends in no small part on identifying new factors, have in turn conducted an unprecedented number of backtests, mining for artifacts in historical return data. Unfortunately, this factor proliferation has been transmuted into product proliferation, particularly in the smart beta area. And investors considering multifactor strategies are absolutely overwhelmed. Which of the 250 factors are reliable? Which are most likely to provide excess returns in the future? As it turns out, most of the factors are not persistent – including a few well-known ones like small-cap and quality.

SMALL-CAP, QUALITY, DATA ARTIFACTS, AND DATAMINING

To answer these questions, we first assess the robustness of each factor. A reasonable heuristic for determining the robustness of a factor is to ensure that (1) a strong economic intuition exists for the factor premium, (2) the premium is significant for most countries and time periods, and (3) reasonable variations of the factor definition do not meaningfully alter the empirical results (Hsu and Kalesnik, 2014; Shumway and Warther, 1999).

As an illustration, the famed small-cap factor does not seem to survive the above robustness test. The small-cap effect has disappeared in the last 20 years in the United States and does not seem to exist in the data for non-US countries. It is now understood in the finance literature that the effect is driven by a combination of extreme outliers in the 1930s and a mistake in the treatment of returns for delisted stocks (Kalesnik and Beck, 2014). While small stocks do offer higher returns, evidence suggests that, because they are meaningfully riskier, they do not offer a superior bang-for-the-buck.

Quality, a recently popular factor, also fails and is a prime example of data mining. There are numerous definitions used to define quality, from high return on assets and high profitability to low debt ratio and low variability in earnings, among others. Many variables could be chosen as a measure for each of the above “quality” definitions. Examining the different definitions and their variants produces an outcome where half the results are positive and the other half negative – and the results change completely from

country to country, with little rhyme or rhythm. Many factor providers argue for a special blend where only a unique combination of selected definitions can capture the premium appropriately. However, chances are the special blends just reflect randomly positive backtests among the millions of other unreported non-positive backtests; they have little hope of performing in live portfolios.

While active stock picking in the small-cap space or on the basis of quality metrics could lead to alpha opportunities, it is simply not the case that buying an indiscriminate basket of small stocks or quality stocks would lead to superior outcomes.

FACTOR ROBUSTNESS AND PORTFOLIO IMPLEMENTATION

While many of the new factors neither appear to perform after their publication nor survive the standard robustness verification, the classic factors of value, low volatility, momentum, and illiquidity do appear to deliver with more satisfactory consistency globally (McLean and Pontiff, 2013; Levi and Welch, 2014). However, translating paper portfolio results into investable (often long-only) portfolios is a complex exercise. The value and low volatility factors, which require infrequent rebalancing and engender relatively modest turnover at each rebalance, can be executed cheaply and passively by tracking suitable smart beta indices. On the other hand, as a short-horizon signal, momentum requires frequent rebalancing, substantial turnover, and skillful trading to get ahead of other investors; attempting to access this factor by replicating a public index is likely unwise. Similarly, illiquid stocks should not be mechanically bought and sold at the market close (a common practice in passive index replication). Skilled but reasonably priced active management is potentially the better approach for accessing the momentum and illiquidity premia.

MULTI-FACTOR INVESTING

Adding to the bubble, factors can be combined, at least in theory, to achieve diversification benefits. The potential benefit from multi-factor investing is alluring – so much so that investors are willing to consider relatively untested factors in the hope of diversifying into uncorrelated exposures. However, there is a meaningful risk that many of the latest factors are results of data mining and produce nothing more than noise in live portfolios. Combining non-robust factors with the known factors will not bring about the desired effect. For example, a strategy of random coin flipping is uncorrelated with the investor’s other exposures, but it is certainly not a reasonable di-



Jason Hsu, Ph.D.
Co-founder and Vice
Chairman of Research
Affiliates



Vitali Kalesnik, Ph.D.
Director, Head of Equity
Research, Research
Affiliates

versifying investment (even if the coin was lucky in selecting good investments in the past). As is often the case, simple, tried-and-true strategies work best in investing. Classic factors like value, low volatility, momentum, and illiquidity appear to be the most reliable sources for excess return. And, as always, thoughtful, low-cost strategy implementation is critical for achieving ultimate investment success.

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